Vocal Timbre and Sexual Trauma in Women's Popular Song

by

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DISSERTATION ABSTRACT

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The voice holds immense power. The voice can evoke fear or exhibit submission; it can arouse or turn off; it can signal sarcasm or sincerity. More broadly, the voice can tell someone how you are feeling in a particular moment or even who you are. Due to the fact that trauma causes specific emotional reactions, survivors' emotions are marked by their trauma and so, therefore, are their voices. In this dissertation, I first show how two specific reactions to trauma—the "freeze" and "fight" responses—have been and can be conveyed through specific vocal timbres. In my discussion of the "freeze" response, I demonstrate how breathiness and reverb, respectively (but also together) can be used to effectively convey dissociation, or feeling disconnected from one's self and/or surroundings. In doing so, I analyze "5AM" by The Anchoress and "Sullen Girl" by Fiona Apple. Next, I examine how noisy timbres, like growl, rasp, and screams, are particularly powerful ways to portray rage and hyperarousal, consequences of the "fight" response, through analyses of "Swine" by Lady Gaga and "Liar" by Bikini Kill. I end with more in-depth, full-song analyses of "Gatekeeper" by Jessie Reyez and "Praying" by Kesha. Each of these songs use a variety of vocal timbres to convey a more nuanced narrative navigating through a night of assault and the recovery process, respectively.

Through this project, I show how sexual assault—which is rampant in the music industry (Johnson 2021; Bain 2021; Savage 2019)—exists not only behind closed doors but also in the public musical output of the industry. In doing so, my project shows how vocal sound conveys personal trauma in ways that are therapeutic for both performers and listeners. More specifically, I draw attention to the ways that sexual violence affects the music that we write, perform, and listen to.

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[1] Since this is a Music Theory dissertation, I feel the need to make the distinction that Forte is pronounced "four-tay," as in the Chicago Bears running back, Matt Forte, or "loud" in musical terms. He is not named after the famous music theorist Allen Forte.

DEDICATION

This dissertation is first and foremost dedicated to me. I have worked really hard, sacrificed a lot, and cried so much. I am so proud of myself for getting here, and for surviving everything that I have gone through to get to this point. I would also like to dedicate this dissertation to all survivors of sexual violence. It can be earth-shattering, and I hope y'all are doing okay out there. Lastly, I would like to dedicate this dissertation to my good friend, Kelly Murray. I love and miss her so much, and I wish she could be here today to see it.

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CHAPTER I: INTRODUCTION

The voice holds immense power. The voice can evoke fear or exhibit submission; it can arouse or turn off; it can signal sarcasm or sincerity. More broadly, the voice can tell someone how you are feeling in a particular moment or even who you are. There exists ample research on physical production and emotional communication through the voice, much of it focused on the speaking and non-singing voice (e.g., Borrie and Delfino 2017; Arnal et al. 2015; Kreiman and Sidtis 2011), but there is some on the singing voice as well (e.g., Henrich 2006; Kochis-Jennings et al. 2012; Spreadborough and Anton-Mendez 2019). Due to the fact that trauma causes specific emotional reactions, survivors' emotions are marked by their trauma and so, therefore, are their voices. Some scholars (e.g., Parson 1999; Overland 2005; Porges 2011) have discussed the intimate connection between the voice and trauma, though typically they focus on the speaking voice. However, connections between trauma and emotional expression in the singing voice, from biological, embodied, and timbral perspectives, have not been examined. Building upon these discussions of timbre, voice, and trauma, this dissertation shows how the sounds of trauma symptoms after sexual assault can be heard in a singer's vocal timbre. While some music researchers have examined collective trauma in music, such as pieces written during or after wars (e.g., Cizmic 2012; Rogers 2021), my research focuses on the individual trauma experienced after sexual violence and, therefore, provides a different lens through which to examine trauma in music and sound.

My dissertation is situated within an ongoing surge in music-theoretical work on timbre. Scholars have recently drawn more attention to musical timbre

(e.g. Lavengood 2020; Wallmark 2022), traditionally a "secondary parameter" of music (Ratner 1979). Some of this work (e.g., Heidemann 2016; Rings 2015; Malawey 2020) focuses specifically on the timbre of the popular singing voice. This scholarship has created systematic methodologies for analyzing vocal timbre and examined ways in which vocal timbre can be connected with identity (i.e. gender, race, sexuality). Building upon this important work, I use a combination of these methodologies to show how artists portray different emotions and bodily feelings connected to the trauma of sexual violence through the sounds of their voice.

In this introduction, I offer a literature review, methodological overview, and chapter-by-chapter outline of my dissertation. First, I discuss how my project engages with scholarly literature on timbre, voice, trauma, feminism, race, sexuality, and sexual violence. I then describe my methods for analyzing vocal timbre in combination with songs' texts. After a brief discussion of the project's significance, I describe the dissertation's organization in five chapters. Through this project, I show how sexual assault—which is rampant in the music industry (Johnson 2021; Bain 2021; Savage 2019)—exists not only behind closed doors but also in the public musical output of the industry. In doing so, my project shows how vocal sound conveys personal trauma in ways that are therapeutic for both performers and listeners. More specifically, I draw attention to the ways that sexual violence affects the music that we write, perform, and listen to.

Literature Review

In my examination of songs about sexual assault, I weave together a variety of scholarship, including studies in timbre, voice, trauma, feminism, race, sexuality, sexual assault in the media, and embodiment. Since I focus on performance and expression in my analyses, studies in timbre provide understanding of the ineffable parts of sound, as well as a listener's perceptions of these sounds. Since timbre has been previously considered a secondary parameter in music studies (probably due to difficulties in meaningfully quantifying it), it is only recently being considered in popular music studies. Discussions of vocal timbre appear in only a small portion of timbre scholarship, though, and voice studies help to provide a greater understanding of the vocal mechanism and physiological vocal production. Through the combination of analysis in physical voice production and timbral perception, I am able to show not only how various vocal sounds are produced, but also various emotional meanings behind the sounds and listener's perceptions of them.

In order to discuss the specific emotions connected to sexual assault and trauma, I also draw from trauma studies. By examining the neurological, psychological, and physiological effects of trauma—including its well-documented effects on the voice—I am able to better understand and describe how trauma manifests itself in the mind and body. Additionally, I am able to make connections between songs about sexual assault in the ways that vocal timbre is used as a method to express these thoughts and feelings. Finally, embodiment studies help me to connect all of these pieces together due to the physical nature of both music and trauma. When we perform or listen to music,

our bodies engage with it. In other words, through actual physical production while singing (or playing) and mimetic engagement (Cox 2001, 2011, 2016) while listening (whether overt or covert), our bodies cannot help but engage with music. As mentioned previously, trauma inhabits the body and actually changes the way the brain and body work. Therefore, embodiment runs through all aspects of my analysis. Drawing from this scholarship, as well as my experiences as a singer and sexual assault survivor, I provide analysis that does not ignore bodily experience, but rather emphasizes it as an imperative aspect of performance, listening, and trauma.

Voice and Timbre Studies

The voice is intimately connected to trauma. Erwin Randolph Parson says, "it is victims' evocative memories and meanings associated with the trauma which shape their *trauma-voice* in therapy. This voice tells *more* about what *really* happened, and what has been broken and shattered inside than ordinary words ever can" (1999, 20). In other words, people can vocally perform their emotions in ways that they may not be able to communicate in words.[2] Many psychologists (e.g., Hart 1967; Kaser 1993; Porges 2011) discuss the connection between the voice and the psyche, saying that aspects of the subconscious are expressed

[2] Though I will use this model for my analyses, connecting personal emotions with the performer and the particular performance, there are important distinctions between a performer as a person and a performer as a brand (or persona). Allan Moore unpacks this concept in *Song Means: Analysing and Interpreting Recorded Popular Song* (2012, 179–214). In my analyses, I argue that the performers, whether consciously or subconsciously, are using their real-life experiences to influence the way they vocally perform these songs about sexual assault.

through vocal production and timbre. Specifically, Porges says that "vocalization, in addition to facial expression, can reflect and trigger bodily states" (2011, 249). Alfred Wolfsohn's work further demonstrates the power of the voice, removed from any lyrics, in trauma recovery. He succeeded in treating his own trauma responses—as well as expanding his vocal range to an impressive eight octaves—by producing extreme sounds with his voice to process his feelings and responses. Paul Newham notes that "[Wolfsohn] discovered that…the voice could reflect psychological images in sound" (1992, 326 and 328). As a part of the voice-psyche connection, mimetic engagement plays an important role. Arnie Cox (2001) points out that the muscular activity (and muscle memory) of tension and release are extremely important parts of the process and the way it makes one feel, whether we are aware of it or not. Cox states, "the build up of tension in some music is not simply a property of the music itself, but it is rather a tension that we feel partly as a result of mimetic participation" (205). This embodiment extends to our emotional experiences with our participation, as well. Porges comments that "physiological state is an implicit component of the subjective experience of listening to or producing music. Music not only changes our emotive state but also elicits changes in our physiology that parallel the feelings of anxiety, fear, panic, and pain" (2011, 247).

For this reason (and drawing from Cox 2016 and others), mimetic engagement is a helpful framework for informing any analysis of vocal timbre. In her article "A System for Describing Vocal Timbre in Popular Song," Kate Heidemann suggests that "vocal timbre telegraphs the interior state of a moving body, presenting the listener with blueprints for ways of being and feeling" (2016,

[1.1]). Victoria Malawey's recent work on vocal production and timbre, *A Blaze of Light in Every Word* (2020), emphasizes the power in vocal delivery and the importance of its analysis and study. Malawey says "like any meaningful analysis, analyzing vocal delivery helps us to better understand the sonic content of the music that moves us" (2020, 5). More specifically, mimetic engagement is a particularly useful tool to analyze trauma-voice because of the embodied nature of trauma, medically speaking. As stated earlier, trauma changes the way that the brain reacts to outside stimuli and thus changes the way that the body works. In doing so, trauma manifests itself within the body, and embodiment is therefore an especially productive way to analyze expressions of trauma, specifically with the voice. About music's (and especially vocal music's) power in trauma expression and healing, Porges says,

> Vocal music, through both lyrics and melody, has been used both as a contemporary vehicle and an archival mechanism to transmit important cultural, moral, spiritual, and historical events and values. Music has been used to calm, to enable feelings of safety, to build a sense of community, and to reduce the social distance between people (2011, 246).

There is also a large body of literature in voice studies from outside music theory and musicology, much of which takes a more scientific approach to the voice. In their influential book *Foundations of Voice Studies* (2011), Jody Kreiman and Diana Sidtis discuss linguistics and the physiology of the voice. In this work, Kreiman and Sidtis focus more on the spoken voice, but do incorporate some discussion of the singing voice. Most notably for my project, they provide scientific studies of vocal differences across various basic human emotions (e.g., fundamental frequency, range, intensity, spectral slope, etc.). They say that

"every unique emotion should have a specific pattern of acoustic cues" (2011, 314). They also point out that the limbic system (which includes the amygdala) "exercises a mighty influence on the expression of emotion by means of vocal prosody" (2011, 308), and give examples of some affects that fight/flight responses have on the voice. While the singing voice can sometimes be separated from these automatic biological responses, they specify that the singing voice, especially outside of the classical style, can often convey these same emotions and that "many aspects of the singing voice can be understood in terms of standard theories of voice production" (2011, 397). In my project, I use this important work, as well as that of John Colapinto (2021), to examine the ways in which biological reactions to emotions, specifically trauma, affect the voice, as well as ways that artists can convey these same feelings through their singing voice.

I situate my vocal analysis within the growing field of research on musical timbre. Many scholars are now looking not only at what differences in timbre mean, but also how to define timbre itself. Many mention that the reason scholars have avoided analyzing timbre for so long is because of its ineffability. As stated in the introduction to *The Relentless Pursuit of Tone,* aspects of sound such as pitch or dynamics have a "single measure of a sound stimulus," while timbre does not (Fink et al. 2018, 9). In timbral analysis, many different measures have to be accounted for. In *The Relentless Pursuit of Tone*, many scholars try to make this hard-to-grasp quality a bit more understandable. Within music scholarship, it seems that researchers essentially examine and define timbre from three distinct viewpoints: listener perception, measurable sound qualities, and physical production.

Zachary Wallmark describes timbre as "a metaphor for bodily action and experience, a sonic disclosure of the material and affective dynamics of sound production, which are, in turn, corporeally mirrored in perception" (2022, 4). In this way, timbre is dependent on aural qualities of the sound, but more importantly on perception of the sound. Other scholars (e.g., Eidsheim 2019; Fales 2002) use similar definitions. Megan Lavengood (2020), however, focuses her timbral analyses on aspects that are measurable and definable on a spectrogram. Other scholars (e.g., Heidemann 2016; Malawey 2020), center physical vocal production and embodiment in their definitions of vocal timbre. In my work, I use spectrograms to show differences in specific sounds, especially when they are all made by the same singer. However, because my work is grounded in the analysis of emotional expression, the performers' physical production and listener perception are imperative aspects of my definition of timbre. In this way, I synthesize these definitions in a way that includes all three perspectives (listener perception, measurable aspects of sound, and physical production).

Trauma Studies

I draw from research in trauma studies to situate the physical effects of trauma within my analyses. In the most recent edition of the *Diagnostic and Statistical Manual of Mental Disorders*, or *DSM-5*, trauma is defined as "exposure to actual or threatened death, serious injury, or sexual violence" (2013, 271). Though this definition is the most recent, it can prove to be problematic. For instance, it implies that these exposures are the only ways that someone can experience

trauma. However, different bodies react to stressors in different ways; racism, adoption, divorce, body dysmorphia, and many other events have shown to be traumatic for some, and none of these fit within this definition (Wright 2020; Harper 2017). Some authors, including Faith G. Harper and Sarah E. Wright, have expanded the DSM's definition of trauma to make it more general, encompassing more of what people experience as trauma, physiologically. In *Unf*ck Your Brain,* Harper defines trauma as "an event that happens outside our understanding of how the world is supposed to work" (2017, 34). She also says that "when our ability to cope with what happened goes to shit and it's affecting other areas of our life," we are having a traumatic response (2017, 34). In *Redefining Trauma* (2020), Wright avoids using the term "trauma" altogether (outside of the title and introduction). She calls this an "extreme word" due to its associations with violence and expands, saying "using an extreme word to describe a common phenomenon runs the risk of both minimizing the intense struggles of some and overlooking the real effects of general distress on others" (2020, 3). My dissertation focuses on sexual assault, which does fit into the most commonly used definition of trauma, but I draw upon these important works to not only discuss the common effects of trauma on the mind and body, but also to situate my work in trauma studies that work to expand the definition of trauma itself.

The medicalization of trauma goes further in the Western world to include the diagnosis of Post-Traumatic Stress Disorder (PTSD). Many people have heard, most especially, of this diagnosis in soldiers returning from war zones, but it is also being diagnosed more frequently in rape survivors, as well as after other

traumatic events. Psychologists are also now recognizing Complex Post-Traumatic Stress Disorder (CPTSD), which affects those who have experienced continuous, repeated traumas (such as child abuse) for many years, as opposed to one or two localized traumatic events (see, e.g., Foo 2022). While these diagnoses can be very helpful for those who have experienced trauma to start to understand their psychological and physiological reactions, I do not use these medicalized terms in my dissertation. Instead I opt for "trauma-affected body" and other more inclusive terminology that stays disconnected from any particular medical diagnosis. As a musician, and not a psychiatric professional, I do not wish to diagnose any of the performers I discuss in this dissertation, and therefore will continue to use terminology that is not connected to any specific disorders.

Historically, the use of the word trauma to mean a life-threatening event and the subsequent psychological and physiological symptoms it causes is a very Western concept. That is not to say that other cultures do not experience or acknowledge these events and reactions to have meaning, but that the Western concept and the ways that the Western world handles trauma carries some baggage. For example, as Wright points out, "trauma often gets framed as an all-or-nothing concept; either something was 'traumatic' or it wasn't. However, reality is vastly different," and that "speaking about 'trauma' in a binary…is not only inaccurate, it can be harmful" (2020, 2 and 4). Additionally, Stein et al. note that many critics of the medicalization of trauma "emphasize that constructs such as 'posttraumatic stress disorder'…are particularly Western, and that 'talk therapy' and medication are inappropriate in situations where problems are moral rather than medical" (2009, 2). In other words, in the Western world

trauma carries with it the idea that something is "wrong with you" and it must be "fixed" by professional therapy and medication, but these ways of "curing" trauma are not always necessary and are sometimes inappropriate.

To explain the physical effects of trauma on both the mind and the body, I draw from a few key sources. First, any study on trauma post-2014 would be incomplete without *The Body Keeps the Score* by Bessel van der Kolk (2014). In this influential work, van der Kolk thoroughly explains how trauma leaves an imprint on the mind and body by literally rewiring the brain (which affects mental processing and bodily functions). To sidestep the specific ways in which this occurs, which I will explain more fully in this dissertation, I offer here that he says, "trauma radically changes people: that in fact they are no longer 'themselves'" (2014, 239). He then offers advice on self-healing. In other words, he shows how trauma rewires one's insides and then discusses ways in which one can rewire themselves back. In addition to van der Kolk's important work, I also draw from Stephen W. Porges's *The Polyvagal Theory* (2011). In this work, Porges focuses on the autonomic nervous system (which oversees many of our unconscious bodily functions) and the vagal nerve. In doing so, he provides discussion of how these systems are affected by trauma. He explains that the vagal nerve is responsible for functions such as heart rate regulation, breathing, and social interactions, and that after trauma these can be affected because of the fact that they go into overdrive in attempts to protect one's self—i.e., the fight, flight, freeze, or fawn responses (2011, 239–40). Most important to my discussion, Porges explains how music can be an expression of these feelings, saying that "music is intertwined with emotion, affect regulation, interpersonal

social behavior, and other psychological processes related to personal responses to environmental, interpersonal, and intrapersonal challenges" (2011, 246).

Lastly, I draw greatly from Sarah E. Wright's, *Redefining Trauma* (2020). In addition to expanding the definition of trauma, her research also explains how cortisol plays an important part in how trauma affects the mind and body. In her book, she provides three key definitions of brain functioning. First, the "cortisprinkled" brain is "a state of brain in which there is sufficient cortisol for routine functioning," and the "cortisaturated" brain is "a state of brain in which there is excess cortisol resulting in some symptoms of protection with daily functioning partially intact" (Wright 2020, 12). Lastly—and this one is most important because it is how the brain reacts after trauma—she says that the "cortisoaked" brain is one "in which excess cortisol has elicited emergency management mode with the primary goal of keeping the person alive" (2020, 12). She uses the metaphor of water/rain to describe how these various states of mind function in stress management and emphasizes that they are all normal responses. For example, she relates small stressors to a light rain, which typically requires very little cleanup and the return to normal life is quick and easy. However, trauma causes reactions in the brain in a way that she relates to bad hurricanes, which wreak havoc when they come and require a lot of cleanup and long time to return back to normalcy. Much trauma research interprets these changes as the brain malfunctioning—because they cause disruptions in one's daily life—but Wright maintains that trauma, unfortunately, is a normal occurrence and that our brains are merely doing what they can to keep us safe in and after a severely stressful event. My work draws upon this idea in order to

emphasize the fact that these responses are common in people, generally, but especially common among women within the music industry. Additionally, she emphasizes both that "sexual assault in particular was found to result in the highest symptom severity" (2020, 43), and that "repeated storytelling promotes the activation of standard memory systems while the cortisoaked memory is told, encouraging it to be stored where other memories are stored and organizing it in its appropriate place in time" (2020, 192). Put simply, storytelling (like musicians do in their songs) is extremely helpful in helping trauma survivors ease the intense emotions attached to their memories of the trauma, therefore helping the brain to categorize in a way that helps the brain not to overreact to mundane stimuli.

Using these sources as a base for my work in trauma, in addition to others (e.g., Levine 2010; Herman 1997), I show not only how the mind and body are affected by trauma, but also how storytelling and music provide healing for survivors of sexual assault and trauma. More specifically, I use these works to frame my arguments about the expression of sexual trauma through the voice by connecting specific vocal sounds with certain trauma responses in the brain, psyche, and body. In doing so, I examine how music can be healing and how survivors express their mental and bodily experiences with trauma through the sounds of their voices.

Feminist, Race, and Sexuality Studies

No discussion of sexual assault is complete without acknowledging the intersections of gender, race, sexuality, and other aspects of identity. My project

focuses on survivors who are women[3] for three reasons: (1) statistically in the US, 91% of reported victims are women; (2) I am a woman who is a survivor of sexual assault, and therefore relate directly in this way to the performers I analyze; and (3) women (especially white, cisgender women) are more likely to report and discuss their experiences with sexual assault, so there are a number of songs for me to analyze. However, it is important to acknowledge that men also experience sexual violence and that it is estimated that the numbers are much higher than recorded because of the societal stigmas that discourage men to report (Pino and Meier 1999). Additionally, trans and nonbinary individuals experience sexual violence at higher rates than cisgender people.[4] Even if we do focus on how sexual violence impacts women, which I do in this project, race plays an important role. Many Black feminist writers have written about the fact that Black girls and women are societally stereotyped as inherently more promiscuous, and even "unrapeable," which causes them to be assaulted at much higher rates (e.g., Morgan 1999; Cottom 2019; Kendall 2020; Burke 2021). These stereotypes can be traced back to slavery in America (Kendi 2019, 190). In *Hood Feminism,* Mikki Kendall explains that 40–60% of Black American girls are sexually abused before the age of 18 (2020, 66). Tarana Burke tells her personal story, as the

[3] I am using "woman" to mean anyone who identifies as a woman. Unfortunately, my project does not include any trans women, and it only includes one woman of color, even though women with these identities are statistically more likely to be survivors of sexual violence. Even after the rise of #MeToo, white women feel more comfortable sharing their stories publicly. Since I narrowed my examples to songs that are known to be about sexual violence, and which are written and performed by a woman who has stated (or heavily alluded) that she has experienced sexual violence, my song list is filled predominantly with white, cisgender women. In my future research, I hope to be able to find more examples to widen the perspectives in my analyses.

[4] "Responding to Transgender Victims of Sexual Assault," 2014, *Office for Victims of Crime* (June).

creator of #MeToo, in her book *Unbound*. Both Kendall and Burke also appear in the documentary *Surviving R. Kelly* (2019) to comment on the ways the public ignored R. Kelly's abuse because he was abusing young, Black girls. It is not only Black women who experience higher rates of sexual violence, though; Hispanic, Indigenous, and Asian women do, too. Sarah Deer's book, *The Beginning and End of Rape* (2015), thoroughly discusses the history of rape as a tool for colonialism. Deer confronts the fact that "Native women in particular suffer the highest rate of per capita rape in the United States" (2015, 3). By engaging with these writers, I show that even though my project focuses specifically on women, sexual assault affects people with other identities at high rates, and even higher rates, as well. Additionally, I note that sexual violence intersects with and compounds upon traumas outside of the *DSM-5* (2013) definition such as racism, homophobia, transphobia, and other forms of bigotry.

Sexual Violence and Media

Sexual violence is a global issue. While people commonly assume that sexual violence is purely a women's issue, and it is true that statistics show that women experience sexual assault at higher rates, men, nonbinary people, and intersex people all experience sexual violence as well. Sexual violence is especially rampant within institutions with hierarchical power structures, since it is a power and control issue and not a sex issue. In other words, rape is not about an urge for sexual contact; it is about dominating someone else. Sarah Deer explicitly states that, "there is no such thing as nonviolent rape," and that "rape can be employed as a metaphor for the entire concept of colonialism" (2015, xix and

xvii). Deer goes on to explain that, legally, the United States considered women as property, saying "for most of American legal history, rape was framed as a *property* crime perpetrated against men" (2015, 17, original emphasis). In this definition, "taking" a woman's body was akin to stealing or damaging another man's property. Many documentaries have examined predators in athletics (e.g., *Athlete A* 2020), the military (e.g., *The Invisible War* 2012), and the film industry (e.g., *Untouchable* 2019; *Allen v. Farrow* 2021). In the 2015 documentary *The Hunting Ground*, Andrea Pino and Annie Clark interview a multitude of survivors from various colleges who have experienced sexual violence on or near campus (within campus-affiliated activities). They also show how poorly college campuses treat survivors in their attempts to promote safety on their campuses. Other documentaries (e.g., *Audrie & Daisy* 2016; *Roll Red Roll* 2018) discuss this issue in high schools. In addition to these documentaries, many books highlight sexual violence in schools. Chanel Miller's powerful memoir, *Know My Name* (2020), details her experience as the survivor of the well-known Brock Turner assault, and Erika Krouse walks readers through her investigation into systematic rape culture on a Colorado college campus in *Tell Me Everything* (2022).

While sexual violence is prevalent in all of these institutions wherein hierarchical power structures exist, the most important to my project is the music industry. In this dissertation, I analyze songs by women who are all operating within this industry, many of whom were assaulted by powerful producers, and others, within it. Recent documentaries (e.g., *Surviving R. Kelly* 2019; *Leaving Neverland* 2019) provide spaces for survivors of serial predators R. Kelly and Michael Jackson to open up about their experiences, and also give listeners this

important information. I want to acknowledge, though, that the fact that both of these popular documentaries call out Black men is problematic. White men in the industry (e.g., Elvis Presley, David Bowie, Bob Dylan) have historically bragged about "sleeping with" underage girls for decades (Ridley 2021). Steven Tyler even admitted to legally adopting a 16-year-old girl so that he could take her on tour with him (across state lines) to "be in a relationship" (Tyler 2004).[5] Sexual violence in the music industry has been discussed at length by Perry B. Johnson in her 2021 dissertation, "How the Light Gets In: Sexual Misconduct and Disclosure in America's Music Industries."

Analytical Methodology

I use two distinct methods to analyze vocal timbre and show the details of my analysis. First, I use spectrographic analysis to examine the intensity and frequencies present in the vocal recording. Spectrograms are graphs which show time along the x-axis, frequency along the y-axis, and intensity in the brightness of the bands (or along a z-axis of sorts). In doing so, spectrograms provide empirical data about the acoustic properties of the sound. In these cases, I am able to provide information that shows distinctions between various vocal sounds in order to describe what we can hear in the recording, which allows me to connect the physical properties of the voice to the emotional trajectory of the song. Following Lori Burns (2020) and Michèle Duguay (2021, 2022), I use the program Izotope RX because it has the capability to isolate the voice within a

[5] Recently, the survivor, Julia Holcomb, has brought sexual assault charges against Tyler (Millman 2022).

recording. This isolation is useful not only because I can then only focus on the properties of the voice (without the other instruments such as guitar or drums), but also because I can make examples that are easier for readers to comprehend since they are not cluttered with visual representations of the other sound materials as well. Admittedly, however, the vocal isolation process is not perfect, so some manual adjustments must be made in order to examine the full timbral expression within the voice. These can be done without isolating the voice—e.g., isolating certain frequency ranges to see when the voice is present and when it is not—and by including my own interpretation of the sounds (based on the other sections of the song). Additionally, while I do annotate and describe my examples thoroughly, spectrograms are not as accessible to every reader since not everyone knows what they mean and how to decipher them. Specifically, spectrographic analysis is helpful in showing specific differences in register/pitch, intensity, and roughness of the voice, which makes this method especially conducive to conveying more drastic differences in vocal delivery. For example, I find these graphs useful to showcase the three distinct vocal "characters" that Jessie Reyez uses in "Gatekeeper" in Chapter V. However, for songs in which a performer delivers smaller, but important, nuances in timbral difference, this method is often less useful. For this reason, I use musical transcriptions annotated with colors and textures (instead of spectrograms) to show the various timbral nuances in my analysis of Kesha's "Praying" in Chapter VI.

Due to these limitations in spectrographic analysis, I also employ my own embodied analysis of the voice. Drawing from my experience as a singer, as well as from the embodiment theories of Kate Heidemann (2016) and Arnie Cox

(2016), I am able to assess how my own body creates vocal sounds, as well as how my body inhabits trauma. This method is not quite as objective as spectrographic analysis, but it provides reflection upon aspects that are interpreted by listeners that are not necessarily perceptible within a spectrogram. Since sound itself, and timbre especially, is an element dependent upon perception, this method allows me to shine focus back onto the humanness of the voice and discuss, more specifically, how important the body is in the physical act of singing and/or creating sound. In using a combination of these analytic styles—one in which I interpret sounds using spectrograms and the other in which I interpret my own embodied analysis—I combine empirical sound data with my own vocal expertise to emphasize the fact that timbre is ultimately based on embodiment and listener perception, but also contains objective physical acoustic properties, which can be measured and assessed through spectrographic readings.

Though my analytic focus is on vocal timbre, I supplement my timbral analyses with discussions of other aspects of the song performances, such as text, music video imagery, texture, form, harmony, etc. Though these characteristics are not the basis of my song analyses, they are still important markers of emotional meaning and provide emphasis for the timbral narratives (because just as a song is not only pitches, rhythms, and chord progressions, it is also not purely timbre). By incorporating textual analysis, I highlight both the authorial voice of the performer, thereby providing analysis of the voice on multiple levels, and the connections between these two interacting voices. I incorporate text analysis into each of my examples not only because of the multiple levels of voice and their interactions, but also because I believe that it is imperative to study text

when analyzing any songs that have words, especially when the lyrics were written by the performer. The other supplementary parameters—music video imagery and other musical aspects—are not relevant to every case study, and I therefore include them only when they are applicable.

Significance

In the wake of #MeToo, journalists have spoken about rampant sexual misconduct in the music industry (and other industries). Academic discourse on this topic is, however, conspicuously limited. In my project, I show how the music industry's culture of sexual assault affects the sound of the music the industry produces. In other words, the issue of sexual violence is not just behind the scenes, but comes out in the music that we listen to. By synthesizing research in trauma, voice, and timbre—as well as in feminist, race, and sexuality studies—I am able to focus on aspects of the human condition and how these emotions are expressed through the sounds of the voice. Though other aspects of music (e.g., pitch, harmony, rhythm) have been examined in many ways, including their ability to reflect and/or incite emotional responses, the amygdala and vagus nerves (two of the main trauma reactors) directly affect our vocalizations in response to emotion, especially trauma (Porges 2011, 147). Due to this connection, my research examines how emotion can be portrayed in music, specifically in the voice, in ways that studies in other aspects of music have not.

My analysis of vocal timbre contributes significant research and methodology to the growing field of timbral studies. While aspects of pitch, harmony, rhythm, and form have been studied in-depth in music theory, timbre,

and especially vocal timbre, has only recently gained traction in the field. My attention to and analysis of vocal timbre, as well as narrative voice (through written lyrics), contributes significant research to a topic that is at last gaining analytical attention and provides methodology for analyzing vocal sounds and lyrics together in a way that shows a song's expressional narrative. In doing so, I connect my analyses to important social issues. By incorporating trauma studies into my musical analyses, I am able to connect musical aspects (timbre) to human experience in a way that is pertinent to current issues and that emphasizes the body in music making—as well as in emotional expression. Additionally, in centering the body in my research (both in its reactions to trauma and its necessity in music making), I make sure to focus on humans and our connections to the music we create and listen to. While music is a human creation and experience, much of music theory has placed focus on pitch, harmony, and rhythm with focus on *the music itself*. In my work, I center timbre, which the field of music theory has, until recently, generally considered to be a secondary parameter of analysis (and, therefore, of our musical experiences). By placing focus on timbre, as opposed to more commonly analyzed aspects of music, I not only provide evidence that timbre is not a secondary parameter, but also work towards a methodology that can examine timbre in a meaningful way.

Through my analyses of musically expressed narratives of trauma, I also provide information about trauma and its mind/body effects to music theorists, while showing music theorists and those outside of the discipline some of the ways that sexual trauma is communicated through the voices of women in popular music. In doing so, I explain necessary information about sexual trauma

and its effects on the mind and body to people who (for the most part) work on college campuses—where sexual assault is rampant and underreported. Additionally, though much analysis has been done on music expressing *collective* trauma, such as wars, few have examined the ways that *individual* traumas are conveyed in music, and specifically, through the expressive singing voice. By focusing on individual trauma—specifically sexual trauma—I draw attention to the ways that individual people express their own personal experiences, as opposed to an individual's conception of a collective traumatic event. While collective trauma is obviously important to discuss, those going through an event such as a war still have a sense of community because those around them are experiencing the same traumatic event. However, those experiencing individual trauma have increased difficulties feeling connected to others, and even to themselves. Therefore, my focus on individual trauma is more personal and allows me to examine the ways that performers can convey their own experiences through music—specifically through their voice—and how that can help someone who feels alone in their experience.

As I have explained previously, the voice and trauma are intimately connected. As I argue that these singers use their voices to convey their experiences during and after assault—namely dissociation and rage—I do so in a way that shows the ways the voice is literally affected after experiencing trauma. In this way, I show how trauma affects the body, and especially how it affects the voice. It is important to acknowledge, though, that I am not necessarily arguing that these singers are unable to sing in other ways. Instead, I argue that they are using their expertise as a performer to sing in ways that artistically convey their

experiences. In other words, even though hypoarousal can literally change the way that someone speaks, especially when discussing their assault, I am not arguing that it is always a subconscious choice by the performer to sing that way because of the fact that the trauma changed their voice to only allow them to sing like that when discussing their assault. Instead, I claim that these types of voices are reflective of their experience, due to the literal connections between trauma and the voice, and that these professional performers are especially equipped to use these vocal tools to convey their experiences of trauma.

Chapter Outline

My dissertation is organized in five main chapters, after this introduction. In the next three chapters (Chapters II–IV), I provide information about symptoms of trauma that spawn from the freeze response (Chapters II and III) and the fight response (Chapter IV). (The flight response is not included in my analyses because of the fact that an overactive flight response ends with extreme avoidance of things that are read by the brain and body as dangers. Therefore, an overactive flight response after the fact would most likely result in survivors not writing and performing songs about sexual assault.) In these three chapters, I discuss a few specific vocal timbres that I have found in multiple songs about sexual violence that convey dissociation (freeze) and rage (fight), respectively. Hypoarousal and hyperarousal (freeze and fight, respectively) are biologically opposite responses in that dissociation from hypoarousal manifests in minimal reactions to events that would normally elicit significant reactions, and rage from hyperarousal manifests in extreme reaction to events that would typically be

trivial. In my analyses, I show how performers use their voice to convey these different trauma symptoms. In doing so, I find similarities across songs on this topic and show how these specific trauma responses can be and have been portrayed in popular music. Though each survivor's experience and each song is unique, I show how the common experience of trauma from sexual assault can result in similar mental and bodily symptoms, which can be performed in similar ways, vocally.

It is important to note, though, that I am not claiming that any of these vocal timbres (breathiness, reverb, and noisy timbres) *inherently* mean dissociation or rage, respectively. I acknowledge that these timbres can be found in other songs that are not about sexual assault and are used in similar ways by the same artist across multiple songs. Instead, I argue that in songs about sexual assault that contain lyrics describing the experience, these vocal timbres carry these meanings *in this specific context*. In my experience collecting songs for this project, I found that many of the songs I listened to that described dissociation, for example, included breathy singing and/or added reverb, and that many songs discussing rage used noisy timbres. Therefore, I am not arguing that breathiness and reverb always mean dissociation, or that noisy timbres always mean rage, but rather that they are commonly used in these contexts, and are particularly effective at portraying the hypo- and hyperarousal survivors experience after sexual assault.

In my final two chapters (Chapters V and VI), I pivot to focus on the individual experience as I analyze one song in full in each chapter. In Chapter V, I analyze "Gatekeeper" by Jessie Reyez and in Chapter VI I analyze "Praying" by

Kesha. I have organized my project in this way to first show some of the ways that common trauma symptoms have been expressed in songs about sexual assault, connecting survivors of this unfortunately common violation of people's bodies, and then to use two case studies analyzing entire songs and their specific narratives in order to emphasize the fact that every survivor has their own unique story to tell.

Chapter II: Breathiness and Dissociation

In Chapter II, I provide information about dissociation, a trauma symptom derived from the freeze response resulting in extreme numbness and disconnection from one's body, surroundings, and/or reality. After my discussion of hypoarousal and the freeze response, I relate breathiness in the voice, which is produced with low tension in the vocal folds, to dissociation and then examine ways that the breathy voice can be used to portray the intense numbness and disconnection common to the experience. In doing so, I provide descriptions of the vocal mechanism during breathy vocal production and demonstrate how this type of vocal production relates, physically and aurally, to the experience of dissociation. To make my point, I analyze two songs—"5AM" by The Anchoress and "Sullen Girl" by Fiona Apple—which both incorporate breathy vocal timbre as they sing about their experiences of sexual violence.

Chapter III: Reverb and Dissociation

In Chapter III, I continue my discussion of dissociation (from Chapter II) to examine ways that technological mediation of the voice can be used to portray the

intense numbness and disconnection of hypoarousal. In doing so, I provide background on the concept of virtual sonic space and how it can be used to convey different amounts of distance between the various musical elements on the track and between the listener. Left–right panning, reverb, and the distance of the microphone can all be used to manipulate the type of space a listener imagines, as well as where they perceive all of the various instruments to be situated within that space. After an introduction to the concept of sonic space, I unpack the connection between the unmediated voice and authentic expression. In doing so, I argue that technological mediation on the voice, or "wet production" (Malawey 2020), is an especially productive way to convey the detachment one feels from themselves in a dissociative state.

Though I mention that there are many ways that a performer might use technological mediation and the creation of a specific sonic environment to portray dissociation, in this chapter I focus my analyses on reverb. Since reverb makes it difficult to pin down exactly where the voice is coming from (because it sounds as if the voice bounces around the room), I argue that it is an effective way to show, aurally, how one feels disconnected from their own body, as well as from their surroundings. In doing so, I analyze "Motion Sickness" by Phoebe Bridgers and "Dog Teeth" by Nicole Dollanganger to show how these two artists use reverb (in addition to other musical elements like breathiness, child-like vocal timbre, small pitch range, and repetitive form) in these songs about their experiences with sexual violence to powerfully portray their feelings of disconnection from themselves, those around them, and reality.

Chapter IV: Noisy Timbres and Rage

In the fourth chapter, I start with information about the fight response and its lingering effects after experiencing trauma: hyperarousal and rage. While frustration and anger are typical human emotions, experienced by everyone on a regular basis, small triggers can cause extreme reactions in trauma survivors because they go into fight mode in moments that are not actually dangerous. This rage can be directed at anyone and anything around them in the moment, which makes maintaining relationships quite difficult. The tight muscle tension involved in the production of noisy vocal timbres, such as growl, rasp, and screaming, in addition to the roughness that can be heard in these sounds can effectively convey the intense energy and anger common in hyperarousal after trauma. In this chapter, I analyze "Swine" by Lady Gaga and "Liar" by Bikini Kill to show how these various noisy timbres convey rage.

Chapter V: Gendered Power and Timbre in Jessie Reyez's "Gatekeeper"

In "Gatekeeper," Jessie Reyez paints the picture of a night when she was sexually harassed and threatened by a powerful music producer, Noel "Detail" Fisher. She wrote her lyrics entirely from quotes that Detail said that night. In Chapter V, I analyze this song, in full, to show how Reyez weaves together her own narrative of what happened that night, and how she felt during and after the experience. Throughout the song, Reyez uses three distinct vocal timbres, which I call characters in this context, to navigate the various sections of the song. In my analysis, I show contrasts a mixed voice, which I call the feminine voice, with an electronically manipulated low voice (explicitly representative of Detail's voice),

which I call the masculine voice, to sonically portray a man/abuser vs. woman/victim narrative. In the verses, she raps in what Jillian Mapes (2019) calls a "villain voice," which is a sound one could easily accept as coming naturally from Reyez's body, but that also contains roughness and other aspects of "masculine" sound. By using these three distinct voices, I argue that Reyez not only conveys her own experience hearing these words directly from Detail and then repeating them back to herself, but also draws attention to the gendered power dynamics in the music industry, as well as in society writ large. In the previous chapters, my focus was on specific *timbres* that are common in the songs I analyzed for this project. In these last two chapters, however, I shift my focus to full-length analyses that show these individual's unique experiences.

Chapter VI: Recovery and Timbre in Kesha's "Praying"

In Chapter VI, I continue my exploration of individual, full-song narratives (from Chapter V) to show how Kesha uses her vocal timbre to tell her story of trauma and recovery. First, I provide background information about Kesha and the abuse she suffered at the hands of her former producer, Dr. Luke, as well as the subsequent lawsuit against him and Sony to request relief from her contract. In my analysis, I draw attention to the fact that Kesha uses all four vocal registers in this song, from vocal fry all the way up to whistle tone. I argue that the way she makes these vocal shifts at key moments in the song's lyrics conveys her growing emotional strength throughout her recovery. Within these four registers, though, she also uses timbral variances, allowing her voice to be clear and smooth at times, grainy in some places, and breathy in other moments. In doing so, she

portrays the smaller struggles within each level of emotional strength. In other words, even when she makes large strides in her recovery (which I argue she conveys through registral shifts), her smaller struggles are still expressed in the timbral variances within each register. I bring back discussion of sonic space in this chapter, as well, as I talk about the different ways that Kesha's voice fits within the musical environment, and how her voice is situated in respect to the listener. In doing so, I show how she uses texture and sonic space to sonically demonstrate her growing ability to connect to herself and to others around her. Through my analyses in each of these chapters, I show the importance not only of connecting survivors' stories and experiences (as I do in Chapters II–IV), but also of noting that each person and their reactions to trauma are unique (as I do in Chapters V and VI). For context, a deep look into two common reactions (caused by the freeze and flight responses, respectively) provides important insight into what happens in the trauma-affected body. However, in Chapters V and VI I take a big step back to show that survivors do not experience just one reaction or the other. Instead, survivors feel many of these symptoms, sometimes in isolation and sometimes all at once, and that is the important narrative to tell.

CHAPTER II: BREATHINESS AND DISSOCIATION

Dissociation is the essence of trauma.[6]

We all experience moments in which our minds disconnect from what is going on around us. Think about spacing out during a boring lecture or daydreaming in the backseat of a long car ride. In such cases, we realize we have disconnected once we mentally return to reality (whether we return slowly and calmly, or something "snaps" us back). Such mental journeys represent mild forms of what psychologists call *dissociation*. In these everyday situations, dissociation is natural, safe, and often pleasurable. In fact, people often seek out activities and creative outlets designed to elicit these mild dissociative experiences—trance music, meditation, etc. However, in its more extreme forms, dissociation can be incredibly uncomfortable and even dangerous. Dissociation caused by trauma—both during and after the event(s)—is a consequence of the "freeze" survival response and can be far more intense than these everyday examples; it often results in dissociative disorders, causing extreme physical and mental numbness, uncontrollable out-of-body experiences, temporary paralysis, and time blackouts. Due to the fact that dissociation happens so frequently in sexual assault survivors (Wright 2020, 43), I argue that many songs about sexual assault convey this experience, most especially through specific vocal timbres.

[6] Van der Kolk 2014, 66.

Dissociation and Sexual Assault

Dissociation is, at its core, an automatic disconnection from experiences and feelings that are too intense for the mind and/or body to handle. When something happens that is too overwhelming to comprehend, our brain dissociates in order to block it out, both logically and emotionally. The American Psychological Association defines dissociation as "a defense mechanism in which conflicting impulses are kept apart or threatening ideas and feelings are separated from the rest of the psyche" (APA Dictionary). Many survivors have explained that dissociation is more than just "feeling numb"; instead, victims describe feeling literally separated from one's body, or even from reality all together. Discussing how the brain functions during dissociation, Peter Levine emphasizes that a particular section of the brain (the insula) "is strongly inhibited during shutdown and dissociation, and it confirm[s] that these traumatized individuals are unable to feel their bodies, to differentiate their emotions, or even to know who they (or another person) really are" (2010, 112–13). As van der Kolk explains, "trauma makes people feel like either *some body else*, or like *no body*. In order to overcome trauma, you need help to get back in touch with *your body*, with *your Self*" (2014, 249, original emphasis). In these instances of shutdown, even if someone logically knows that something bad is happening or has happened to them, they are completely disconnected in such a way that they do not *feel* as though it has happened. Van der Kolk explains that he can recognize dissociation in his patients immediately when they "tell [him] horrendous stories without any feeling" accompanied by "blank stares and absent minds"—or what

he refers to as "the outward manifestation of the biological freeze response" (2014, 72).

As I mentioned earlier, dissociation happens in different ways that can vary in intensity and in the degree of interference with everyday life. As far as survival is concerned, the type of dissociation discussed so far (the separation from overwhelming negative feelings) seems, on the surface, to be a beneficial response to a traumatic event. It allows survivors to keep going as if nothing has happened. However, it can intrude on one's ability to feel anything at all, including bodily sensations, even when the emotions would be positive, and can cause problems with relationships to others because everything around you feels literally unreal. During a traumatic event (and especially during sexual assault), the "freeze" response often results in a state called *tonic immobility,* in which one's body literally feels paralyzed (Wright 2020, 37 and 43). In this state, like other animals such as the opossum, our survival instinct kicks in by forcing the body to "play dead."[7] While we are often still mentally present in this state, our minds separate us completely from the use of our body. When we experience stress, our sympathetic nervous system (SNS), increases the flow of stress hormones (such as adrenaline and cortisol) to our body so that it can mobilize against whatever is causing the stress.[8] In order to come back to a regulated state

[7] This state is also responsible for deer freezing in headlights and for the "fainting" seen when a specific species of goat is startled.

[8] By "stress" I mean, generally, challenges that we face that come from outside of the body. This can encompass anything from daily, small-scale stress (such as a upcoming deadline) to a literal physical attack. In small-scale stressors, this system activates on an equally small-scale level (when functioning properly), but in traumatic events, this system becomes highly activated. After the traumatic event, this large-scale reaction can be triggered by small-scale stressors (see Porges 2011, 58, 64–5).

after the stress is handled, our parasympathetic nervous system (PNS) gives us hormones (such as acetylcholine) that combat the ones pumped in by the SNS to even us out (Porges 2011, 64–5; van der Kolk 2014, 79). To put it in easier terms, van der Kolk calls the SNS and PNS the nervous system's "accelerator" and "brake," respectively (2014, 79). In states of tonic immobility, however, the SNS overwhelms our systems with stress hormones so quickly that the PNS automatically, and immediately, reacts to calm us down, which results in both sets of hormones coursing through our systems simultaneously (2014, 79). This collision of opposing hormones—one set causing mobilization, the other immobilization—causes our body to freeze while our mind goes a mile a minute.

Tonic immobility is typically followed by a distinct type of dissociation called *depersonalization,* or an "experience of unreality or detachment from one's mind, self or body," in which "people may feel as if they are outside of their bodies and watching events happening to them" (APA Dictionary). As van der Kolk puts it, when this state takes over, "other people, and we ourselves, cease to matter" (2014, 85). Many assault survivors detail having an out-of-body experience in which they watch the assault from a bird's-eye view or from the opposite corner of the room. In such cases, many people do not even perceive the person they are watching being assaulted as themselves. For example, van der Kolk describes a patient's, Marilyn's, experience of repeated sexual abuse, saying, "when her father started to touch her, she made herself disappear; she floated up to the ceiling, looking down on some other little girl in the bed. She was glad that it was not really her—it was some other girl being molested" (2014, 134). Many sexual assault survivors detach from their experiences in this way, describing the

Figure 2.1: Marilyn's drawing of "put[ting] her head in the clouds" during sexual abuse (van der Kolk 2014, 134)

event in the third person instead of the first person (Levine 2010, 113). Van der Kolk also includes a drawing that Marilyn did to provide a visual representation of her experience (Figure 2.1).

Marilyn's drawing not only provides a clear representation of how it feels to watch from a bird's-eye view—with her face up in the corner watching down on the abuse—but also shows the disconnection from her own body and Self through the absence of clear features (such as a face, hair, hands, etc.) on the body at the bottom of the page. She draws herself as an abstract being, as if her body does not only not belong to her, but like it is not real. Her abuser is also shown as an abstract being, though his representation does, importantly, have a clearly drawn hand emerging from his darkness. Judith Herman quotes another rape survivor

who says, “I left my body at that point. I was over next to the bed, watching this happen…I dissociated from the helplessness. I was standing next to me and there was just this shell on the bed…There was just a feeling of flatness. I was just there. When I repicture the room, I don’t picture it from the bed. I picture it from the side of the bed. That’s where I was watching from” (1997, 43). When I was sexually assaulted, my experience started with tonic immobility and then was similar to what Marilyn and the other anonymous survivor experienced. When I realized what was happening, I wanted to scream so badly. I had so much energy vibrating within my mind and body it felt like I was about to explode, but could not get even the tiniest sound to come out or movement to happen. After what felt like forever, but could have just been a matter of minutes, I was depleted of all energy; I escaped from by body and watched from over on the other side of the room until it was over.

Survivors can also experience dissociation after an assault, regardless of how they reacted (i.e., fight, flight, or freeze) in the moment. Trauma permanently affects the brain and body, especially in their responses to stimuli that they consider (subconsciously) to be dangerous.[9] Scholars (e.g., Ogden, Minton, and Pain 2006; Mischke-Reeds 2018) describe a continuum of the body’s arousal states—ranging from hypoarousal to hyperarousal with the “Optimum Zone of Arousal”/“Window of Tolerance” (OZA/WOT) in the middle—which can be used in therapy to help survivors understand their feelings. When

[9] Some survivors prefer to feel panicky or enraged. About this, van der Kolk expands and says, “activating fight/flight at least makes them feel energized. That is why so many abused and traumatized people feel fully alive in the face of actual danger, while they go numb in situations that are more complex but objectively safe, like birthday parties or family dinners” (2014, 85).

someone is suffering from trauma, it can feel as if the OZA/WOT is very small because of the fact that their nervous system is overreactive to outside stimuli, which constantly shoves them into hyper- or hypoarousal. Numbness, depression, and—most importantly to this discussion—dissociation occur when someone falls into the hypoarousal zone. I discuss symptoms of hyperarousal in more detail in Chapters IV and V. Sometimes, survivors can experience depersonalization after the assault, especially in moments that trigger the same mind/body feelings experienced during the assault, even if they did not experience feeling out of their body in the moment. Marilyn goes on to explain that she often continued to "float up to the ceiling" when she would attempt sexual contact as an adult and she would often have no memory of the sexual experience afterwards, even though she logically knew that it occurred (van der Kolk 2014, 134–35). I still often feel so numb that I separate from my body. This experience happens to me when I think of the event, when I am overwhelmed with other things in my life (e.g., school, work, finances), and even at seemingly random times. Sometimes it means that I cannot focus on whatever I am attempting to do (like writing this chapter); other times I feel as if everything (e.g., me, time) is moving in slow-motion.

When I feel that the world is moving in slow motion, I often feel completely detached not only from my body (as mentioned earlier), but also from everything else. It feels to me like a haze and like nothing around me is real, or like I am dreaming. This state is something that many survivors experience, and it is called *derealization*, which is another distinct form of dissociation and is defined as a "detachment from one's surroundings," during which "people may

feel as if things and people in the world around them are not real" (APA Dictionary). Büetinger et. al. (2020) note that "individuals may feel detached from…individuals, objects, or all surroundings, often described as being in a fog, dream or bubble, being numb, or as if they are under a glass bell" (2). For example, in "Motion Sickness" by Phoebe Bridgers (which I analyze in more detail in Chapter III), she sings "I'm on the outside looking through, you're throwing rocks around your room," which places her on the outside of what we might assume (from the rock throwing reference) is a glass house. Depersonalization and derealization, both distinct forms of dissociation, can occur independently of each other or simultaneously. If someone has "persistent or recurrent experiences" of depersonalization, derealization, or both, they are considered (by current medical language) to have Derealization/ Depersonalization Disorder (*DSM-5* 2013, 302). Though victims' survival instincts and processes are, in actuality, just acting as they are designed to (albeit hyperactively) in order to protect themselves, when they cause disruptions in our daily lives, they can be extremely frustrating and are considered to be symptoms of a disorder (Wright 2020, 5).

Another way that dissociation can manifest in sexual assault survivors is called Dissociative Amnesia Disorder. Trauma and dissociation affect not only our ability to understand our bodily reality and/or our surroundings but also how we experience time and memory. In states of dissociation, one may feel as though time is moving in slow-motion (as mentioned earlier) or may have gaps in their memory. Dissociative Amnesia Disorder causes the "inability to recall important autobiographical information, usually of a traumatic or stressful nature, that is

inconsistent with ordinary forgetting" (*DSM-5* 2013, 298). In other words, people are not able to remember being abused. This phenomenon is often referred to as "repressed" memories. This inability to store memories related to a traumatic event is one reason that people do not discuss their abuse for years, because sometimes they literally cannot remember it. Even in cases where a person knows, logically, that they were assaulted, dissociative amnesia can cause gaps in their memory of the actual event. For example, the memory might not be able to be accessed at all, or it might be stored in flashes of sensory material (smells, sounds, etc.) instead of as a complete replay. While this disorder most often affects "localized" or "selective" memories of a specific event or events, it can sometimes be more severe and can cause "generalized amnesia for identity and life history" (*DSM-5* 2013, 298).

Dissociation can disrupt our memory and sense of identity even more than amnesia, though. Dissociative Identity Disorder (previously known as Multiple Personality Disorder) is understood to be the most severe form of dissociation, and results in the "disruption of identity characterized by two or more distinct personality states, which may be described in some cultures as an experience of possession" (*DSM-5* 2013, 292). Often when those suffering from DID switch personalities, they do not have memory of what their other personalities did while inhabiting their body. Essentially, when people with DID are triggered, they dissociate so severely that their brain splits into these various personalities so that the person can detach themselves from the stresses of their daily lives after

experiencing severe trauma. This mercifully rare disorder typically makes many aspects of life (e.g., work, relationships) very difficult.[10]

Breathiness and Dissociation

From isolated incidences of depersonalization to chronic Dissociative Identity Disorder, trauma (especially sexual trauma) commonly causes dissociation. Some scholars (e.g., Maus 2015, Cizmic 2012) have discussed how traumatic numbness and dissociation can be portrayed musically through repetitive, cyclical form and limited pitch range and volume. In my analyses, I show how these same phenomenon can be musically conveyed through the timbre of the voice. As I have stated previously, trauma and the voice are intimately connected. Through my analyses of two songs about sexual assault ("5AM" by The Anchoress and "Sullen Girl" by Fiona Apple), I show in this section how breathy vocal timbre in particular powerfully conveys the low arousal and disconnection of dissociation, in ways that words alone cannot.

Vocal timbre is particularly adept at communicating the speaker or singer's level of arousal. For instance, sounds that are low in muscle tension can be indicative of low arousal states. Heleen Grooten (2023) describes the voice in the three vagal (or arousal) states (discussed previously): ventral (neutral), sympathetic (high arousal), and dorsal (low arousal).[11] About the dorsal state, she says, "the muscle tone is 'hypotonic' or slack; the voice becomes monotonous,

[10] Due to the fact that this disorder is not very well understood, it is unfortunately commonly represented in media as extremely dangerous, and even evil, with characters like Dr. Jekyll/Mr. Hyde and horror films such as "Psycho" and "Split."

[11] The dorsal state is also commonly referred to as the parasympathetic state.

flat, and often a little lower; speech is softer and slower. The breathing pattern is shallower" (Grooten 2023, 36). When vocal muscle tone is slack, as discussed by Victoria Malawey (2020, 101–3, 109) and Kate Heidemann (2016, [3.6]), a breathy tone is produced. The apparent ease in producing breathy sounds, physically, could be one reason that breathy tone can be heard quite often in popular singing, and Heidemann also says that "most artists singing in a popular style have some amount of breathiness in their voice" (2016, [3.7]).

It is important to note that, due to its common use in popular singing, breathy tone has been said to mean everything from "relaxation, sensuality, and intimacy" (Heidemann 2016, [3.7]), to "femininity," "an aging voice," a "lack of control," and, more specifically, "physical intimacy"—because it implies situations in which you are "out of breath" (Malawey 2020, 10, 109–10). It seems, therefore, that breathiness can mean many different things, depending on its specific context, because it is used so widely across various popular styles—ranging from R&B to boy bands to folk singer-songwriters, and even mid-1980s emo music (Malawey 2020, 110; Chandler 2014, 39; Tongson 2006, 57). Breathiness, therefore, does not signify any particular meaning on its own. For this reason, I do not intend to ascribe dissociation as an *inherent* meaning of breathy tone. Instead, I argue that in the particular context of songs about sexual assault (or other traumatic experiences) breathiness can be used to create an aural portrait of dissociation due to the fact that it is produced with low tension in the vocal folds, which can be somatically connected to a low arousal state.

In addition to being more slack, the vocal folds are also literally more disconnected from each other in breathy singing than in non-breathy singing.

Since you only use some of the air to vibrate your vocal folds to produce a breathy tone, the vocal folds allow space for the excess air to pass through. The opening between the vocal folds, or glottis, "becomes insufficient at resisting air leakage" because when producing a breathy phonation "the adductory forces," or closing forces, "are so weak that the vocal folds do not make contact" (Nerurkar 2017, 25).[12] This literal disconnection of the vocal folds to produce breathiness, I argue, is another physiological link between a breathy sound and the feelings of dissociation wherein you feel disconnected from yourself, your body, and/or your surroundings (including others). Perceptually, for both listeners and performers, breathy sounds also sound and feel more disconnected from the body.

Heidemann (2016) describes embodiment during the action of singing, and specifically discusses the various places that you can feel sympathetic vibrations in your body while you sing, including the nose, face/mouth (sometimes referred to as "the mask"), head, throat, and chest ([3.21–26]). In breathy phonation, the aspirate noise (as well as the literal breath) leaves the body very quickly, and when I sing in a breathy tone, I often do not feel very many sympathetic vibrations (if any at all). Since breathy singing actually requires more air than non-breathy singing, if you hold your hand in front of your mouth while you sing with a breathy phonation, you can literally feel the breath (and a lot of it) hitting your hand. However, performing the same task while

[12] By saying that the "vocal folds do not make contact" here, Shukla and Nerurkar are referring to the fact that the upper and lower "lips" of the vocal folds do not make contact simultaneously, and therefore the full vocal fold mechanism does not make contact at the same time during breathy phonation. There is still some vibration, because it does still produce sound, but the folds do not ever fully connect in this type of phonation. This is also called "nonmodal phonation." For further detail on this, see Klatt and Klatt 1990 and Hanson, et. al. 2001.

singing in a non-breathy tone does not result in nearly the amount of breath hitting your hand, if you are able to feel any at all except for what is necessary for certain consonants.[13] In this way, breathiness is quite literally outside of the body in a way that non-breathy phonation just is not. In Figure 2.2, I depict where specific vocal sounds feel and sound like they occur in relation to the body producing the sound. Non-breathy sounds are quite obviously connected to the sound source directly, with singers feeling sympathetic vibrations (or resonance) in the nose, face, chest, etc. In contrast, breathy sounds quickly leave the body, with the excess air leaving the mouth in large amounts and avoiding strong resonance in the body.

Malawey (2020) and Wallmark (2022) also discuss the sonic qualities of pressed or "noisy" timbres, which stand in opposition to these low-tension breathy sounds. High-tension sounds contain many high-frequency harmonics (see Figure 2.11), and "the region responsible for processing high-frequency sounds exhibits greater functional connectivity to subcortical areas involved in ergotropic arousal states and 'fight or flight' reflexes," (Wallmark 2022, 42). In other words, the high-tension sounds also literally *cause* high arousal. The opposite is true of low-tension sounds: they do not contain the same high frequencies and, therefore, do not cause these high-arousal states.

Breathy sounds, therefore, are produced with low intensity and disconnected vocal folds and they escape the body quickly, both literally (in terms of the excess breath) and perceptually (as we listen to where they sound like they

[13] For example, the "w" sound will still produce a good amount of air, but when the actual vowel sound is sustained, it quickly stops.

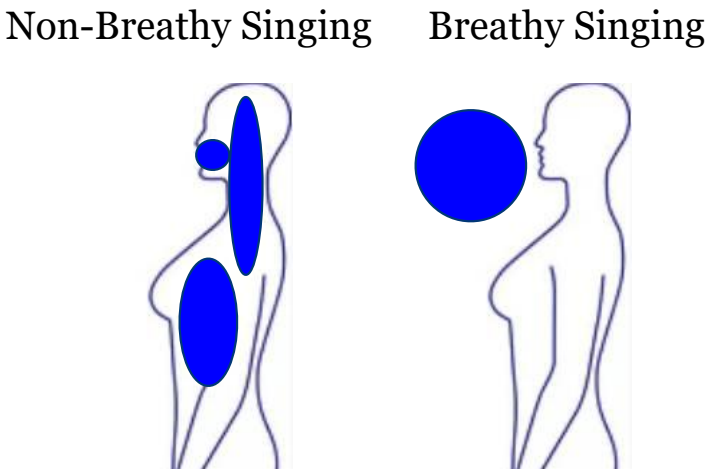


Figure 2.2: Breath and sound location (while singing) in non-breathy tone vs. breathy tone

are coming from). Additionally, they do not activate the high-arousal centers of the brain like high-tension sounds do. Due to the ways that we produce, and therefore somatically perceive, these sounds, I argue that breathiness can enhance lyrics that describe sexual assault, as well as dissociation, to portray the experience of traumatic dissociation vocally.

Analyses

The Anchoress, "5AM"

Catherine Anne Davies, known musically as The Anchoress, released her second album, *The Art of Losing*, in March of 2021. Two days following the album's release, she shared a video for one of its songs, "5AM," saying "we made this a year ago with the help of many brave + wonderful people but I was too afraid to share it at the time. The events of this week have given me the confidence,

knowing that it is not just my story, it is all of ours" (Davies 2021, Twitter post).[14] In the song, Davies uses each verse–chorus cycle to tell the story of a different trauma faced by many people, especially by women: domestic violence, sexual assault, and miscarriage. In an interview about how personal "5AM" is, Davies says "it's both personal and universal" (Walsh 2021). She continues, saying that "5AM" was the only song on the album that she "was trepidatious about including," but that the song "made itself known that it wanted to be on the record" (Walsh 2021).

Lyrically, this song is quite confusing, at times. Just as dissociation causes people to feel as though they are in a haze, the lyrics here, at best, paint a very blurry picture of what is going on. As mentioned earlier, Davies has said that her first verse is about domestic violence, the second about sexual assault, and the third about miscarriage, but when I listen to the lyrics, that does not always seem obvious without this explicit context. She does, however, unify these opaque verses with the repeated chorus about "red, red blood" that is "dripping on the carpet," which emphasizes the overall theme of trauma, even when the details are not necessarily clear. Figure 2.3 contains the lyrics for the first verse–chorus cycle in "5AM."

Even though Davies has specified that this verse is about domestic violence, the context still seems to have a sexual component to the abuse, since she discusses allowing her abuser to "stay the night" and that it was "my

[14] "The events of this week" is in reference to the #ReclaimTheseStreets movement in the UK following the abduction, rape, and murder of Sarah Everard by an off-duty police officer on March 3, 2021. The officer stopped Everard on her walk home and raped and strangled her before dumping her remains in a nearby wooded area; her remains were discovered a week later on March 10, 2021 (Williamson et al. 2022).

It was my mistake in a hotel room
Let you stay the night
Cause even though I know we're done
Well these things go wrong
When you want to be liked
And if you see her say "hi"
I didn't stop to tell her why
It's 5AM and she's dripping down my thighs

Red, red blood is dripping on the carpet
Red, red blood is dripping and I can't sleep
And I can't speak, can't speak

Figure 2.3: Lyrics to Verse–Chorus Cycle 1, "5AM" by The Anchoress

mistake." In lines 2–4, she specifies that she and her abuser were previously involved in a relationship ("I know we're done") and that her natural human want for care and attention keeps her involved with someone who abuses her ("well these things go wrong when you want to be liked"). The last part of the verse is the most ambiguous. In one reading, one could assume that Davies's abuser is a woman who "didn't stop to tell her why" and "is dripping down her thighs" at 5AM. This reading pushes against the stereotypical, heteronormative abuse narrative of a man abusing a woman and draws attention to the fact that women can be abusers, too. These lines could also be read as Davies talking back at herself. In this reading, her shame causes her to avoid coming to terms with why she keeps going back to the abuse ("didn't stop to tell her why") and that her own bodily fluids, as a consequence of the abuse, are "dripping down [her] thighs.

In the third verse–chorus cycle, the lyrics of which are in Figure 2.4, Davies describes an experience with miscarriage. This section has some small, but distinct, differences from the other two, which could be due to the fact that

On my way to the hospital
Late last night
But you said you don't want this thing
But I can't win
So I lie
So if you see him say "hi"
I didn't stop to tell him why
It's 9AM and it's dripping down my thighs

Red, red blood is dripping on the concrete
Red, red blood is dripping and I can't sleep
And I can't speak

Figure 2.4: Lyrics to Verse–Chorus Cycle 3, "5AM" by The Anchoress

the trauma of losing a child does not necessarily happen at the hand of an abuser. First, she changes 5AM to 9AM. Though miscarriages can occur at any time, I wonder if the timing change here reflects that it is happening at a time that is within typical waking hours. It seems that maybe the two instances of abuse she describes happen in private, in the wee hours of the night, and her time to reflect is when she is alone before everyone is awake yet. In this one, though, her reflection time occurs at a typical morning start time, as if she is starting her day anew with the horrifying realization that she has lost her pregnancy. The second change is that the red blood is dripping on concrete, not on carpet. This distinction emphasizes that her miscarriage happens out in a more public setting (the hospital), as opposed to behind private, closed doors where it is just her and her abuser. It is interesting that Davies has specified that this verse is about miscarriage, though, because the line "but you said you don't want this thing" hints at the possibility of a forced-abortion narrative. However, she starts the verse saying that she is on the way to the hospital late at night, which is not when

a non-emergency abortion would occur. Still, the ambiguity points to some additional abuse from a partner and back to the other two verses.

In the second verse–chorus cycle, Davies sings about being sexually assaulted. This verse seems to be the clearest of the entire song. The text for this verse–chorus cycle can be found in Figure 2.5. The lines "'cause you said we could stop when I wanted, but you weren't that bothered when I just screamed" make it very clear that she is describing sexual assault. However, not all of the elements of the verse are entirely easy to understand. She starts saying that she is "wide awake at her best friend's house." Is her best friend the abuser? Is she abused at her best friend's house, or is she just thinking about it late at night (while at her best friend's house) because she cannot sleep? If her best friend is the abuser, she switches between calling him "my best friend," "you," and "him/he." If not, she still switches between "you" and "him/he." This change in address (as well as verb tense, flipping between present and past) emphasizes the ways that past traumas can feel as though they are happening in the present. Traumatic memories are actually stored in a different part of the brain, which does not allow them access to the part of the brain that understands time and the sequence of events as they occurred, meaning that when survivors remember traumatic experiences, they are often out-of-sequence and not in a linear fashion. While the verb tense changes are the most obvious way to convey this phenomenon, the changes in address, at least from "you" to "him" and "he," but also possibly the reference to "my best friend," also show the time-jumping because when talking about the past event, she talks like the abuser is there in the room, using "you." When she switches to talking about still seeing him around, however, she

And I'm wide awake at my best friend's house
Age 14
Cause you said we could stop when I wanted
But you weren't that bothered
When I just screamed
But when I see him I still say "hi"
He didn't stop to tell me why
It's 5AM and he's dripping down my thigh

Red, red blood is dripping on the carpet
Red, red blood is dripping and I can't sleep
And I can't speak, can't speak

Figure 2.5: Lyrics to Verse–Chorus Cycle 2, "5AM" by The Anchoress

distances herself and uses "he" and "him," as if she is no longer reliving the specific memory and talking directly to him.

Even within each distinct section of time (i.e., discussion of past event, discussion of after the event), she changes verb tenses. Starting in the present, she moves to past tense as she describes the assault. Next, she says she "still sees him and says 'hi'" (present tense), but that "he didn't stop to tell her why" (past tense), and finally that "he's dripping down her thigh" (present tense). These quick shifts in past and present tense may seem small, or even go unnoticed as you listen, but they are jarring when you try to figure out what the narrative actually is. Even more interesting is the fact that the use of past and present tense does not always align with which part of her story she is telling. For example, she starts talking in present tense about a past event (being wide awake at age 14). Then, her use of past verb tense aligns with her story of the assault itself. Coming back to the present to say that she still says "hi" to him, she switches back to present tense, but ultimately talks again about the assault, this time in the

present tense, at the end of the verse and in the chorus ("is dripping"). This confusion of tenses really effectively portrays the ways that time can be muddled in memories of and feelings about traumatic events. Ultimately, the fact that her text is clearly about very upsetting events, which the repeated choruses about "red, red blood dripping" emphasize, but not entirely understandable in the specifics, allows her voice to carry so much of the emotional weight.

At the beginning of many of her words, Davies uses what Kristal Spreadborough (2022) calls a "creak onset." Spreadborough defines "creak onsets" as "percussive and rough" and as being "produced by the vocal folds rapidly opening and closing as breath passes through" on the "initial part of the note" (2022, Example 6 and [32]). She adds (boldly) that they are typically "noisy (e.g., rough, breathy) and may therefore tend to be associated with negative emotional states" (2022, Example 6). Davies's creak onsets sound like she is trying to sing in a non-breathy tone, but her folds just will not connect enough to vibrate consistently and block the excess air from coming through. She begins the second cycle saying, "and I'm wide awake at my best friend's house, age 14." Many of these words have these noisy creak onsets before she gives way to a breathy, disconnected tone. On the spectrogram in Figure 2.6, you can see the blurry clusters on "and I'm," "best," and "age," where the most intense creak onsets occur, but afterwards there are clear bands with fuzz just around the outside, where she uses her breathy tone.

In both the creak onset and the breathy sustained tone, the vocal folds do not close entirely, allowing excess air to escape without being able to support the vocal folds' continued vibration. It sounds like she starts her story trying to be

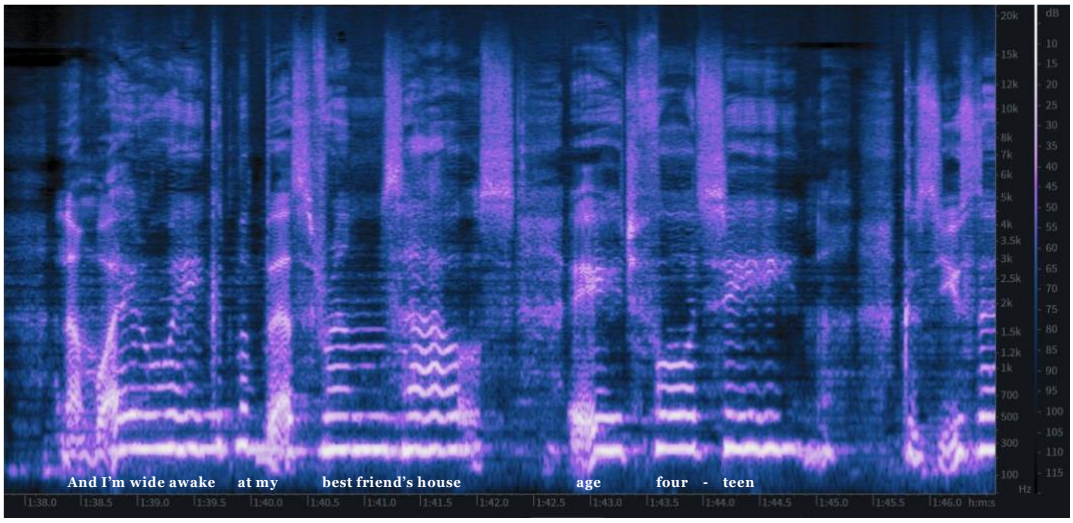


Figure 2.6: Spectrogram of Catherine Davies's voice in "5AM" by The Anchoress, 1:38–1:46

strong and connected to herself, but as she continues with the details of the experience she dissociates and goes into a lax, breathy phonation. This creak at the beginning of certain words, then, is her attempt to connect back to her body, but she cannot get back into her skin in the same way that her vocal folds seemingly cannot connect and vibrate consistently together. Most notably, the lyrics immediately following those above continue, saying "'cause you said we could stop when I wanted, but you weren't that bothered when I just screamed." In a literal sense, one may think that the word "screamed" would be expressed with a rougher, louder, angrier, or maybe even a more screechy timbre of some sort. However, at the moment that might be the most intense, she backs off and sings in an even breathier tone (see Figure 2.7). As she reflects on this experience, she quickly gets past the hardest part ("when I just screamed") and talks about way after the event ("but when I see him, I still say hi. He didn't stop to tell me why"). This choppy narrative mimics the way that traumatic memories are

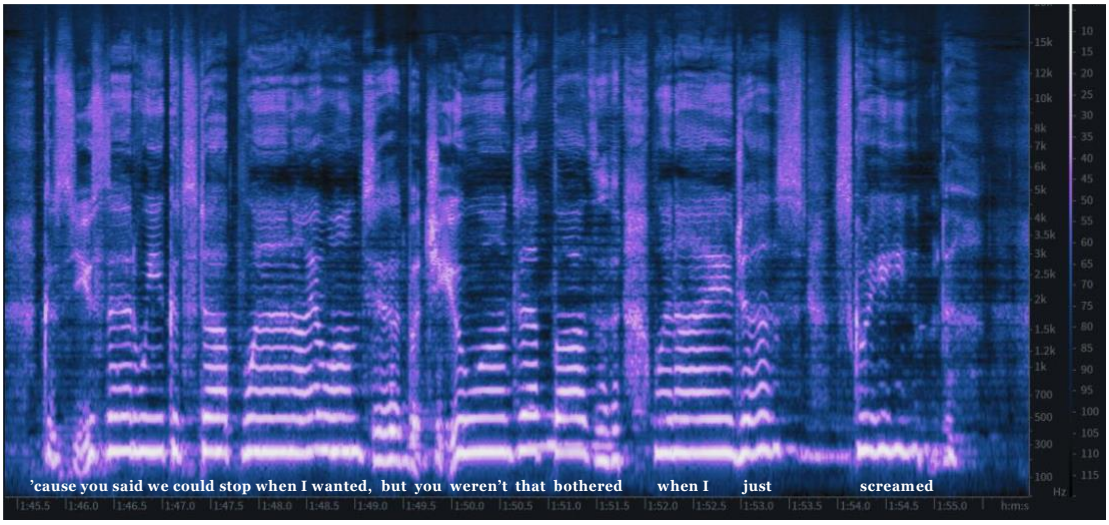


Figure 2.7: Spectrogram of Catherine Davies's voice in "5AM" by The Anchoress, 1:45.5–1:55.5

stored—in pieces that are out of order—and just as the story is out-of-order, so are her feelings. When she describes the moment of greatest intensity, the seemingly incongruous breathiness portrays how this intensity causes a numbing and dissociative effect, as the mind tries to ignore the intense feelings connected to the trauma.

In the chorus, she continues in this non-linear timeline, jumping back to directly after the event by singing "it's 5AM and he's dripping down my thigh/ red, red blood is dripping on the carpet." She uses morbidly graphic lyrics to describe her physical experience after her assault as she details his sexual fluids dripping down her thigh and her own blood dripping on the carpet. She presents these memories in flashes that have particular focus on the color of the blood, as well as on the fact that it is dripping, instead of telling the memory as a complete thought or story. As she sings about these deeply personal *bodily* memories, she stays vocally disconnected in her light, breathy tone and adds vocal overdubbing in eerie, dissonant harmony. The dissonance enhances the sense of dissociation;

as Maria Cizmic notes, dissonance is one way in which "music can metaphorically perform the psychological effects of trauma," namely the "disruptive features" of trauma such as dissociative states (2012, 25). In this instance, Davies's overdubbed vocal harmonies (they are all her own voice simultaneously) imply that she is unsure of who she is because of the fact that they seem to compete with each other, especially when singing "And I can't speak, can't speak." The dissonant harmonies and simultaneous occurrences of her voice(s) sound as if she is feeling like she is in multiple places, or that there are multiple "versions" of her. It sounds like her own thoughts are bouncing around, possibly in her own head, but also around a virtual listening space (see Chapter III). The overdubbed voices also appear only when she sings in her breathy timbre, and not on words where she attempts to connect through her creak onset, such as "carpet" (where she seems to take advantage of a moment that is not so morbid to attempt reconnection to herself). In this way, she conveys the "who am I?," "where am I?," and "am I real?" confusion of depersonalization even further with these multiple voices. Her point-of-view sounds like it is coming from multiple places, and on different pitches that conflict with each other, simultaneously. Through her breathy voice and these double-tracked vocal harmonies in the chorus, she musically paints her memory of his bodily fluids dripping down her thigh and her blood dripping on the carpet as hazy, unreal, and disconnected. In Figure 2.8, the spectrogram shows her voice, as well as the vocal harmonies. The upper harmonics are more clear here, but only because there are additional pitches supporting the fundamental through the use of vocal harmonies. Through Davies's use of breathy voice, overdubbed harmonies, and a thin texture with

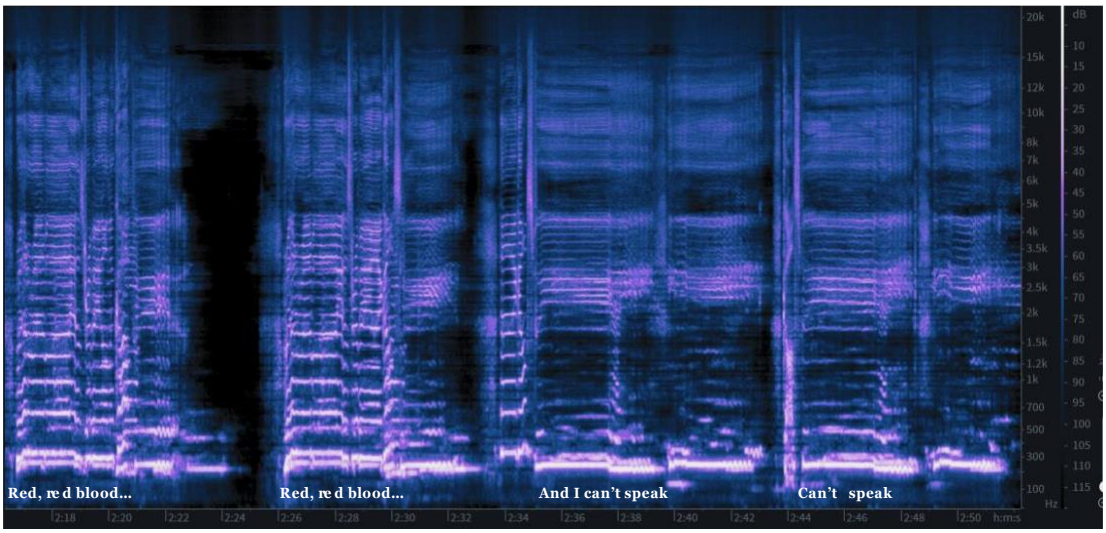


Figure 2.8: Spectrogram of Catherine Davies's voice in "5AM" by The Anchoress, 2:16–2:52

these graphic lyrics of a traumatic experience, she paints an aural portrait of dissociation.

Fiona Apple, "Sullen Girl"

In "Sullen Girl," from her 1996 quintessential debut album *Tidal*, Fiona Apple also uses a breathy timbre to convey feelings of dissociation after trauma from sexual assault and society's subsequent judgment of her. Like many other women who write and perform their own music, especially such mid-'90s artists as Tori Amos or Alanis Morissette, much of Apple's music tackles subjects relating to misogyny, female sexuality, trauma, and her own personal experience. She is possibly best known for her song "Criminal," or her 1997 MTV Video Music Award speech (after winning for her song "Sleep to Dream"), in which she said "the world is bullshit" and urged people to "go with themselves"; many people reacted poorly to her vulgarity in this moment (Alexander 2022; Grimes 2022). Over the course of her career, she has been open about her traumatic experiences

and her feelings about the patriarchy, using her music and platform to talk out against oppression. When she was 12 years old, Apple was raped by a stranger who forced his way into her mother's apartment building the day before Thanksgiving and threatened her with a weapon. On his way out, she recounts that he said, "Happy Thanksgiving. Next time don't let strangers in" (Grimes 2022). About "Sullen Girl," Apple says that it "is complicated for [her]" (Frampton 1996, 30). She continues to say that she "went through a really hard time when [she] was a very, very cold person," and,

> When I was 12, I was raped by a stranger and that's what ["Sullen Girl"] is basically about, because I felt like everybody in my life thought there was something wrong with me, and it was just my wondering 'is that what changed me?' (Frampton 1996, 30).

In this way, though she writes about her own very personal experience, and her reflections after the fact, she also writes this song as a commentary on the collective trauma of rape, since so many girls and women experience it. She allows her song to capture her own feelings, but provides them as feelings that many have experienced and that many can connect with. Additionally, it seems that the song bites back at society a bit. In a way, she seems to say that the patriarchy made her this "sullen girl" because of the fact that she was raped, but then "they" (society) are making her feel like something is wrong with *her* because of her reaction to such a horrific trauma.

Apple begins "Sullen Girl" singing "days like this I don't know what to do with myself, all day and all night" in a soft, breathy tone. She describes wandering "the halls along the walls," painting a picture of aimless wandering as time seems to move very slowly. However, as she starts the first chorus, she explains why the

Days like this I don't know what to do with myself, all day and all night
I wander the halls along the walls and under my breath I say to myself
"I need fuel to take flight"

And there's too much going on
But it's calm under the waves in the blue of my oblivion
Under the waves in the blue of my oblivion

Is that why they call me a sullen girl, sullen girl?
They don't know I used to sail the deep and tranquil sea
But he 'washed me shore and he took my pearl and left an empty shell of me

And there's too much going on
But it's calm under the waves in the blue of my oblivion
Under the waves in the blue of my oblivion
Under the waves in the blue of my oblivion
It's calm under the waves in the blue of my oblivion

Figure 2.9: Lyrics to "Sullen Girl" by Fiona Apple

time may seem to be unending as she sings "there's too much going on, but it's calm under the waves, in the blue of my oblivion." The lyrics here, seen in Figure 2.9, express her detachment, or dissociation, which seems at least somewhat purposeful, from the overwhelming world around her. On the word "calm," she has a bit more connection to her voice, but quickly returns to her breathy "calmness" (or numbness, if you will) as she descends "under the waves."

In Verse 2, she alludes to assault more specifically, but not in the same gory detail as does Davies. She describes how "he took my pearl and left an empty shell of me." As she sings through this line, she increases her vocal intensity through the word "my," and then suddenly drops back into an even breathier

voice to finish the phrase. Vocally, she mirrors her "pearl" being taken and the "empty shell" that is left as her vocal support (or the consistent vibrations of her vocal folds supported by her breath) drops out and her vocal folds again do not fully close together. Physiologically, her vocal folds not fully closing mimics the image she creates of her being a "shell" (presumably an oyster shell) that has been pried open and left emptied of its/her "pearl." Her "pearl" here is an apt metaphor for her virginity and innocence, as a shiny, often white, gem associated with purity. This line is seemingly the most intense in the song (in regards to subject matter), even though she opts for a metaphor (albeit one that is still pretty obvious) instead of a more graphic description of her assault (like Davies's in "5AM"). As she quickly builds to the most intense vocal delivery of the piece (on the word "my"), she seems to connect to the memory, and her voice, in a way that stands out from the rest of the song. Her voice does not sound strained, per se, but definitely sounds emotionally charged, and not in a positive way. She also drifts quite a bit flat on the note, drawing attention to both the perceived authenticity in performance—as she is not using corrective technologies like Auto-Tune (see Chapter III)—and the fact that her "pearl" being taken has made her feel emotionally low.

As described above, she sings the rest of the phrase in stark opposition to this moment of high arousal, which seems to convey her dissociative reaction to the stressful memory in addition to directly mirroring the "empty shell" that is left of her after being raped. In similar fashion, when she sings "and there's too much going on" for the second time, after this second verse speaking of her pearl being taken, she sings in a non-breathy tone and with a longer melisma on the

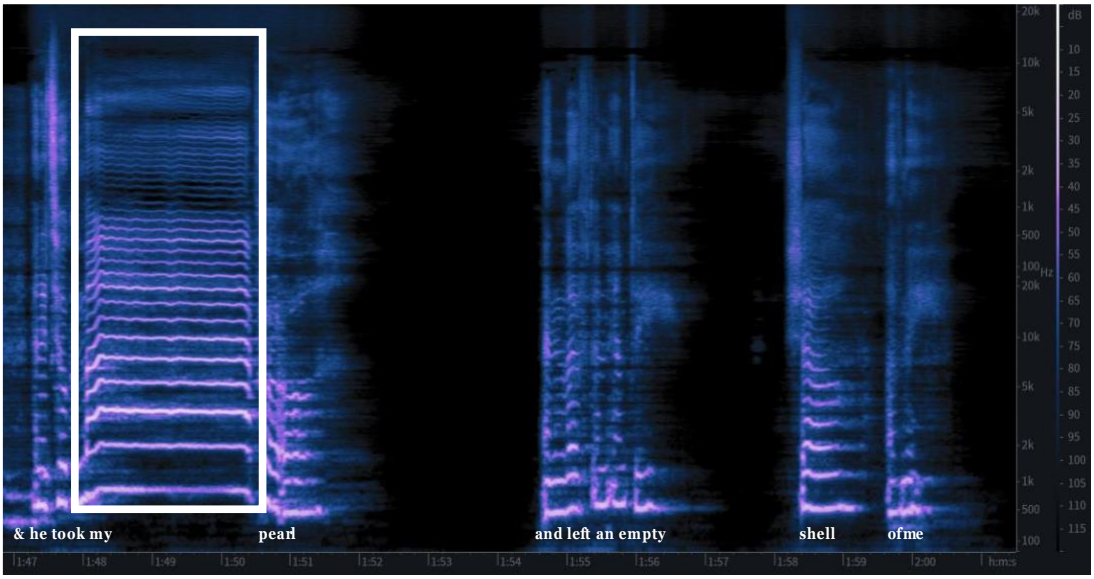


Figure 2.10: Spectogram of Fiona Apple's voice in "Sullen Girl," 1:47–2:01

word "on." Again, she evokes her emotions being overwhelming as she comes out of her dissociative state, only to go right back into it after describing that it is too much for her to handle. Apple illustrates being thrust back into these memories, and also possibly bombarded with society's opinions of her being "too sullen" or that something is wrong with her, with her brief moments of high-intensity vocals, followed by quickly numbing out their overwhelming nature through her sudden shift back to an even breathier timbre. The spectrogram in Figure 2.10 shows the presence of high-frequency overtones on "my," as she uses pressed phonation for this intense moment before backing away into her breathy voice. It seems that Apple may be calling out rape culture for making her like this and then denigrating her for it. In other words, she is pointing out the problem of society pushing her down and then asking her, "why are you on the floor?"

In "5AM," Davies's breathiness and double-tracked vocal harmonies serve as useful tools to emphasize the disconnection she feels from her body as she

sings, with gory details, of her assault. In "Sullen Girl," however, Apple's breathy timbre is used to emphasize her dissociated numbness as she sings about being an "empty shell." It does not necessarily sound as though she is feeling literally outside of her body, but instead like she feels nothing. In this way, I argue that in "5AM," Davies's breathiness (as well as the addition of vocal harmonies) works with the lyrics to vocally represent *depersonalization* (separation from the body and Self), and in "Sullen Girl" Apple's breathiness accents her lyrics discussing her emptiness and "oblivion" to convey *derealization* (separation from reality and surroundings). While she describes this oblivion as "calm" in the song, the sound portrays a calmness that is not stable or positive. In other words, the calmness does not sound like it is serene, but more like it is detached and empty, even if it is a temporary relief from the overwhelming pain of her trauma and/or from the constant judgment from everyone around her. In both of these songs, the use of breathy vocal timbre conveys these detached, hazy feelings and, at certain moments, clashes with lyrics about high-arousal events. In doing so, the breathy timbre quite effectively musically portrays dissociation in ways that words alone just cannot. So, to conclude, these songs are connected in that they are both about sexual trauma, and the incorporation of breathy timbre makes this connection stronger as they both convey a specific trauma response, dissociation. Another song that incorporates breathiness in similar ways to convey dissociation is "Me and a Gun" by Tori Amos (1991).

CHAPTER III: REVERB AND DISSOCIATION

My discussion of breathiness in the previous chapter involved songs that use relatively dry production on the voice—i.e., minimal perceptible studio effects or technological mediation. Dry vocals often signify *authenticity*, or realness, as many scholars have discussed (Malawey 2020, 33–9; Brøvig-Hanssen and Danielsen 2016, 39–40; Moore 2012, 259–71). According to Allan Moore, "when listeners…regard a performance as authentic," they sense "no gap between the identity presented 'on stage,' and that presented 'in real life'" (2012, 211 and 263). Authenticity is not always the goal, though; many artists explicitly take on a character or alter-ego in performance, such as Beyoncé's "Sasha Fierce" or Janelle Monáe's "Cindi Mayweather" (Partridge 2021). In such situations, listeners and performers alike are generally aware of the distinction between the actual singer and their on-stage or recorded persona. A variety of elements can contribute to this perceived identity gap, including, as Drew Nobile describes, "any perceived technologies, training, commercial concerns, co-writers, or other external agents that transform *performer into persona*" (2022, [2.1], my emphasis). Among these elements, overt studio production (or wet production) effects can be the strongest signifiers of inauthenticity, due to the obvious electronic manipulation of the "natural" voice. Ragnhild Brøvig-Hanssen and Anne Danielsen comment on studio vocal production, more specifically, saying that it is largely believed that "*any* manipulation of the lead vocal away from the singer's 'true' (inner) expression" is a way of "falsifying" the singer's performance (2016, 39, my emphasis). Other scholars, such as Catherine Provenzano (2018)

and Diane Pecknold (2016), note that software like Auto-Tune is considered by listeners to be "cheating" when it is used for pitch correction purposes.

That said, studio effects do not always signify inauthenticity. In certain situations, production techniques such as reverb and distortion (among others) can give artists tools for authentic expression *beyond* what is possible through dry production alone. In sonic portrayals of dissociation, these production tools can be especially effective. Dissociation, as noted previously, can make someone feel disconnected from themselves and/or their surroundings, and can even make it seem as though their surroundings and/or they, themselves, are not real. The argument of authenticity as attached to a performer's "real" voice, then, becomes complicated as we discuss these dissociative feelings. In this context, mapping "real" and "mediated" voices onto "authentic" and "inauthentic" performances is potentially a false binary. Rather, performers can powerfully portray dissociation—an authentic feeling—through mediated sounds because of the disconnection from reality (among other things) that dissociation causes. In this way—through techniques like reverb and distortion—technological mediation does not take away from the authenticity and meaning of such a performance. Instead "the technological mediation has a voice of its own, in fact, and insists on its role in the experiential meaning of the music" (Brøvig-Hanssen and Danielsen 2016, 5). In other words, voices that contain added sonic effects through technological mediation can be used to powerfully and *authentically* convey symptoms of dissociation in ways that the unmediated human voice cannot.

Sonic Space

One of the most salient recording tools is the ability to place sounds in spatial relationships with one another, as well as with the listener. The way that the instruments (including the voice) are organized within a song's sonic space can greatly affect the way that listeners perceive and embody the emotional meaning of any song. Michèle Duguay notes that "comparisons of vocal placements [within sonic space] are…*crucial* for an analyst wishing to make claims about the way vocal placement interacts with other aspects of music, such as vocal timbre or the way a vocal performance expresses identity through sound" (2022, [2.10], my emphasis).

Sonic space is different from the literal space in which a song is recorded. Even if a listener does not know what the actual recording space looks like, which is often the case, they can imagine what kind of space it sounds like the performers are in. Production techniques are often used to manipulate sounds so that the imagined space (or sonic space) is different from the literal recording space, and sometimes even from *any* literal space. When scholars discuss this metaphorical space, they use different terminology, including "sound-box"/"soundbox" (Dockwray and Moore 2010, Moore 2012), "sound stage" (Moylan 2020), "virtual space" (Duguay 2022), and "vocal setting" (Lacasse 2000). While these authors do not use these terms in entirely identical ways, they do all agree that there is a metaphorical sonic space that a listener can interpret based on the ways that the instruments (but especially the voice) are panned left and right, are performing timbrally, and are technologically mediated.

Many of the aforementioned scholars provide visual representations of this virtual sonic space. Most of them recognize three spatial dimensions: a horizontal dimension representing L–R panning; a vertical dimension representing pitch; and a depth dimension representing prominence or distance. Dockwray and Moore use these dimensions to create their soundbox. Figure 3.1 shows their analysis of the sonic staging of Jimi Hendrix's "Purple Haze," which has drums, guitar, and bass in the center, and the voice (represented by a split sphere, roughly approximating "lips") off to the right. With the voice off on its own and everything else clustered in the middle, Dockwray and Moore explain that "the detached vocal becomes a focal point, and its volume level creates the sensation of Hendrix singing at close proximity, invading the listener's space from the side" (2010, 192).

Michèle Duguay (2022) also starts with a three-dimensional box, drawing on Dockwray and Moore, but shows only the voice in her representations and adds some additional analytical parameters. Duguay analyzes vocal placement through five parameters: pitch range (expressed as a frequency range), prominence (expressed as a percentage through a digital audio extraction program), width, environment, and layering (these last three expressed on five-point scales). While *pitch range, prominence* (i.e., volume), and *width* (to a certain extent), are situated along the y-, z-, and x-axes, respectively, *environment* is represented through the opacity of the box representing the voice, and *layering* through the number of stacked vocal boxes. Comparatively, Duguay

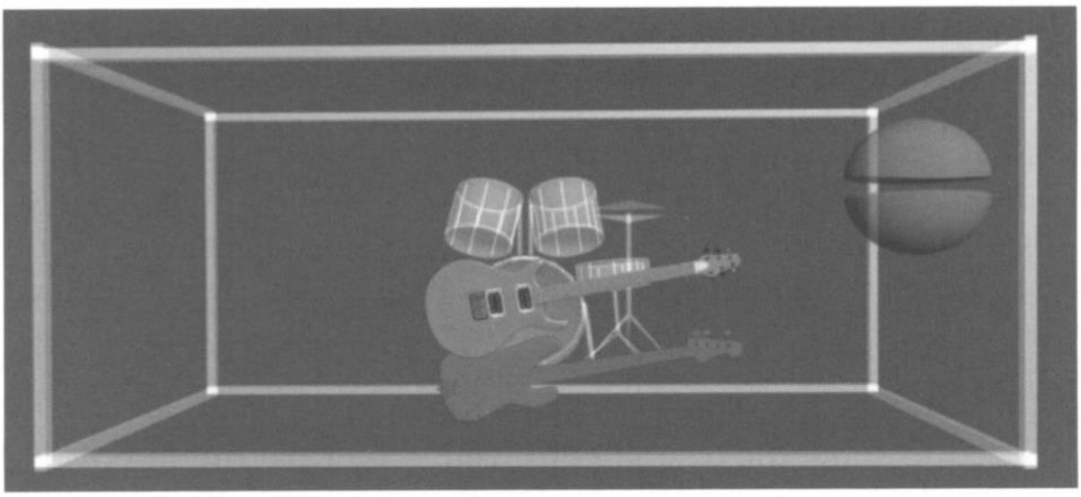


Figure 3.1: Ruth Dockwray's and Allan Moore's sound-box representation of "Purple Haze" by The Jimi Hendrix Experience (2010, 192)

uses essentially the same parameters as Dockwray and Moore for pitch (along the y-axis), but uses slightly different parameters for her definitions of width and prominence (though still keeping them, essentially, on the x- and z-axes). Layering and environment do not affect a sound's position in virtual space, but affect how it relates to other sounds. Duguay defines the width of a voice as "the breadth it occupies" in the sonic space (2022, [3.9]), instead of where it sits in regards to its left-right panning. In order to calculate a voice's width, which she shows using a five-point scale ranging from a voice being "narrow" and "centered" to "spread across the stereo stage," she uses (or was using) a program called MarPanning (2022, [3.10]), which is not available anymore.[15] In Duguay's consideration of prominence, she only considers loudness, which she measures by calculating the voice's volume relative to that of the entire mix (2022, [3.13–

[15] Trevor de Clercq recently published a response to Duguay's article, which draws attention to the ways in which she calculated many of her parameters and suggests revisions to make them more accurate to the listening experience (see de Clercq 2024).

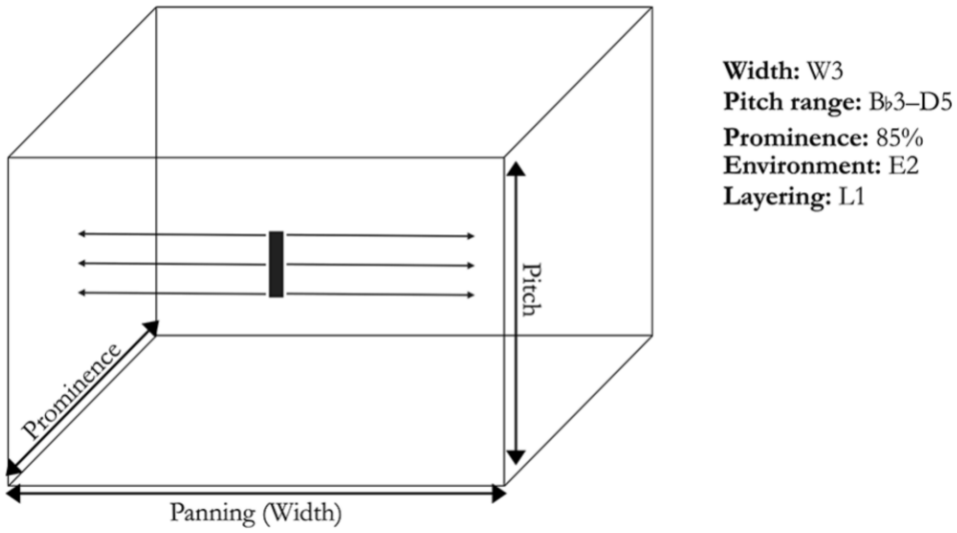


Figure 3.2: Michèle Duguay's vocal placement representation of Rihanna's voice in the first chorus of "Love the Way You Lie" by Eminem (feat. Rihanna) (Example 15)

18]). To account for the presence or absence of reverb (which Dockwray and Moore also consider in prominence), Duguay uses a separate parameter, which she calls environment. She represents environment through the relative opacity of the box representing the voice, foregrounding reverb's ability to disguise the specific placement of the sound source instead of considering it to create virtual distance. In other words, she does not attribute reverb to a specific amount of distance, but instead to a perceptual lack of a pinpointed space from which the sound is coming. Figure 3.2 shows Duguay's analysis of Rihanna's vocal placement in the first chorus of "Love the Way You Lie." In this example, Duguay uses a thin, solid black box with arrows on both sides to show that Rihanna's voice "occupies a narrow position in the center of the stereo stage" with the "*last word or syllable*…repeated through echo or reverberation," which is "panned toward the sides" (2022, Examples 9 and 13).

William Moylan (2020, 322–29) imagines the sound stage not as a three-dimensional box, like Dockwray and Moore's soundbox and Duguay's virtual space, but instead as two-dimensional, even though the concept has many similarities. Essentially, his graphs could be thought of as a bird's-eye view of these previous three-dimensional figures, flattening the pitch axis so the two remaining axes are distance and panning. In his visualizations of what he calls the "sound stage," the width accounts for both left–right panning and the perceived "width" of a sound (which he relates mainly to pitch frequency, with higher sounds being more pointed and lower sounds being wider). The height, however, does not denote pitch frequency, as in the previous two examples, and instead provides the perceived distance of each instrument from the listener (and, with the consideration of lateral placement, from each other).[16] He includes, specifically, the listener's "point of audition," which he defines as "a vantage point from which listeners observe the track and its sounds" (2020, 289). In determining the perceived distance that each instrument holds from the listener, Moylan boldly claims that volume and reverb do *not* correlate with distance, as most other scholars imply. Noting that louder sounds, such as shouting, are often perceived as farther away than softer sounds, such as whispering (as well as that we don't hear a trumpet moving toward us when it crescendos), Moylan instead claims that timbral detail is the main determinant of

[16] In the other conceptualizations of a 3-D sonic space, Dockwray, Moore, and Duguay employ the PITCH AS HEIGHT metaphor for their y-axes, considering high sounds as literally higher up and low sounds as literally further down. In Moylan's figures, he does not consider high pitches as literally high above the ground and low sounds as literally low to the ground, just like he does not consider a sound that gets louder to be moving closer.

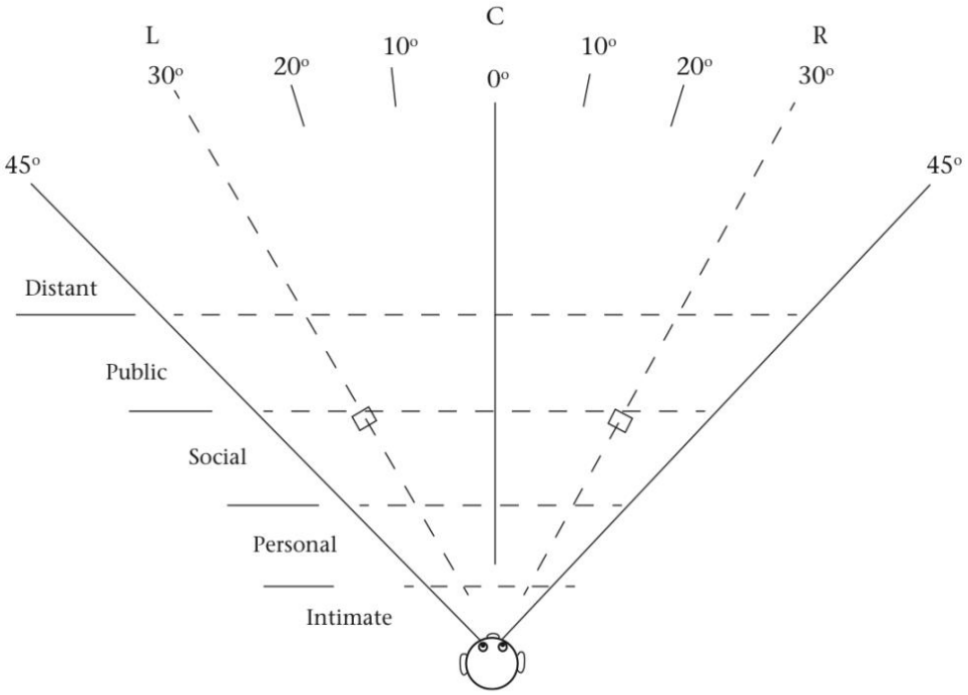


Figure 3.3: William Moylan's Sound Stage Diagram Template (2020, 328)

sonic distance. Similarly, reverb does not apply a specific amount of distance from the listener, but instead makes the specific placement of the sonic source blurry (which aligns with Duguay's conception of how reverb affects sonic placement). Figure 3.3 shows Moylan's general sound stage diagram, with left–right panning along the x-axis (up to 45° each direction from the point of audition) and distance along the y-axis (with five categories: intimate, personal, social, public, and distant). The first four of these categories are the same as those in Allan Moore's concept of proxemics (2012), which is also a method for describing a performer's perceived distance from the listener(s) and other sonic material. I discuss Moore's proxemics in more detail in Chapter VI.

Sonic Space and Dissociation

All of these diagrams help readers to understand the ways that these authors are considering sonic space, especially as they provide information for specific examples. More specifically, they all consider that sonic space is perceptible by listeners (who are situated within the sonic space), and that L–R panning is the most literal realization of that space. As we listen, a voice's placement within the sonic space can imply the singer's distance from other musical elements, as well as their perceived distance from the listener. Even though these scholars all discuss and show distance, however, they mostly disagree about how we perceive distance within this sonic space, meaning that distance can be heard in multiple different ways. Since trauma, and especially dissociation, can make survivors feel separated, or distant, from others around them, from themselves, and from reality, sonic space can be an especially useful element in portraying this experience. For example, a voice that is placed very narrowly in the sonic space, uses a small pitch range, and/or sounds distant from other musical material saliently portrays the disconnection from both the edges of the soundbox (or one's surroundings/reality) and other instruments (or other people). In "Me and a Gun," Tori Amos uses sonic space in this way.

In my discussion of sonic placement for this chapter, I focus specifically on the ways in which reverb aids in conveying dissociation. In doing so, I analyze two songs, "Motion Sickness" by Phoebe Bridgers (2018) and "Dog Teeth" by Nicole Dollanganger (2012). Peter Doyle defines reverberation (or reverb) as occurring "when sound is reflected either so many times that no single, discontinuous repeat of the source sound is heard, or when the reflective surfaces

are too near the listener to allow subjective aural separation (as in, say, a tiled bathroom)" (2005, 38). He differentiates reverb from echo, which is essentially isolated sound reflections, which causes the sound source to be "distinctly reproduced" (2005, 38). In other words, an echo is a single, distinct repetition of a specific sound (though a sound can have multiple echoes), whereas reverb is a large amount of echoes that all blur together and end up making the sound seem continuous for some amount of time. Brøvig-Hanssen and Danielsen (2016) provide an example depicting how waveforms show reverb in the way of a reverb "tail," which I have included as Figure 3.4.

Scholars have interpreted the emotional meaning of reverb, as it is used in popular song, in a few different ways. First, following Dockwray and Moore's assessment of reverb as distance, reverb can make a sound seem far away and can be used as a metaphor for emotional distance (though, importantly, Moylan and Duguay disagree with this idea). Lori Burns thinks about the types of spaces that might typically cause reverb (namely large, empty spaces) to say that "reverb may imply 'emotional emptiness'" (2016, 164), and Doyle notes that the metaphorical emptiness could come from within the performer's own head, with the reverberated voice being heard as an "inner thought," bouncing around in their mind (2005, 30). Thinking about it in a different way (as I have noted previously), Moylan (2020) and Duguay (2022) claim that instead of portraying distance or space between the listener and performer, or between the performer and the space around them, reverb makes the exact virtual space of the performer

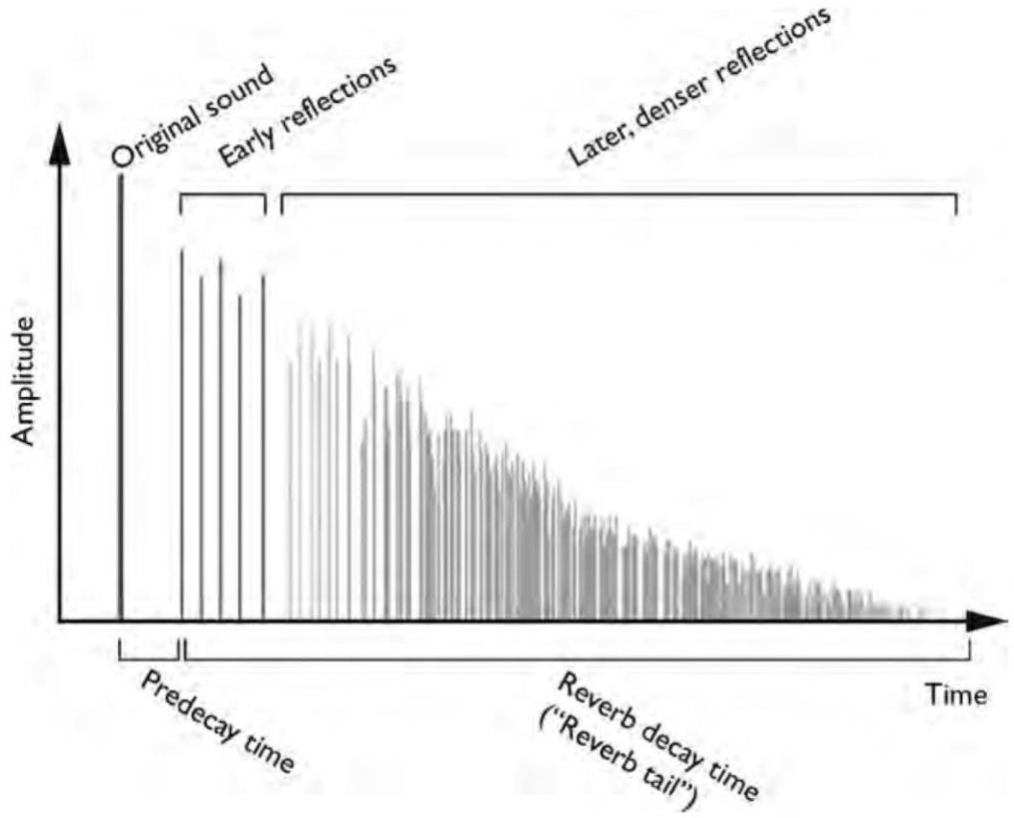


Figure 3.4: Brøvig-Hanssen's and Danielsen's (2016) figure depicting the waveform pattern of reverb, Figure 2.1, 26

difficult to perceive. In other words, they say that reverb blurs the edges of the voice in a way that makes a listener struggle to pinpoint where, exactly, the voice is coming from, giving it a certain ethereal or intangible quality.

In my analyses I focus on two aspects of reverb that specifically convey dissociation: the obvious electronic production on the voice and the ability to obscure the specific location of the sound source, which is in these cases the voice. As I discussed earlier, dry recordings are often perceived to be more intimate and authentic than wet recordings. Listeners tend to feel more connected to authentic performances, wherein the performer feels extremely close, both proximally and emotionally. In opposition, wet recordings can create

a sense of perceived spatial and emotional distance between the performer and listener, which can be used to mirror the disconnection someone experiencing dissociation feels from their surroundings and from other people. An important note here is that I am not arguing that reverb, specifically, creates this sense of aural distance (though vastness of sonic space that reverb implies can be a nice metaphor for distance from one's surroundings), but instead that the wetness of the technological mediation (standing in opposition to a dry recording) can be perceived as emotional distance due to the voice being modified (or "falsified") in some ways. I am also not arguing that reverb always means dissociation, as there are plenty of songs that incorporate reverb that are not about sexual assault or trauma, some of which are by these same artists (e.g., Phoebe Bridgers). Instead, I argue that *in this context* the reverb adds an aural element to performances about this specific experience. About reverb, I use the ideas of Moylan (2020), Duguay (2022), and Doyle (2005) to argue that the voice's specific location is blurred through the continuous repetitions of the sound in such a way that powerfully portrays the separation that dissociation can cause someone to feel from their own body (or their own specific location) in a way that blurs their sense of where, and who, they really are.

Analyses

Phoebe Bridgers, "Motion Sickness"

Phoebe Bridgers released her debut album, *Stranger in the Alps*, in 2017. Prior to releasing this album, she put out an EP (*Killer*), during which she worked with producer Ryan Adams. After working together professionally, Bridgers and

Adams started a romantic relationship, which Bridgers has since described as "emotionally abusive," adding that he exposed himself to her (Bloom 2019). Multiple other women, including Adams's ex-wife, Mandy Moore, and a woman who claims Adams exposed himself to her when she was only 14 have spoken out against Adams's behavior, accusing him of "abuse ranging from emotional manipulation to sexual misconduct" (Bloom 2019). On *Stranger in the Alps,* Bridgers includes the track "Motion Sickness," which she wrote about him and the aftermath of their relationship. Before the allegations of abuse came out, Sam Sodomsky of *Pitchfork* reviewed *Stranger in the Alps* and referred to "Motion Sickness" as a "breakup anthem" (Sodomsky 2017), but after all of the abuse accusations, the emotional impact of this song goes much deeper than that.

Bridgers opens the song with the heartbreaking line "I hate you for what you did and I miss you like a little kid." Every time that I listen to this song, this just feels like a lyrical punch in the gut. The lyrics to the opening verses and chorus can be found in Figure 3.5. The opening is expected, and very bluntly gets to the point that she hates him because of the fact that he abused her. However, it is quickly juxtaposed with a feeling that does not get talked about as much after abuse. Even though abuse is a traumatic experience, in many cases survivors still have intimate relationships with their abusers, who are often family members or romantic partners, that are hard to just discontinue. This song differs from other songs I have discussed thus far because of this specific abuse dynamic. Rape by a stranger and sexual abuse from a partner, while both intense bodily violations, differ greatly because of the nature of the relationship to the abuser. When a

I hate you for what you did and I miss you like a little kid.
I faked it every time, but that's alright.
I can hardly feel anything, I hardly feel anything, at all.

You gave me 1,500 to see your hypnotherapist
I only went one time, you let it slide.
Fell on hard times a year ago,
Was hoping you would let it go and you did.

I have emotional motion sickness,
Somebody roll the windows down.
There are no words in the English language
I could scream to drown you out.

Figure 3.5: Lyrics to Verse–Chorus Cycle 1, "Motion Sickness" by Phoebe Bridgers

stranger is the one committing such a vile act, it can be a bit easier to recognize that what happened was hurtful and traumatic. However, when abuse happens from someone you know and love, it can be easier to dismiss signs of abuse and make excuses for manipulative and dangerous behaviors. Additionally, even after coming to terms with the fact that a relationship was abusive, many survivors still live with conflicting feelings about their abuser because they still hold love for the person with which they were so intimately connected.

After expressing her conflicting feelings about her abuser, Bridgers attacks his sexual abilities by saying "I faked it every time." The emasculating insult she adds here, though, is softened by the context that she gives about the fact that she "can hardly feel anything…at all." This description on her numbness comes right after talking about sex, so physical numbness seems to be especially implied here, but her faking it could also refer to emotional enjoyment in their relationship. Either way, her emphasis on numbness sounds like she is describing some type of

dissociation, especially after the emotional impact of the lines leading to that point. In this first verse, it seems that she starts with lines that are strong and attack Adams, but then immediately doubles back and provides devastating details about her own very personal feelings after their relationship and the abuse. These lines seem to yo-yo up and down emotionally, effectively portraying the "emotional motion sickness" she describes in the chorus.

In the second verse, she takes a step back from the heavier emotional lines and describes a specific moment in their relationship when she was encouraged and supported monetarily to see a hypnotherapist. This moment seems much more mundane than the intense emotions in the first verse, but it provides background for a common form of manipulation in a relationship: financial abuse. Money is a very powerful tool for manipulation, and many people feel trapped in abusive relationships because of it. In this verse, Bridgers explains that he spent a lot of money so that she could get some mental health (seemingly a very kind thing to do). Additionally, she implies that she might feel some guilt about the fact that, despite his spending a lot of money, she "only went one time," and that her hopes were fulfilled when he "let it slide." In doing so, she paints the portrait of a helpful partner, who she was ungrateful for (because she only went to one appointment), and who did not hold that against her or get upset. However, Anya Jaremko-Greenwold (2019) notes that "after Bridgers's and Adams's relationship soured on account of his obsessive, controlling behavior, Adams retracted the professional help he'd promised her" (*FLOOD* online).

In the chorus, she asks somebody to "roll the windows down" because of her "emotional motion sickness," adding the metaphor of a moving car (that she's

not driving) for the toxic relationship, which at this moment seems to still be controlling her emotions even after the fact. Her description of her emotional stress as "motion sickness" declares not only that feeling mentally ill can be just as overwhelming as physical ailments, but also that this type of stress can manifest in physical ways. Bridgers also emphasizes how overwhelming Adams's presence is in her mind as she says that she cannot scream anything to drown him out. In this moment, she seems to be struggling with the intrusive thoughts that are so common after trauma, as well as her intimate connection to him. She could also be struggling to get his actual voice out of her head, so to speak, because they were so close, both professionally and romantically. In addition to taking away the professional help he offered her, when Bridgers ended their relationship Adams also refused to release the music they recorded together and rescinded his offer for her to open his upcoming shows (Jaremko-Greenwold 2019). Therefore, this "motion sickness" she describes could also be due to her professional world being turned upside-down after having the courage to end this abusive relationship.

In the next verse–chorus cycle (the lyrics of which are in Figure 3.6), she alludes to dissociative feelings again by saying that she is "on the outside looking through." As stated before, many people who experience dissociation describe it as looking through glass, a bubble, or even a wall. Bridgers cleverly alludes to looking through glass here with a reference in the next line to the saying "people in glass houses shouldn't throw stones," which is typically used to mean that people should not criticize others when they have things (oftentimes similar

I'm on the outside looking through.
You're throwing rocks around your room,
And while you're bleeding on your back in the grass,
I'll be glad that I made it out,
And sorry that it all went down like it did.

I have emotional motion sickness,
Somebody roll the windows down.
There are no words in the English language
I could scream to drown you out.

Figure 3.6: Lyrics to Verse–Chorus Cycle 2, "Motion Sickness" by Phoebe Bridgers

things) for which they could be criticized. She deepens the metaphor by implying that he has broken his room by throwing these rocks and is bleeding due to the broken glass (while lying on his back "in the grass," another nice nod to "glass" through an implied rhyme with the imagery she creates). To end the verse, she says "I'll be glad that I made it out" and that she is "sorry that it all went down like it did." While her apology here could be assumed to mean that she takes some part of the blame, it also could mean that she is sad that it was abusive and that she just wishes that it could have been different.

With the same melody as the chorus, Bridgers next asks Adams why he sings with an English accent, which Jaremko-Greenwold (2019) notes as "one of the most vicious insults" because she is mocking his "phoniness." Bridgers adds that, even though drowning him out seems an impossible task, she is going to try. The lyrics of this modified chorus, the bridge, and final chorus can be found in Figure 3.7. In the bridge, Bridgers notes that he was bored when he met her and emphasizes this point through repetition. Literally, the text says that he tells her,

And why do you sing with an English accent?
I guess it's too late to change it now.
You know I'm never gonna let you have it,
But I will try to drown you out.

You said when you met me, you were bored.
You said when you met me, you were bored.
And you, you were in a band when I was born.

I have emotional motion sickness,
I try to stay clean and live without.
And I wanna know what would happen,
If I surrender to the sound.
Surrender to the sound.

Figure 3.7: Lyrics to Ending Cycle (altered chorus, bridge, ending chorus), "Motion Sickness" by Phoebe Bridgers

after their breakup, that when they met he was just bored. This reading implies that he throws this statement in her face as an insult, claiming that she was there just for his entertainment, nothing more. It could also be read that he was bored *by* her when they met. However, the repetition could also be an opportunity to read it in additional way: that she lifted him of his boredom when they met. Though this might more typically be written "you said you were bored when you met me," the ambiguity still provides room for both interpretations. In this reading, some positive light is shed upon her. Even though this section gives the same line, sung twice, the ambiguity could be seen as mirroring the juxtaposition of the opening line, "I hate you for what you did and I miss you like a little kid." In that line, she draws attention to her conflicting feelings, and in this section she emphasizes conflicting feelings of her role in the relationship. In doing so, she

considers herself (based on his opinions) both his savior from boredom and a temporary play-thing.

She follows this repeated line with a comment on his age, noting that he was already in a band, and therefore an adult, when she was born (Bridgers was 20 and Adams was 40 when they started dating.) About the ending to the bridge, Jaremko-Greenwold says "after he's told her he was *bored* when they met and dated—she taunts the singer (who is twenty years her senior), that 'you were in a band when I was born.' As if to say, *I'm half your age and every bit as talented*" (2019, original emphasis). In doing so, Bridgers not only draws attention to their large age gap, blaming him for his predatory behavior, but also uses the fact of his age to belittle his musical career. Finally, she uses the last chorus to reiterate her "emotional motion sickness," but with a new hope behind more altered lyrics. Instead of the previous defeated attitude from the previous choruses, in which she needs someone to "roll the windows down" for her to be sick because she cannot possibly "drown him out," she sings of "staying clean" and "living without," and then, finally, about "surrendering to the sound." It seems that she is hopeful about trying a different method—facing her trauma head on—to get through her negative feelings after experiencing such abuse.

Throughout "Motion Sickness," Bridgers sings in a breathy timbre, as we heard in "5AM" by The Anchoress and "Sullen Girl" by Fiona Apple, discussed in Chapter II. Her breathy timbre, in similar fashion to these other songs, conveys the dissociation she describes in her lyrics. Bridgers also incorporates quite a bit of reverb in this song, making her voice's exact sonic placement difficult to pin down. While reverb is especially easy to hear at the ends of phrases because the

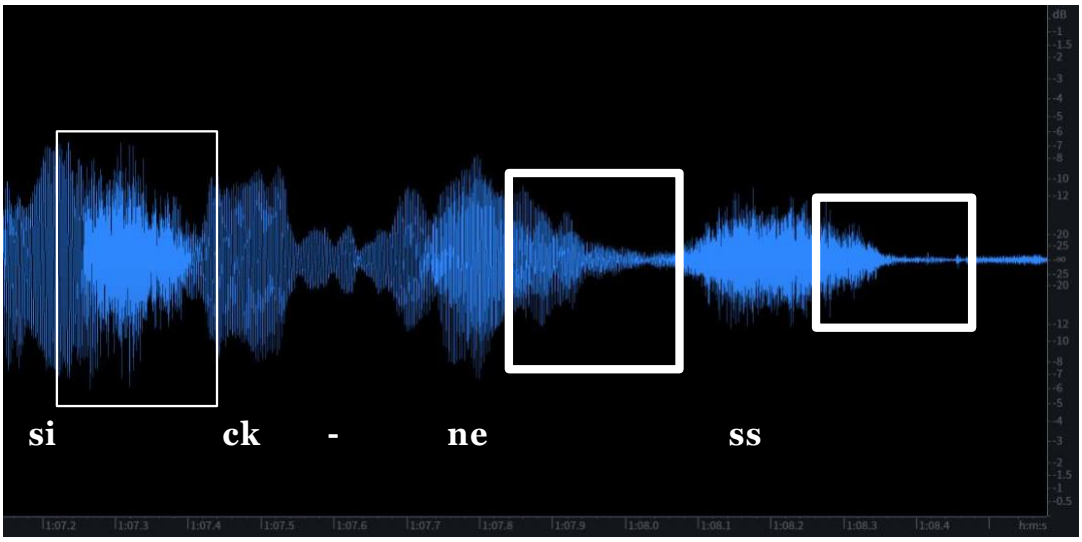


Figure 3.8: Waveform of "Motion Sickness" by Phoebe Bridgers, 1:07.1–1:08.6

sound reflections occur without other vocal sounds to obscure them, in this song reverb is pervasive enough that it is audible before Bridgers finishes some of her phrases, and even some words. As the song begins, it is especially salient on the words "hate," "faked," "hard," and "scream." In Figure 3.8, a waveform isolating the word "sickness" in the first chorus shows two distinct reverb tails in the word—one on the "e" vowel and one as she closes the word on the "s" sound. Additionally, another start to a reverb tail can be seen on the beginning "i" vowel, but the "k" sound covers up the tip of the tail. The fact that there is detectable reverb in multiple places in the word "sickness" aurally reinforces the emotional "motion sickness" that she describes—including the implications of dizziness and nausea. In fact, listeners can hear reverb on more sounds than there are syllables in the word due to the fact that it can be heard on the "i" vowel in the first syllable, the "e" vowel in the second syllable, and the "s" sound at the end. As her voice seems to bounce around the "walls," or maybe into the "corners," of the

virtual sonic space, listeners cannot necessarily detect her actual placement in this space. Through her sonic placement (or maybe lack of placement), her voice sounds aurally disconnected from herself. Additionally, she sounds disconnected from the other musical instruments (namely guitar, drums, and bass) due to the fact that they have more stable positions in the sonic space, with the guitar being panned pretty heavily to the left and the drums having a centralized placement. Since these differences in sound are not possible for a band to create by playing all in the same space, the technological mediation becomes more obvious. Simon Zagorski-Thomas calls effects like this "sonic cartoons" (2018, 349). The dizzying effect of the added reverb on her voice here is especially interesting because the entire word ("sickness") only lasts for just over a second. Reverb can be allowed to ring when it is given more time, but the short length of time given to this word makes the multiple instances of reverb especially powerful. With these reflections occurring on multiple sounds in this word that only lasts a second, the sound seems to mirror the way that trauma and dissociation can affect a survivor's perception of time. In the span of a second, her voice seems to bounce around so many times, which aurally portrays how endless moments of abuse can feel as they are happening. Even though the literal time is very short, the added reverb reflects her voice over and over, stretching her sound in addition to hiding it within the sonic space.

Reverb continues throughout "Motion Sickness," as does Bridgers's breathy delivery. Additionally, Bridgers uses both double-tracking and overdubbing to enhance this effect, similar to the way The Anchoress uses overdubbing in "5AM" (See Chapter II). As discussed previously, people

experiencing dissociation can feel like their life is fuzzy or distorted, or like they are looking through glass. When I listen to this song, it sounds to me like her voice is traveling through a fish-eye lens, being stretched and bent in places where it would not be naturally, or in ways that are "unreal." Additionally, the reverb in this song adds an additional layer of meaning when we consider that it may sound as if she is "in a tiled bathroom" (Doyle 2005, 38), since her title lyric refers to nausea from her "emotional motion sickness." Though her specific lyrics ask someone to "roll the windows down," implying her hypothetical placement in a vehicle, a tiled bathroom would be an ideal place to be if feeling any sort of nausea. Whether a listener imagines her being in a tiled bathroom or some other space, the reverb present continues her sound after she stops singing, creating a dizzying effect (emphasizing her "motion sickness") that makes it difficult to pin down exactly where her voice is in the sonic space. In doing so, the added reverb paints the aural picture that she is disconnected from parts of her voice, especially since it is combined with her breathy voice.

Nicole Dollanganger, "Dog Teeth"

Nicole Dollanganger's "Dog Teeth," from her 2012 album *Curdled Milk*, is also about sexual violence. One *Medium* blogger with username bug (stylized in lowercase) describes the song as being "ripe with body horror and coated in a discomforting air of hopelessness" (2016). Similarly, Michael Doherty (2015) calls it "darkly dolled up" through the "disconnect between Nicole's childlike voice and her brutally dark lyrics." While Dollanganger does not publicly detail her exact experience with sexual assault, she does say that "90% of the time" she

He handed me a pair of pliers and he told me to pull out his teeth,
Because as long as he had them, he'd use them to do bad things.

You're cold on the inside.
There's a dog in your heart and it tells you to tear everything apart.
My body's covered in teeth marks.
Your bite's worse than your bark.
You ruin everything you touch and destroy anyone you love.
You're all over me.

Figure 3.9: Lyrics to Verse–Chorus Cycle 1, "Dog Teeth" by Nicole Dollanganger

writes about "things that [she has] experienced," and adds, "I write better from my personal perspective than an outside perspective" (Doherty 2015). Since she has many songs about sexual violence (e.g., "Dog Teeth," "Angels of Porn" [and its re-recording "Angels of Porn II"], "Uncle"), I unfortunately find it likely that she has experienced such violence firsthand.[17] In this particular song, Dollanganger tells the story of a serial rapist, using the metaphor of a feral dog to describe him and his actions.

Dollanganger opens "Dog Teeth" with some of the "body horror" described by bug (2016), saying "he handed me a pair of pliers and he told me to pull out his teeth" with heavy reverb on her voice (see Figure 3.9 for lyrics of the first verse–chorus cycle). As I will discuss in greater detail later, the strong reverb is added to her voice, but not nearly as much reverb is heard on the piano. Though teeth are not a body part one might immediately connect to sexuality, they are

[17] Even though I have not been able to find any evidence of Dollanganger publicly disclosing an experience of sexual assault, Jason Downie (2020) writes that "Dog Teeth" is "a very personal re-telling of a time when Nicole was raped."

easily connected to violence, especially when talking about dogs. The pain invoked here is palpable, and the aversion that many people have to the dentist could make listening to this even more difficult for some.[18] The procedure she describes here, though, does not involve a doctor's office or any sort of numbing agent, but instead crudely depicts pulling out his teeth "with pliers." On a deeper level, and more importantly, the metaphor also seems to refer to castration. Rape and sexual violence, though technically involving sexual acts, are acts of violence and power, not of sex. Sarah Deer notes that "there is no such thing as nonviolent rape" because "all rape is a form of intimate violation of the highest order" (2015, xix). She continues, declaring that

> We must eliminate a legal distinction between the rapist who hits his victim and the rapist who waits, paying sinister attention, for his victim to pass out. In the latter case, a victim may not actively resist with her body, but she resists with her mind or her spirit (2015, xix).

By this logic, rapists and abusers use their genitalia as a weapon (as dogs use their teeth), so castration would seriously diminish (though not eliminate) their abilities to engage in these types of violence. In the song, the abuser is the one asking for this to happen, so it does not have the same revenge narrative that some other songs contain (see Chapter IV), but she completes the first verse saying that he is only asking her to pull his teeth out "because as long as he had them he'd use them to do bad things." The abuser's plea in this first verse shows that he feels he cannot control himself, and that these are actions he wants to stop, even if it takes drastic measures. In this way, the beginning of the song

[18] Additionally, the 2007 cult horror film *Teeth* connects teeth to sexual violence, and more specifically protection and revenge for sexual violence. In the movie, a high school student finds out that her vagina has teeth, which she uses for her revenge after being assaulted.

reinforces the narrative that men cannot control their sexual urges, to the point that acts of violence occur. Through this narrative, society often conflates male sexual urges and violent urges, absolving them of blame by claiming these violent urges are "natural" and "uncontrollable." This dangerous belief is part of the reason that society often victim blames survivors of sexual violence with questions like "well, what were you wearing?" and "how much did you have to drink?"

Dollanganger describes him as "cold on the inside" to begin the chorus. Again, the second line implies that he does not have ultimate control of himself, as she sings "there's a dog in your heart and it tells you to tear everything apart." She makes reference here to the fact that men are often referred to as "dogs" when they are sexually promiscuous. It is important to note, again, that what society deems as "dog-like" or promiscuous behavior in men can actually be sexually coercive and violent behavior due to the conflation of sex and violence when it comes to men. After her direct reference to him having a dog in his heart, she says that her body is "covered in teeth marks," which provides more insight into these "bad things" he remarks doing with his teeth in the first verse. Though bite marks and bruises are sometimes inflicted during sexual assault, it is not nearly always the case. In this line, these "teeth marks" she references could be literal, but she could instead be describing the emotional pain he has caused her through the violation of her body. Later in the chorus, she emphasizes this point as she states, "you're all over me." In my experience, I often still feel as though my abusers' hands are still "all over me," like spiders, and it makes me feel as though my body is not really my own. It seems that Dollanganger may be

He'd sunk his teeth into the flesh of many others,
Infecting them with whatever was already inside him.
He'd broken all their hymens, cut them open and played inside them.
He'd hollowed out their bodies so they'd feel just as empty as him.

You're cold on the inside.
There's a dog in your heart and it tells you to tear everything apart.
You draw blood just to taste it.
You hold bones just to break them.
You ruin everything you touch and destroy everyone you love.
You're all over me.

Figure 3.10: Lyrics to Verse–Chorus Cycle 2, "Dog Teeth" by Nicole Dollanganger

reflecting on a similar experience here, using the metaphor of bite marks to mean that she cannot stop thinking about his body on hers and the pain it causes her. In between talking about these teeth marks and the fact that he's all over her, she reverses the common phrase "his bark's worse than his bite" to say "your bite's worse than your bark." Often, this phrase is used to tell people that a dog appears more aggressive than they actually are. In this line, though, she pushes against the previous implication that he is remorseful, or that he deserves sympathy because he "can't help it," to state the fact that he is, in reality, *more aggressive* than he comes across. She follows with "you ruin everything you touch and destroy anyone you love," to really hammer on the fact that his actions have serious consequences, and that his violence causes harm to everything and anyone around him, even those that he claims to love.

In the second verse, the lyrics of which are in Figure 3.10, she continues to describe his actions in extremely morbid detail. While the form of this song is

simply two cycles of verse and chorus, she makes modifications to both the verse and chorus in the second cycle. The second verse is twice the length of the first, allowing her to expand her description of his abuse. However, she does not specifically reference her own abuse in the second verse, and instead says that "he'd sunk his teeth into the flesh of many others, infecting them with whatever was already inside him." While talking of his crimes against other people makes sense in a song about a serial rapist, it might also be the case that it is easier to describe what he did to her through the lens of other people. When people dissociate during or after a traumatic event, they often find it easier to picture the abuse as happening to someone else. In this verse, her macabre depictions of the fact that "he'd broken all their hymens, cut them open and played inside them" and that "he'd hollowed out their bodies so they'd feel just as empty as him" seem to be dissociative recollections of her own abuse, especially since they are so specific. The last line further reinforces aspects of dissociation as she talks about the emptiness the victims (probably including herself) feel after the fact. Dollanganger's lyrics are more disturbing on the surface, but these same ideas are present in "Sullen Girl" by Fiona Apple through the metaphor of her "pearl" being taken, leaving her as an "empty shell" (see Chapter II).

In the second chorus, Dollanganger maintains the first two lines about him being "cold on the inside" with a dog in his heart, as well as the last few lines, "you ruin everything you touch and destroy everyone you love, you're all over me." In the middle, though, she uses an opportunity to change the text in order to describe his violence, and his lack of remorse for it, in more detail. Even though she implies that he does feel bad about his actions in the first verse, as well as in

the chorus, in this second chorus she says "you draw blood just to taste it, you hold bones just to break them." Here, she specifically calls out the fact that his intentions are purely violent for violence's sake. As she finishes out the second chorus, and the song as a whole, she reiterates to the abuser, "you ruin everything you touch and destroy everyone you love, you're all over me." In the previous chorus, before referencing specific acts he has done to "them" (or, in my reading, herself from a dissociative perspective), she says that he destroys anyone he loves, and now she says "everyone you love." This change, while small, emphasizes the second cycle's focus on the magnitude of his crimes.

Vocally, this song has some distinct similarities to "5AM" by The Anchoress (see Chapter II). First, in "Dog Teeth," Dollanganger's light, child-like voice is accompanied only by held out piano chords with quite a bit of space in between them, exposing her voice all by itself in between chords. "5AM" also has a thin texture with emphasis on Davies's voice. Dollanganger's voice also stays relatively consistent, as she sings through two melodically and timbrally similar verse–chorus cycles. Additionally, the melody is a bit monotonous, with a small range and not a lot of movement. All of these aspects are similar to both "5AM" and "Me and a Gun." However, Dollanganger's striking baby voice and vocal reverb drastically changes the aural experience. First, the added reverb places her voice all around the sonic space. While Bridgers also has reverb on her voice in "Motion Sickness," it is not quite as sonically overwhelming because of the fact that the texture is quite a bit thicker (including guitar, drums, etc.). In "Dog Teeth," Dollanganger does not have any rhythmic accompaniment, so the reverb is especially salient as her voice bounces around the sonic space like a

racquetball. It sounds as if Dollanganger's voice travels across and around a big "room" and away from her body. Just as someone experiences looking at themselves from across the room as they experience depersonalization, the sound does not stay grounded in one spot and, instead, seems to float around the various walls and corners of the sonic space. Since the piano does not seem to have the same reverb added to it, her voice also sounds sonically disconnected from the piano. In this way, the added reverb on her voice conveys her disconnection from her surroundings, and even possibly from reality.

From a listener's perspective the reverb makes her voice sound as if it is coming from inside one's own head, instead of from a specific place outside the body. This added reverb, in addition to the lack of rhythmic accompaniment, makes the entire song sound like an inner monologue during which time has stopped. One could liken it to scenes in movies where the frame pauses and we hear only the voiceover of the narrator or protagonist. This song, then, very saliently conveys interpretations from scholars discussed earlier that say reverb can be heard as inner thoughts, in addition to implying emotional emptiness (Doyle 2005, 30; Burns 2016, 164). Sonically, her baby voice reinforces this emotional emptiness. She sings these really graphic lyrics in this voice that sounds emotionless; she does not convey anger or fear, but just says these macabre, matter-of-fact statements with an eerie numbness. In doing so, she viscerally portrays her dissociation as she describes observing these horrific acts through her emotionless baby voice, added reverb that makes her voice sound like it bounces around inside one's head, and a lack of rhythmic accompaniment that conveys temporal stasis. The song, then, sounds like an all-encompassing

Figure 3.11: Waveform (0:00–1:10), "Dog Teeth" by Nicole Dollanganger

inner monologue, into which a listener is enveloped. In Figure 3.11, I show the waveform for the first verse–chorus cycle of "Dog Teeth," on which I have drawn attention to some of the more obvious reverb tails. As one can see, the reverb is prevalent throughout the entire cycle, even when the waveform is not zoomed in. Additionally, reverb tails can be found even in places that I did not mark, which visually shows how pervasive this intense reverb is throughout the song. Though only the first cycle is shown here, the reverb continues in similar fashion in the second cycle.

In each of these songs ("Motion Sickness" and "Dog Teeth"), reverb is used to aurally reinforce Bridgers's and Dollanganger's dissociative feelings after sexual abuse. Bridgers says that she "can hardly feel anything, at all," and is "on the outside looking through," both of which are commonly described in survivors of sexual assault experiencing dissociation. Dollanganger sings about the abuse of others in such a specific manner that it seems she is actually describing her own abuse, from an outside perspective, in addition to describing the abuser as having

"hollowed out their bodies so they'd feel just as empty as him." Just like van der Kolk's patient, Marilyn (see Chapter II), Dollanganger depicts her abuse as happening to someone else, or from a dissociated vantage point. In both songs, the added reverb serves to convey these dissociative feelings of numbness and separation from the body. By using reverb to make it sound as if their voices are bouncing around the entirety of the sonic space, instead of staying in one, stable spot within that sonic space, both Bridgers and Dollanganger powerfully portray the disconnection survivors feel from their bodies, as well as disconnection from their surroundings, represented through the instrumental accompaniment. In summary, both Bridgers and Dollanganger (in addition to others I have not had the space to dive deeper into here) use reverb as a tool to make their voices sound disconnected from their environment, without a singular, stable location. Additionally, the fact that the added reverb is used differently on their voices than it is on other instruments, the technological mediation becomes obvious because these differences in sound cannot be made naturally in the same location. In this way, the mediation becomes another way that they are able to show how dissociation makes reality blurry, whether you feel disconnected from your body, surroundings, or reality all together. Some other songs about sexual violence that also include reverb to convey dissociation, in similar fashion to the examples I analyze here, are "Oblivion" by Grimes (2012) and "motions" by MOTHICA (2021).

CHAPTER IV: NOISY VOCALS AND RAGE

Everyone gets angry at times. Ranging from mild frustration to red-hot rage, anger is a feeling that everybody is familiar with. Most of the time, we are able to pinpoint exactly what has made us angry—maybe a spat with a friend or misplacing something important—and make sense of the mental and bodily responses to our emotional state. For those living in trauma-affected bodies, however, the smallest triggers can quickly cause intense rage, and sometimes seemingly for no reason. These blow-ups can be confusing and extremely frustrating, both for the person experiencing the rage, and for those that are in their path as they experience it. Not being able to pinpoint how or why their own rage is provoked can cause people to feel out of control, crazy, and childish, among other things, and it can make it especially difficult to maintain relationships of any kind with other people. Anger is an emotion commonly experienced by everyone, but this type of intense rage at seemingly small triggers often occurs after trauma and is a consequence of the "fight" survival response.

So how exactly do we experience anger and rage? Zachary Wallmark (2022) outlines some of the theories about the way that humans experience emotions, including the appraisal theory, which is rooted in human embodiment. He notes that it was previously believed that physiological reactions were the "byproducts of mental states" and that "the emotion itself is an unreachable interior experience that receives external expression through the body" (2022, 34). However, in the appraisal theory, Wallmark explains that William James (1890) "placed human embodiment front and center in the process of affective experience" to show that "instead of causing bodily changes, emotions are *caused*

by the body" (Wallmark 2022, 34, original emphasis). In other words, *anger* is not what makes one's heart beat faster and blood pressure rise. Instead, our heart beating faster and our blood pressure rising causes us (with some help from our logical processing center to assess the outside stimuli causing the bodily changes) to feel angry. Importantly, Wallmark states that

> trembling in fear while watching a horror movie is a starkly different phenomenological experience than trembling in fear while being stalked by an actual killer. But this is precisely where appraisal theory becomes useful—depending on what we perceive about the environment, the same physiological reaction can lead to different appraisals (and thus different affects, from fearful titillation to outright terror) (2022, 35).

In a trauma-affected brain, though, the appraisal system is skewed by one's past traumatic experience. Since the fight, flight, and freeze responses block contact with the logical processing part of the brain, reactions to triggers (e.g., sounds, colors, smells) *can* cause the same fear someone experiences during a traumatic assault. For example, one of my most traumatic memories is associated with the board game Go. One day in a class, we watched a scene from the movie *A Beautiful Mind*, in which the characters are playing that game. While we watched, I was so overwhelmed with fear that I had to leave, and I felt as though I was being assaulted again in that very moment, even though I was perfectly safe. The same can be said of other emotions, like anger and rage, in that the blockage from the logical processing part of the brain makes it difficult for a trauma survivor to assess when a bodily reaction is just that (as in the horror movie example above) or when it is necessary for survival.

In the previous two chapters, I show how breathiness and reverb, respectively, can convey hypoarousal and dissociation in songs about sexual

assault. In this chapter, I move my focus to the opposite end of the arousal spectrum and argue that other types of vocal timbre—namely growl, rasp, and screaming—can portray hyperarousal and rage after sexual trauma. In other words, in my previous two chapters I examine vocal expressions of dissociation after trauma (coming from the freeze response), which is essentially having no reaction to things that would normally be a big deal, while in this chapter I examine vocal expressions of rage after trauma (coming from the fight response), which is a huge reaction to things that are typically trivial.

Hyperarousal and Sexual Assault

When the amygdala—or the brain's "smoke detector" (van der Kolk 2014, 60)—judges something as dangerous, the brain prepares to fight it off or run away from it (what we refer to as the "fight" or "flight" responses). Though these are two distinct responses, resulting in different protection methods, they are actually both caused by the same physiological responses. Our bodies ready themselves to use a lot of energy by activating the Sympathetic Nervous System (SNS), or the nervous system's "accelerator" (van der Kolk 2014, 79). The SNS pumps the brain full of stress hormones like cortisol and adrenaline, which tell the body to increase things like heart rate, blood pressure, and breath speed in order to ready our body to fight off or run away from an attack (van der Kolk 2014, 61). In a moment of danger, this boost of energy is essential for one's survival, and the body is typically able to return to a regulated state once that danger passes.

However, after experiencing something traumatic like sexual assault, the body can have trouble returning to this regulated state because it becomes hypervigilant, always looking out for possible threats. Since trauma makes the prefrontal cortex (where our logical processing happens) go offline, it can be difficult to think things through or say what we are thinking. Due to the fact that the "thinking" part of the brain shuts down, as Sarah Wright notes, "the amygdala is getting no message to calm down," so "logic is not as accessible" (2020, 36). When that happens, the brain continues to flood the system with cortisol and adrenaline in moments that are not life-threatening, causing the body to continually activate panic mode (van der Kolk 2014, 61). In other words, trauma can cause the body to go into attack mode way more often than is necessary, which can be confusing and frustrating, as well as exhausting.

Kimberly Flemke has interviewed incarcerated women who have opened up about the ways they feel their rage is connected to their past traumas (2009, 125). While there are four distinct categories of trauma that Flemke cites as causing rage in these women, sexual abuse accounted for a third of the participants' rage. One participant, Ellie, says the "first time I felt rage I was 11—I was molested at 11. [I] think about it a lot" (2009, 129). Another woman, Bonita, describes how her current partner triggers those feelings from her past, saying "my boyfriend triggers somebody from my past—my brother. He raped me when I was 7 years old. I felt rage" (2009, 129). In this particular study, the women interviewed were, at the time, incarcerated due to being involved (in one way or another) in moments of intimate partner violence. These cases of rage after

trauma, then, were extreme and unfortunately resorted in outwardly violent behaviors.

Many of the participants described specific moments of their rage during which they acted violently as being "blacked out" or "blanked out" (2009, 130–131). One woman, Peggy, even says that in those rage-filled moments "I surprised myself" (2009, 130). In each of these cases, these women were triggered by something that reminded them of their previous traumatic experience(s), causing them to go into fight mode to protect themselves. These examples illuminate not only how debilitating hyperarousal can be, but also the fact that both dissociation and rage can involve differences in how one processes time, and especially that they can both lead to losing time. In this way, trauma symptoms at both extremes of the arousal spectrum have some overlap in the effects they cause, so even when survivors have what seem like opposing reactions to trauma, they can still experience some of the same outcomes.

As these first-hand accounts show, angry outbursts that accompany hyperarousal after trauma can be very intense and can make maintaining relationships of any kind (e.g., romantic, friendly, work) quite difficult. In these cases, it even caused them to act violently towards others in ways resulting in arrest. When the brain misinterprets safety for danger, our bodies react by attacking people and situations that are not actually dangerous in order to protect themselves, and that can easily cause tension in a relationship. For example, Bonita (from the aforementioned study) says that "the smell of alcohol on my partner's breath triggers rage. I re-live the rape moment" (Flemke 2009, 134). Even though her partner having alcohol on their breath does not mean that she is

going to be raped, her mind connects the smell with her previous experience and sends her body into the fight response. As Sarah Wright states, "*anything* that was occurring at the same time of the [trauma] can become linked and encoded as a sign (trigger) that the event may happen again" (2020, 43). Additionally, she mentions that the fact that when survivors react in these ways and the trauma does not reoccur, our lack of prefrontal cortex activity connects that reaction with the avoidance of the trauma. In other words, our brains connect the fact that we reacted with rage and the trauma did not happen, so it reinforces the idea that our reaction protected us. Navigating relationships with other people can be difficult when smells, colors, and sounds can all be triggering someone into rage. Van der Kolk (2014) says,

> You can get along with other people only if you can accurately gauge whether their intentions are benign or dangerous. Even a slight misreading can lead to painful misunderstandings in relationships at home and at work. (…) Faulty alarm systems lead to blowups or shutdowns in response to innocuous comments or facial expressions (62).

Making matters worse, when the body goes into a hyperarousal state, Heleen Grooten says that "our hearing is focused on outside sounds, especially what some clinicians refer to as 'predator sounds,' or the extreme ends of both high and low frequency. Human voices are therefore less understood" (2023, 34). To say it another way, when other people around us may be trying to help us get back to a more neutral state, our high arousal literally makes it difficult to understand them, even if we are trying.

Growl, Rasp, and Rage

Survivors' ears, therefore, are affected by rage and the state of hyperarousal, and so are their voices. Most people can assess when someone is angry based on their speaking voice. Studies have shown not only that anger is more consistently recognized in someone's voice in comparison with other emotions, but also that "there is a cross-cultural generality in the ability to recognize Anger from speech alone" (Green et al. 2010, 139). In other words, speech patterns of anger are similar all around the world, and are therefore almost universally recognized, even across animal species (Colapinto 2021, 78–82). In their examination of multiple studies on the vocal qualities of anger, Green et al. note that "speech identified as angry has generally been found to be fast, loud, and often has a rising melody type," and that "yelling, shouting, and screaming are readily recognized as angry speech" (2010, 139). More specifically, they show that "the fundamental frequency…increases during Anger, and Anger expressions tend to be more intense…and faster" (2010, 153–54). As I discuss further below, Wallmark (2018, 2022) makes connections between high arousal, the body, and what he defines as "noisy" timbres, such as those consistently used in death metal. He provides analysis of both instrumental and vocal timbres to demonstrate how these various sounds affect listeners. Building on his work, I look specifically at the use of growl, rasp, and screaming in "Swine" by Lady Gaga and "Liar" by Bikini Kill to show how these high arousal sounds effectively portray hyperarousal and rage following trauma from sexual assault.

As stated previously, vocal timbre (in both speech and song) is particularly adept at communicating the speaker's or singer's level of arousal. In Chapter II, I

note that sounds involving low muscle tension, such as breathy singing, imply a low arousal state. The opposite is also true, meaning that vocal sounds high in muscle tension can be indicative of high arousal states like rage. Wallmark says "effectively communicating a high-intensity, high-arousal, high-potency emotion, such as 'hot' anger, requires greater exertion than communicating a low-intensity, low-arousal emotion" (2022, 40). Grooten describes the voice in these various arousal states, and about the sympathetic (or high arousal) state, she says, "the voice is characterized by increased overall muscle tension, speaking and singing is characterized by a quicker tempo, greater volume, often with more 'staccato' or emphasis" (2023, 34). Malawey offers a variety of sounds that can be produced when the vocal muscle tone is tense, which she labels as "pressed phonation," including "throatiness, strain, roughness (variously described as rawness, rasp, harshness, hoarseness, huskiness, creak), and growl" (2020, 102). Heidemann also notes that "a hissing or grainy vocal timbre" can be produced with folds that are more tense, as well as the fact that singers use "creak" and "growl," by placing vibrations up higher in the vocal tract, in order to "protect their vocal folds from excessive wear" (2016, [3.6] and [3.10]). Wallmark analyzes a specific type of growl commonly heard in death metal music, called the "death growl" (2018, 72), saying that "processing these kinds of distorted, 'growl-like' vocal timbres can involve parts of the autonomic nervous system active in the 'fight-or-flight' response" (2018, 75). Through his analysis, Wallmark shows how the intense, distorted sounds are well-suited to convey commonly found themes of rage, death, and evil in death metal music.

Wallmark discusses noisy timbre more broadly in his 2022 book, saying that noisier sounds are "typically perceived as an acoustic index for heightened bodily arousal and exertion" (2022, 32). Additionally, he notes that "in its noisier forms, timbre can function as a trigger for certain negative biopsychological reactions. (…) We react to timbre reflexively based on the self-protective contingencies of our perceptual systems" (2022, 32). In other words, these noisier timbres not only take more muscle effort to create, which we can feel sympathetically as we listen, and convey these high arousal states, but they can also literally cause a reaction in the nervous system. Survivors in states of hyperarousal can be triggered by smells, colors, sounds, etc. that remind them of their assault, which means they can be thrown into states of rage by stimuli that would not illicit such a response in someone without that specific traumatic experience.

By using timbres that are—by Wallmark's definition—"noisy," survivors are able not only to convey the rage they feel, but also activate listeners' nervous system and bring them into a state of higher arousal. I argue, then, that vocal growl, rasp, and screaming are often used in similar ways in songs about sexual assault to portray these states of hyperarousal and rage, which are common effects of trauma. In order to see how these sounds are used in songs about sexual violence, I analyze "Swine" by Lady Gaga—in which Gaga sings about being raped by a music producer at the age of 19—and "Liar" by Bikini Kill, which is about Kathleen Hanna's reaction to the news that her friend, "Betty," has been raped.

Analyses

Lady Gaga, "Swine"

Lady Gaga has opened up in multiple interviews, including those with Howard Stern and Oprah, about being raped at the age of 19 by a music producer 20 years older than her. Stern presses her for a discussion of the traumatic event, eventually saying "you wanna be a singer and you're starry-eyed and you're like, 'I just wanna sing, I love singing,' and some guy swooped in and took advantage of that." Gaga responds back with the unfortunate fact that "it happens every day and it's really scary and it's sad" (*The Howard Stern Show* 2014). She also notes that the abusive producer referred to his sexual abuse as them having previously dated and, reacting to that, Gaga says, "you were 20 years older than me, how was that a date?" (*The Howard Stern Show* 2014). Lady Gaga has written multiple songs about experiencing sexual abuse, including her 2013 song "Swine" and her 2015 song "Til It Happens to You." The latter was commissioned for the 2015 documentary *The Hunting Ground*, which examines sexual assault on college campuses and how these cases are handled (or rather *not* handled). In "Swine," she expresses her anger many years after this experience and, about the song, she says "I wrote a song called 'Swine'; the song is about rape. The song is about demoralization. The song is about rape and fury and passion, and I had a lot of pain that I wanted to release" (*The Howard Stern Show* 2014).

"Swine" was released November 6, 2013 on Gaga's *Artpop* album and features elements of EDM and dubstep. In a controversial performance of the song at the 2014 South by Southwest festival, Gaga invited visual and performance artist Millie Brown to vomit paint on her while she sang, played

drums, and, later, rode a mechanical bull.[19] About the performance, she says that she wanted to incorporate all of these demoralizing situations to say to the world (including to her abuser) "you could never, ever degrade me as much as I can degrade myself" (*The Howard Stern Show* 2014). While her performance at SXSW in 2014 was a visual representation of her degrading herself, the lyrics and timbres she sings in "Swine" provide an aural representation of this demoralization of herself.

Throughout "Swine," Gaga's lyrics emphasize both her fury and her demoralization. In each section, Gaga uses text that can be read both as something that her abuser may have said to her (reinforcing her demoralization) and as something that she could be saying to her abuser (conveying her fury). In the first verse of "Swine" (see Figure 4.1), Gaga starts the song saying "hush up, don't speak, don't wanna hear another, not another word from you." At first, this sounds like she is confidently telling her abuser to be quiet, but it also could be interpreted as words that were said to her during and/or after being assaulted. In this reading, she performs her own experience of being silenced by her rapist, placing herself as the intended addressee of the command to not speak. These simultaneous interpretations emphasize both her fury at her abuser about the fact that she was so intimately violated and the demoralization she felt during, and after, the assault. Even with the anger she has toward her abuser, she also

[19] Many, including Demi Lovato, claimed that the performance promoted bulimia due to Millie Brown's continuous regurgitation of paint (See Coleman 2014). Gaga responded to these on her interview for *The Howard Stern Show* on December 2, 2014, saying that Millie Brown is an artist and was regurgitating paint, not food, and that "everybody's just, like, looking for something to bitch about."

shows here the continued disgust that she feels about herself. In the next line of the verse, she says "you're just an animal, tryin' to act real special, but deep down you're just a shrew." Though the title of the song is "Swine," meaning pig, here she describes a shrew, which is a small rodent. Her use of shrew here affects the interpretation of who is being spoken to because of the fact that the term shrew is often used to refer to women, and especially those who reject men's sexual advances (e.g., William Shakespeare's *Taming of the Shrew*). On Urban Dictionary, the definition for shrew is simply, "a woman who is a bitch." This line sounds like something an abuser would say to a victim, not only to degrade them in the moment, but also to discredit her after the fact.

In the prechorus, Gaga sings about having "a little more just to stay out of my mind." Alcohol and/or other substances are often used by survivors of trauma to disconnect from their pain, and here she emphasizes that fact before saying that it's "when I'm not thinking with you that I act like a swine." Though the first line of the prechorus seems to be only about herself, the second line is a bit more ambiguous, but not necessarily in the same way that the first verse is. Is she saying that when she is with him that *she* acts like a swine? Her use of "I" here would imply that. In this reading, she places blame on herself for her assault, which is extraordinarily common for survivors to do (and for society to do to survivors). In this way, she uses the text here to place at least some of the blame on herself (especially after saying she should have a bit more to get out of her mind), which could be both expressive of her own feelings around the assault and commentary on society's rampant victim blaming after a survivor opens up about

Hush up/Don't speak, don't wanna hear another
(not another word from you)
You're just an ani-/-Mal, tryin' to act real special
(but deep down you're just a shrew)

Maybe I should have a little more just to stay out of my mind
'Cause it's when I'm not thinking with you that I act like a swine
Act like a swine/Act like a swine

I know, I know, I know, I know you want me
You're just a pig inside a human body
Squealer, squealer, squeal out you're so disgusting
You're just a pig inside
Do ya? I know, I know, I know you want me
You're just a pig inside a human body
Squealer, squealer, squeal out you're so disgusting
You're just a pig inside
Swine, swine
Swine, swine

Swine!

Figure 4.1: Lyrics to Verse–Chorus Cycle 1, "Swine" by Lady Gaga

their assault. Whatever the interpretation, the pronouns here make it difficult to follow who is who. Alcohol and drug use are frequently used to discredit assault victims, and the prechorus seems to tell the story of someone who has a bit too much (in order not to think) and "acts like a swine," or, as I read it, is assaulted. After the prechorus, she calls out her abuser, saying "you're just a pig inside a human body" and "you're so disgusting." Though she seems to be speaking now to an abuser, the text still could be read in a way that she is placing these descriptions upon herself. The fact that she could be switching address throughout emphasizes the fact that even though she is trying to call her abuser out for being disgusting (because of the things he did to her), she attaches the same adjectives to herself because of the fact that she was abused by him. The

chorus is followed by a big buildup and drop, which leads into an instrumental dance section with some sporadic screams, or what one could possibly describe as squeals, saying "swine!"

In the second cycle of the song (see Figure 4.2), the verse further reinforces the confusion and double address (to her abuser and to herself) of the previous cycle. Gaga starts saying "be that hog, sweat it out you squealer, let your body jiggle." Again, this line seems to be directed back at her, especially when she sings "let your body jiggle." In similar fashion to the first verse, the text here seems as though it might be things an abuser would say to a victim. However, as the verse continues the words appear to be her reflections on her experiences and what may have been said to her because of her use of "he" and "your" pronouns—in reference to an abuser and herself, respectively. The next line starts with some word play, as she sings "slap her skin, he loves to watch your ass go wiggle." In regular speech, one might say this line with a short pause where I have placed the comma, after "skin." When Gaga sings the line, however, she places the short break in between "he" and "loves," which makes "slap her skin, he" sound like "slap her skinny." In doing so, she reinforces the violence involved in sexual assault.[20] Even though not all rape involves physical abuse (and by this I mean slapping, punching, etc.), all sexual assault is violent, and her making this line sound as though she says "slap her skinny" draws attention to the violence

[20] While "slap" is technically the violent term here, the phrase "slap her skinny" typically refers to some sort of severe violence (e.g., slapping someone across the face, giving someone a black eye) and "slap her skin, he…loves to watch your ass go wiggle" seems to imply what many engage in as fun sexual play (e.g., spanking).

Be that/Hog, sweat it out you squealer
(let your body jiggle)
Slap her skin, he/Loves to watch your ass go wiggle
(it's the thrill of ecstasy)

Maybe I should have a little more just to stay out of my mind
'Cause it's when I'm not thinking with you that I act like a swine
Act like a swine/Act like a swine

I know, I know, I know, I know you want me
You're just a pig inside a human body
Squealer, squealer, squeal out you're so disgusting
You're just a pig inside
Do ya? I know, I know, I know you want me
You're just a pig inside a human body
Squealer, squealer, squeal out you're so disgusting
You're just a pig inside
Swine, swine
Swine, swine

Swine!

Figure 4.2: Lyrics to Verse–Chorus Cycle 2, "Swine" by Lady Gaga

involved in sexual assault. After the verse, she sings the prechorus and chorus again, followed by another buildup and drop.

Timbrally, Gaga uses growl, rasp, and—appropriate for the title of the song—squeals that increase in intensity and noisiness as each cycle progresses. In the first verse, she uses growl on the first "don't" and on "-mal" (of "animal"). Professionals running the CVT (Complete Vocal Technique) Research Site explain that growl is produced when the epiglottis is tilted back and allowed to "rattle" against the arytenoid cartilages. In doing so, they note that it "almost covers the vocal cords," which is what creates the "dark 'covered' sound" associated with

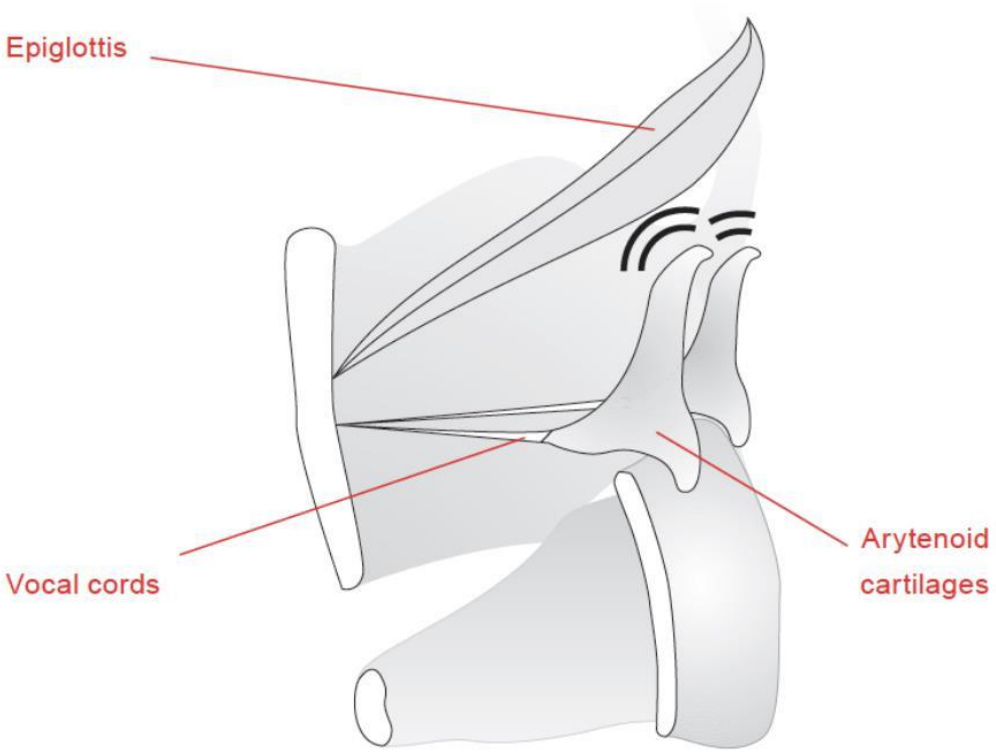


Figure 4.3: Diagram from CVT Research Site Showing the Vocal Production Method for Growl

growl.[21] I have included their diagram of what the production of growl looks like in Figure 4.3. Louis Armstrong is a very famous example of what this vocal timbre sounds like. While the sound has a lot of obvious vibrations, and can be described as rough, growl does not necessarily sound painful or unhealthy. She uses growl to emphasize the command "don't speak," as well as the word "animal." The attention drawn to these words is powerful because it stresses a command that is simultaneously being given to her and thrown at her abuser, as well as a word that encompasses the entire point of the song—that her abuser

[21] See https://cvtresearch.com/description-and-sound-of-growl/#.

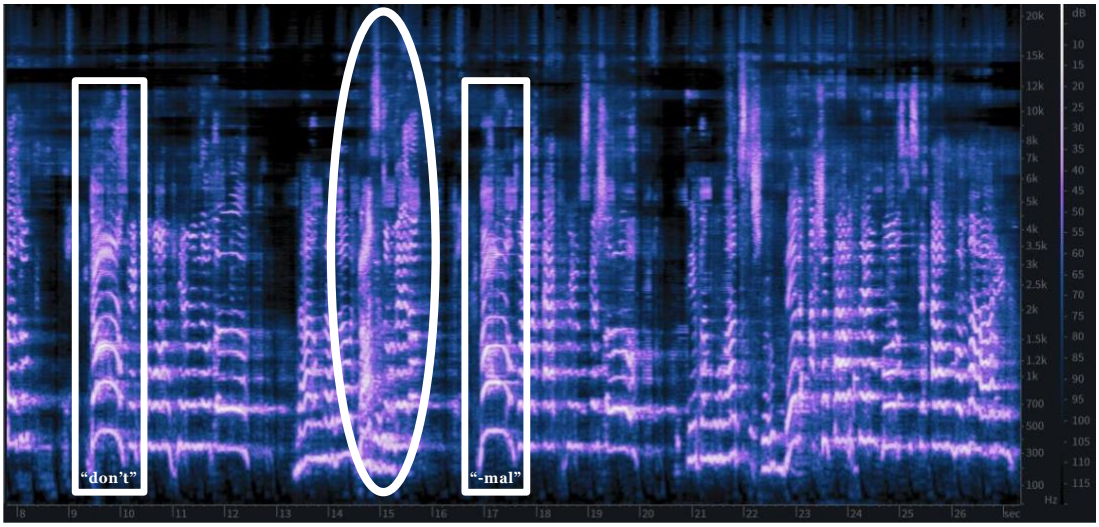


Figure 4.4: Spectrogram of Verse 1 (0:08–0:27), "Swine" by Lady Gaga

(and also her, when considering the demoralization and shame directed toward her) is an "animal," not worthy of human status. Those moments are highlighted with boxes in Figure 4.4, which shows a spectrogram of Verse 1. The arced lines show the moments where growl happens, and one can see that there are many bright frequency bands, but the upper frequencies are blurred together, almost as if they were scraped a little bit with sandpaper. In another moment during the first verse, when Gaga says "you're just (an animal)," she incorporates an even harsher sound, rasp, which I will discuss in more depth later. That moment of rasp in Figure 4.4 is shown with an oval, and one can see that there is even more fuzziness between the many frequency bands than in the moments of growl, implying an even rougher sound.

Gaga continues to use rasp in the prechorus and chorus to emphasize the words "act" (in "act like a swine"), as well as "out" and "-gust-" (of "squeal out, you're so disgusting"). In comparison to the growl sound she uses earlier, her rasp sounds even harsher and gritty. While growl is typically produced by rattling

the epiglottis against the arytenoids, rasp sounds more hoarse, and to my ears it sounds less healthy and more painful. To me, growl sounds wet (like there is actually saliva being used in the sound) and rasp, instead, sounds very dry and scratchy. In her discussion of vocal roughness, Malawey includes rasp, hoarseness, harshness, and growl, but quotes Rob Bowman to specify that rasp is "the practice of harmonic distortion in the overtone series brought about through lateral pressure of the vocal cords" (Bowman 2003, 117n11, quoted in Malawey 2020, 103). In other words, rasp is produced by pressing the vocal folds together super tightly, resulting in the upper overtones to be active, but distorted. In the spectrogram in Figure 4.5 (and previously in Figure 4.4), the boxes show where Gaga sings in her raspy voice. Though there is some distinction still between the upper frequencies, they are not as clearly separated. Interestingly, these rougher sounds actually look a bit rougher on the spectrogram. Additionally, she uses such a rough sound that she really does not even hit a specific pitch. Since the sound is so rough, and because she does not hit a specific pitch, it looks like someone scraped all the upper frequencies together, and that makes them appear quite grainy on the graph. Listening to this section, her rasp emphasizes the idea that her abuser (or possibly her—directed back at herself) "acts like a swine" and is "so disgusting." Each of these small phrases is repeated at least once, and she sings them in practically the same way each time, adding even more of this gritty emphasis. Previously, she used the growl to add this rough flavor to her voice, but

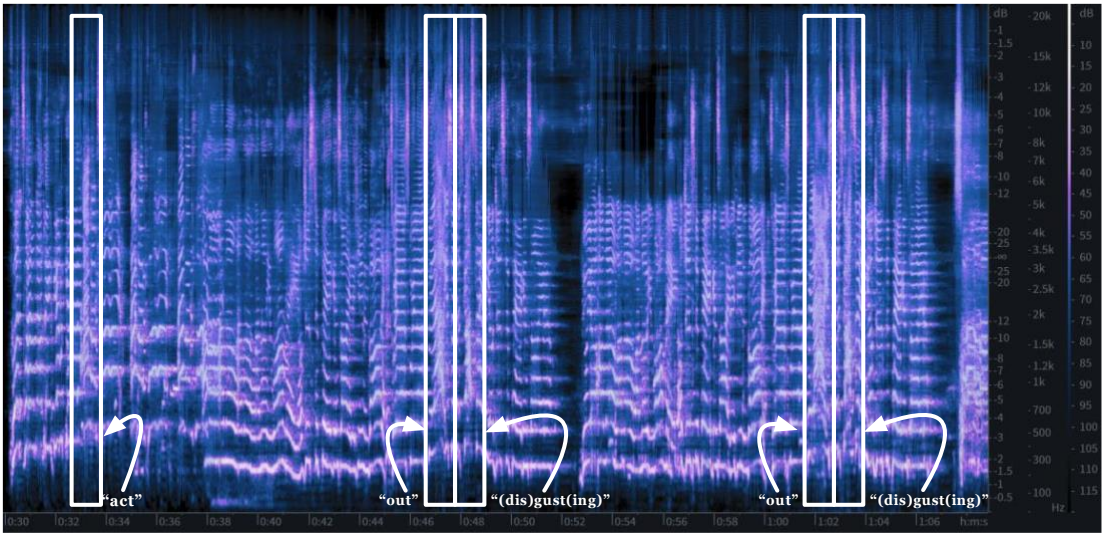


Figure 4.5: Spectrogram of Prechorus (partial) and Chorus 1 (0:30–1:07), "Swine" by Lady Gaga

she quickly goes on higher alert, heard through the rougher rasp voice, as she sings about the actions of her abuser.

After the chorus, as stated previously, there is a buildup and drop, customary of EDM music. During the drop section, Gaga squeals "swine!" a couple of times. Since I have isolated her voice through the music rebalance tool on Izotope RX, which is an imperfect process, the spectrogram does more obviously show some non-vocal sounds in this section (which does not have very many vocal sounds). That being said, her two squeals are clearly shown in boxes in Figure 4.6. When she says "swine" in each of these instances, her throat sounds extremely constricted and tight, and the vocals sound a bit like pig squeals, or maybe even like mild screams. As the spectrogram shows, these sounds have almost no distinction between the various overtones present, but there is still activity in those upper frequencies. Instead of depicting distinct frequency bands above the fundamental, they all blur together, implying an extremely small

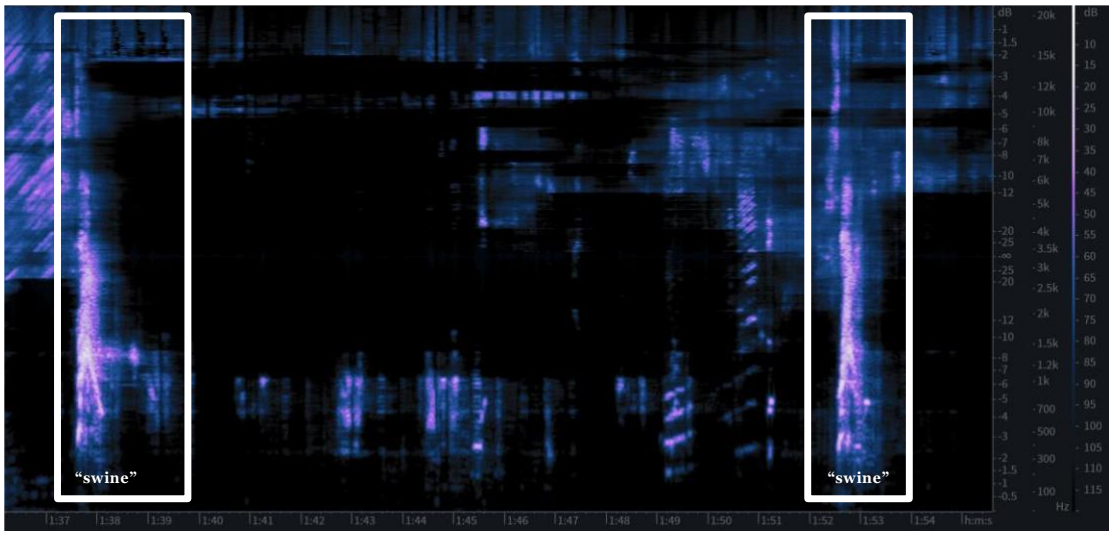


Figure 4.6: Spectrogram after Buildup and Drop 1 (1:36–1:55), "Swine" by Lady Gaga

spectral slope and very harsh sound. This squealy timbre is fitting as she reinforces the fact that her abuser is nothing more than "swine," or "a pig inside a human body." Additionally, the buildup in harshness paints a picture of increasing arousal and anger as she sings about her abuser, as well as about the demoralization and disgust she has experienced and been made to feel for herself.

The EDM buildup and drop right before these moments also aurally reinforces her increasing energy and stress, which helps to support her timbral expressions of hyperarousal. Similar to other songs I have already discussed (e.g., "Sullen Girl" by Fiona Apple, "Dog Teeth" by Nicole Dollanganger), "Swine" has two cycles that repeat essentially the same material. By organizing the song in this way, and by singing the material in mostly the same ways, Gaga starts with an already high arousal sound, growl, and increases the harshness in her sound to rasp, and then to squeals in each cycle. The EDM buildup and drop emphasize this increasing timbral intensity, and Gaga uses both to convey high arousal as

she sings about degradation and rape. Though her anger at her abuser is justified after being violated by him, her lyrics (and famous performances) imply that much of this anger is being directed at herself. She directs "you" at herself during the song, creating ambiguous address for both her abuser and herself. She sings about "squealing out" because she's "so disgusting," using her harsh, raspy voice. It seems that she tries to direct the rage towards her abuser, calling him a "swine" and "just a pig inside a human body," but since hyperarousal does not allow contact with the logical processing part of the brain, her anger gets redirected at herself, and she blames herself for what happened. In doing so, these high arousal sounds are indicative of her rage state, which on the one hand (when directed at her abuser) seems logical. However, her rage is also directed at herself because she was degraded by him and she feels disgusting and unworthy, which is difficult to overcome, especially when the logical processing part of the brain is offline.

Bikini Kill, "Liar"

Bikini Kill is the band considered to be the face of Riot grrrl punk, and Kathleen Hanna is Bikini Kill's frontwoman. Many have spoken about Hanna's anger and intensity on stage and how it rebelled against ideas of "proper womanhood" (see, e.g., Gottlieb & Wald 1994, Marcus 2010, Sormus 2015). Hanna wrote songs for Bikini Kill expressing anger, sexuality, and her girlhood feelings, while discussing violence against women, especially sexual assault and rape. Sara Marcus describes a book that impacted Hanna's concept of womanhood and her own thoughts, *Blood and Guts in High School* by Kathy Acker, saying it "suggested

that the realities of women's lives, especially with regard to sexuality and abuse, were too complicated to be told through typical narrative. Only contradictions, ruptures, and refusals stand a chance of conveying the truth" (2010, 35). These contradictions can be found in Hanna's vocal timbre across many of the band's performances. Her voice is distinctly powerful, and Gayle Wald stresses her emotional range, saying "Hanna's vocals…could range—sometimes in the course of a single song—from sweetly childlike to bone chilling" (Wald 2018, 267–68). In my analysis, I show how she uses guttural screaming to convey her rage. I also argue, though, that she juxtaposes these screams with a soft, child-like voice to aurally portray the uncomfortable nature of both extremes (hyper- and hypoarousal) occurring simultaneously.

The Riot grrrl movement was dedicated to the unedited expression of female oppression and trauma, most especially through amateur punk music and zines. Zines are places for poems, writings, pictures, drawings, collages, and basically anything you could put on paper, and these specifically focused on women's place in society and hatred of the patriarchy. They were distributed weekly for some time, and women in many places in the US began creating their own feminist punk zines. About Riot grrrl and punk music, Hanna says,

> I'm really interested in a punk rock movement—an angry girl movement—of sexual abuse survivors…I seriously believe it's the majority of people in this country have stories to tell that they aren't telling for some reason. I mean, with all of that energy and anger, if we could unify it in some way (Marcus 2010, 91).

During her time as a crisis counselor at a domestic abuse shelter, she heard stories of traumatic abuse all the time (Marcus 2010, 38). Her songs speak to the horrors she has both experienced and heard about, ranging from objectification

Betty's got the back of her dress all ripped out
Mama's got her face muffled, twist and shout
Ah, you're a liar

Liar, liar, you got your pants on fire
Liar, liar, hanging by the telephone wire
You know, you're a goddamn motherfucking liar
You know you are, alright

You profit from the lie, you profit from the lie, yeah
You profit from the lie, you profit from the lie
You profit from the lie, you profit from the lie, yeah
You profit from the rape lie, baby

Figure 4.7: Lyrics to "Verse–Chorus" Cycle 1, "Liar" by Bikini Kill

to sexual assault and rape, and to incest. She reacted to these traumatic stories by writing songs and performing with rage, sexuality, and purpose. "Liar" is one of many songs she has written about rape, portraying her response after a friend (who is called "Betty" in the song) was raped.

The song begins with jarring guitar squeals and distortion and strong bass before Hanna enters first with a couple of grunts on "huh" and then shout-singing "Betty's got the back of her dress all ripped out." She continues in her aggressive, pressed timbre to call out her friend's rapist, and the patriarchy in general, as a "goddamn motherfuckin' liar" before repeating "you profit from the lie" multiple times. The lyrics of the first "verse–chorus"[22] cycle can be seen in Figure 4.7. Her anger is palpable as she seems to yell directly at abusers, with her blunt lyrics and shouty timbre working together to quickly and overtly convey to

[22] I put "verse–chorus" in quotes here because in many ways this song can be considered to be organized in this way, but it does not conform exactly to the typical verse–chorus form model. An in-depth analysis of the form is outside the scope of this particular project, so for my purposes I will still label the sections in this way.

Eat meat, hate Blacks
Beat your fucking wife, it's all the same thing

Deny
You live your life in denial, baby
You stand my life on trial
You, you will always deny me

You profit from the lie, you profit from the lie, yeah
You profit from the lie, you profit from the lie
You profit from the lie, you profit from the lie, yeah
You profit from the lie, you profit from the lie

Figure 4.8: Lyrics to "Verse–Chorus" Cycle 2, "Liar" by Bikini Kill

listeners her reaction to her friend's assault. She continues in similar fashion through the second cycle, the lyrics of which are in Figure 4.8, saying that "eating meat," hating Black people, and beating "your fucking wife" are all abusive. In this way, she comments not only on rape culture, but on domestic violence, racial oppression, and violence to animals, connecting them all as forms of abuse that are "all the same thing." These themes are commonly expressed in many of Bikini Kill's other songs, as well as feminist punk songs, generally. Songs of this style are often blatantly political in that they call out aspects of society that are, in the band's opinion, oppressive and harmful. In doing so, she calls out multiple forms of dominance and power, as well as the violence that comes with it, through mentioning violence against animals (human's dominance over animals), against Black people (white people's dominance over Black people), and against women (men's dominance over women).

After these first two cycles, a section that I call a bridge can be heard (the lyrics can be seen in Figure 4.9). In this section, Hanna enters saying "all we are

All we are saying is give peace a chance
All we are saying is give peace a chance
Huh! Huh!

Betty's got the back of her dress all ripped out
Mama's got her face muffled, twist and shout and twist and shout
And twist and twist and twist and twist and twist and fucking shout it
You're, you're, you're a liar, liar

Liar, liar, you got your pants on fire
Liar, liar hanging by the telephone wire
You know, you're a goddamn motherfucking liar
You know you are, alright

Figure 4.9: Lyrics to "Bridge" and ending, "Liar" by Bikini Kill

saying is give peace a chance," with soft, sweet, child-like vocals, which Sara Marcus describe as sounding "like a child delivering a book report" (Marcus 2010, 162). A good amount of the texture drops back, providing greater emphasis on Hanna's sweet, child-like voice before she is "interrupted by a bloodcurdling scream: from Tobi, an audience member, anyone" (Marcus 2010, 162). The voices stand out here not only because they are not competing with the strong guitar and bass sounds from the rest of the song, but also because the screams are overwhelming sounds (aurally and for the nervous system) that stand in opposition to the soft singing about wanting peace. In my analysis, I focus on this particular section.

Timbrally speaking, listeners can very easily detect the anger Hanna is expressing through her shouty timbre in the first two cycles (and in the final two sections after the bridge). A spectrogram of most of the first verse can be seen in Figure 4.10. On the spectrogram, one can see very clear bands and lots of upper frequencies, with some blurring between the bands. This sound, then, is not as

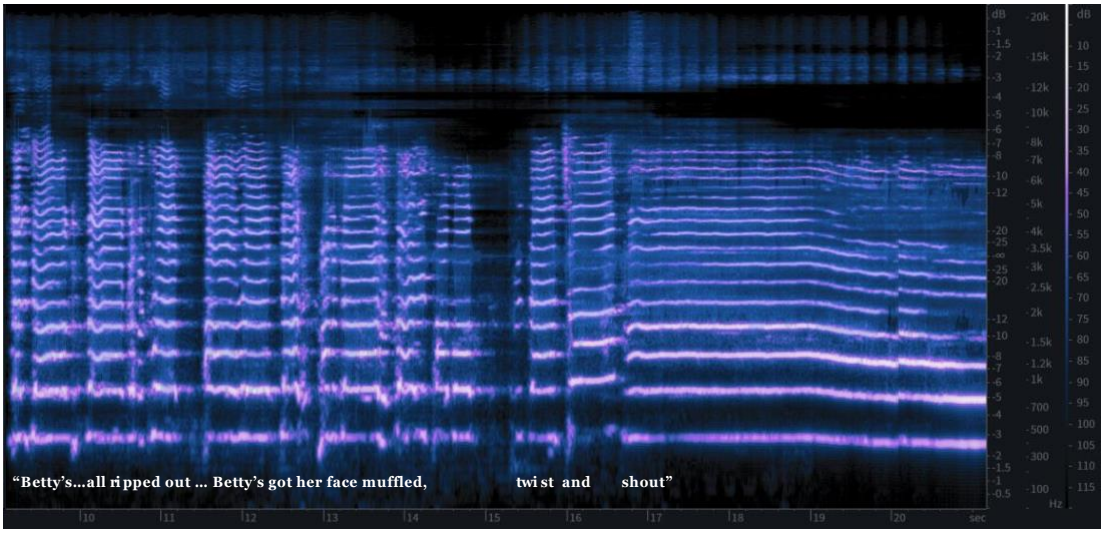


Figure 4.10: Spectrogram of Verse 1 (0:09–0:21), "Liar" by Bikini Kill

harsh as some other sounds discussed already, but still have high intensity. As mentioned previously, shouting is commonly understood as being connected to anger, no matter where in the world people are from. Even cross-culturally, these types of sounds are interpreted as conveying anger, and they do take more energy and muscle tension to create. Even if this connection is often made to shouty vocals, since punk and other types of rock artists use this type of singing a lot, listeners accustomed to these types of music probably will not interpret these vocals as overwhelming because they are expected. Anger (distinct from rage), can also be thought of as an expected reaction to a friend experiencing assault. In this way, the high-intensity vocals and lyrics bluntly expressing anger work together to convey an expected, or what might commonly be thought of as a "reasonable" response to this particular story. However, since shouts are commonly used in these genres, even for songs that do not discuss such heavy topics, they do not necessarily stand out for listeners. Hanna also uses a bit of

growl at the beginning of "Verse 2," as she sings of the other forms of abuse, connecting them to sexual violence (at least in severity). Her voice becomes even more intense in the "bridge," though.

During the "bridge," Hanna draws on two vocal extremes to create a soundscape of timbral opposition with the juxtaposition of guttural screams and sweet, child-like singing. A spectrogram of this section is in Figure 4.11. In the spectrogram, one can see the screams, which have extremely high intensity and lots of blurring of the upper frequencies. This sound is juxtaposed with her sweet, child-like voice (which is most clearly seen at the very left of the spectrogram), which does not have nearly the same activity in the higher overtones. Gottlieb and Wald say screams are "emotional ejaculations bearing specific associations with highly charged events—like rape, orgasm or childbirth. Often associated with femininity at its most vulnerable, the scream in its punk context can effect a shocking juxtaposition of sex and rage, including…feminist rage at the sexual uses and abuses of women" (1994, 261). She continues singing, as if nothing is happening, and these guttural screams stand in simultaneous opposition to Hanna's sweet vocals advocating for peace. While this may be jarring for many listeners, screams (though not as common as shouty singing) are also not a rare occurrence in rock music. Gottlieb & Wald point out that "women rockers, from Yoko Ono and Tina Turner and continuing up to Bikini Kill, have resorted to the strategic use of the scream, a radically polysemous nonverbal articulation which

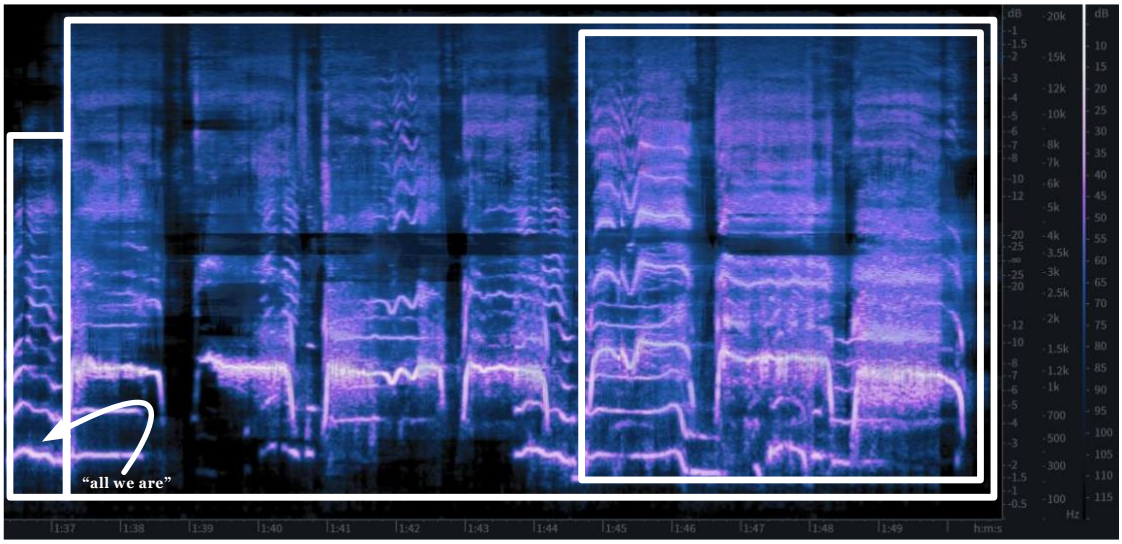


Figure 4.11: Spectrogram of "Bridge," "Liar" by Bikini Kill

can simultaneously and ambiguously evoke rage, terror, pleasure and/or primal self-assertion" (1994, 261).

Screams carry tremendous impact and can overpower our senses as listeners. While most of the sounds that we process directly affect our auditory cortex, Arnal et. al "found that the *amygdala*—but not auditory cortex—is specifically sensitive" to screams and that they "specifically target neural circuits involved in the fear/danger processing" (Arnal et. al. 2015, 2055). The fact that screams, and not more normative musical sounds, directly affect the amygdala, and not the auditory cortex, makes sense considering the cultural knowledge that screams typically occur in order to signal some sort of danger. In activating the amygdala, screams, like trauma, seem to directly penetrate our biological systems of fear processing. An embodied response to this sound could include feeling jumpy or jittery. It could leave you angry. Not only does this sound jump directly to our amygdala when we listen, but as listeners we can also embody these screams through mimetic subvocalization. Even if it is covert, pain, anger, and

fear can all be felt in vocalizing this sound. Most of us have probably screamed in such a manner at least once and are aware that it can create a lot of friction and pain in the throat. When I imagine producing this sound, I already want to start clearing my throat and taking a drink of water. Not only does it leave an uncomfortable mental and emotional state, but it also invites embodiment of the vocal pain that these screams inflict. While it is possible to produce such sounds without hurting your voice, as practiced in metal vocals, this necessitates training and practice. Since these screams were normally produced by the drummer and singer Tobi Vail, or even by members of the audience, it is very likely that these screams were taking a toll on the throats of those emitting such rough sounds.

About the emotional impact of hearing screams in music, Heidemann says, "in my own listening experience, however, there is no substitute for the expressive heft of a scream, or vocal distortion produced in an 'unhealthy' way, with intense vibrations near the vocal folds. Vocalists who do this seem to be making a terrible sacrifice in the service of musical expression" (2016, [3.10]) Since we can engage with these rough sounds mimetically, listeners can experience empathy for the singers as these sounds are produced. In his discussion of death-metal vocals, Wallmark comments that "even in the perceptual absence of explicitly violent words, listeners can *hear* violence being done to language and to the singing body (and to the bodies ostensibly represented in the lyrics). One does not have to know that a given song is about torture and mutilation—in a visceral way, one already knows" (2014, 234). In this way, the screaming in "Liar" allows listeners to feel violence in both the sound

and physical vocal production, even if the lyrics in this particular section are not explicitly violent, and points back to the violence experienced by Betty.

At the same time, Hanna's voice still comes through in child-like sweetness. While the screams are overpowering, they do not completely cover the Hanna's vocals as she persists singing through the intense, and increasingly irregular, screams around her. About listening to multiple voices simultaneously, Arnie Cox explains that the process "offers multiple invitations," which may "conflict in one or more ways" (Cox 2016, 49). He says, "over the course of a listening experience my attention and mimetic participation switch more or less continually between the two voices, with both receiving more or less equal attention" (Cox 2016, 49). In my listening, I find the same to be true. Even though the screams are jarring at first and seem to overpower the sweeter timbre of Hanna's voice, I still find myself trying to focus on the continued singing. In listening for both voices at the same time, my process, similar to Cox's, includes quick switches from focus on the intense screaming to focus on "giving peace a chance" through Hanna's voice. These quick shifts are confusing to my body, as the perceptions of these sounds seem to be opposites of each other. While the screams make me feel a bit jittery and jumpy, the soft singing and peaceful lyrics bring me back down, possibly even further than necessary in comparison to the timbre from the beginning. If one considers the expressed anger heard at the beginning to be a normative coping strategy, then these softer sounds seem to stand in avoidance to the topic at hand. For these reasons, in my interpretation, the screams seem to mirror the fear and anxiety present in the fight-and-flight responses in the Hyperarousal Zone, while the soft, child-like sounds seem to

mirror the numbness and dissociation in the freeze responses in the Hypoarousal Zone (see Chapter II). When I listen to both at the same time, as my embodied experience jumps back and forth between both voices I feel the same confusion as when I experience both zones at the same time. For this reason, I offer an embodied analysis of this section which portrays both the Hyper- and Hypoarousal Zones simultaneously, creating a sense of bodily confusion which does not operate *between* these two zones (where the optimum zone is found), but instead simultaneously at both extremes, emphasizing the uncomfortable bodily effects of trauma.

Hanna found space not only for her music to draw attention to these unfortunately everyday traumas, but to participate in activism by organizing meetings for women to discuss and process their traumas, creating and demanding safer spaces at concerts, and spreading information through zines. Participating in music allowed Hanna her own space to process her personal traumas, about which Sara Marcus says, "some days Kathleen felt like the only way for her to redeem the traumas of her own adolescence—traumas she referenced obliquely from time to time—would be to keep other girls from going through the same kinds of hell, or at least to help them find ways to emerge stronger" (Marcus 2010, 39). She used her own voice and experiences with trauma to create space for others who have experienced similar violence or oppressions. This experience translated into listeners and activists, as well. One Riot grrrl activist in particular, Erika Rothstein, says, "hearing Kathleen Hanna sing songs about sexual abuse had helped Erika realize she could open up to

other people about the vivid nightmares she'd been having, dreams that seemed more like past events doubling back on her" (Marcus 2010, 108).

In both of these songs ("Swine" by Lady Gaga and "Liar" by Bikini Kill), the singers use vocal timbres that are rough, piercing, and intense in order to convey the rage they have after sexual assault. These high arousal sounds not only convey their emotional state, especially since these types of sounds are indicative of anger to people all over the world. The roughness Gaga uses in her growl and rasp sounds gritty, and her raspy voice sounds especially painful (even if it might be the case that she can produce it without harm to her vocal folds). In both songs, the singers use vocals with even more intensity as the squeal and scream about their rage. Both of these artists have more songs about their experience with sexual assault (e.g., "'Til It Happens to You" by Lady Gaga, "Suck My Left One" by Bikini Kill), which incorporate some similar vocal styles, but these stand out against the others with the screams. In summary, both of these songs use these specific noisy timbres to convey their specific experiences of rage and hyperarousal. These noisy timbres are particularly effective not only because of the tension they create in the body, but also because they can aurally cause reactions in listeners. Some other songs that also use rough, high intensity vocals to portray rage after sexual assault are "Touch Me Again" by Petrol Girls, "Dead Men Don't Rape" by 7 Year Bitch, "Knifey" by Amyl and The Sniffers, and both "Asking For It" and "Mrs Jones" by Hole.

CHAPTER V: TIMBRE AND GENDERED POWER IN "GATEKEEPER" BY JESSIE REYEZ

In Chapters II–IV, I examined timbral expressions of dissociation and rage that I have found to be relatively common in songs about sexual assault. For this chapter and the next, however, I pivot instead to analyze two songs in full to show how they use a variety of vocal timbres to convey their own specific narratives. In the previous chapters, my general analysis of specific *timbres* I have found that many women use to convey dissociation and rage, respectively, focuses on the ways artists convey specific biological experiences after trauma in similar, and salient, ways. In these final two chapters, I pivot my focus to the *individual* experience. In doing so, my goal is to demonstrate not only that trauma survivors are connected through their experience due to the fact that trauma causes certain physiological reactions, but also that every survivor has their own, individual story to tell that contains a multitude of these various responses. In this chapter, I analyze "Gatekeeper" by Jessie Reyez and show how Reyez uses three distinct and gendered vocal timbres (or "characters") throughout the song to convey her embodied reflection of that night, as well as to draw attention to and provide commentary on the gendered power dynamics of the music industry. In addition to my lyrical and spectrographic analysis, similar to the analyses in Chapters II–IV, I provide stills from the music video in this chapter to show how the imagery presented reinforces her timbral variances.

Jessie Reyez and "Gatekeeper"

In 2017, Jessie Reyez released her first EP, *Kiddo*, including the track "Gatekeeper," in which she responds to producer Noel "Detail" Fisher's quid pro quo sexual harassment and assault. The lyrics of "Gatekeeper" are all direct quotes from that night, and the music video was created with images and scenes from a short film, also created by Reyez, which reenacts these events. In describing the writing process for this song, Reyez says "it came out in a linear fashion—exactly how I'm singing it, that's how the event happened. It's all quotes, it's insane" (Mapes 2019). In the short film, Reyez describes her experience as she begins the night at the studio, saying

> I was like, fuck, this is sick. This is gonna be an opportunity. This is my chance to go shake a few hands and play guitar in front of the right people, sing in front of the right people. To me, at that point I kept thinking tonight's gonna be the night that I make moves. You know? (…) I went to the bathroom and I knelt down and I started praying and thanking God for letting me be here and thanking God for letting me have this opportunity (Reyez 2017, 1:10–1:30 and 4:55–5:06).

Later in the short film, however, she expresses different sentiments after showing the producer blow up at her in the car for refusing his sexual advances, stating,

> So all that shit just went down in the car, and like a dumbass, after everything that just happened, I still went inside the house. Even after what happened I followed them in because I was thinking, maybe now that he knows that I'm not down, maybe I can get him to listen to my music. (…) Of course, when we got upstairs he kept trying and I kept saying no. And that didn't change, I left. But it fucked me up that I thought about it. I thought about it because that's like a dream. That's a dream. That's one of those kid dreams that you chase and I'd been chasing it for I don't know how many years and he knows that he's holding it in his hands. And you don't wanna give up on yourself. You don't wanna let the fucking chance slip through your hands, slip through your fingers. I was this close to selling my soul that night. I was this close to breaking (Reyez 2017, 10:05–11:31).

When the song was released, Reyez decided to keep the identity of the producer a secret. However, after two women came out with allegations against him in 2018, Reyez announced on her Instagram page that "Gatekeeper" was, in fact, written about Noel "Detail" Fisher (Reyez 2018, Instagram post). In 2020, the producer was arrested on 15 sexual assault charges occurring from 2010–2018, including five counts of rape and an allegation of inappropriate behavior in the studio from Bebe Rexha (Blistein 2020). About coming out with this information, Reyez says "when those other girls came forward, I broke. The reason I decided to come forward was because their bravery inspired me" (Mapes 2019). She also explains that "I was lucky I got out before it got to [assault]. I didn't know what to say or who to tell. I was scared. Fear is a real thing. The girls that came out are brave as hell" (Penrose 2018). Since Reyez was threatened by a music producer, her story is similar to those of Phoebe Bridgers, Lady Gaga, and Kesha, who I discuss in other chapters in this dissertation (Chapters III, IV, and VI, respectively). These women represent only a small fraction of women in the music industry who have been abused by producers (see Bain 2021, Savage 2019), and their stories show the rampant abuse occurring behind closed doors of the music industry.

Analysis

Throughout the song, Reyez uses distinct vocal characters to act out that night, and these timbral distinctions provide commentary on the gendered (read male-dominated) power dynamics in the music industry (as well as in society writ-

large). More specifically, I contrast her sung mixed voice and her electronically manipulated low voice to reveal how she presents a "feminine" against a "masculine" voice (conveying a "survivor"/"abuser" narrative). I then argue that she incorporates her rapped "villain voice" (Mapes 2019)—representing ambiguous gender expression—in the verses to portray the interactions between Reyez and Detail. Additionally, I demonstrate how she uses imagery in the music video for all three of these voices—including imagery of herself with the "feminine" voice, of Detail with the "masculine" voice, and of her and Detail with her "villain voice"—to visually reinforce these narratives. In doing so, I show how she tells her own story about that night through her strategic and expressive use of these various vocal characters.

The song begins with Reyez singing what we later learn to be the chorus (see Figure 5.1). The lyrics start by flaunting money, saying "20 million dollars in a car," and taunting the addressee (in this case, Reyez) to tie her hair up if she wants to be a star. The fact that "30 million people want a shot" is emphasized, pressuring Reyez to do whatever it takes to make it in the industry, since there are so many people fighting for their place. This pressure becomes more intense with the inclusion of military marching orders "left, right, left, right, left, right, right, right" and the question, "how much would it take for you to spread those legs apart?" The amount of money thrown out here ($20 million) is more than enough to drastically change anyone's life, and these pressures can be overwhelming not only because of the money, but also because the person making these stakes is someone who can make or break your career in an instant.

20 million dollars in a car, girl tie your hair up if you wanna be a star
Left, right, left, right, left, right, right, right
30 million people want a shot,
How much would it take for you to spread those legs apart?
Left, right, left, right, left, right, right, right

Figure 5.1: Lyrics to Beginning Chorus, "Gatekeeper" by Jessie Reyez

We hear the first chorus after a short instrumental introduction, similar to the sparse, mostly or entirely chordal textures we hear in "5AM" by The Anchoress, "Dog Teeth" by Nicole Dollanganger, and "Praying" by Kesha (see Chapters II, III, and VI, respectively). Throughout the song, the chorus repeats after each verse and after the bridge, occurring a total of three-and-a-half times (the ending being only the first half of the section). To accompany the text "20 million dollars in a car, girl tie your hair up if you wanna be a star," Reyez uses a mix between chest and head voice with some breathiness (especially at the ends of phrases) and added reverb. Both the slight breathiness and the reverb, especially with the small range and sparse accompaniment, make it sound as though she dives straight into her traumatic memory when she thinks about the things he told her that night (see Chapters II and III). Kim Chandler notes that the mixed voice is a "neutral register," which is "a quintessentially 'pop' quality, particularly for female singers (2014, 39). This voice is one that one would not be surprised to hear coming out of Jessie Reyez, and even with the added reverb is recognizable as her voice. In my analysis, I call this voice the feminine voice because 1) it is a timbre that is commonly expected to come out of Reyez's body, and 2) it is juxtaposed with a manipulated low voice that is directly representative of Detail's voice. In these sections, Reyez continues to contemplate the question, "how much

would it take…to spread those legs apart?" The use of the feminine mixed voice seems to portray Reyez's *personal* reflection, which is reinforced aurally with the added reverb to make it sound as though her voice is bouncing around the sonic space. Similar to "Dog Teeth," these thoughts seem to be echoing around in her head, enveloping the listener in a similar experience. It seems that as she goes back to this memory, she is immersed in it herself, disconnected from the world around her. A spectrogram of the beginning phrase of the chorus, seen in Figure 5.2, shows her feminine mixed voice, with clear frequency bands spaced evenly apart. This spectrogram is quite similar to parts of "Dog Teeth" by Nicole Dollanganger (see Chapters III).

Her feminine voice in the opening phrase is immediately offset with a heavily pitch-manipulated lower voice (or what I call the "masculine voice") sounding military march orders, "left, right, left, right, left, right, right, right," panned exactly opposite of what you would expect (the "right"s are panned to the left, and the "left"s are panned to the right). Her mixed voice returns again with "30 million people want a shot, how much would it take for you to spread those legs apart" before the low voice occurs again with the marching orders, but this time Reyez's voice is also panned, offsetting the low voice, exactly how you *would* expect. On the spectrograms for these sections, seen in Figure 5.3a & b, one can see, first, the low voice changing sides (a) and, next, the differences in timbre changing sides in opposite directions (b). On the first spectrogram, the voice changing sides is indicated with arrows, and one can see the activity changing sides. There is some activity on the opposite panning, but that just indicates both that the isolation algorithm in Izotope RX is not perfect and that the panning is

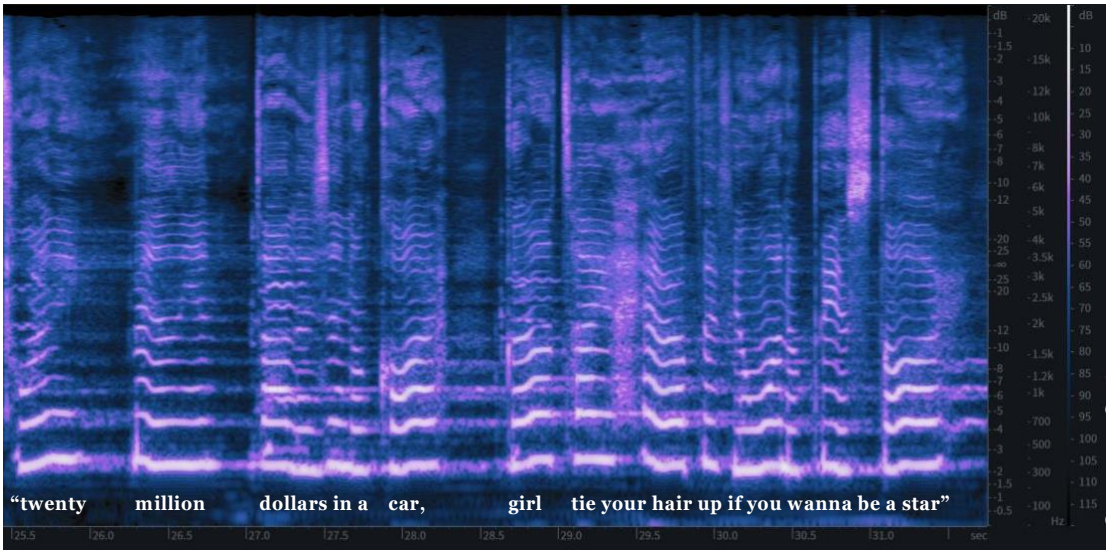


Figure 5.2: Spectrogram of Beginning Phrase (0:25–0:32), "Gatekeeper" by Jessie Reyez

not 100% right, left, etc., but instead has some lingering sound on the opposite sides. On the second spectrogram, the boxes represent the masculine voice's panning and the ovals represent Reyez's voice's panning. The first time the marching orders sound, the masculine voice representing Detail changes sides and circles around the listener within the sonic space, giving commands from each side of the stereo sound with drastic shifts. The second time, however, Detail's voice and Reyez's voice encompass the listener. They also switch sides drastically, seeming to spin around quickly and fill the sonic space from both sides. Importantly, the different voices reinforce the idea not only that Detail is telling her these degrading comments, but also that she (in her own voice) is repeating them to herself.

While she sings these chorus sections, in the music video the imagery stays focused on Reyez, but in different ways. In the introductory and concluding choruses, the video portrays Reyez as a little girl singing the lyrics into a toy

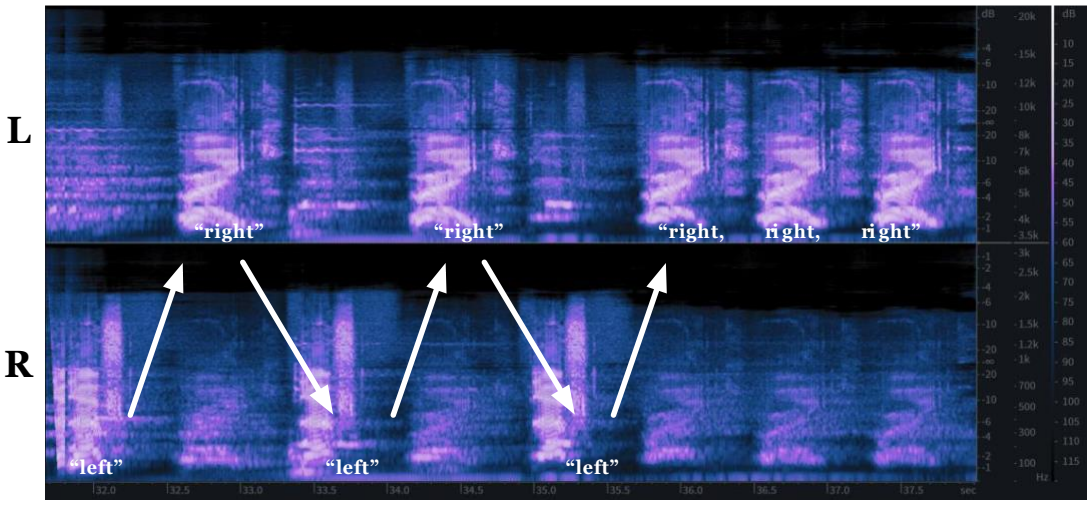


Figure 5.3a: Spectrogram of Portion of First Chorus (0:31–0:38), "Gatekeeper" by Jessie Reyez

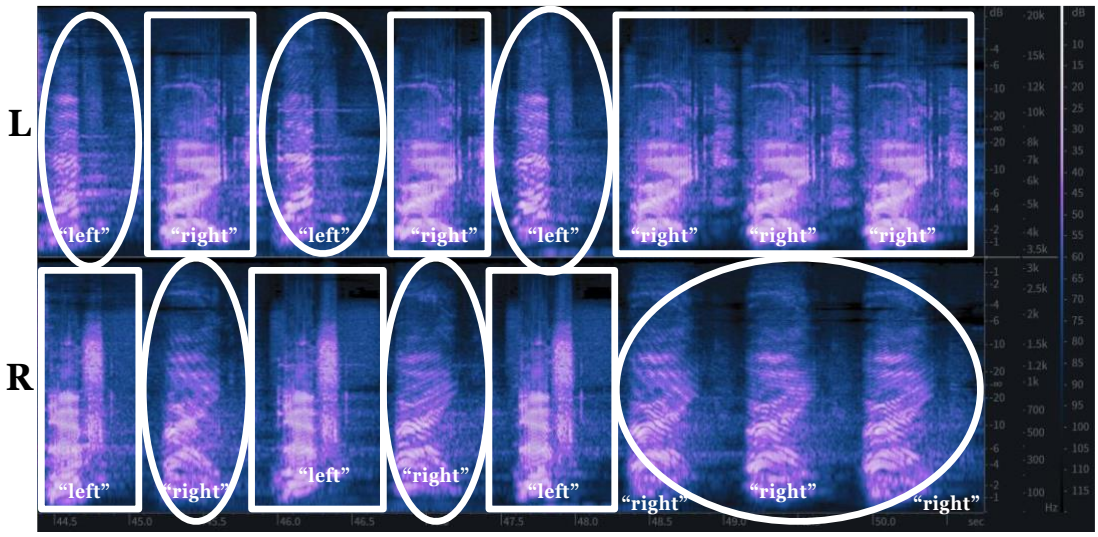


Figure 5.3b: Spectrogram of Portion of First Chorus (0:44–0:51), "Gatekeeper" by Jessie Reyez

microphone for a home video (see Figure 5.4). In these instances, the masculine marching orders seem to be a disembodied voice from outside the frame speaking to the child. The imagery of her as a child not only reinforces the fact that singing was her childhood dream, but also conveys the vulnerability she feels about this experience.

Figure 5.4: Screenshot of Music Video (0:24), "Gatekeeper" by Jessie Reyez

The aggressive pressures continue in Verse 1 (see Figure 5.5), as she sings "oh, I'm the gatekeeper, spread your legs, open up, you could be famous." Reyez is then threatened with being erased from the industry, before she even gets a chance to be a part of it, if she tries to go anywhere else to record. This threat, in particular, is quite strong because of the fact that this producer does not just have the power to get her noticed and start her career, but also the power to kill her career and her childhood dream before it even starts. Drawing back to the chorus, the marching orders reinforce the influence these types of comments can have on people wanting to be in the industry because of the connection to the military teaching that you follow orders, no matter what. The threat is followed by an order to "drink up, bitch" because they have "champagne by the cases." Not only does this line make reference, once again, to money because they have champagne, a fancy and expensive alcohol, but it also says they have cases of it (making it even more expensive) meaning that she should drink *a lot*. The same pressures are escalated in the second half of the verse, as she reiterates that the

Oh, I'm the gatekeeper, spread your legs, open up, you could be famous
If you come up anywhere else I'll erase you
Drink up, bitch we got champagne by the cases
Don't you know, don't you know?
We are the gatekeepers, spread your legs open up, you could be famous
You know we're holding the dreams that you're chasing
You know you're supposed to get drunk and get naked

20 million dollars in a car, girl tie your hair up if you wanna be a star
Left, right, left, right, left, right, right, right
30 million people want a shot,
How much would it take for you to spread those legs apart?
Left, right, left, right, left, right, right, right

Figure 5.5: Lyrics to Verse–Chorus Cycle 1, "Gatekeeper" by Jessie Reyez

gatekeepers are "holding the dreams that you're chasing" and that she is "supposed to get drunk and get naked." In this verse, then, the two halves follow the same narrative trajectory, first taunting her to spread her legs and telling her she could be famous, then giving a threat about her career being in their hands, and last noting that she should drink and become inebriated. This verse is followed by another iteration of the chorus, reinforcing the military marching orders and, again, asking the question: "how much would it take for you to spread those legs apart?"

In Verse 2 (see Figure 5.6), the threats keep coming, but this time they are tied specifically to sex. She sings Detail's derogatory comments to her, saying "wait 'til five years down the road and you're failing, keep fucking these regular dudes that are nameless." Here, he reinforces not only that he holds her career in his hand, but also that he expects her to be sexually involved with him in order to have access to the power he holds and if she does not, he will make sure she does not succeed in the industry. In the second half of the verse, the language becomes

Oh, I'm the gatekeeper, spread your legs, open up, you could be famous
Wait 'til five years down the road and you're failing
Keep fucking these regular dudes that are nameless
Don't you know, don't know you know that
We are the gatekeepers, spread your legs, open up, you could be famous
Girl, on your knees, don't you know what your place is?
Got gold on my dick, girl, don't you wanna taste it?

20 million dollars in a car, girl tie your hair up if you wanna be a star
Left, right, left, right, left, right, right, right
30 million people want a shot,
How much would it take for you to spread those legs apart?
Left, right, left, right, left, right, right, right

Figure 5.6: Lyrics to Verse–Chorus Cycle 2, "Gatekeeper" by Jessie Reyez

even more explicit as he tells her that her place is "on her knees," or performing oral sex, followed by the question "got gold on my dick, girl, don't you wanna taste it?" Connecting gold with his genitalia here serves to remind her that the only path to money and success in the music industry is through a sexual relationship with him.

In what Jillian Mapes calls Reyez's "villain voice" (2019), she raps the verses. This voice, while containing some roughness, is still a relatively natural vocal timbre, as compared to the low voice that has obvious electronic distortion. This "villain voice" seems similar to the style of voice that can be heard in some of Eminem's songs (who has collaborated with Reyez on tracks such as "COFFIN") such as "Bad Guy." In Reyez's song, she sings as the "gatekeepers," who tell her to "drink up bitch, we got champagne by the cases," and that "[she] knows [she's] supposed to get drunk and get naked." In Verse 2, it escalates to threats about an empty future—"wait 'til five years down the road and you're failing, keep fucking these regular dudes that are nameless"—and flaunting wealth and male

anatomy—"got gold on my dick, girl, don't you wanna taste?" Timbrally, in Verse 1 Reyez begins with a less-rough rapped voice and escalates into her villain voice, but in the second verse she starts already in the roughness of her villain voice. It is as though Verse 2 builds on the energy from the previous verse and pushes her further into the rough villain voice. This trajectory can also be seen in the text, as the first verse presents lyrics that focus on getting drunk and naked. These words are, according to Reyez, literally quotes from that night (said by Detail), but they could also easily be interpreted as text that she says to herself in reflection. This changes by the end of the second verse with the final line, since she would not be referring to her own genitalia, but would have to be reiterating what was said to her by Detail, a powerful man in the industry.

On the spectrograms in Figures 5.7a and b, which show the beginnings to Verses 1 and 2, one can see the difference between her less-rough melodic rap voice shown with the thinner, clearer bands (a), and the roughness of her villain voice shown with the wider, fuzzier bands (b). While the villain voice is still easily recognizable as Reyez's voice, she adds harshness, creating a more aggressive sound. This voice is made with a more pressed phonation, which is commonly associated with roughness and high arousal (see Chapter IV), but also with masculinity. Malawey notes that "like many of the qualities under the umbrella of pressed phonation, *rasp* may signify…masculinity" (2020, 104). In this way, the villain voice is not only noisy, conveying rage and hyperarousal, but also operates with what have been socially considered to be masculine qualities, such as the roughness of the pressed phonation and speech-like nature of rap; it also still clearly represents Reyez's own vocal femininity and identity because of the fact

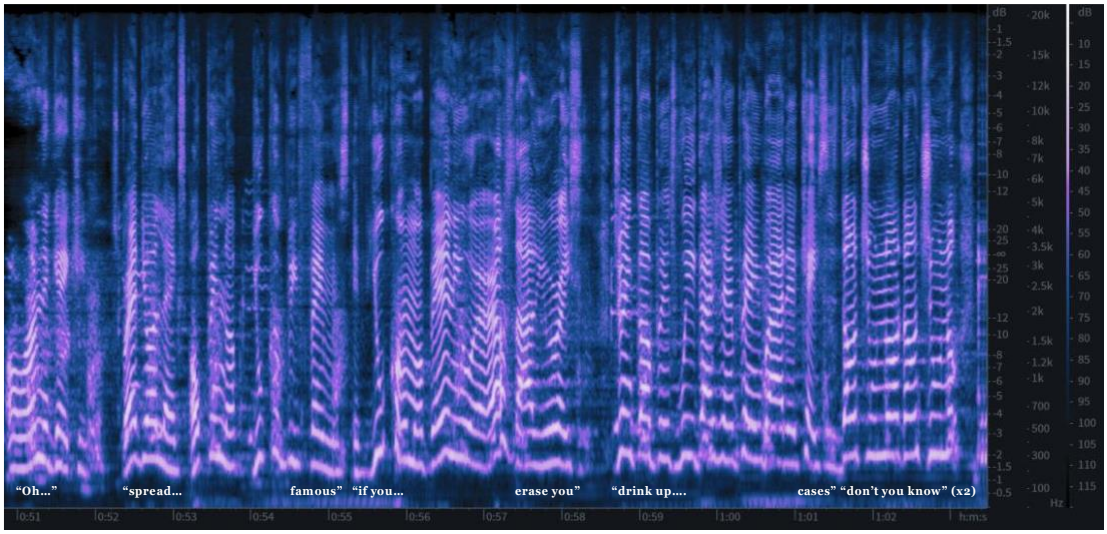


Figure 5.7a: Spectrogram of Beginning to Verse 1, "Gatekeeper" by Jessie Reyez

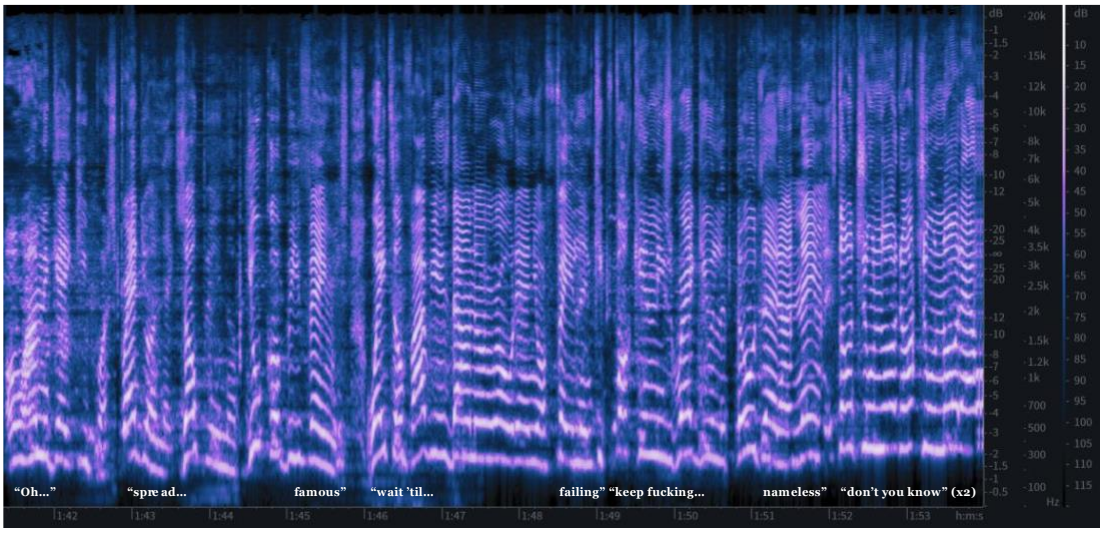


Figure 5.7b: Spectrogram of Beginning to Verse 2, "Gatekeeper" by Jessie Reyez

that it is still obviously her own natural voice, especially in comparison to the voice that is lowered in pitch electronically.

During the verses, the imagery in the music video shows scenes depicting Reyez and Detail together, including party scenes with others around them where Detail is pouring alcohol for her and other women, as well as flipping back and

forth between solo shots of Reyez and of Detail. Sometimes when Detail is shown, the shot is very zoomed in on his face and is a bit distorted. The fact that both of them are emphasized, and that a lot of the scenes are them together, reinforces the idea that this rapped villain voice is an embodiment of both Detail saying these things to her, as well as her own reflection on these words. In the choruses, the imagery is focused on Reyez, herself, first as a child and then an adult, connecting her childhood dreams and vulnerability to her current adult self. However, in the verses, one sees flashes of the party, zoomed in on Reyez and Detail, as well as solo shots of his zoomed in, slightly blurry face in a distorted, red and black room and her in what seems to be the bathroom, talking to herself. As one watches these snapshots of her experience that night, the imagery supports the argument that the villain voice serves as a representation of masculinity, or of Detail, as she sings the commands and threats directed at her that night. However, since the voice also sounds natural to her, it also has femininity as she reflects on these words, and repeats them to herself (in the bathroom mirror, as well as after that night). Figures 5.8a–d show some of the various snapshots in Verses 2 and 3 that I describe above.

In the bridge, only the low manipulated voice is present when important lyrics from the verses are reiterated, saying "we are the gatekeepers, spread your legs, open up, you could be famous, girl, on your knees, don't you know what your place is?" With the text repetitions, this section emphasizes the fact that "on your knees" is a place that women wanting to be successful in the performance industry are expected, or even supposed, to be, at least from the powerful-male-producer perspective. It seems as though the choruses and verses have gradually

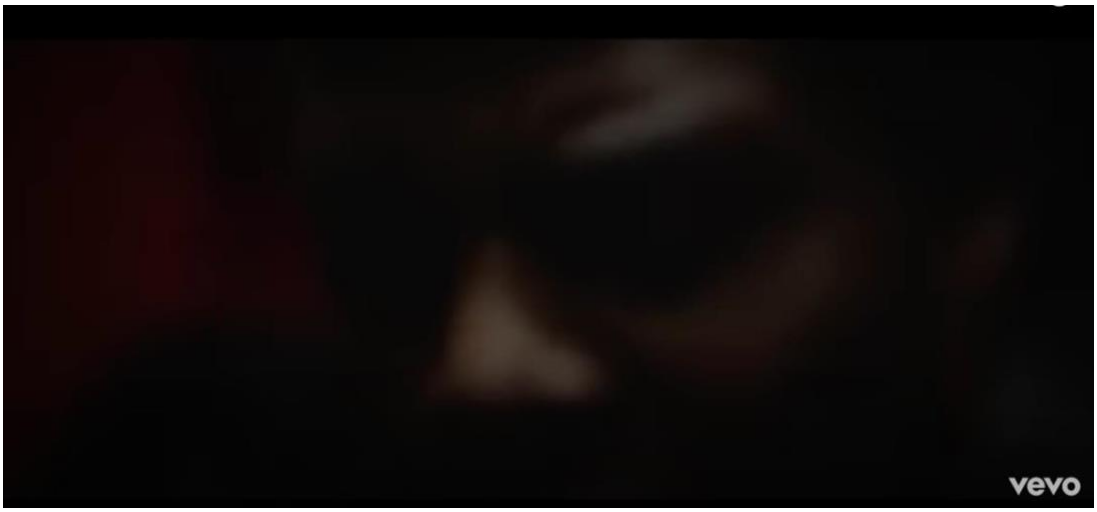


Figure 5.8a: Screenshot of Music Video During Verse 1 (1:13), "Gatekeeper" by Jessie Reyez

Figure 5.8b: Screenshot of Music Video During Verse 1 (1:24), "Gatekeeper" by Jessie Reyez

descended into the masculine voice, almost as if previously she was ruminating in these words and now she is completely reliving the memory, dissociated from reality all together as she feels like it is happening again, in that moment. In other words, this heavily modified timbre could be interpreted as Reyez reliving the most traumatic part of the evening. On the spectrogram for the bridge, pictured in Figure 5.9, the high frequencies are completely absent, as compared to the

Figure 5.8c: Screenshot of Music Video During Verse 2 (1:51), "Gatekeeper" by Jessie Reyez

Figure 5.8d: Screenshot of Music Video During Verse 3 (2:11), "Gatekeeper" by Jessie Reyez

villain voice in which the high frequencies are definitely present in some capacity (see Figures 5.7a and b). It seems as though to manipulate the pitch, they compressed the sound, pushing the frequencies down (lowering the pitch) and scrunching the top frequencies down until they were no longer existent in that

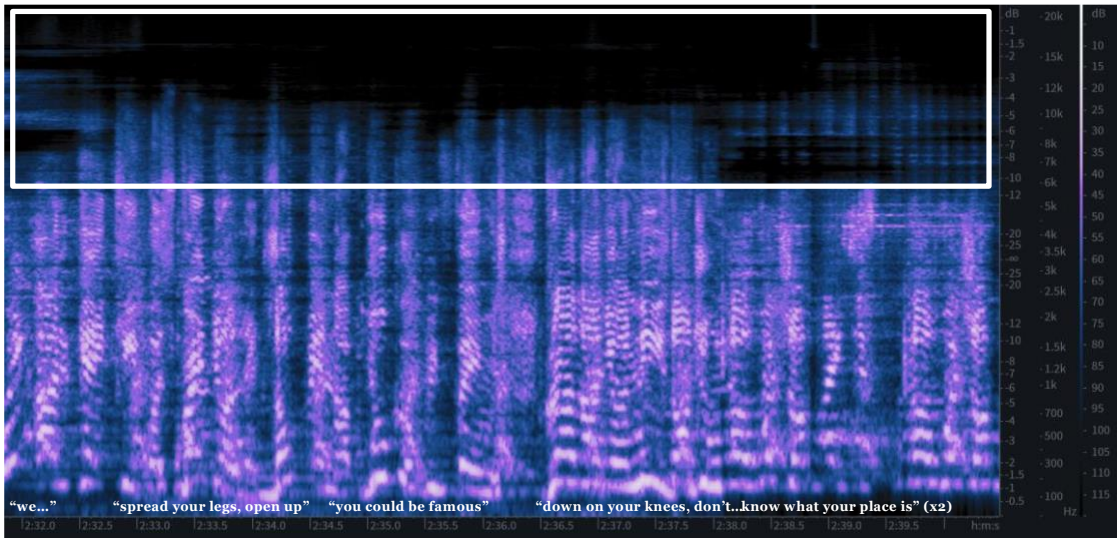


Figure 5.9: Spectrogram of Portion of Bridge (2:32–2:40), "Gatekeeper" by Jessie Reyez

Figure 5.10: Screenshot of Music Video (2:43), "Gatekeeper" by Jessie Reyez

upper register (above about 6.5k). In the bottom (or pan right) section, the bands are closer together, as if they have been smashed together.

During the bridge section, the imagery in the music video focuses almost solely on Detail. He can be seen yelling at her (through the words in the bridge), grabbing her inappropriately, and throwing water at her in a car while she reacts

with fear and apprehension. While the frame does show her a few times, she comes on screen to show how he treats her inappropriately and how she reacts to it. A screenshot from the bridge can be seen in Figure 5.10. While the other sections of the music video flash around between various scenes quite haphazardly. It jumps around between visions of her, Detail, and the party scenes. However, the bridge is different in that it plays out an entire scene (of her yelling at her and grabbing her in the car). While there are a couple of flashes to other people in the car, the scene still stays focused in the car itself as she is being groped and yelled at. In doing so, this scene feels more stable (but intense) than the other scenes, as if the previous scenes are her scattered memories of the entire night, after the fact, but she relives this scene in full after repeating back the various threats and commands he threw at her that night. In this way, the music video reinforces the fact that this low masculine voice represents his literal voice and her dissociation from reality as she relives this moment.

Summary

Across the song, Reyez uses these three different vocal timbres—mixed voice (or feminine voice), villain voice (or ambiguous voice), and manipulated low voice (or masculine voice)—to portray her reflection upon and reliving of that night. Her use of these various timbres also serves to create the form of the song, with the various voices being used in specific sections. Specifically, she uses her feminine voice in the choruses, her villain voice in the verses, and the masculine voice in the bridge (as well as for the marching orders in the choruses). Additionally, the imagery she pairs with each of these vocal characters reinforces

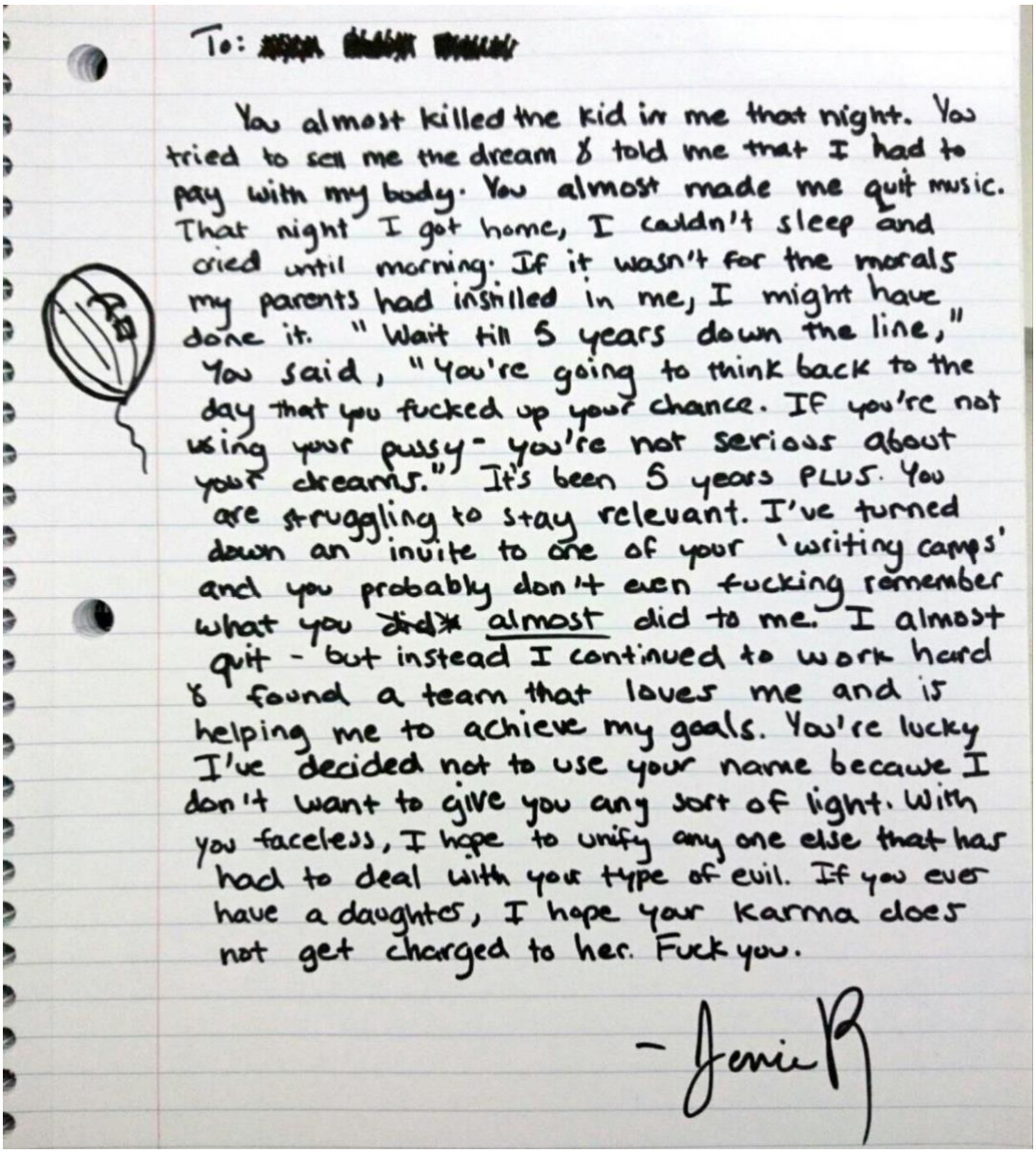
the gendered dynamics of sexual abuse, both in the music industry and in society writ large.

In the choruses, her mixed (feminine) voice seems to be her own voice, repeating what he said back to herself. The imagery—of her as a child at first and at the end, as well as her as an adult in the middle choruses—reinforces this narrative. It seems that her mixed voice represents her own "voice in her head," especially with the added reverb, as she asks herself "how much would it take…to spread those legs apart?" These words, unfortunately, do not only come from this one abusive situation with this one producer, but can be heard throughout the industry. In the short film, her blonde girlfriend even tells her that is what she is expected to do and that she "thought [Reyez] knew" (Reyez 2017, 9:38–9:40).

Her feminine voice is contrasted in the choruses with the militaristic marching orders in a heavily pitch-manipulated voice, which seems to represent a "masculine" voice, and probably specifically represents Detail's voice. This masculine voice, both in the chorus and in the bridge, serves as an overt representation of the powerful male voice, which Reyez uses to emphasize giving orders (with the marching orders in the chorus) and the idea that, according to these powerful men, women should know that their "place" is "on their knees." In the choruses, the voice seems to be disembodied because the imagery shown is predominantly of Reyez, both as a child and as an adult. However, in the bridge Detail is front and center reciting these words as he gropes, threatens, and yells at Reyez in the music video. This scene is also the only one in the entire music video that is played out in its entirety, as though Reyez is reliving the moment in a flashback and feeling as though it is actually happening in real time.

The verses offset this dichotomy as she sings and raps with increasing intensity in her villain voice, containing roughness and conveying a sense of power and aggression that is not heard in her mixed voice. This voice is different from the manipulated voice, though, as it is not as heavily technologically mediated. In this case, her villain voice seems to be imitative of Detail's threats, but not to the point of the manipulated voice, which loses the salient qualities of *her* voice. In this way, it seems to represent both his voice and her voice, simultaneously giving his threats and providing her reflection on these words to herself. It reinforces how true these words feel both in these moments of abuse and pain, as well as during the healing process afterwards. The imagery in the music video shows both Reyez and Detail, as well as full-party shots, which reinforces their interactions with each other, as well as the ambiguous gendered nature of this voice.

In a letter to Detail (shown in Figure 5.11), Reyez writes "you almost killed the kid in me that night" (MacDonald 2017). She has made it obvious that this particular night had a big impact on her, but she did not expect the song to have the public impact that it did. She says, "sometimes, I would see women go into themselves. I would see women tear up. Women would get emotional or hug me after. It was crazy 'cause then it would affect me the same way, it would throw me back. I wasn't expecting to feel that connection" (Mapes 2019). It is especially telling that she was not expecting this connection because in these moments of manipulation and coercion, you feel so alone. However, these moments are far too common, which means that one can find connection with other women relatively easy, especially in the music industry. She also comments on the song's


To: [redacted]

You almost killed the kid in me that night. You tried to sell me the dream & told me that I had to pay with my body. You almost made me quit music. That night I got home, I couldn't sleep and cried until morning. If it wasn't for the morals my parents had instilled in me, I might have done it. "Wait till 5 years down the line," You said, "You're going to think back to the day that you fucked up your chance. If you're not using your pussy - you're not serious about your dreams." It's been 5 years PLUS. You are struggling to stay relevant. I've turned down an invite to one of your 'writing camps' and you probably don't even fucking remember what you did* almost did to me. I almost quit - but instead I continued to work hard & found a team that loves me and is helping me to achieve my goals. You're lucky I've decided not to use your name because I don't want to give you any sort of light. With you faceless, I hope to unify any one else that has had to deal with your type of evil. If you ever have a daughter, I hope your karma does not get charged to her. Fuck you.

- Jessie R

Figure 5.11: Letter that Jessie Reyez wrote to Detail (MacDonald 2017)

effects on men, saying "the other side of it was in certain meetings, watching men's energy switch, or watching men tense up. Certain men didn't know how to act because it was almost like they'd been called out in the media, you know?" (Mapes 2019). Through her direct quotes, which make for extremely powerful lyrics, and the use of these various timbres, Jessie Reyez tells a story that too

many other people, both inside and outside the industry, can relate to. The contrast between her feminine mixed voice, rough villain voice, and masculine voice emphasizes not only how these statements are made by powerful men and directed at women, but also how they simultaneously manifest in the minds of these women who want to be noticed in the industry. Through this song, Reyez also forms powerful connections with other survivors. Reyez admits that she was scared to put the song out, and that is why she originally hid the identity of the producer. However, about the release of the song she says, “but like, fuck it. It’s me and it’s my story and it’s my truth. If I didn’t say it, I would feel like I was censoring myself” (Mapes 2019).

CHAPTER VI: TIMBRE AND RECOVERY IN KESHA'S "PRAYING"

I vividly remember the first time I heard Kesha's "Praying." The raw emotion of her voice, without the addition of obvious vocal production and a catchy dance-pop beat, stands out in complete opposition to her previous auto-tuned party anthems, like 2009's "Tik Tok." As the song progresses, the variety of vocal timbres—from smooth to rough, and breathy to overblown and cracking—create an aural soundscape of her traumatic abuse that keeps listeners on their toes, impatiently awaiting what comes next. At the song's climax she surprises us further as she emits a high note you would expect from Mariah Carey or Ariana Grande, but not of a singer who "brushes her teeth with a bottle of Jack" and stylizes the "s" in her name with a dollar sign. This 2017 single—her first release since 2012 and after dropping the dollar sign from her name—was her first ballad ever, and in it she reacts to the traumatic verbal and sexual abuse she suffered from her former producer, Dr. Luke. In this final chapter, I examine another song, in full, to show how Kesha conveys her specific experience after sexual trauma. Specifically, I end on a slightly more positive note to show how this song uses vocal timbre and placement in the sonic space to portray a narrative of trauma recovery.

Kesha and "Praying"

In October 2014, after rehabilitation for an eating disorder she developed surrounding her abuse, Kesha sued Dr. Luke for sexual assault and battery, sexual and civil harassment, gender violence, violation of California's unfair business laws, and intentional infliction of emotional distress (Sebert v. Gottwald

et. al. 2014). She also sued multiple companies founded by Dr. Luke for negligence, including her own record label—Kemosabe Records (a subsidiary of Sony). The body of the lawsuit explains: "For the past ten years, Dr. Luke has sexually, physically, verbally, and emotionally abused Ms. Sebert to the point where Ms. Sebert nearly lost her life" (Sebert v. Gottwald et. al. 2014). Kesha filed a court injunction in attempts to continue recording elsewhere, but it was denied in February 2015 (Johnston 2016). Lacking evidence, Dr. Luke won the lawsuit, making her bound to her six album contract with Kemosabe Records. At that point in time, she had only completed three of these six records (*Animal* (2010), *Cannibal* [2010], and *Warrior* [2012]). With the release of her most recent album, *Gag Order* (2023), she has now completed her six records and can choose to record elsewhere for her future projects. Though devastated, she continued to make music and released the album *Rainbow* in August 2017. On this album, she explores her experiences with trauma, and shares songs in many different styles and genres—including pop, country, rock, and more. She wrote many of these songs during her time in rehabilitation and therapy, and has implied that "Praying" is about coming to terms with the trauma she experienced at the hands of Dr. Luke. About writing the album, she says

> Since those difficult and emotional days in rehab, I started imagining that one day I would put out a new record and I would call it *Rainbow*…I just held onto that idea because it was all I had. I just kept saying, "I'm gonna put out *Rainbow*, I'm gonna put out *Rainbow*. I'm gonna do it, I'm gonna do it." This idea…is what helped me get up every day. I know that this album saved my life. (Sebert 2017)

Kesha's sound in "Praying," and on the entirety of *Rainbow*, is distinctly different from her previous music as she broaches more intense topics, including

her sexual abuse. Regarding the album, Chelsey Hamm notes that the style "starkly contrasts with her previous recordings," and that "instead of her earlier stylistic features such as rapped lyrics, extreme auto-tuning, and over-produced vocals, *Rainbow* relies more heavily on sung words, natural timbres, and her first use of head voice" (Hamm 2018). Hamm's analysis of two songs on *Rainbow*, "Praying" and "Woman," focuses on a gendered interpretation of Kesha's voice, in which she calls Kesha's head voice the "female" or "woman's voice" and her chest voice a more "masculine voice." By contrasting these two distinct vocal registers, Hamm argues "that this 'female voice' reinforces the central textual, formal, and structural elements in the album (Hamm 2018). In my examination of "Praying," I show how Kesha's vocal performance portrays a narrative of trauma recovery. More specifically, I show how Kesha's uses various laryngeal positions and registers, vocal timbres, and vocal placement within the sonic space to convey her journey through trauma and her recovery process.

Throughout my previous chapters, I have used spectrographic and waveform analysis to show how various vocal timbres can be used to convey trauma responses, namely the flight and fight responses. In Chapters II–IV, I rely on spectrographic and waveform analysis because of the fact that the songs use these techniques, such as breathiness and reverb, predominantly throughout the song. In Chapter V, the spectrograms can clearly show the distinct differences in the vocal characters that Jessie Reyez uses in "Gatekeeper" to portray her specific experiences on the night of her abuse. In this chapter, however, I incorporate a different methodology for my figures: musical transcriptions with annotations to show what vocal timbre she uses and where. My reasoning for this difference is

twofold. First, since Kesha switches her vocal timbres so often, and sometimes very briefly, in this song, my annotations are able to more clearly convey these quick, but powerful, shifts. Second, part of the power of Kesha's performance comes from her use of many different vocal registers, and my musical transcriptions more clearly depict the pitch range she uses in "Praying." Additionally, since the lyrics are included in the transcriptions, I do not include them as their own, individual figures.

Vocal Registers and Allan Moore's "Proxemics"

In the previous chapters, I have already discussed the connections between trauma and the voice. Additionally, I have explained how specific vocal timbres, like breathiness and rasp, are produced with low and high tension, respectively, and convey dissociation and rage, respectively. In this chapter, I talk about moments with these specific timbres, but I also note how Kesha uses the various vocal registers to convey an overall upward trajectory relating to recovery. In discussing the physical aspects of vocal production, Victoria Malawey provides distinction between the four positions of the larynx (or voice box)—M0 through M3—that people can use to produce sound. These laryngeal positions affect pitch (and register), timbre, and overtone output in various ways. Malawey explains that the M0 position creates vocal fry, which is a phenomenon more often heard in speech, but Heidemann and Malawey both discuss its use in popular music. Vocal fry is often used to produce the lowest notes of anyone's range (Malawey 2020, 52). Though it does sounds just a little rough, it is produced with very lax vocal folds that vibrate inconsistently due to the lack of tension. Both chest and

belt voice are produced with the M1 position. Chest voice, as Malawey describes, "results in rich audible harmonic overtones," while belting "occurs when a singer uses chest voice in a higher pitch range" (Malawey 2020, 41–2 and 45). In opposition to the chest voice, the M2 position (head voice and falsetto) produces significantly fewer overtones. While some of the same pitches can be produced in the M1 and M2 positions—a specific register called "mixed voice"—they provide very different sounds. Lastly, the M3 position creates the virtuosic whistle tone. Throughout history, the whistle register has been awed as a virtuosic ability, from Mozart's "Queen of the Night" aria to Mariah Carey and Ariana Grande.

While vocal timbre can portray an array of emotions dependent on the laryngeal position, breath support, and so many other bodily factors, another aspect of vocal analysis is the voice's position in respect to the musical environment and other instruments, which is critical in any recorded song. I discuss the concept of virtual sonic space in more depth in Chapter III, and in this chapter I specifically incorporate Allan Moore's concept of "proxemics," which provides a method to analyze the perceived distance between the singer and other members of the musical experience. More specifically, this methodology notes the ways that the various instruments are placed in relation to each other, but also how far the listener is from the sonic space. He details four "proxemic zones," which imply a singer's perceived physical distance from the listener (ranging from very close to very far), connection with the surrounding musical material (from separated to integrated), vocal volume/delivery (whisper to full/shout), and address (one person to a large group of people) (Moore 2012,

Zones	Distance from Listener and Other Material	Connection Between Singer and Musical Environment	Volume/Audience
Intimate	Very close No intervening musical material	High degree of separation	Close range whisper Lyrics suggest intimacy
Personal	Close (within arm's length) Some intervening musical material	Still separation, but less than in intimate	Soft to medium vocals Addresses 2-3 people
Social	Medium distance Intervening musical material	Little separation and more integration	Medium to loud vocals Addresses small/medium group
Public	Large distance High degree of intervening material	High degree of integration	Full, loud vocals, shout/semi-shout Addresses a large group

Figure 6.1: Table adapted from Allan Moore's "Proxemic Zones" (2012, 187)

187). I provide a simplified chart detailing the aspects of these four zones that are important to my analysis in Figure 6.1.

Analysis

In my examination of "Praying," I discuss Kesha's use of all four laryngeal positions throughout the song—including the virtuosic whistle tone. After her previous party-girl image, the F6 at the end of the bridge came as a shock to many listeners—as can be seen on YouTube[23]—and "proved" to some that she actually has great vocal abilities. As I mentioned in Chapter III, production tools like Auto-Tune lead listeners to infer that a performer is "cheating," and therefore does not actually have the ability to sing well. In my analysis, I illustrate how Kesha's use of all four positions throughout the song and how the changes in laryngeal position reflect her trauma and recovery. More specifically, I show how these positions and the sounds created by Kesha's voice portray (in addition to dissociation and rage, as discussed in Chapters II–IV) intruding thoughts and memories, negative self-thoughts, and perceived loss of control, as well as their

[23] People React to Kesha's High Note in "Praying," 2017.

improvement during her recovery process. Additionally, my work demonstrates the vocal depiction of disconnection (and reconnection) to others common amongst trauma survivors. I posit that Kesha's vocal placement, in relation to her surrounding musical environment, implies this narrative through use of a gradually thickening texture throughout the song. Using proxemics, I suggest that the intimate and personal zones represent her feelings of disconnection, and that the social and public zones represent her reconnection to herself and to others.

Vulnerability & Vocal Fry

In the first verse–chorus cycle of "Praying," Kesha's voice portrays her emotional vulnerability in three ways: 1) singing in an almost-too-low register, 2) implying the intimate and personal zones through thin texture, soft vocals, and lower register, and 3) placing herself grammatically as a direct object within the text. This first cycle provides a low starting point, mirroring her feelings of victimhood, vulnerability, and fear, which she can rise above in later sections to musically depict her emotional growth.

The first verse's text begins by discussing what the active "you" (Dr. Luke) has done to her. Kesha explains how powerless he made her feel, positioning herself as a direct object, which grammatically depends on the subject, and emphasizes her feeling of being "nothing without [him]." After describing how he made her feel like nothing, she only reclaims agency, as the active subject, in the last line to politely address him, saying "thank you." Though she literally thanks him for "how strong I have become," it also seems to stretch to the abuse itself.

Even as a backhanded "thank you," the phrase's positivity shows fear in blatantly calling out the antagonist with her newfound agency.

Kesha sings the lyrics in Verse 1 with low chest voice and vocal fry, representing the M1 and M0 laryngeal positions, respectively. While her voice attempts strength and clarity in her chest voice, it gives in to vocal fry on "had me fooled" (see Figure 6.2). Chest voice allows the vocal folds to vibrate with consistency, but vocal fry causes inconsistent vibrations as it stretches to the bottom of one's range. In the same moment she uses fry, she also sings as the antagonist's direct object. Her lax vocal fry dominates the verse until she fittingly regains vocal strength and consistency (in chest voice) on the word "strong." It seems she uses vocal fry like sandpaper, sanding away the graininess and inconsistencies and leaving her smooth, modal voice. In this position shift, a small transformation is heard shortly after switching into active voice, and at the moment she announces her own strength. In this way, she grammatically (direct object to active subject) and vocally (vocal fry to chest voice) gains strength, specifically on the word "strong," in the last line of Verse 1.

With support only from the piano, Kesha's low register and quiet delivery are presented without other musical material, suggesting Allan Moore's intimate zone, where the singer sounds extremely close to the listener. Additionally, the "lyrical content suggests intimacy…and addresses interpersonal relationship between two people" (Moore 2012, 187), which further suggests the intimate one. It sounds quite lonely and disconnected because of the perceived separation from other musical elements. The low vocal register emphasizes her vulnerability, which can be heard at the low end of her range. It has been shown that when

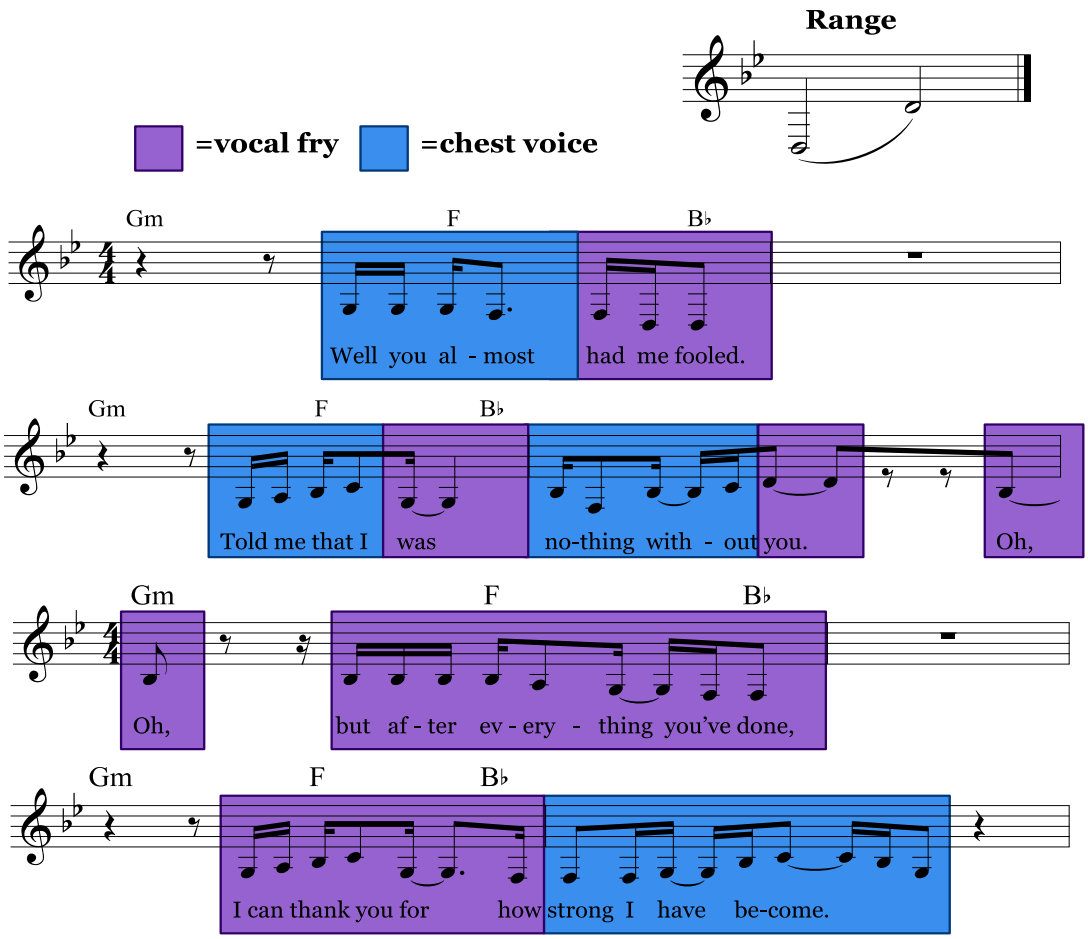


Figure 6.2: Annotated Musical Transcription of Verse 1 (0:13–0:38), "Praying" by Kesha

people feel emotionally low, they tend to speak in lower pitches and volumes, as well as with a more monotone voice (Kreiman and Sidtis 2011, 321; Grooteen 2023, 35–6). These notes push the limits of her lower range (sometimes she even moves them up in live performances, as she cannot always count on hitting them). Since these pitches are lower than what is consistently comfortable for Kesha to sing, this register also emphasizes how low she feels.[24]

[24] Many scholars (e.g., Zbikowski 2002; Cox 2016) have also discussed the PITCH HEIGHT AS VERTICAL SPACE metaphor in reference to our (Western) understanding of pitch of being "high" or "low." This metaphor is often mapped onto emotional states (i.e., low=sad).

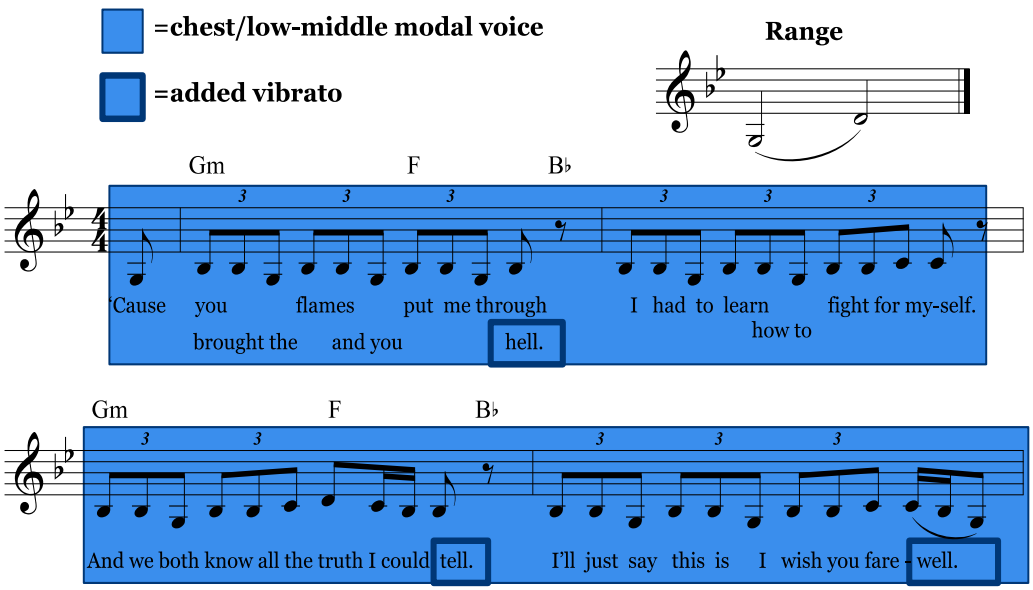


Figure 6.3: Annotated Musical Transcription of Prechorus 1 (0:39–0:51), "Praying" by Kesha

So far, Kesha has performed in a position of pure vulnerability, not yet convinced of her strength to recover. Her strength starts to grow in the ensuing prechorus, shown in Figure 6.3. As in Verse 1, the antagonist is the active subject. More specifically, Kesha does not even mention herself until the second subphrase of line 1. Though she lacks grammatical agency here, she does directly call him out for "bringing the flames" and "putting her through hell." In contrast to Verse 1, she more quickly gains agency in the lyrics, saying, "I had to learn how to fight for myself," in the second line. She does briefly use "we" as an active subject, but continues herself as the subject throughout most of the prechorus.

With her newfound strength, Kesha consistently sings in her low-middle modal voice, holding the comfortable M1 laryngeal position that was too difficult to maintain in Verse 1. She even allows vibrato to shine through on "hell," "tell," and "farewell," implying comfort and a small loss of tension and control in this

position.[25] Vibrato implies a small loss of control because to some extent it happens by itself (Malawey 2020, 38). Singers do not typically thoughtfully maneuver their voice to create vibrato; it is a byproduct of the voice functioning "properly." Her vibrato happens on key emotional words "hell," discussing what he put her through, "tell," implying the horrible truths of her story, and "farewell," delivering her goodbye to her abuser. As synthesizer adds to the texture in the prechorus, Kesha sounds a bit farther from the listener. This shift implies the personal zone, in which Moore describes the voice as "close to the listener" with the "possibility of intervening musical material," still containing separation from the environment—but less than in the intimate zone—and having "soft to medium vocals" (Moore 2012, 187). The synthesizer also contains sonic connections to a Hammond organ, which carries church connections, appropriate to the song's title and message, and can intensify the sonic distance between Kesha and the listener, as images of listening from a congregation in a church come to mind.

Kesha's low voice continues, and she sings more comfortably, implying consistency (both vocal and, I argue, emotional) similar to the end of Verse 1. Moving into the chorus (see Figure 6.4), and ending the first cycle of the song, this vocal consistency continues. Starting the chorus, she sings "I hope you're

[25] As discussed by Malawey (2020), vibrato implies a small loss of control because to some extent it happens by itself. Singers do not typically thoughtfully maneuver their voice to create vibrato; it is a byproduct of the voice functioning "properly." She notes that due to this lack of physical vocal control of the specific pitch variation and speed of vibrato, others (Fox 2004, 280; van Leeuwen 1999, 41) have attributed vibrato to implying "heightened emotionality and loss of control" (38) and Malawey, herself, analyzes vibrato in Elliott Smith's cover of "Twilight" as conveying "nervous energy," (161) which is fitting here as Kesha calls out her abuser about "putting her through hell."

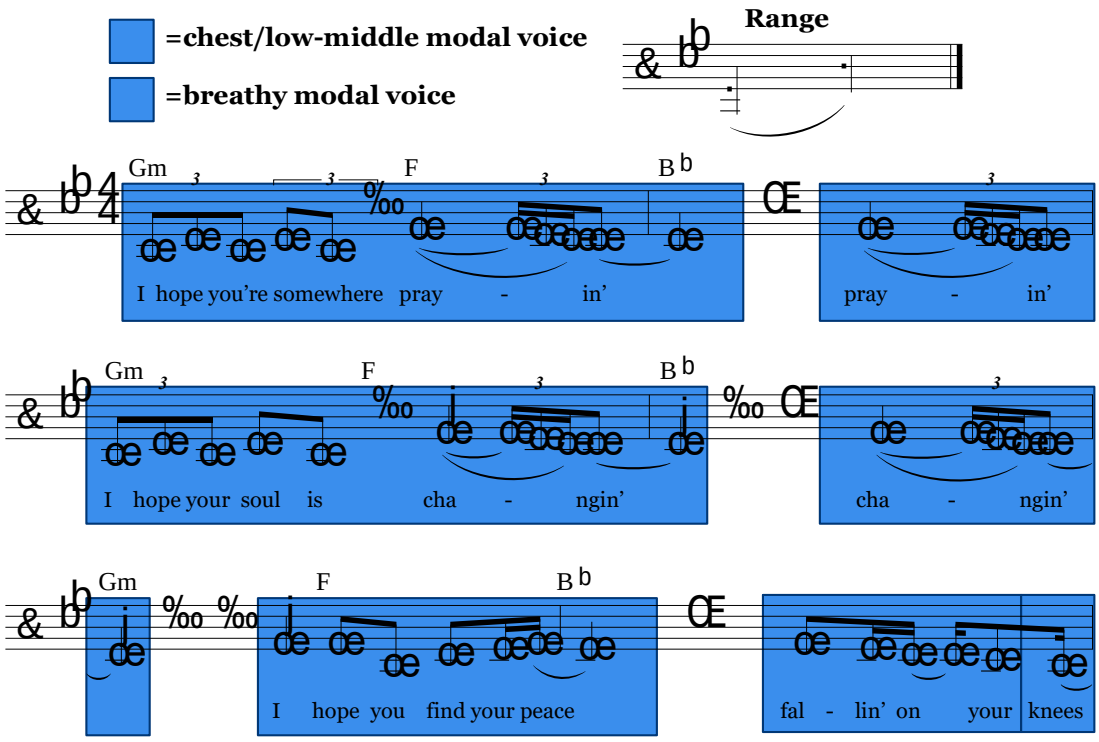


Figure 6.4: Annotated Musical Transcription of Chorus 1 (0:52–1:18), "Praying" by Kesha

somewhere prayin'." Her agency shows strength as she implies the antagonist's need to repent, and her voice demonstrates strength as she sings with continuing consistency in her low-middle modal voice. However, when she sings "falling on your knees," "knees" stands out in breathy tone, sounding as though her voice—like her knees—has been knocked out from under her. It seems as though this highly charged phrase, which can imply sexual submission, is overwhelming and her breathy timbre could convey brief dissociation (see Chapters II and V). Here, her vocal strength mirrors her emotional strength, giving out on this provocative word that offers the implication of both praying and sexual submission.

Her exclamation depicts strength and security in her belief that what her antagonist did was wrong, but the chorus may also be directed back at herself,

implying her own guilt and shame. These feelings of shame and guilt are emphasized by the disappearance of the synthesizer from the song's texture, implying a return to Moore's intimate zone, with just voice and piano for the first half of the chorus. While her lyrics and timbre portray strength, the vocal placement sounds strikingly disconnected. Directly before she sings, "I hope you find your peace," back-up vocalists enter singing "ooh" behind her. Her voice now seems to return to Moore's "personal zone," though not in the same way as before, and provides more aural connection between Kesha's voice and other musical material. Significantly, this time she is more connected to human voices, and not just synthesizer, as if the back-up voices are acting as a support system, pushing her through the difficult part of the chorus.

In the first sections of "Praying," Kesha's voice finds strength in text, timbre, and placement. Grammatically, Kesha starts with a lack of agency—placing herself as the direct object, describing what the antagonist did *to her*—and then later becomes the active subject, discussing her "wishes" and "hopes" for the antagonist. In doing so, she switches grammatical places with her abuser. Timbrally, she begins in a very low, vulnerable register singing with vocal fry, then moves into chest and modal voice—smoothing away the roughness of her vocal fry—and, to foreshadow more of her journey to come, gives in to a more timid, breathy sound right before the chorus ends. Her move from the intimate zone to the personal zone (in different ways) shows her gradual connection to the other musical elements. These three vocal shifts create a musical representation of Kesha's recovery and growing strength within the first few sections of the song and foreshadow further shifts to come.

Recovery & Registral Shift

The second cycle displays similarities to the first—namely a low vocal register and a return to Moore's intimate zone to begin Verse 2—yet some significant differences arise. In this cycle, Kesha not only more consistently sings in her lower-middle register, but also provides a stark registral shift between Verses 2 and 3, portraying a new level of her emotional journey. Texturally, she enters new proxemic zones, namely the social and public zones, which imply her growing connection to others; grammatically, Kesha continues to have agency by placing herself as the active subject. This grammatical change from Verse 1 foreshadows registral and timbral shifts that will occur in Verses 2 and 3. As Kesha confidently shifts registers into her more supported belt voice, her strength—first heard grammatically with the newfound stability as the active subject—can also be heard in her vocal timbre (her belt voice and registral shift) and placement (moving out of Moore's intimate and personal zones).

As mentioned previously, Kesha maintains her agency in Verse 2 (see Figure 6.5), beginning with "I'm proud of who I am." This line is Kesha's first unabashedly positive statement about herself in the song. The antagonist is nowhere to be found as she asserts her pride without him. Vocal fry is less prevalent here than in Verse 1, but still appears in a couple of key places. On her strong first line, Kesha's voice gives in on the second half of "proud" and on "and you said," at the first mention of the antagonist in this verse. The inconsistent vibrations in her vocal fry on the word "proud" portrays the unstable nature of this positive belief about herself, and it embodies her fear and discomfort when

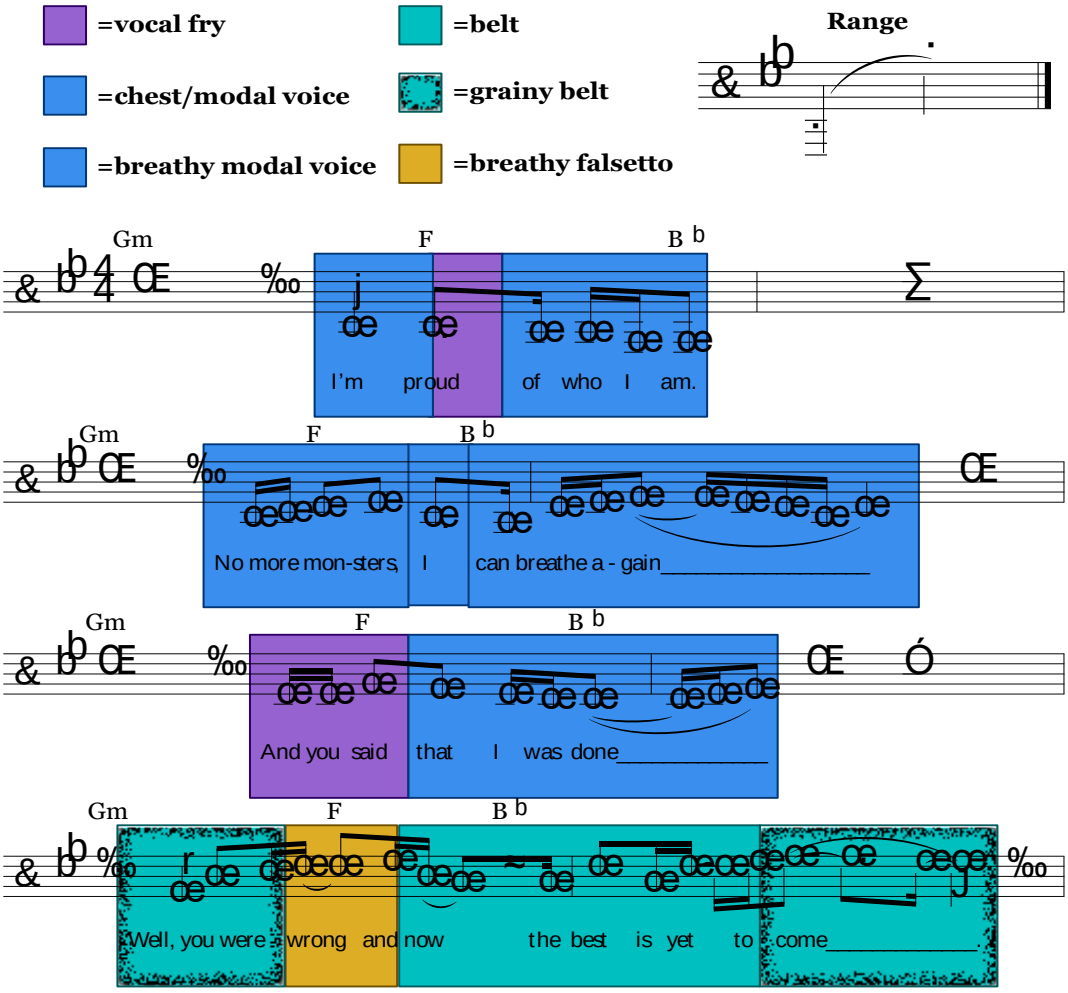


Figure 6.5: Annotated Musical Transcription of Verse 2 (1:19–1:44), "Praying" by Kesha

she brings him up ("and you said"), pushing her into a vocal shift. On the final phrase of this verse, a registral shift emphasizes, "you were wrong and now the best is yet to come." Synthesizer adds to the texture earlier than in the previous, giving her aural support (or connection to the other musical material) for her registral shift and emphasizing another move to the personal zone. As she pulls her voice into this higher register, still keeping M1 position, she brings aspects of her lower sounds along with her. Some words sound grainy and rough—similar to

the vocal fry—as she seems to overdrive her voice. While this section shows both lyrical and vocal strength, she does allow her voice to slip into breathy sound on what is perhaps the most important word of the phrase: "wrong." The breathy sound is produced more passively in a different vocal style (falsetto) and laryngeal position (M2), portraying Kesha's hesitancy in accusing him of being incorrect. In this way, the quick shifts between her grainy belt voice and her breathy voice convey that as she is going through her recovery process, she sometimes oscillates between hyper- and hypoarousal (or rage and dissociation). This juxtaposition is especially important on this final line of Verse 2, as she tells him that he was wrong and that "the best is yet to come" for her.

Kesha ends the verse by dramatically leaning into the grainy belt on the final word, "come," as she gets ready to continue in the new, higher register. This moment of vocal roughness in her higher register provides an especially salient moment expressing the grit of both her emotions surrounding her trauma (i.e., rage) and the hard work she has put into her recovery. She seems to attempt making the shift in "well, you were wrong," but is forced into her breathy voice. It sounds like she pushes herself too much, gets overwhelmed, and drops into numbness for a moment. The second time, however, she breaks through an important barrier, belting "the best is yet to come." While obvious growth can be felt in the higher register, the roughness of her voice implies lingering rage and foreshadows further evolution yet to come. In this way, Verse 2 provides many aural indications of growth, including maintaining agency, a quicker shift into the personal zone, and more consistency in her low range, followed by a registral shift out of the vulnerable, low range. Timbral nuances (such as her vocal grain

and her breathy, head voice) also portray an imperfect journey through this new strength, giving further indication that her vocal timbre provides important insight into her mental state through her trauma and recovery, even when the lyrics have found consistent strength in active voice. In comparison to Verse 1 and the first cycle of the song, Verse 2 shows growth in a more obvious way. This shift continues into an additional verse, as she asserts her ability to carry on without him.

Though Kesha is beginning to gain confidence here in the second cycle, we are soon reminded that her recovery in still in its early stages. At the beginning of the next verse—Verse 2 leads to another verse before continuing to the prechorus—her lyrics project strength, but her vocal timbre betrays her inner hesitance. Figure 6.6 shows the third verse, in which active and aggressive statements such as "I can make it on my own" and "I don't need you" are set to a breathy head voice similar to a falsetto sound. Hamm notes that since Kesha sang these same notes earlier with her chest voice (i.e., belting them), her use of head voice here represents a deliberate choice (Hamm 2018). In particular, the soft breathiness portrays a numbness to the words she is singing. So even with lyrical and registral strength, which is still an improvement from the other two verse, her timbre provides doubt that she actually believes them; Kesha now sounds a bit uncomfortable, numb, and weak in this high range.

As the third verse progresses, however, her vocal strength builds back up. She uses grainy voice to begin "I," which seems to incite her vocal strength for the remainder of the verse, similar to the vocal fry in Verse 1, beginning with "I've found a strength I've never known." To me, it sounds as though she comes out of

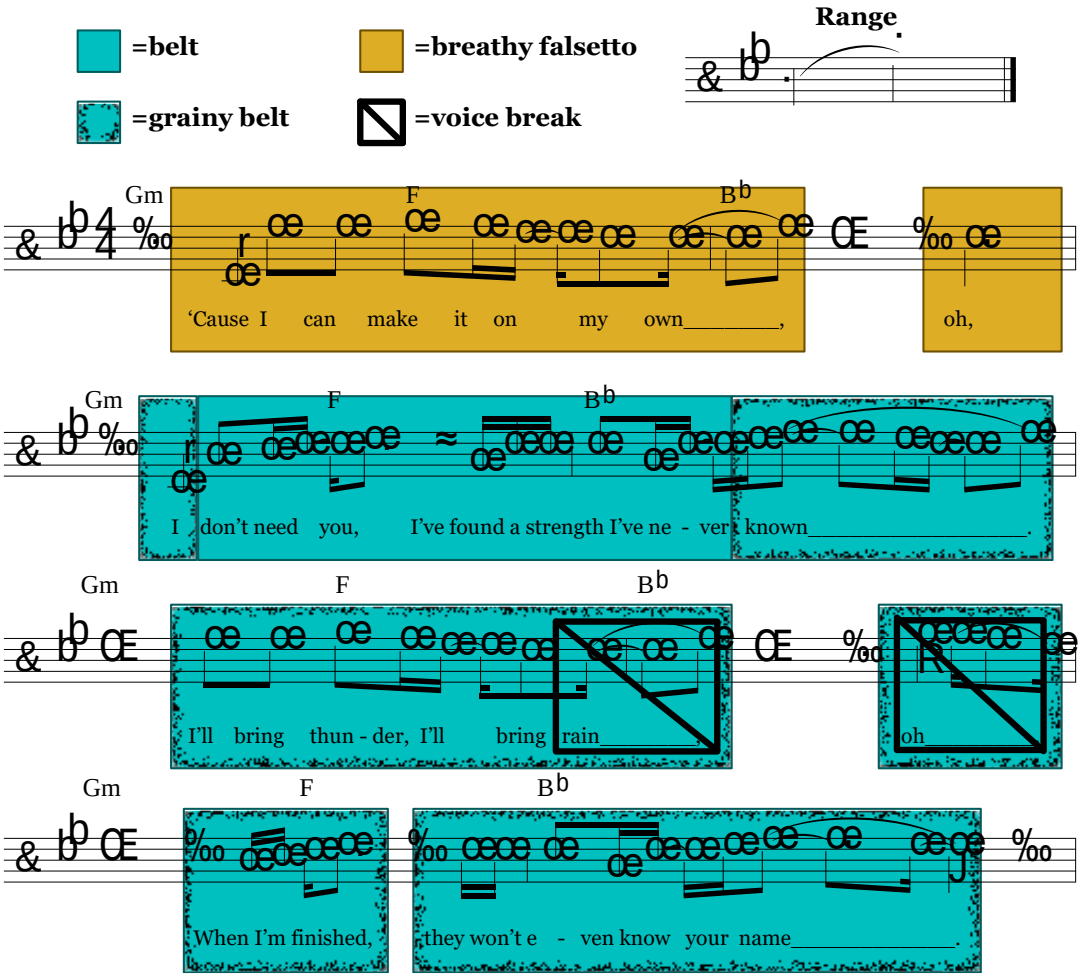


Figure 6.6: Annotated Musical Transcription of Verse 3 (1:45–2:10), "Praying" by Kesha

her numbness (hypoarousal) by way of rage (hyperarousal) in order to eventually level out. Fittingly, she finds her level vocal strength, or belt voice, at the same time she lyrically finds her emotional strength, also similar to Verse 1. She does continue to overblow her belt, or experience rage, causing her voice to break on "rain" and "oh." However, she does not revert back to her breathy head voice, giving into her hypoarousal and numbness. She instead pushes through and attempts to be strong, even when it is difficult to stay strong. She emphasizes strength by stretching her M1 position, using belt to replace head voice in her

high register. As her voice becomes louder and more present in the second half of the verse, and as backup vocalists and strings thicken the texture, the song now implies Moore's social zone. Moore describes the social zone as having "medium distance from the listener" with "intervening musical material," "medium to loud vocals," and lyrical content that "addresses [a] small/medium group of people" (2012, 187). He also describes the voice as having "little separation and more integration" with the surrounding musical environment. Previously, the synthesizer and backup have been present separately underneath Kesha's low voice. Now they are both present at the same time behind Kesha's high voice, with the addition of strings. The social zone provides the aural sensation of Kesha's deeper connection to her surroundings, as she now sounds as if she is a part of this larger group, and not all alone in the sonic space, disconnected from almost anything else. This thicker texture helps to support her while she threatens, "when I'm finished, they won't even know your name" in her grainy belt.

In the ensuing prechorus and chorus, seen in Figures 6.7 and 6.8, Kesha continues in her new register, singing an octave higher than in the previous prechorus and chorus. She sings mostly with her belt and grainy belt voices in M1 position, settling into her more supported vocal strength while still experiencing some anger and hyperarousal. In the previous prechorus, her vibrato emphasized the words "hell," "tell," and "farewell." However, this time her grainy belt emphasizes the words "I," "myself," and "truth I could tell." "Tell" is emphasized in both, reinforcing Kesha's truth, or side of the story. Previously, she lost a small amount of control on the ends of phrases, demonstrating her new comfort in the

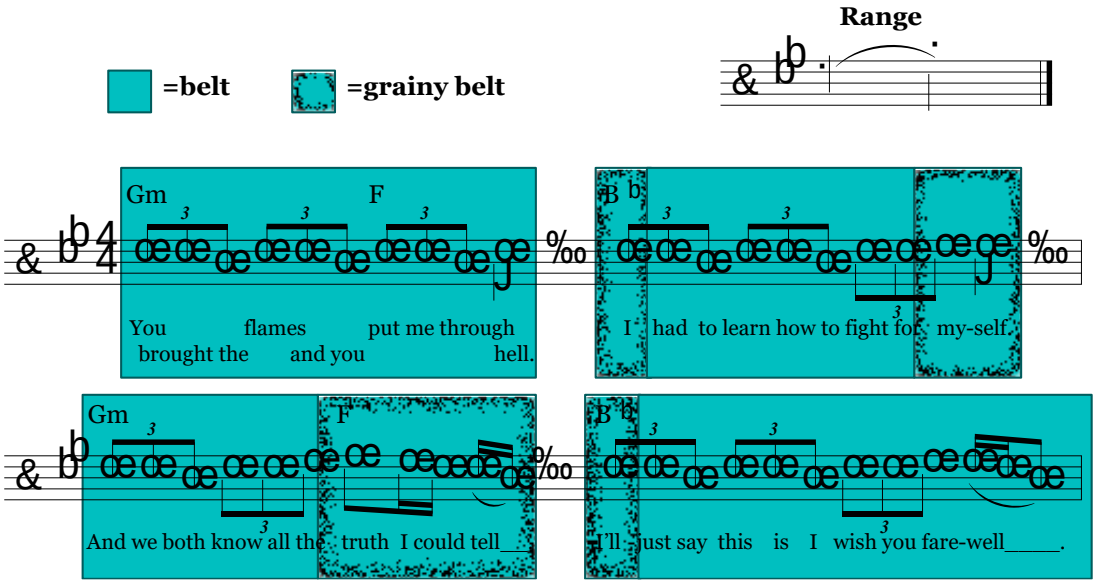


Figure 6.7: Annotated Musical Transcription of Prechorus 2 (2:10–2:24), "Praying" by Kesha

low, modal voice (without vocal fry), on words related to her experience with her abuser. This time she emphasizes words relating to herself, showing not only the anger she has for the truth she could speak out about, but also her growing emotional strength and connection to herself in her recovery.

Her feelings of connection are even more aurally salient in the chorus (see Figure 6.8). While the strings disappear, a bass drum enters to reinforce a strong beat. The backup vocalists sing in a choir with Kesha on the lyrics—not just supporting "ooh"—and provide an even stronger aural sense of community. Backup choirs are very common in power ballads and gospel music, and this texture encourages other voices to sing with her, inviting connection through mimetic engagement. In its new register, the chorus enters what Moore calls the public zone. About the public zone, Moore says it includes a "high degree of intervening material," a "high degree of integration" between the voice and the musical environment, "full, loud vocals" which may contain "shout/semi-shout,"

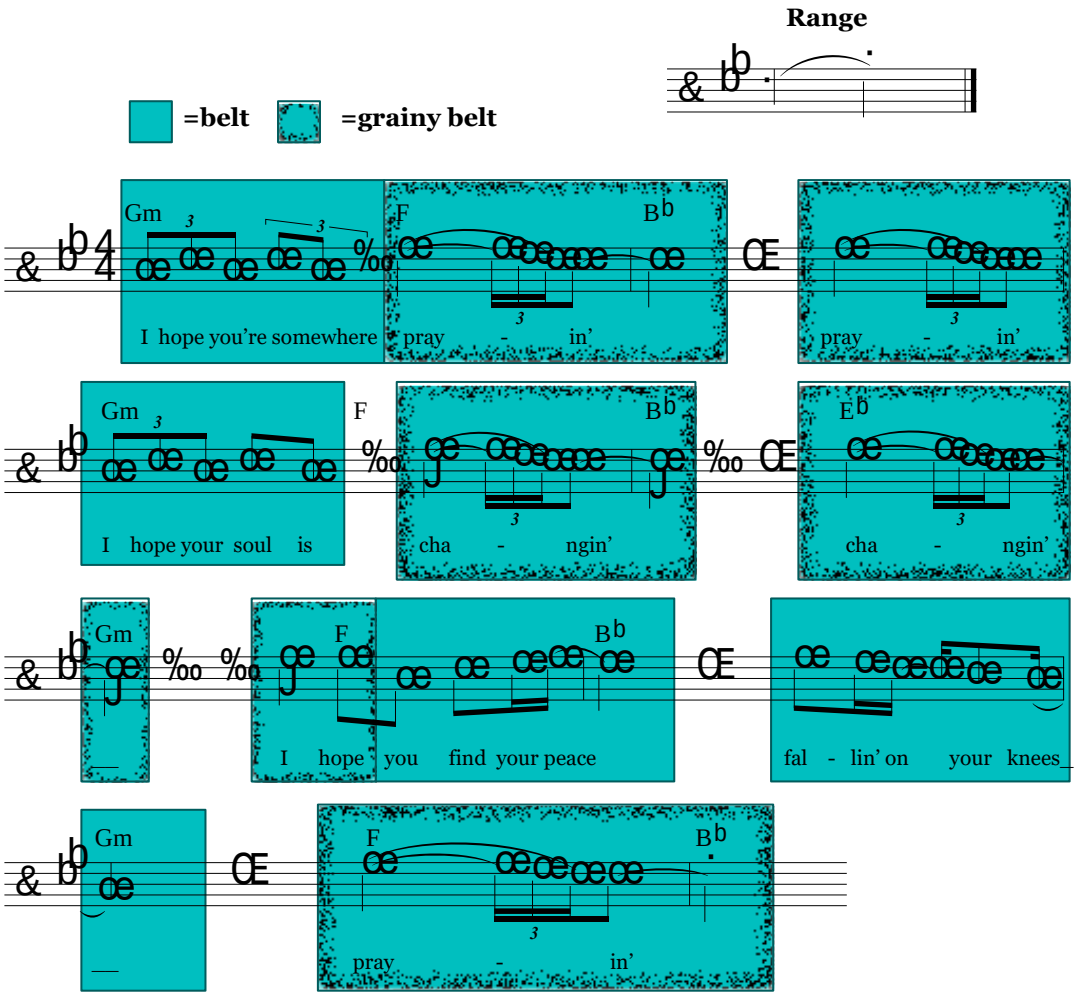


Figure 6.8: Annotated Musical Transcription of Chorus 2 (2:24–2:48), "Praying" by Kesha

and that the "vocals [lyrics] address large groups" (2012, 187). While her lyrics are the same as before, and listeners know that she is specifically addressing her abuser and (in the public zone) anyone that can hear, the chorus could also be vaguely addressed to anyone, serving as an open message for any and all abusers, in similar fashion to the chorus of Alanis Morissette's "You Oughta Know," as discussed by Lori Burns (2010). This shift is especially pertinent as lyrics are sung by the listener at home, therefore directly addressing these lyrics to their own abuser(s) through mimetic engagement. The proxemic shift between the first

chorus, in the personal zone, and the second chorus, in the public zone, suggests different implied audiences (small vs. large), even when the lyrics remain the same. As Kesha sings in the new public zone, she stays in her belt voice and overdrives only on "prayin'," "changin'," and "I hope," a sign that her anger is diminishing.

As opposed to the first cycle of "Praying," the second cycle shows tremendous changes in lyrical content, vocal register, vocal timbre, and vocal placement. These shifts all work together to create an aural sense of her growing strength in recovery. In the lyrics, she both has agency and emphasizes herself; vocally, she shifts out of her low register and sings predominantly with a more supported belt voice; and texturally, other instruments add to the texture to give her voice a place in a larger, musical community. The timbral nuances also importantly show that the recovery is not a perfectly upward trajectory, and that even with her newfound strength, she does not yet feel completely comfortable. She does not, however, sink back into the low, vulnerable, disconnected voice and texture from the beginning, showing significant growth even though her recovery is not perfectly linear.

Timbral Transcendence

In the bridge, shown in Figure 6.9, Kesha describes praying for her abuser, hoping that he will "see the light," before letting go and leaving this to God to forgive. Though it is an unfortunately common assumption that leaving an abuser behind is an easy thing to do (as is evident by the commonly asked question:

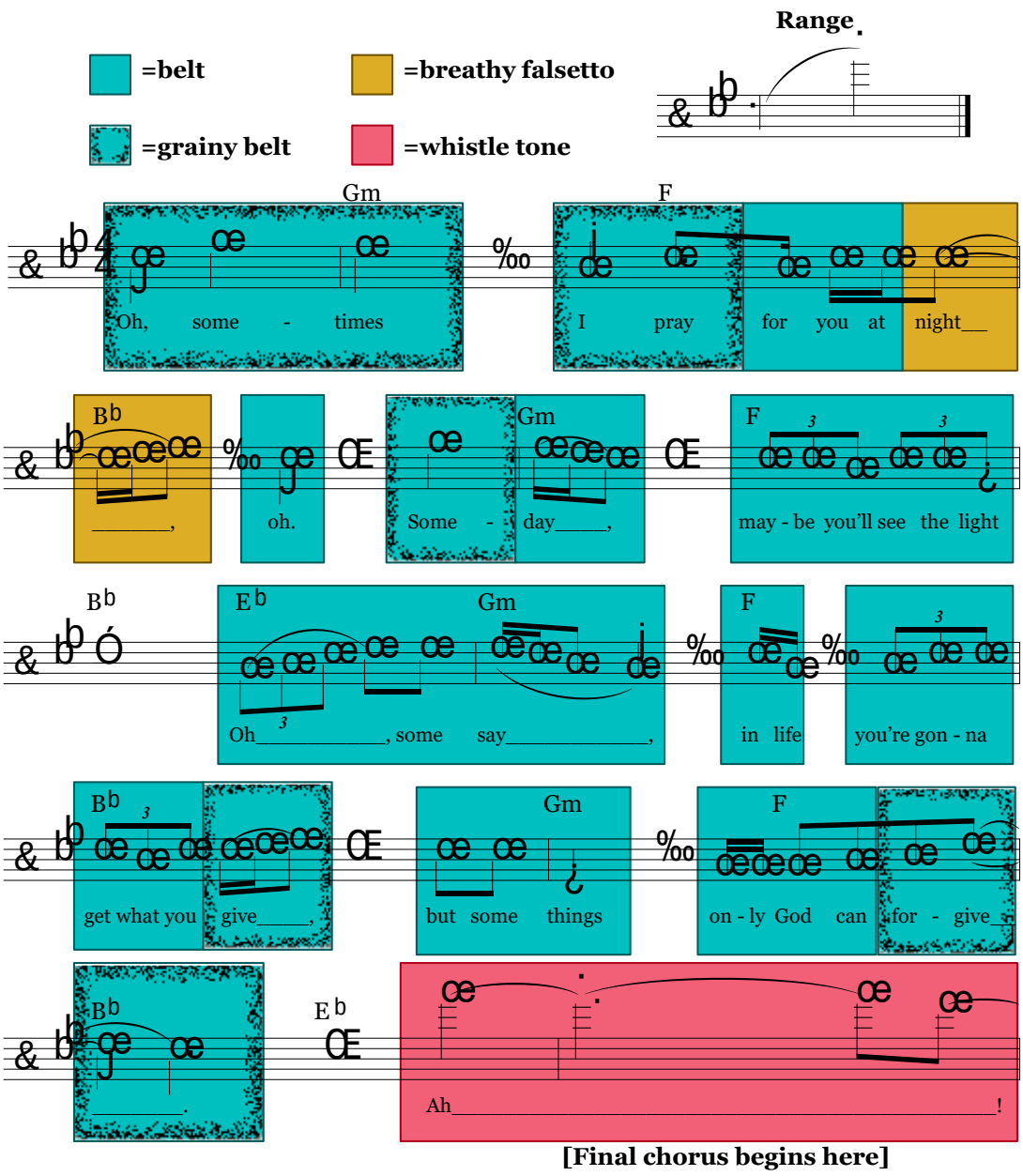


Figure 6.9: Annotated Musical Transcription of the Bridge (2:48–3:15), "Praying by Kesha

"why don't they just leave," as well as the necessity for the dialogue around the viral #WhyIStayed), survivors have very strong connections with their abusers (e.g., emotional, financial, familial) and many have been so dependent on them for so long that it is very difficult. Leaving abusers can often be extremely

dangerous as well, especially for women (Fleury et. al. 2000, 1364). Kesha's entire career was, at this time, very dependent on Dr. Luke, so financial and career dependence, on top of their personal relationship, made her connection to him very strong. While she goes through this difficult step, listeners can sense her feelings of disconnection as the accompaniment drops back to just piano and backup vocalists. Kesha has not lost all of her connections, as her backup vocalists remain, but it is a noticeable shift from the previous public zone. Similar to Verse 3, she sings with multiple vocal timbres, including belt, grainy belt, breathy falsetto, and even whistle register. Even though the texture thins behind her, she does not drop back down to her lower register. She does include some of her breathy falsetto, implying some shifts into dissociation and hypoarousal, but does seem to be able to hold herself up on her own for most of the bridge. She begins expressing rage in her grainy belt and, at the end of the phrase, becomes overwhelmed and gives into her breathy voice. It is like all her vocal energy is given at the beginning of the phrase, and she drops immensely in energy at the end. She continues using mostly smooth belt, but does use grainy belt for "some(day)," "give," and "forgive." While she is leaving the forgiving up to God, she still emphasizes the word "forgive," as it is a very difficult word for any trauma survivor. She then vocally "shoots for the stars" as she soars to F6 in her whistle register, switching into her M3 position and handing the main melody over to the choir. This moment represents her transcendence. Chelsey Hamm describes this moment as "representative of feminine liberation from a male oppressor" (2018). She not only emphasizes her leaving *him* behind, but also leaves *listeners* behind, as most people cannot overtly mimetically engage with

this vocal moment. In this way, she seems to invite listeners to join in with the chorus behind her, creating more musical support for her, and possibly emphasizing this public zone shift even more.

The final chorus (see Figure 6.10) begins with the backup vocalists while Kesha continues to hold her transcendent whistle tone. It returns to Moore's public zone, with the same texture as the previous chorus. Kesha joins in the chorus's melody after exhausting her whistle note, and sings along in her belt voice. She uses her grainy belt voice only on "I hope," "peace," and "falling." In the first chorus, she sang consistently in low-middle modal voice, and only sang in breathy voice on "knees." In the second chorus, similar to this one, she emphasizes "I hope" in her grainy voice, but also highlights the title words "prayin'" and "changin'." This time, "peace" and "falling" stand out as she sings through these words one final time, portraying her ultimate goal of peace for herself. She continues in belt and grainy belt, portraying her continued oscillation through intense anger and leveling out, and on the final titular lyric, she backs off to her breathy voice. Though this sound has previously felt numb, timid, and afraid, this time it seems like a return-to-Earth moment after her whistle-tone transcendence. However, the lightness in her sound could also represent some numbness, as before. With this interpretation, she ends the song admitting that she is not "fixed," nor "finished" with her healing. This message is further represented with a drop in texture. At the end, all other musical material cuts out underneath her belting "I hope you find your peace," and she and the piano finish alone. While she ends disconnected from her musical environment, she does not imply the same intimate zone of the beginning. Even though the ending portrays

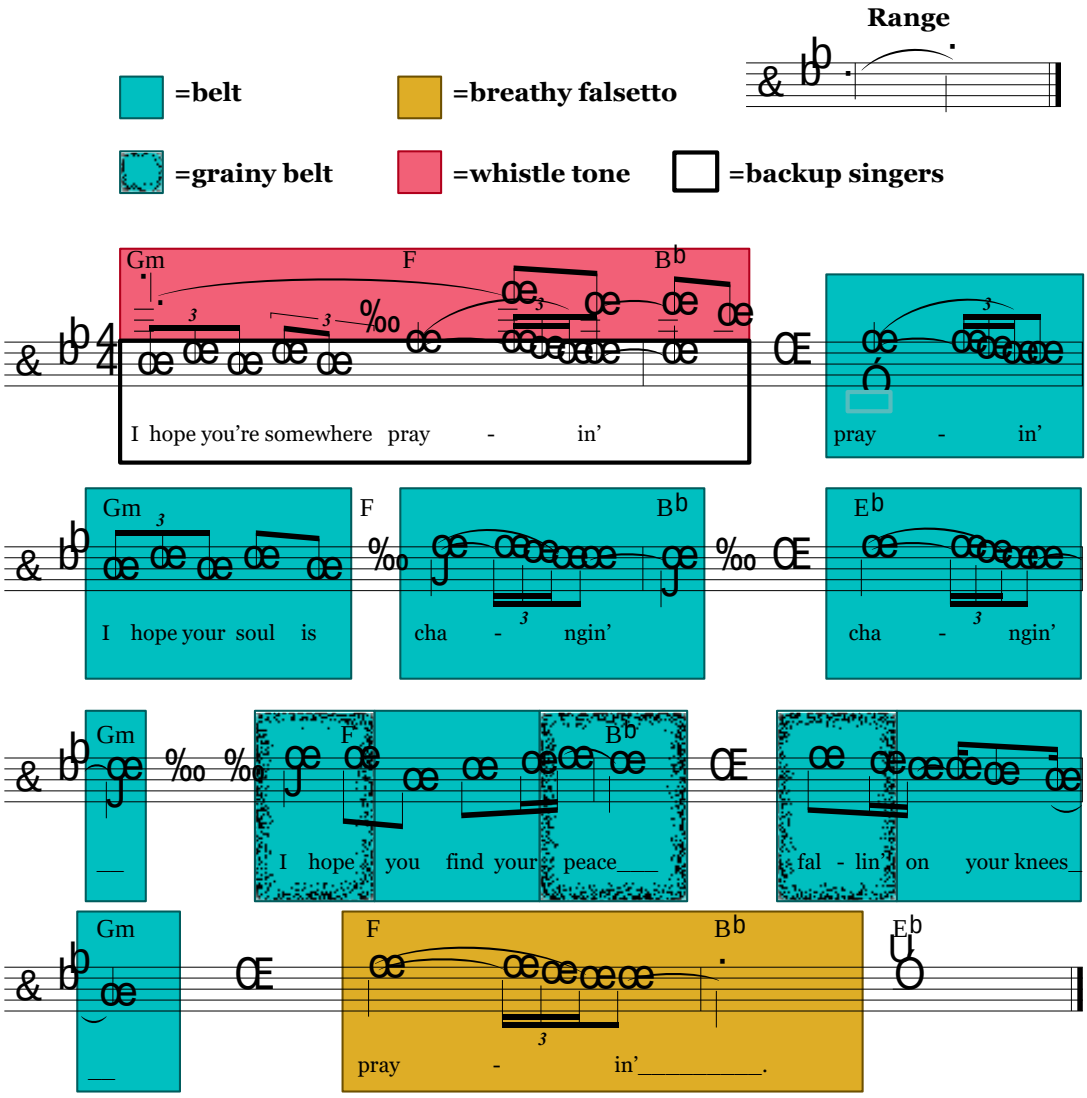


Figure 6.10: Annotated Musical Transcription of Chorus 3 (3:15–3:50), "Praying" by Kesha

an imperfect recovery, it still shows distinction from the very beginning, suggesting a journey of improvement from that place. It seems to be that in the first and second cycles of the song, she needed the other musical material to lift her up, but here she seems to imply strength in herself. Now, she can stand on her own without their help and support.

Conclusion

In “Praying,” Kesha begins her vocal journey in an extremely low register, disconnected from musical material aside from the piano, and she places herself—grammatically—as the direct object to the active subject, Dr. Luke. In the first cycle, she gains more strength in her lower-middle register as she is supported by other musical material and begins to give herself a more active grammatical role. In the second cycle, she shifts registers dramatically and has to find her way in a new place of strength. She continues to speak actively about herself, she is supported by more musical material, and she sings confidently in a high, grainy belt voice. She finally has her moment of transcendence in the bridge as she soars to her whistle tone voice, and at the very end (during the final chorus) she proves that she can now stand on her own, even though her recovery is not perfect.

Kesha has made it clear that these lyrics were written as a direct response to her trauma and recovery, and many listeners have been powerfully affected by this song. One listener writes,

> The weight that these lyrics carry echoes far beyond Kesha’s own struggles—it’s the dead letter in the nightstand that survivors could never send, the hours of roleplaying exercises in therapy. It’s the opportunity to say something to a person who has caused such profound pain, to prove that survivors have voices despite abusers attempts to silence them…the power in “Praying” comes from the light shown on the trauma itself, that if her trauma was real enough to be spoken out loud, maybe mine was too (Boucher 2017).

However, it is not only Kesha’s lyrics that elicit a powerful response. Kesha’s range and timbre in “Praying” convey her trauma processing, through which her subconscious thoughts find an outlet. Not only can listeners sense and

mimetically engage with these shifts (Heidemann 2016, Cox 2016), but Kesha's comments have shown that she found therapeutic benefit in writing and making this album. She says, "I'm looking at this record and as [sic] myself, and as this whole journey as, I'm a new artist. Like the first time anyone is getting to know me" (Sebert 2018). Rabbi Lionel Blue, a student/patient of Alfred Wolfsohn, who attempted to cure mental illnesses with vocal coaching, said about this process "it was never a process of taking apart, but of putting together all the pieces into a whole, a whole that I had never experienced before—and this whole was me" (Blue 1991, 330). While I am in no way making claims that Kesha would have known about Wolfsohn's teachings, these quotes are so similar in nature, showing the connections in experiences after trauma, as well as the ways that vocal production helps in the recovery process. Throughout "Praying," Kesha uses two large registral shifts that mark important lyrical moments, timbral nuances that show small-scale changes in her emotional control, and various proxemic shifts that portray her building ability to connect both to others and to herself.

In this dissertation, I have shown how performers are able to use vocal timbre as a powerful expressive tool. In doing so, I examined the effects of trauma on the mind and body, with particular focus on the "freeze" and "fight" responses. In Chapters II and III, I discuss dissociation and hypoarousal, consequences of the "freeze" response, and demonstrate how breathiness and reverb are effective communicators of this feeling. Breathiness is created with low tension in the vocal mechanism and it feels and sounds as if it is more disconnected from the body due to the excess air expelled. In a different way, reverb conveys dissociation through obscuring the specific place that a singer

occupies in the sonic space, as well as through the addition of technological mediation (especially in instances of sonic cartoons), which effectively communicates the idea that dissociation can make someone feel like they are not real, and/or like everything around them is not real. In my experience, in many songs about sexual assault that have lyrics referring to dissociation performers use breathiness and/or reverb. On the opposite end of the spectrum, noisy timbres like growl, rasp, and screams are commonly found in songs about sexual assault with rage narratives. In Chapter IV, I show how these timbres are created with high tension and excess noise, which effectively communicate hyperarousal caused by the "fight" response. Additionally, I demonstrate that these sounds can also actually cause a response in a listener. In my final two chapters, I move to full-song analyses using the methodology I set up in Chapters II–IV to examine nuances in personal experience and show how performers use a variety of vocal timbres to portray the emotional roller coaster that comes along with experiencing sexual trauma. In doing so, my aim is to bring more attention to studies in vocal timbre, trauma, and music.

BIBLIOGRAPHY

Alexander, Christine. 2022. "The Untold Truth of Fiona Apple." *Nicki Swift*, October 5.

Anderson, Sini. 2013. *The Punk Singer*. Documentary, 80 minutes. Sundance Selects Production.

Ani, Ivie. 2018. "Jessie Reyez, Bebe Rexha, Tinashe Accuse Producer Detail of Sexual Misconduct." *Okayplayer.com Music News*.

Arnal, Luc H., Adeen Flinker, Andreas Kleinschmidt, Anne-Lise Giraud, and David Poeppel. 2015. "Human Screams Occupy a Privileged Niche in the Communication Soundscape." *Current Biology* vol. 25, issue 3 (August): 2051–2056.

BaileyShea, Matthew L. 2014. "From Me To You: Dynamic Discourse in Popular Music." *Music Theory Online* 20, no. 4 (December).

Bain, Katie. 2021. "Women Making Music Study: Sexual Harassment Is 'By Far the Most Widely Cited Problem.'" *Billboard*, March 25.

Bellis, Nigel and Astral Finnie. 2019. *Surviving R. Kelly*. Documentary. Lifetime.

Bliss, Karen. 2017. "Jessie Reyez Opens Up About Her Journey to Landing a Deal with Island Records." *Billboard*, September 5.

Blistein, John. 2020, "Detail, Producer for Beyonce and Lil Wayne, Arrested on Sexual Assault Charges." *Rolling Stone*, August 7.

Bloom, Madison. 2019. "Phoebe Bridgers Issues New Statement on Ryan Adams Abuse Allegations." *Pitchfork*, February 16.

Borrie, Stephanie A. and Christine R. Delfino. 2017. "Conversational Entrainment of Vocal Fry in Young Adult Female American English Speakers." *Journal of Voice* vol. 31, no. 4 (July): 513.e25–e32.

Boucher, Jacqueline. 2017. "Kesha's New Music and Its Impact on Survivors of Sexual Trauma." *The Mary Sue*, August.

Bowman, Rob. 2003. *Soulsville, U.S.A. – The Story of Stax Records*. New York: Schirmer.

Brackett, David. 2000. *Interpreting Popular Music*. Berkeley: University of California Press.

Brewerton, Timothy D. 2007. “Eating Disorders, trauma, and comorbidity: Focus on PTSD.” *Eating disorders* 15, no. 4: 285–304.

Briere, John N. and Catherine Scott. 2015. *Principles of Trauma Therapy: A Guide to Symptoms, Evaluation, and Treatment.* Los Angeles: SAGE Publications.

Brøvig-Hanssen, Ragnhild and Anne Danielsen. 2016. *Digital Signatures: The Impact of Digitization on Popular Music Sound.* Cambridge: The MIT Press.

Büetinger, Jessica R., Daniela Hubl, Stephan Kupferschmid, Frauke Schultze-Lutter, Benno G. Schimmelmann, Andrea Federspiel, Martinus Hauf, Sebastian Walther, Michael Kass, Chantal Michel, and Jochen Kindler. 2020. “Trapped in a Glass Bell Jar: Neural Correlates of Depersonalization and Derealization in Subjects at Clinical High-Risk of Psychosis and Depersonalization-Derealization Disorder.” *Frontiers in Psychiatry* 11 (September 10).

bug. 2016. “Nicole Dollanganger’s Beautiful Dark Twisted Fantasy.” *Medium*, July 26.

Burns, Lori. 2019. “Dynamic Multimodality in Extreme Metal Performance Video: Dark Tranquility’s ‘Uniformity,’ Directed by Patric Ullaeus.” In *The Bloomsbury Handbook of Popular Music Video Analysis*. Edited by Lori Burns and Stan Hawkins.

———. 2020. “Female-Fronted Extreme Metal: Jinjer, Gender, and Genre Norms in Sound & Image.” Presentation at the Annual Meeting of the Society for Music Theory, Virtual Conference (November).

Burns, Lori and Mélisse Lafrance. 2002. *Disruptive Divas: Feminism, Identity & Popular Music.* New York: Routledge.

Burns, Lori. 2010. “Vocal Authority and Listener Engagement: Musical and Narrative Expressive Strategies in the Songs of Female Pop-Rock Artists, 1993-95.” In *Sounding Out Pop: Analytical Essays in Popular Music,* ed. Mark Spicer and John Covach. University of Michigan Press: 154–192.

Chandler, Kim. 2014. “Teaching Popular Music Styles.” In *Teaching Singing in the 21st Century,* ed. Scott D. Harrison and Jessica O’Bryan, 35–51. New York: Springer.

Cheng, William. 2020. *Loving Music Till It Hurts*. New York: Oxford University Press.

Cizmic, Maria. 2012. *Performing Pain: Music and Trauma in Eastern Europe*. New York: Oxford University Press.

Clark, Annie E. and Andrea L. Pino. 2016. *We Believe You: Survivors of Campus Sexual Assault Speak Out*. New York: Holt Paperbacks.

Claveria, Marina. 2014. "Mina Loy and Bikini Kill: Hidden Identities in Feminist Politics." *Oregon Undergraduate Research Journal* vol. 6, no. 1.

Cohen, Bonni and Jon Shenk, directors. 2016. *Audrie & Daisy*. Documentary. Actual Films.

———. 2020. *Athlete A*. Documentary. Actual Films.

Colapinto, John. 2021. *This Is The Voice*. New York: Simon & Schuster.

Coleman, Miriam. 2014. "Demi Lovato Lambastes Lady Gaga for 'Glamorizing' Eating Disorders: Singer Criticizes Gaga's Vomit-Filled SXSW Performance." *Rolling Stone*, March 16.

Cottom, Tressie McMillan. 2019. *THICK: And Other Essays*. New York: The New Press.

Cox, Arnie. 2001. "The mimetic hypothesis and embodied musical meaning." *Musicae Scientiae* V, no. 2 (Fall): 195–212.

———. 2011. "Embodying Music: Principles of the Mimetic Hypothesis." *Music Theory Online* 17, no. 2 (July).

———. 2016. *Music and Embodied Cognition: Listening, Moving, Feeling, & Thinking*. Bloomington: Indiana University Press.

Davies, Catherine Anne (@The_Anchoress). 2021. "Here's the video for 5AM. We made this a year ago with the help of many brave + wonderful people but I was too afraid to share it at the time. The events of this week have given me the confidence, knowing that it is not just my story, it is all of ours." Twitter post, March 14, 2021.

de Clercq, Trevor. 2024. "Some Proposed Enhancements to the Operationalization of Prominence: Commentary on Michèle Duguay's 'Analyzing Vocal Placement in Recorded Virtual Space.'" *Music Theory Online* 30, no. 1 (March).

Deer, Sarah. 2015. *The Beginning and End of Rape: Confronting Sexual Violence in Native America*. Minneapolis: University of Minnesota Press.

"Depersonalization." 2018. In *APA Dictionary of Psychology*. April 19, 2018.

"Derealization." 2018. In *APA Dictionary of Psychology*. April 19, 2018.

"Description and Sound of Growl." *CVT Research Site*. https://cvtresearch.com/description-and-sound-of-growl/

Diagnostic and Statistical Manual for Mental Disorders: DSM-5. 2013. Arlington, VA: American Psychiatric Publishing.

Dick, Kirby, director. 2015. *The Hunting Ground*. Documentary. RADiUS-TWC.

Dick, Kirby and Amy Ziering, directors. 2012. *The Invisible War*. Documentary. Cinedigm and Docurama Films.

———. 2021. *Allen v. Farrow*. Documentary. HBO.

"Dissociation." 2018. In *APA Dictionary of Psychology*. April 19, 2018.

Dockwray, Ruth and Allan Moore. 2010. "Configuring the sound-box 1965–1972." *Popular Music* vol. 29, no. 2 (May): 181–97.

Doherty, Michael. 2015. "Nicole Dollanganger's Music is Darkly Dolled Up." *VICE* (June 8).

Doyle, Peter. 2005. *Echo and Reverb: Fabricating Space in Popular Music Recording, 1900–1960*. Middletown, CT: Wesleyan University Press.

Duguay, Michèle. 2021. "Gendering the Virtual Space: Sonic Femininities and Masculinities in Contemporary Top 40 Music." PhD diss., City University of New York (September).

———. 2022. "Analyzing Vocal Placement in Recorded Virtual Space." *Music Theory Online* 28, no. 4 (December).

Eidsheim, Nina. 2019. *The Race of Sound: Listening, Timbre & Vocality in African American Music*. Durham: Duke University Press.

Fales, Cornelia. 2002. "The Paradox of Timbre." *Ethnomusicology* 46, no. 1 (Winter): 56–95.

Fink, Robert, Melinda Latour, and Zachary Wallmark, eds. 2018. *The Relentless Pursuit of Tone: Timbre in Popular Music*. New York: Oxford University Press.

Flemke, Kimberly. 2009. "Triggering Rage: Unresolved Trauma in Women's Lives." *Contemporary Family Theory* 31 (January 31): 123–139.

Fleury, Ruth E., Cris M. Sullivan, and Deborah I. Bybee. 2000. "When Ending the Relationship Doesn't End the Violence: Women's Experiences of Violence by Former Partners" *Violence Against Women* 6, no. 12 (December): 1363–1383.

Florio, Angelica. 2018. "The Kesha Documentary 'Rainbow' Shows How the Singer Overcame Trauma to Make Her Album." *Bustle*, August.

Frampton, Scott. 1996. "Next Big Thing: Fiona Apple." *CMJ New Music Magazine*, January 1.

Goldman, Vivien. 2019. *Revenge of the She-Punks: A Feminist Music History from Poly Styrene to Pussy Riot*. Austin: University of Texas Press.

Gottlieb, Joanne and Gayle Wald. 1994. "Smells Like Teen Spirit: Riot Grrrls, Revolution and Women in Independent Rock." In *Microphone Fiends: Youth Music & Youth Culture,* ed. Andrew Ross and Tricia Rose, 250–274. Routledge.

Green, James A., Pamela G. Whitney, and Gwen E. Gustafson. 2010. "Vocal Expressions of Anger." In *International Handbook of Anger: Constituent and Concomitant Biological, Psychological, and Social Processes,* ed. Michael Potegal, Gerhard Stemmler, and Charles Spielberger, 139–156. New York: Springer.

Griffiths, Dai. 2003. "From lyric to anti-lyric: analyzing the words in pop song." In *Analyzing Popular Music*, ed. Allan F. Moore, 39–59. New York: Cambridge University Press.

Grimes, A.C. 2022. "Fiona Apple's Tragic Real-Life Story." *Grunge.* (10 October).

Grooten, Heleen. 2023. "The Polyvagal Theory and Voice Disorders." In *Trauma and the Voice: A Guide for Singers, Teachers, and Other Practitioners,* edited by Emily Jaworski Koriath, 29–48. Lanham, MD: Rowman & Littlefield.

Grow, Kory. 2014. "Kesha Opens Up About Her Eating Disorder and Experience in Rehab." *Rolling Stone,* July 11.

Hallett, Stephanie. 2017. "On 'Rainbow,' Kesha Manifests the power of surviving trauma." *Hello Giggles,* August 11.

Hamm, Chelsey. 2018. "Representations of the 'Female Voice' in Kesha's *Rainbow*." Paper presented at the joint Annual Meeting of the Society for Music Theory and American Musicological Society, San Antonio, TX, November.

Harding, Kate. 2015. *Asking for It: The Alarming Rise of Rape Culture—and What We Can Do About It*. Boston: Da Capo Press.

Harper, Faith G. 2017. *Unf*ck Your Brain: Using Science to Get Over Anxiety, Depression, Anger, Freak-Outs, and Triggers*. Portland, OR: Microcosm Publishing.

Hart, Roy. 1967. "How a voice gave me a conscience." *Journal of Psychotherapy and Psychosomatics* 15, no. 1 (August): 1–19.

Hayes, Eileen M. 2010. *Songs in Black and Lavender: Race, Sexual Politics, and Women's Music*. Urbana: University of Illinois Press.

Heidemann, Kate. 2016. "A System for Describing Vocal Timbre in Popular Song." *Music Theory Online* 22, no. 1 (March).

Henrich, Nathalie. 2006. "Mirroring the Voice from Garcia to the Present Day: Some Insights into Singing Voice Registers." *Logopedics, Phoniatrics, Vocology* 31, no. 1 (February): 3–14.

Herman, Judith. 1997. *Trauma and Recovery: The Aftermath of Violence—From Domestic Abuse to Political Terror*. New York: Basic Books.

James, William. 1890. *The Principles of Psychology*. New York: Henry Holt and Company.

Jaremko-Greenwold, Anya. 2019. "Reminder: Phoebe Bridgers Exposed Ryan Adams in Diss Track 'Motion Sickness.'" *FLOOD Magazine*, February 22.

Johnson, Perry B. 2021. "How the Light Gets In: Sexual Misconduct and Disclosure in America's Music Industries." PhD diss. University of Southern California.

Johnston, Maura. 2016. "Kesha and Dr. Luke: Everything You Need to Know to Understand the Case." *Rolling Stone*, February 22.

Kaser, Vaughn A. 1993. "Musical expressions of subconscious feelings: A clinical perspective." *Music Therapy Perspectives* 11, no. 1: 16–23.

Kearney, Mary Celeste. 2017. *Gender and Rock*. New York: Oxford University Press.

Kendall, Mikki. 2020. *Hood Feminism: Notes from the Women That a Movement Forgot*. New York: Viking.

Kendi, Ibram X. 2019. *How to Be an Antiracist*. New York: One World.

Kesha Rose Sebert v. Lukasz Sebastian Gottwald a/k/a Dr. Luke, Kasz Money, Inc., Prescription Songs, LLC, Where Da Kasz At?, Kemosabe Entertainment, LLC, Kemosabe Records, LLC, and Does 1–25, BC 560466. October 2014.

Kochis-Jennings, Karen Ann, Eileen M. Finnegan, Henry T. Hoffman, and Sanyukta Jaiswal. 2012. "Laryngeal Muscle Activity and Vocal Fold Adduction During Chest, Chestmix, Headmix, and Head Registers in Females." *Journal of Voice* vol. 26, no. 2 (March): 182–93.

Koriath, Emily Jaworski, ed. 2023. *Trauma and the Voice: A Guide for Singers, Teachers, and Other Practitioners*. Lanham, MD: Rowman & Littlefield.

Kreiman, Jody and Diana Sidtis. 2011. *Foundations of Voice Studies: An Interdisciplinary Approach to Voice Production and Perception*. Hoboken: Wiley-Blackwell.

Krouse, Erika. 2022. *Tell Me Everything: The Story of a Private Investigation*. New York: Flatiron Books.

Lacasse, Serge. 2000. "'Listen to My Voice': The Evocative Power of Vocal Staging in Recorded Rock Music and Other Forms of Vocal Expression." PhD. Diss. University of Liverpool.

Lavengood, Megan. 2017. "A New Approach to the Analysis of Timbre." PhD diss., City University of New York (September).

———. 2020. "The Cultural Significance of Timbre Analysis: A Case Study in 1980s Pop Music, Texture, and Narrative." *Music Theory Online* 26, no. 3 (September).

Leman, Marc. 2008. *Embodied Music Cognition and Mediation Technology*. Cambridge, MA: MIT Press.

Lesaffre, Micheline, Pieter-Jan Maes, and Marc Leman, eds. 2017. *The Routledge Companion to Embodied Music Interaction*. New York: Routledge.

Levine, Peter A. 2010. *In An Unspoken Voice: How the Body Releases Trauma and Restores Goodness*. Berkeley, CA: North Atlantic Books.

Lorusso, Marissa. 2017. "Kesha Walks Us Through Her 'Rainbow,' Track By Track." *National Public Radio*, August 11.

MacDonald, Sarah. 2017. "Jessie Reyez Debuts Short Film Inspired by Sexist Bullshit in the Music Industry." *VICE*. May 10.

Macfarlane, Ursula, director. 2019. *Untouchable*. Documentary. Lightbox.

Malawey, Victoria. 2020. *A Blaze of Light in Every Word: Analyzing the Popular Singing Voice*. New York: Oxford University Press.

Mapes, Jillian. 2019. "The Chorus of #MeToo, and the Women Who Turned Trauma Into Songs." *Pitchfork*, October 23.

Marcus, Sara. 2010. *Girls to the Front: The True Story of the Riot grrrl Revolution*. Harper Perennial.

Maus, Fred. 2015. "Sexuality, Trauma, and Dissociated Expression." In *The Oxford Handbook of Music and Disability Studies*. New York: Oxford University Press.

Meyer, Leonard B. 1956. *Emotion and Meaning in Music*. Chicago: University of Chicago Press.

Middleton, Richard. 2006. *Voicing the Popular: On the Subjects of Popular Music*. New York: Routledge.

Miller, Chanel. 2020. *Know My Name: A Memoir*. New York: Penguin Books.

Millman, Ethan. 2022. "Steven Tyler Accused of Sexual Assault of a Minor in New Lawsuit Over a Decades-Old Claim." *Rolling Stone*, December 29.

Mischke-Reeds, Manuela. 2018. *Somatic Psychotherapy Toolbox: 125 Worksheets and Exercises to Treat Trauma & Stress*. Eau Claire, WI: PESI Publishing & Media.

Moore, Allan. 2012. *Song Means: Analysing and Interpreting Recorded Popular Song*. Farnham, UK: Ashgate.

Morgan, Joan. 1999. *When Chickenheads Come Home to Roost: a hip-hop feminist breaks it down*. New York: Simon & Schuster.

Morris, Monique M. 2016. *Pushout: The Criminalization of Black Girls in Schools*. New York: The New Press.

Moylan, William. 2020. *Recording Analysis: How the Record Shapes the Song*. New York: Routledge.

Nerurkar, Nupur Kapoor. 2017. *Textbook of Laryngology*. New Delhi: JP Medical Ltd.

Newham, Paul. 1992. "Jung and Alfred Wolfsohn: Analytical psychology and the singing voice" *Journal of Analytical Psychology* 37: 323–336.

Nobile, Drew. 2020. *Form as Harmony in Rock Music*. New York: Oxford University Press.

———. 2022. "Alanis Morissette's Voices." *Music Theory Online* vol. 28, no. 4 (December).

Ogden, Pat, Kekuni Minton, and Claire Pain. 2006. *Trauma and the Body: A Sensorimotor Approach to Psychotherapy*. New York: W.W. Norton.

Overland, Gwendolyn. 2005. "Voice and Trauma." *ReVision* vol. 27, no. 3 (Winter): 26–31.

Parker, Ryan. 2020. "Music Producer Charged With Sexually Assaulting 6 Women." *The Hollywood Reporter*, August 6.

Parson, Erwin Randolph. 1999. "The Voice in Dissociation: A Group Model for Helping Victims Integrate Trauma Representational Memory." *Journal of Contemporary PsychoTherapy* vol. 29, no. 1 (March): 19–38.

Partridge, Kenneth. 2021. "The Bizarre Alter Egos of 11 Major Celebrities." *Mental Floss*, May 3.

Pecknold, Diane. 2016. "Those Stupid Little Sounds in Her Voice: Valuing and Vilifying the New Girl Voice." In *Voicing Girlhood in Popular Music: Performance, Authority, and Authenticity,* edited by Jacqueline Warwick and Alison Adrian, 77–98. New York: Routledge.

Penrose, Nerisha. 2018. "Jessie Reyez Accuses 'Drunk In Love' Producer Detail of Sexual Misconduct, Reveals He Inspired 'Gatekeeper.'" *Billboard* (May 10).

Pino, Nathan W. and Robert F. Meier. 1999. "Gender Differences in Rape Reporting." *Sex Roles* 40 (June): 979–90.

Porges, Stephen W. 2011. *The Polyvagal Theory: Neurophysiological Foundations of Emotions, Attachment, Communication, Self-Regulation*. New York: W.W. Norton.

Provenzano, Catherine. 2018. "Auto-Tune, Labor, and the Pop-Music Voice." In *The Relentless Pursuit of Tone: Timbre in Popular Music,* edited by Robert Fink et al., 159–82. New York: Oxford University Press.

Ratner, Leonard G. 1980. *Classic Music: Expression, Form and Style*. New York: Schirmer Books.

Reed, Dan, director. 2019. *Leaving Neverland*. Documentary. HBO.

Resick, Patricia A. and Monica Schnicke. 1992. “Cognitive Processing Therapy for Sexual Assault Victims.” *Journal of Consulting and Clinical Psychology* 60, no. 5 (October): 748–756.

“Responding to Transgender Victims of Sexual Assault.” 2014. *Office for Victims of Crime*, June.

Reyez, Jessie. 2018. “One night, over 6 years ago Noel ‘Detail’ Fisher tried this on me. I was lucky and I got out before it got to this. I didn’t know what to say or who to tell. I was scared. Fear is a real thing. The girls that came out are brave as hell. Yes this is who gatekeeper is about. My experience didn’t get this awful. I hope that these women find justice.” Instagram, May 10, 2018. (Post has since been removed).

Reyez, Jessie and Peter Huang. 2017. *Gatekeeper*. Short Film. Mad Ruk Entertainment.

Ridley, Jane. 2021. “Inside rock star sex predator allegations: From Elvis to David Bowie to Bob Dylan.” *The New York Post*, August 17.

Rings, Steven. 2015. “Analyzing the Popular Singing Voice: Sense and Surplus.” *Journal of the American Musicological Society* 68, no. 3 (Fall): 663–671.

Rogers, Jillian. 2021. *Resonant Recoveries: French Music and Trauma Between the World Wars*. New York: Oxford University Press.

Savage, Mark. 2019. “Musicians ‘face high levels of sexual harassment.’” *BBC News* (October 23).

Schwartzman, Nancy, director. 2019. *Roll Red Roll*. Documentary. Together Films and POV.

Sebert, Kesha Rose. 2017. “Kesha: What’s Left of My Heart is Fucking Pure Gold and No One Can Touch That.” *Refinery29*, August 11.

———. 2018. *Rainbow: The Film*. Documentary, 31 minutes. Magic Seed Productions.

Sodomsky, Sam. 2017. “Album Review: *Stranger in the Alps* by Phoebe Bridgers.” *Pitchfork*, September 23.

Sormus, Megan. 2015. “‘I Could Scream My Truth Right Through Your Lies if I Wanted’: Bikini Kill’s Sound-Collage and the Subversive Rhetoric of Grrrlhood.” *Punk & Post-Punk* vol. 4, no. 2 (September 1): 159–174.

Spreadborough, Kristal. 2022. “Emotional Tones and Emotional Texts: A New Approach to Analyzing the Voice in Popular Vocal Song.” *Music Theory Online* 28, no. 2 (June).

Spreadborough, Kristal and Ines Anton-Mendez. 2019. “It’s Not What You Sing, It’s How You Sing It: How the Emotional Valence of Vocal Timbre Influences Listeners’ Emotional Perception of Words.” *Psychology of Music* vol. 42, issue 3 (May): 407–19.

Stein, Dan J., Debra Kaminer, Nompumelelo Zugu-Dirwayi, and Soraya Seedat. 2009. “Pros and cons of medicalization: The example of trauma.” *The World Journal of Biological Psychiatry* 7, no. 1 (July): 2–4.

Stern, Howard. “Episode on December 2, 2014.” *The Howard Stern Show*. Sirius XM Radio. December 2, 2014.

Tongson, Karen. 2006. “Tickle Me Emo: Lesbian Ballads, Straight-Boy Emo, and the Politics of Affect.” In *Queering the Popular Pitch,* edited by Sheila Whiteley and Jennifer Rycenga, 55–66. New York: Routledge.

Tyler, Steven with David Dalton. 2004. *Does the Noise in My Head Bother You?: A Rock ’n’ Roll Memoir*. New York: Harper Collins.

van der Kolk, Bessel. 2014. *The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma*. New York: Penguin Books.

Vasterling, Jennifer J. and Chris R. Brewin, eds. 2005. *Neuropsychology of PTSD: Biological, Cognitive, and Clinical Perspectives.* New York: The Guilford Press.

Wald, Gayle. 2018. “Kathleen Hanna.” In *Women Who Rock: Bessie to Beyoncé, Girl Groups to Riot Grrrl*, ed. Evelyn McDonnell, 266–69. Black Dog & Leventhal Publishers.

Wallmark, Zachary. 2018. “The Sound of Evil: Timbre, Body, and Sacred Violence in Death Metal.” In Fink et al. 2018, 65–87.

Wallmark, Zachary. 2022. *Nothing But Noise: Timbre and Musical Meaning at the Edge*. New York: Oxford University Press.

Walsh, Dominic. 2021. “The Anchoress: Interview.” *At The Barrier: Live Music, Reviews and Opinion*, March 12.

Whiteley, Sheila. 2000. *Women and Popular Music: Sexuality, Identity, and Subjectivity*. New York: Routledge.

Williamson, Lucy, Sylvie Wilkinson, Rachael Davis, and Ruby Gregory. 2022. "Boundless love: The Story of Sarah Everard." *Shorthand*.

Wright, Sarah E. 2020. *Redefining Trauma: Understanding and Coping with a Cortisoaked Brain*. New York: Routledge.

Zagorski-Thomas, Simon. 2018. "The Spectromorphology of Recorded Popular Music: The Shaping of Sonic Cartoons through Record Production." In Fink et al. 2018, 345–66.

Zbikowski, Lawrence M. 2002. *Conceptualizing Music: Cognitive Structure, Theory, and Analysis*. New York: Oxford University Press.