

A Comparative Study of Classical and Contemporary Commercial Vocal Pedagogies

A thesis submitted to the School of Arts, University of the Witwatersrand
in fulfilment of the requirements for a Master of Music
in Research and Creative Work

Ms. Megan Nicole Cox
Student Number: 2289009
April 2021
Ethics Clearance: HREC/NMW20/09/02

Declaration

I declare that this thesis is my own, unaided work. It is being submitted in fulfillment of the degree of Master of Music at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.



(Signature of candidate)

10 March 2022

(Date)

Parkhurst, Randburg

(Location)

Abstract

This study analyses the emerging discourses present in classical and contemporary commercial music (CCM) vocal pedagogy texts. It inquires into how these discourses manifest with regards to the vocal techniques of registration, vocal colour, and vibrato. The methodology involved identifying key words and phrases, interpreting them through the devices of situated meanings and cultural models, and placing them in a larger social structure through historical and intertextual context. The emergent discourses among classical pedagogy texts reflect themes of racial and gender bias, pathologising and othering CCM techniques and singers, recommending a bodiless tone, and revering the golden age of bel canto. The emergent discourses among CCM pedagogy texts reflect themes of commercialism, anti-institutionalism, and omnivory. Overall, this suggests that the discourses driving these fields are not unrelated, but rather reflections of each other.

To Mr. Glenn LeClair

1955 - 2003

Who taught me how to believe in my abilities, to find self-discipline,
and to gain the courage to face my audience.

Acknowledgements

First of all, my deepest gratitude extends to Dr. Donato Somma, my academic supervisor, who helped guide this research in a way that was kind, intentional, and thorough. Dr. Somma helped me maintain focus and positivity throughout the entire process, and truly made this a positive and unforgettable experience.

Secondly, I would like to acknowledge my creative supervisor, Dr. Jonathan Crossley, who continually motivated my work, and helped to bring out the best parts of my creative self. Whenever I felt unsure, his enthusiasm and reassurance guided me towards new levels of inspiration and confidence in my abilities.

It was such an incredible joy to take voice lessons again! Eugenie Chopin consistently went above and beyond, stepping up to be the mentor I needed for years. Her dedication to her students is palpable, and her gift for communication and bringing music forth from her students is unrivaled. Likewise, Malie Kelly helped me to sing and express music in a way I never had. Her passion for authentic performance shines through to all of her students, and her zest for life is absolutely contagious. These two beautiful souls contributed such richness to my life over the past two years, for which I am deeply grateful.

I would like to thank Lené Kraft, who truly helped this thesis shine in the editing process. Coming from America, I had much to learn about expected spellings and punctuations, and her gentle guidance helped bring this work to the next level.

To my family and friends, who have always been so incredibly supportive of wildest dreams and ambitions. You help me to be completely, unabashedly *me*, and I thank you for your unending support.

And lastly, to Gareth, who has been by my side through it all. Your constant pep-talks have kept my spirits up more times than I can count, and your belief in my ability to be constantly better, stronger, and more capable has helped me become my very best self. From the bottom of my heart, thank you.

Table of Contents

Introduction	1
The Lived Experience of being a 'Pop Singer' - Discourse in Action	1
The Classical/CCM Divide	3
Aim	4
The Texts Chosen for this Study	5
 Rationale	7
Unequal Footing: The Evolution of CCM Pedagogy	7
The Importance of Discourse Analysis	8
 Literature	9
Comparative Vocal Pedagogy Reviews	10
Notable Discourse Analyses	12
 Methods	15
The Analysis of Discourse	15
Situated Meanings and Cultural Models	17
Discourse Analysis Method	19
The Structure of This Study	20
 Registration	21
The Definition and Classifications of Vocal Registers	21
 Classical Pedagogy Texts and Registration	24
Common Research Cited in Classical Pedagogy Texts	24
Real-Life Effects - A Discourse of the Fallible Scientist	26
McKinney's Preference for 'Modal Voice' - A Discourse of Pathology	27
McKinney's Distaste for the Falsetto Register - Gender Bias and Othering	28
'Is the Female Capable of Producing a Falsetto?' - Gender Bias Part II	32
'Reversing the Usual Procedure' - A Discourse of Racial Bias	33
'The Direct Lineal Descents of Bel Canto' - The Golden Age and Bodilessness	35
 CCM Pedagogy Texts and Registration	36
Mix Voice and Register Blending - A Discourse of The Magic Pill	37
What is in a Name? - A Discourse of Commercialism	39
 Vocal Colour	42
Resonance Versus Timbre	42
The Paradox of Timbre	43
 Classical Pedagogy Texts and Vocal Colour	45
The Chiaroscuro Timbre	45
'Drawn to That Which is Truly Beautiful' - Talent, Class, and the Body	46
Undesirable Vocal Colours - Bodilessness & Racial Bias, Part II	47

Singing in 'Strict Conformity with Nature' - Racial Bias, Part III.....	50
CCM Vocal Pedagogy Texts and Vocal Colour	52
The CCM Singer's Timbre - A Discourse of Variability and Controllability.....	52
Bias Awareness - A Discourse of Omnivory.....	54
CCM and the Classical Institution - A Discourse of Anti-Establishment.....	56
Vibrato	59
The History of Vibrato Research.....	59
The Physiology of Vibrato.....	60
Different Styles of Vibrato.....	61
The Perception of Vibrato and Sonance.....	62
The Relationship of Straight Tone to Vibrato.....	62
Classical Pedagogy Texts and Vibrato.....	63
Vibrato is Essential - A Discourse of The Natural.....	64
Vibrato is Artistic - A Discourse of Othering (Part II).....	66
CCM Pedagogy Texts and Vibrato.....	68
Different Styles of Vibrato, Past and Present - Omnivory, Part II.....	69
Vibrato Can and Must be Taught - A Discourse of Class via 'The Underdog'.....	70
Vibrato as an Asset - A Discourse of Commercialism, Part II.....	71
Vibrato as Function Versus Vibrato as Effect.....	71
Conclusion	73
Review of Discourses Identified in Classical Texts.....	73
Review of Discourses Identified in CCM Texts.....	74
Emergent Themes.....	75
The Implications of this Study.....	76

Introduction

The Lived Experience of being a ‘Pop Singer’ – Discourse in Action

I am a singer of both classical and contemporary commercial music, a multi-instrumentalist, and a composer. While these designations are rather straight-forward on the surface, identifying myself as any one of these things often proves to be somewhat fraught. When I identify myself as a contemporary singer, I am aware that classical musicians might assume I lack in foundational or theoretical knowledge. When I identify myself as a classical singer, I may get pigeon-holed into a category that does not fully consider my wide skillset of genre flexibility. Identifying as an instrumentalist or composer, I realise that singers might think I am disconnected from the emotional practice of performing and interpreting music. Despite this, even though one might be able to slough off the opinions of others, the truth of the matter remains: these thoughts, views, and biases have real-life effects.

These thought patterns illuminate the discourses surrounding musical categorisations. Discourse, as defined by Titscher et al. (2000, 26), is “text in context”. This means that any utterance – spoken or written – carries social meaning outside of its actual physical existence. The context of an utterance likewise contributes significantly to any meaning that might be interpreted. For example, consider the idea of ‘being a pop singer’. The physical reality of this action is relatively simple; one opens their mouth and, with the power of their lungs, produces a singing tone on certain pitches, in a specific order, stylistically consistent within the genre. However, the discourse surrounding this activity is much more complex. It implies a skill that was procured perhaps outside of standardised musical institutions. It implies performance that might make use of a certain style of dress or might be done at a certain type of venue. You might imagine a ‘pop singer’ having a certain type of marketing or social media savvy. You might even imagine this singer having a sense of self-importance or a shallowness, since their career is invariably tied to their image. Perhaps you have even made an assumption about this person’s general musical knowledge. Did you imagine them being able to play an instrument? Did you imagine this person having a rich background in classical music, with a depth of music theory knowledge? Did you imagine that they composed all of the songs they perform?

These questions highlight the wider cultural discourse surrounding 'being a pop singer', as well as the important fact that no activity lives in a vacuum (Gee 2001, 26). Furthermore, every utterance exists in a world of implied meanings that vary or overlap, depending on who is considering that particular utterance. After all, 'being a pop singer' is seen differently by a classical violinist than it is by a session bassist, just as it is seen differently by the conservatory admissions office or the producers of *The Voice*. Most importantly, these discourses operate in a way that have real-life effects.

When I was 18 and deciding on which university I was to attend, I wanted to find an institution at which I could study contemporary commercial music (CCM hereafter), song writing, and performing arts technology. An institution at which I could study voice, piano, and violin, and perform multiple genres of music. This, however, was not a viable option for me in the United States in 2003. The only contemporary programme I was aware of was Berkeley College of Music, whose annual tuition was \$20,450, not including room and boarding in a major metropolitan area (SEIU Faculty Forward 2021). My music teachers advised that I instead receive a 'well-rounded' education at a state university, that I get a 'good foundation' studying classical music, and that I could perform contemporary music afterward if I still wanted. What actually happened was that I attended a programme based entirely on the western-European classical music paradigm. I got an extremely specialised degree that did not consider the fact that I was not only a singer. Worst of all, I graduated without the tools to do what I really wanted to do. I did not know how to effectively perform any genres besides classical. I did not know how to improvise. I did not know how to read a chart. I did not know how to secure gigs, and I did not know how to market myself. In short, I did not know how to have an actual career in singing. I was essentially prepared only for further academic study, or to specialise in a relatively narrow path in the performing arts.

The discourses surrounding singing and studying CCM had a real-life effect on many aspects of my undergraduate music education. It influenced the advice of my private music teachers. It influenced my decision of where to study. It presumably influenced the curriculum that was available at my university (since no popular music courses or specialised professors were available). It also influenced the ways in which the university recommended I continue forward with my career, despite my individual interests.

The Classical/CCM Divide

Pedagogy textbooks, or the academic texts that guide the methodology of teaching any particular discipline, are intended by their very nature to shape the way in which things are taught. This is their purpose. The way in which things are taught then continues to form the base of knowledge of that discipline. In this way, academic pedagogy texts have a way of forming what is perceived as reality (Gee 2001, 12). This exists at the micro level, from teacher to pupil, and also at the macro level, from the institutions to the cultures they inform. Discourses are cyclical. The way in which things are taught informs the general knowledge base, and the knowledge base then influences the way things are taught. Because of this, vocal pedagogy texts are an effective entry point to analyse the discourses surrounding different styles of singing.

Let us take a moment to discuss the historic divide between classical and CCM pedagogy. The style of singing which we now call 'bel canto' rose to popularity in the mid- to late-1500s in Venice, Italy and its surrounding areas. At first, the practice was exclusive to higher society court performances, and a few celebrated singers rose to prominence in this small community for their feats of virtuosity. The vocal capabilities of these singers made a significant impact on Giulio Caccini, the hugely influential pedagogue and composer whose writings, particularly his preface for *Le nuove musiche*, "served as the model for generations of later vocal pedagogues" (Stark 2008, 194). Caccini was credited, through these writings and the careers of his many pupils, with having proliferated this style of singing throughout Italy, thus establishing the 'Old Italian School' (Stark 2008, 190–197). Many other celebrated pedagogues rose from this tradition, including Tosi, Mancini, Garcia, and Lamperti, whose writings on bel canto continue to influence the methods and pedagogies of today (ibid.).

On the contrary, the term CCM – a blanket term which includes all styles of 'non-classical' singing – was not coined until the year 2000. It includes multiple genres like pop, rock, jazz, folk, gospel, and blues, each of which has its own complex history. In 2008, the American Academy of Teachers of Singing (AATS) issued a statement calling for the necessity of a "systematic, practical approach to teaching genres including CCM and other nonclassical singing". The statement recognised that "techniques used for singing other genres ... have neither been clearly defined nor seriously addressed in traditional voice pedagogy texts" (AATS 2008, 7). This statement was seen as the impetus to establish a new field of study: CCM vocal pedagogy. From this brief history we can

sense the greenness of CCM pedagogy: an academic field in its infancy, despite the rich and complex histories of the myriad genres it contains. Classical pedagogy has a 450-year lineage compared to CCM, which was only given the green light of 'legitimacy' 13 years ago. With these stark differences in mind, there is no doubt that the discourses surrounding these styles of singing will vary quite widely.

In the years since the AATS declared CCM to be the next pedagogic frontier, how much headway has been gained? Unfortunately, the physiological complexities that differentiate CCM from classical singing have not been identified in their entirety. Many sources simply identify CCM as a more belt-heavy technique (LeBorgne & Rosenberg 2014; Stark 2008, 85), therefore having a predominantly TA-dominant¹ production. One can discern, however, from simply listening to any CCM artist that there is more to the sound than simply developing their chest voice. For example, CCM singers interchangeably use different styles of vibrato or different vocal colours, such as a 'twangy' or 'breathy' quality. Some research has investigated specific contemporary vocal techniques, for example 'mix voice' (Young 2018; Castellengo Lamesch & Henrich 2007; Lamesch et al. 2007; Castellengo Chuberre & Heinrich 2004), the development of healthy belting techniques (Sullivan 1989; Jennings 2014; Gerbi 2013), or the resonatory differences between contemporary and classical singing (Sundberg, Thalen & Popeil 2012; Sundberg, Gramming & Lovetri 1993; Bourne & Garnier 2012; Bjorkner et al. 2008; Estill 1988). Despite these gains, the multitude of differences that have organically emerged between the two singing styles have yet to be categorised and, importantly, there has not been much growth in the 'legitimacy' of the pedagogies produced, as evidenced by their presence (or lack thereof) in tertiary institutions (LeBorgne & Rosenberg 2014, xi-xiii).

Aim

In order to further the research into the field of both classical and CCM vocal pedagogy, I will conduct an in-depth comparative discourse analysis between commonly used classical and CCM vocal pedagogy texts with a focus on the vocal techniques that define and differentiate the two styles of singing: registration, vocal colour, and vibrato. For this study, I have chosen three texts from both categories based on their prominence among voice pedagogues and professional

¹ 'TA' stands for thyro-arytenoid, or the muscle that is primarily involved in the thickening of the vocal folds when singing in the lower register. TA-dominant register is synonymous with 'chest' or 'modal' register.

singers. By conducting an in-depth comparative discourse analysis of these texts, I aim to discern the discourses that are present, both currently and historically, in classical and CCM pedagogy texts. My primary research questions are thus: What are the emerging discourses in classical and CCM vocal pedagogy textbooks? How have these discourses manifested themselves with regard to how registration, vibrato and vocal colour are addressed? Lastly, what are the implications for these discourses in the way society, institutions, and musicians themselves view these styles of singing?

The Texts Chosen for this Study

It is important to note that I was born and raised in America, where I also received my undergraduate education. Because of this, the texts I am most familiar with are North American texts. Likewise, the vast majority of CCM textbooks currently available are written by American pedagogues. Therefore, due to my personal experience as well as the accessible resources, the texts chosen for this study are all American texts.

From the category of classical texts, I chose three works that are commonly used in tertiary pedagogy courses. The first text is *Dynamics of the Singing Voice, Fourth Edition* by Meribeth Bunch (1997). Bunch is a widely published voice scientist who has influenced the field of vocal pedagogy through her writing and research on whole body, holistic approaches to teaching voice (Harrison & O'Bryan eds. 2014, 5). *Dynamics of the Singing Voice* has been purchased 8.5 times more often than the discipline average since 2015, according to its publisher (Bookmetrix 2019). The second text I chose is *The Diagnosis and Correction of Vocal Faults: A manual for teachers of singing and for choir directors* by James C. McKinney (2005), who was a vocal professor and choral conductor at Southwestern Seminary (1994). *Diagnosis and Correction of Vocal Faults*, although originally published in 1994, is still the 167th most popular book purchased on Amazon in the category of voice literature (2019). The third classical text I chose is *Bel Canto: Principles and Practices* by Cornelius L. Reid (1990). Reid was a pioneering pedagogue who expanded the traditional practice of bel canto into the modernised fields of voice science and performance psychology (Glover 2002). This text, originally published in 1950, resembles the archaic style of the treatises of the Old Italian School.

From the category of CCM pedagogy, I chose three reputable texts based on their mention in several books, articles, and publications (Hoch ed. 2018, 134–149, 251–263, 291–295; Harrison &

O'Bryan eds. 2014; LeBorgne & Rosenberg 2014, 218–225). *Singing for the Stars*, authored by Seth Riggs (1992), was a standout option for this study since Riggs's clients, as of 2019, have received a collective 135 Grammy Awards (Riggs 2019). Although Riggs does not see himself as a voice scientist, his *Speech Level Singing*TM method has been used both to coach CCM singers as well as to rehabilitate post-operative voices (Wicks 2019). The second text I chose is *The Estill Voice Model: Theory and Translation* by Kimberly Steinhauer, Mary McDonald Klimek, and Jo Estill (2017). Jo Estill was one of the first voice scientists to study the physiological differences between classical and CCM singing (Estill 1988), and her scientifically proven *Estill Voice Training*TM method fully expands on her theory of teaching vocal function as the foundation of healthy singing in any genre (Fantini et al. 2016). The third CCM text I chose for this study is Elisabeth Howard's *Sing! The Vocal Power Method* (2006). Elisabeth Howard is a self-proclaimed 'vocal chameleon' who has performed in many different genres. She is also a successful vocal coach with a star-studded clientele (Howard 2019). *The Vocal Power Method* is of interest to this study because of the author's differentiation between multiple styles of vibrato and vocal colours, each of which has its own name, description, array of practical examples, and vocal exercises by which the singer may learn to develop these techniques.

Due to their prominence in their perspective disciplines, these texts were chosen in order to fairly and accurately represent the discourses reflected in both classical and CCM vocal pedagogy. Even still, these texts may not exemplify the opinions, experiences, and methods of all classical or CCM voice pedagogues. However, the differences in style, tone, method, content, author experience, and decade between the texts, coupled with the shared themes among them, will hopefully serve as ample evidence to accurately draw conclusions.

Lastly, it is important to note that discourse analysis is not a hard science (Gee 2001, 6, 94–96; Said 1979, 11). The data gathered in this study are in the form of patterns and ideas based on keyword analysis, not quantitative data. Therefore, in this process of analysis, I took great care to gather as much data as possible before drawing conclusions. As a researcher, I have been intentional in my attempt to view these texts fairly and accurately; however, I am not without my own opinions, biases, or discourses within which I operate as a classical singer, a CCM singer, an instrumentalist, a composer, an academic, and a consumer of music (Titscher 2000, 164; Said 1979, 11). Thus, it must be noted that discourse analysis can be seen only as a stepping stone, as a brick in the wall of understanding why we do the things we do, why we think the way we think as creatures of our environments, and how discourses affect the way in which we function in the world.

Rationale

Society and culture are dialectically related to discourse: society and culture are shaped by discourse, and at the same time constitute discourse. Every single instance of language use reproduces or transforms society and culture, including power relations. (Titscher 2000, 146)

Unequal Footing: The Evolution of CCM Pedagogy

Prior to the term CCM being coined in 2000, the predominant term used for this collection of singing styles was 'non-classical' singing. The implication of this terminology was that classical singing was the standard against which all other singing should be judged; that other genres of singing were considered subordinate (LoVetri 2014, 207). This suggests a cultural model in which classical singing is considered 'legitimate' while other styles of singing are tacitly deemed less worthy, lumping them all together despite their incredibly varied palate of sounds, vocal techniques, and histories.

Furthermore, although classical methods are still the predominant procedures for training the voice, it is no longer the primary career choice. A study conducted in 1997, drawn from US Bureau of Labor and Statistics data, found that out of 23,000 self-identified professional singers in the US, only 3,000 identified as being classical singers. The other 20,000 identified as 'other' (Wilson 2003). What's more, according to a 2016 survey conducted on graduate-level voice teachers, even though 77% are teaching CCM styles, only 26% are specifically trained in any CCM technique (DeSilva 2016, 41–48). In this study, 61% of the teachers surveyed stated that they have learned to teach CCM styles from 'other sources', including observing singers or teachers, talking to colleagues, experimentation with singing and teaching, or reading books and articles (51). The conclusion drawn from this study is that the majority of contemporary vocalists are either being taught by classical teachers who have little-to-no CCM training, or they are seeking to learn this style of singing from non-institutional sources (55). This suggests that the theory and practice of singing in today's western society have diverged: even though a significant portion of professional singers identify as non-classical singers, access to high-level, genre-specific educational resources is greatly limited. Furthermore, even though the institutions are still anchored in the idea that 'classical is

best', the people entering the field today are moving away from this paradigm and choosing to perform other genres.

As previously discussed, western-European classical vocal pedagogy has been constantly evolving (and critiquing) its own past since its genesis in the late sixteenth century (Stark 2008, 216–225). Each of the classical texts profiled in this study look to the past, compare their tenets to archaic hypotheses, and place themselves on the shoulders of their pedagogic forefathers. These pedagogies acknowledge their lineage through a history of faults (people used to believe this), theories (some people believe this), and perceived truths (this is what research suggests today). However, many of those 'truths' are either in contention or are 'proven' through biased research, only to be dismantled in later decades. This, in fact, can be seen as a discourse in and of itself — that science is fallible, that it is subject to human error and biases. Even still, science evolves over time, as (hopefully) do the texts. Because of this, classical voice pedagogy has slowly unfolded as a practice of critiquing old methods in order to suggest new ones.

Through my ample research, I was unable to find a single study that steps back from the standard pedagogic practice of critiquing methods to analyse discourse. There is no single study that inquires into the cultural models that have been tacitly present throughout the centuries of texts, research, and institutions. In fact, there is no discourse analysis of *any* pedagogy texts in this or any other instrumental discipline. It was even difficult to find literature that was tangentially related enough to be significant to this study. The only studies I could find comparing classical and CCM singing pertained to measurable resonatory differences between genres (Bourne & Garnier 2012; Bjorkner et al. 2008; Estill 1988; Sundberg, Gramming & Lovetri 1993). Nothing even began to discuss the deeper patterns that drive the way that genres are understood, or the way that they function within and are perpetuated by a culture.

The Importance of Discourse Analysis

Words have the power to create realities. In writing a pedagogic text, the author is taking licence to say what is 'good singing' and what is not; what is 'normal performance practice' and what is not; which techniques are 'acceptable' and which are not; which timbres constitute 'the way things are' or 'the way things ought to be' and which do not, and the way in which 'people like us' rather than 'people like them' choose to make music (Gee 2001, 2). These realities are not simply created by the author on a whim; they are based on the practices and texts of the past, whose actors have

constructed similar realities, as well as present-day actors who are simultaneously constructing parallel realities.

The purpose of discourse analysis, then, is two-fold. Firstly, it is to shed light on the implicit structures that make things 'the way they are' to "make human beings aware of the reciprocal influences of language and social structure of which they are normally unaware" (Titscher 2000, 147). Without this light, these structures continue *ad infinitum*. The second purpose is then to question these implicit structures, and to allow these questions to change the way we view things. Once the power structures that drive institutions are illuminated, those who act in that structure become "morally complicit with harm and injustice unless we attempt to transform them" (Gee 2001, 8). Discourse analysis is then seeking to be a politically involved research methodology, one with an 'emancipatory requirement' that aims to have an effect on social and institutional practices (Titscher 2000, 147). This 'emancipatory' effect of discourse analysis has real-life effects on organisations and institutions, especially in the realm of prejudice awareness, which has contributed to the rightful evolution of many institutions (i.e. female ministers in the church and increase in Black business executives), and will hopefully continue to do so in other fields.

This study therefore aims to use methodological tools of inquiry to discern the discourses that have real-life effects in the fields of classical and CCM vocal pedagogy. These discourses will be illuminated by in-depth analysis of the vocal techniques that separate and define the two styles of singing, therefore marking 'difference'. Lastly, this study will seek to identify how these discourses affect the way in which society, institutions, and singers themselves view these styles of singing. While this identification can serve only as a torch illuminating the implicit power structures of centuries-old institutions, perhaps its findings may serve their purpose as 'emancipatory' actors in a slowly evolving science.

Literature

It is important to note that there are no comparative discourse analyses of pedagogy texts, whether vocal or instrumental, within the academic literature. Therefore, in order to build the foundation for this study, I have identified an orbit of literature, relating to the research questions, on which to rest this study. As we will thoroughly discuss in the methods section, effective analysis of discourse is dependent on reading the text through the lens of both its historical and intertextual

contexts. Therefore, two categories of literature heavily influenced this analysis. These were comparative historical reviews of pedagogic methods, which gave a basis for the historical context, and other seminal discourse analyses, which helped to guide the analysis of intertextual context.

Comparative Vocal Pedagogy Reviews

Historical context is the first tool of inquiry that provides significant basis for comparative discourse analysis. Because of this, I found it important to delve into the pedagogic history of the vocal techniques analysed in this study. The two texts that were of immense help were James Stark's *Bel Canto: A History of Vocal Pedagogy* (2008) and Wendi LeBorgne and Marci Rosenberg's *The Vocal Athlete* (2014). Stark's *Bel Canto* is a comparative review of individual bel canto techniques, from their first mention in letters and treatises, through the scientific revolution of vocal pedagogy in the late nineteenth century, into modern understanding and performance practice. On the other hand, *The Vocal Athlete* extends its pedagogic review into the budding scientific research of CCM. These two texts offered great insight into the ways in which registration, vocal colour, and vibrato have been viewed and taught over the centuries of established vocal pedagogies.

Bel Canto became a go-to source for this study since its central method is to trace the lineage, both socially and pedagogically, of individual vocal techniques. Referencing this text not only provided historic context, it also deepened my understanding of the broader social and cultural implications of these techniques. For example, observe the introductory passage for Stark's chapter discussing vibrato:

Throughout the history of vocal pedagogy there have been arguments about [vibrato] ... especially in the field of early music where authenticity and historically informed performance are the goals. But those goals are elusive, due to the relative paucity of historical references to vocal tremulousness, the vague descriptions and confused labels used for it, ... and of course the varying musical tastes of each historical epoch. (2008, 121)

Even in this introduction, we can see that Stark has taken great caution to consider not only the history of any particular technique, but also where it stands with relation to human psychology, current voice science, and performance practice. This passage exemplifies the way in which Stark's text aims to "seek a *rapprochement* between historical and scientific views of good singing – that is, to extrapolate backwards in time our current understanding of the physiology, aerodynamics, and acoustics of singing as a means of reinterpreting historical vocal practices" (xi).

As an aside, I would be remiss not to mention the ephemeral characteristic of music. Despite the lineage of vocal pedagogies available to be studied, they exist as mediated writings about styles and sounds, centuries past, that can never fully be captured. Even historical recordings are subject to the compression of microphones, or the degradations of the physical materials onto which they were etched. Therefore, even though the research of Stark can greatly inform this text, it is impossible to know exactly what sort of sound was being produced at any given time.

The other comparative pedagogic resource that was of great importance to this study was *The Vocal Athlete* (2014). This text offered insights into relevant CCM vocal techniques and how they relate to the established pedagogies of classical singing. In *The Vocal Athlete*, LeBorgne and Rosenberg introduce the concept of a new type of singer – the ‘hybrid singer’ – defined as “the vocal athlete who is highly skilled performing in multiple vocal styles possessing a solid vocal technique that is responsive, adaptable, and agile in order to meet demands of current and ever-evolving vocal music industry genres” (xiii). This definition, for me, truly hit the nail on the head of my personal experience, adapting my own performing career from what I had learned in my undergraduate education, and it further shed light on the fact that my experience is not unique. Many other singers have stumbled upon the same challenges and are seeking their own path toward adaptation.

Because of its extension into the CCM genres, *The Vocal Athlete* was of tremendous help where Stark left off. It allowed me to understand the way in which the historical applications of certain vocal techniques have shifted in recent times, not only into CCM vocal stylings, but also with consideration for external influences like the use of the microphone (276–93). For example, consider the way in which LeBorgne and Rosenberg recommend addressing the vocal student who also plays guitar:

Many artists who concurrently play guitar lean forward into the microphone, mainly from their neck throwing the vocal instrument out of alignment. Compensation for the lack of laryngeal freedom results in constriction and pushing. Help the client make adjustments to their microphone stand ... [and] use YouTube to introduce them to artists that use the microphone as an extension of their instrument. (290)

In this passage we can see how *The Vocal Athlete* combines traditional pedagogic ideas, like using proper alignment to take strain off the vocal mechanism, combined with modern practices like microphone technique. This aspect of the text helped me to fully understand how much CCM pedagogies have evolved in recent years, how they have truly separated themselves from the

established norms of classical pedagogies and, consequently, how they should be treated as a genre in their own right.

It is important to note that neither *Bel Canto* nor *The Vocal Athlete* are pedagogies in and of themselves, but rather reviews of multiple methods of teaching. Their structures, therefore, served as a model for the chapters of this study, which go through the chosen vocal techniques – registration, vocal colour, and vibrato – from past to present. This format allowed me to integrate the themes that arose during analysis into a form that is both logical and chronological.

Notable Discourse Analyses

The history and significance of discourse analysis as a tool of social inquiry rests on the shoulders of French philosopher Michel Foucault. For Foucault, the term ‘discourse’ was not relegated to conversation, nor to structural aspects of linguistics, but rather to patterns of knowledge and power which were, as he viewed it, inextricably linked (Gutting & Oksala, 2019). Foucault’s primary writings discussed the histories of medicine, ‘madness’, prison systems, and sexuality. Through these analyses he was able to extrapolate silent structures of power that functioned within these systems. His works have had a massive influence on several academic fields, including history, philosophy, psychology, critical theory, and gender studies. Foucault’s writings changed the very way we observe the power structures that silently govern society. His writings helped shift our understanding of power from systems of physical oppression and coercion to systems of knowledge and government.

The writings of Foucault were revolutionary in the field of social sciences, as evidenced by the fact that he is still the most frequently cited author in academic research (Kelly, 2021). Most importantly, his writings helped those in the social sciences to understand the power of words; that words are reflective of the systems of power that give them life, and that by examining texts and images, much can be discerned about the systems of power that are in place. As Gee so eloquently writes, “words have *histories*. They have been in other people’s mouths and on other people’s pens. They have circulated through other discourses and within other institutions. They have been part of specific historical events and episodes” (2001, 54). Words have the ability to construct reality in multiple ways, from naming physical objects to initiating activities, from establishing relationships to solidifying social hierarchies (12). They both reflect the world from which they emanate, as well as solidify this view of reality into the future.

Given the social significance that discourse analysis is able to sustain, the second genre of texts that provided great insight into this study was that of notable discourse analyses in the social sciences, specifically Edward Said's *Orientalism* (1979) and Stuart Hall's *Representation* (2009). These analyses helped me to pinpoint the methodological tools and thought devices that are central to uncovering discourse, as well as important themes that often arise in analysis. The greatest contribution to this study was the realisation that these analyses were focusing primarily on context – both historical and intertextual – in order to form the foundation of their arguments. These texts became not only a model of methodology, but also a source of intertextual context itself. As discussed, a discourse analysis of vocal pedagogy texts does not yet exist. However, I was able to take cues from these texts to form a framework through which I was able to structure this study.

The first notable discourse analysis that influenced this study is Edward Said's *Orientalism*. This text is seminal in how it analyses the ways in which European culture academically, artistically, and institutionally helped to both “manage and produce” the idea of ‘the Orient’ as a contrast to ‘the Occident’ throughout its history and involvement in the region (1979, 3). As an access point to analysing the discourse of Orientalism, Said studied the power dynamics between the people, politics, and institutions of ‘the Orient’ and the colonial powers of Britain, France, and post-war America through examples of art, literature, and scholarship. According to Said, “ideas, cultures, and histories cannot seriously be understood or studied without their force, or more precisely their configurations of power, also being studied” (5).

Similar to the ideologies of Foucault, within these discourse analyses power is not defined simply as an expression of physical force; it is also expressed in other, more subtle ways. According to Hall, “power also involves knowledge, representation, ideas, cultures, leadership and authority, as well as economic constraint and physical coercion” (2009, 263). In other words, the ability to express one's view about another person, group of people, idea, or institution is in itself a form of power. As Said states:

There is nothing mysterious or natural about authority. It is formed, irradiated, disseminated; it is instrumental, it is persuasive; it has status, it establishes canons of taste and value; it is virtually indistinguishable from certain ideas it dignifies as true, and from traditions, perceptions and judgments it forms, transmits, reproduces. Above all, authority *can*, indeed *must*, be analyzed. (1979, 19-20)

Stuart Hall builds on the precedent of Said in his chapter entitled “The Spectacle of the Other” (2009, 226–279). In this chapter, Hall illuminates the way in which the discourses

surrounding People of Colour in magazine images function culturally. Most importantly, he highlights the ways in which, through visual representation of minorities, differences are 'marked' and layered, adding up to a 'spectacle of otherness' (231). This act of representation produces the idea of the 'other' – someone outside of the majority group – who is often distilled to their most notable characteristics and fixed, unchanging, as an objectified example of someone who does not belong, the other (249).

Observe the way in which Hall builds the argument and assembles the layers of otherness painted onto Saartje Baartman, otherwise known as 'The Hottentot Venus', a woman who was taken to Europe from her homeland in South Africa to be displayed as an example of difference:

First, note the preoccupation ... with *marking 'difference'*. Saartje Baartman became the embodiment of 'difference'. What's more, her difference was 'pathologized': represented as a pathological form of 'otherness'... Next, observe her reduction to Nature, the signifier of which was her *body*. Her body was 'read', like a text, for the living evidence—the proof, the Truth—which it provided of her absolute 'otherness' and therefore of an irreversible difference between the 'races'... Further, she became 'known', represented and observed through a series of polarized, binary oppositions. 'Primitive', not 'civilized', she was assimilated to the Natural order ...rather than to the Human Culture. (2009, 265-266)

In this example, Hall shows how difference is marked, layer by layer, in order to form this 'spectacle of otherness'. It was not simply the colour of Saartje Baartman's skin that set her apart; it was a combination of factors, the multiplicity of 'differences' that, added together, allowed Europeans to view her as non-human; to be simultaneously intrigued and repulsed, aroused and disgusted. This layering of otherness created a world of binaries in which Saartje was reduced to simplified characteristics (primitive, sexualised etc.), thus giving cause for her subhuman treatment (266).

Hall's detailed analysis of Saartje Baartman, including his identification and layering of binaries that built this 'spectacle of otherness', was heavily influential to this study. Within my own analysis I found similar instances in which authors built their own 'spectacle of otherness' by marking difference and producing binaries, thus producing (and re-producing) implicit power structures within the field of vocal pedagogy. This text served as a template for the analysis of power structures, which as previously established, is integral to the analysis of discourse.

Orientalism and *Representation* were seminal in their respective fields for showing the ways in which discourses surrounding systemic issues – for example race, gender, or class – are reflected in the texts that are produced by the majority. Furthermore, these texts show *how* these implicit

power dynamics are present within the systems. While their subject matters differ greatly from this study, both texts bring to the forefront themes that are also embedded within these pedagogy texts, including themes of gender and racial bias, as well as pathologising and othering certain vocal styles or practitioners. These texts served as a great example of not only how to search for implicit meaning within a text, but also how to treat discourse analysis itself. This is done by not simply naming and shaming but also by searching for the historical context that grounds both words and actions in the predominant logic of their time, all while keeping in mind subsequent paradigm shifts that may have exposed and/or balanced archaic power structures.

In the process of this discourse analysis, I have taken cues from both Said and Hall in the importance of viewing the implicit effect of historical power structures. Although many would like to believe that art stands in a vacuum, that it is created purely for art's sake, the fact remains that individuals who produce art and who author pedagogy texts are only human, subject to their own experiences and biases. Thus, "no production of knowledge in the human sciences can ever ignore or disclaim its author's involvement as a human subject in his own circumstances" (Said 1979, 11). It is with this very idea in mind that I embarked on this study.

Methods

This study takes the form of a comparative discourse analysis of classical and CCM vocal pedagogy texts. It is a literature-based study, centred predominantly on secondary sources, in the realm of qualitative research. Qualitative research is defined by Van Maanen as "an umbrella term covering an array of interpretive techniques which seek to describe, decode, translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world" (Van Maanen in Merriam & Tisdell 2016, 15). Therefore, any conclusions drawn from this study will be subjective in nature, based on in-depth analysis of the chosen texts, as well as the researcher's personal experience as a singer of both classical and CCM genres.

The Analysis of Discourse

According to Titscher, discourse analysis is "the analysis of relationships between concrete language use and the wider social and cultural structures" (2000, 149). The analysis of language

and its social and cultural structures is of particular interest to academic research because of the significance language itself holds. Simply stated, “language use is always simultaneously constitutive of (i) social identities, (ii) social relations and (iii) systems of knowledge and beliefs” (Fairclough in Titscher 2000, 149). In short, language functions in a way that simultaneously reflects and produces social dynamics.

Recall the discourse definition established earlier, which is simply ‘text in context’. Context, as defined by Gee, is “everything in the material, mental, personal, interactional, social, institutional, cultural, and historical situation in which [an] utterance was made” that could conceivably influence the way it is interpreted by either the producer or receiver, whether intentional or not (2001, 54). With such a vast pool of possible meanings, how does one begin to identify the analytically significant context of an utterance? The answer centres on that which most greatly influences the interpretation of any text: historical and intertextual context (*ibid.*). Let us begin by looking at historical context.

Every act of communication has two parts: the act of the producer and the act of the interpreter. These acts are equally important to the making of meaning. Like the thought experiment of an unobserved tree falling in the woods, without an interpreter, an utterance would be insignificant sound waves in the air, or chicken scratch on a page. Due to this dual nature of communication, the complexity of discourse analysis is revealed since the process of making meaning often occurs over time. Consider a text written 50 years ago. When today’s reader interprets the text, the discourses revealed are not simply based on the experience of the author 50 years prior; they are also contingent on the experience of the present-day reader. The discourses present are influenced, whether intentionally or not, by the knowledge, biases, and lived experiences of both the producer and the receiver of the text, despite the intervening years.

Furthermore, this historical context is not reserved only for the individuals involved in the process of meaning-making; it is also dependent on history at large. The analysis of language is not dissimilar to navigating a field of linguistic landmines, due to the complex social evolution of the meaning of words (Gee 2001, 54). This can be exemplified by the transformation of terms that are no longer considered ‘politically correct’, terms that have evolved over time (and usually rightfully so) to carry negative connotations. As language progresses, any text containing such a term maintains its modern meaning to today’s interpreter, despite the fact that at the time of its authoring, the term did not necessarily carry that derogatory implication, nor did the author

necessarily intend the modern meaning of the word. Regardless of the author's intentions, the modern cultural context changes the way in which the text is interpreted.

This brings us to the next aspect of context: intertextuality. Just as any utterance is influenced by the history it carries, any text is likewise "infected with the meanings (at least, as potential) of all the other texts in which its words have comported" (Gee 2001, 54). Texts do not stand alone as testament to the words and ideas they contain; they are "related to those produced before, simultaneously and subsequently, and are only intelligible in terms of the underlying conventions and rules" (Titscher 2000, 148). Therefore, as we can see, the analysis of discourse is incomplete without gaining an understanding of related texts that discuss similar ideas and themes. Without examining both historical and intertextual contexts, any discourse analysis would be missing critical information. Context gives discourse analysis ground on which to stand, and acts as a methodological compass for the researcher.

Situated Meanings and Cultural Models

An important set of methodological tools for the analysis of discourse are the thought devices of 'situated meanings' and 'cultural models'. Situated meanings can be viewed as a bottom-up approach of thinking, from an individual's perspective, and cultural models as a top-down approach, or the world view from which a text might find meaning (Gee 2001, 51–52).

Situated meanings are variable interpretations of any given idea, depending on the individual and the context. For example, let us take the idea of 'a singer's performance'. Consider the way in which this 'performance' might be visualised differently from the perspective of an early music chorister (concert black attire, black music folder, church venue) compared to a blues singer (cocktail dress, hand-held microphone, bar venue). These individual situated meanings change depending on who the 'singer' is and the context of their particular genre.

As a methodological approach, questioning the possible situated meanings that underlie any text can give structure and direction to the analysis of discourse. It is important to inquire into any situated meanings that may be reasonable to attribute to either the author of the text, the intended reader of the text, or any unintended reader of the text (i.e. those coming from different backgrounds). Furthermore, it is important to imagine what possible situated meanings may be attributed to an author's words, despite the author's intentions (Gee 2001, 53).

Just as language does not live in a vacuum, neither do situated meanings. Situated meanings always exist within larger social structures of meaning-making, called 'cultural models'. Cultural models are the set of assumed circumstances about the world in which situations occur. They are the 'taken-for-granted assumptions' about the 'reality' of any given idea, both in form and function (59). Take, for example, the way in which one might consider the word 'art'. At first, the cultural model that often arises might inspire the image of a museum filled with oil paintings and sculptures. Quickly this cultural model might also allow one to include other disciplines, perhaps exemplified by symphonies, literature, or theatrical works. It is then not a stretch for this cultural model to include more current media, such as film or television. But where does this cultural model begin to break down? What about flat-pack furniture design? A child's finger painting? A banana duct-taped to a wall?

Cultural models are frequently challenged and ever-evolving in the field of music. Consider the troubled history of atonal, 12-tone, serial, and new music. The idea of a critic or concertgoer exclaiming, 'That isn't art!' identifies this cultural model in action. As a tool of inquiry, pinpointing the cultural model within which a text was created (and is interpreted) becomes a powerful method since, by definition, they function in a way to "set up what count[s] as central, typical cases, and what count[s] as marginal, non-typical cases" (59).

Within the analysis of any text, it is important to question what the author of the text might have valued or believed in order to write the text the way it appears. Are the emerging cultural models being used to make any value judgments? Within the text, whose interests are being represented? Furthermore, it is important to look beyond the words of the author to the larger systems that may have influenced this cultural model, including past texts, related media, or institutions as a whole. Lastly, one must inquire as to how these cultural models relate to or influence greater social structures, such as historic power dynamics or political relationships (78).

Given these examples, it is easy to see how language influences meaning-making in real-life situations. The written language of an educational text creates meaning, and in a sense constructs reality through their influence on the knowledge which is maintained and passed down by future educators. The simple fact that one text can reflect the discourses of the past while simultaneously producing the discourses of today serves as an example of how discourses perpetuate themselves over time. Therefore, analysing the way in which "situations produce and reproduce institutions,

and are, in turn, sustained by them” is central to discourse analysis (84). In this way, it is easy to see that pedagogy texts are fully intertwined with the institutions that perpetuate them; in order to gain an understanding of these institutions, it is imperative to analyse the discourses they perpetuate.

Discourse Analysis Method

The analysis of discourse, according to Titscher, is to be taken in three steps. The first step originates from the level of the text itself, in which one identifies linguistic aspects that are significant to one’s research questions. The second involves an act of interpretation and connection between the text and social practices by using the thought models of situated meanings and cultural models. The third involves viewing emergent themes with relation to larger social structures and explaining these connections within an organisational framework (2000, 150–154).

Step one: Identification

The first step of discourse analysis involves identifying, at the textual level, key words and concepts that seem significant to the genre of texts one is analysing. This includes not only the chosen vocabulary, but may also include grammar and semantics (Titscher 2000, 150–153; Gee 2001, 97). During this process, key words and phrases are chosen with a focus on the research questions, and significant linguistic elements are dissected and described.

Step 2: Interpretation

The second step is the interpretation of the text, which forms a connection between the text and social practices (Titscher 2000, 150). In this step, the thought devices of situated meanings and cultural models are employed to consider what the text suggests beyond the literal level. In this step, the researcher considers how “identities, social structures, power dynamics, etc., are being reinforced by the data” and, through this lens, inquires into how linguistic details might be contributing to possible meanings or interpretations (Gee 2001, 97). Through this process, certain themes will begin to emerge. These themes then become the basis of the next methodological step in discourse analysis.

Step 3: Explanation

In the final step of discourse analysis, the researcher connects the emergent themes to social practice within wider contexts, including the historical, intertextual, institutional, and cultural environments. In this step, issues of hegemony often arise, since “power and ideologies may have an effect on each of the contextual levels” (Titscher 2000, 151). From there, the connections between themes and cultural structures may be organised in a way that illuminates the researcher’s argument, as supported by evidence found in other texts and sources that have undergone the same scrutiny. Gee further suggests that in order for the conclusions of a discourse analysis to be valid, it must achieve ‘convergence’, defined as the way the data connect to support the analysis, which must offer ‘compatible and convincing’ support for the emergent themes (2001, 95). Because of this, the analysis of multiple texts not only aids in accuracy, it is also in fact imperative to gain a comprehensive view of the discourses in play.

The Structure of This Study

This study is separated into three chapters, centred on the vocal techniques that differentiate and define the two styles of singing: 1) registration, 2) vocal colour, and 3) vibrato. Within each section, there are three sub-categories. The first delves into the history of the vocal technique, the emergent science surrounding the technique, and where it stands with regard to current performance practice in both classical and CCM genres. Secondly, the three classical texts are analysed and presented within categories of emergent discursive themes. Thirdly, the same process of analysis is repeated with the CCM pedagogy texts. Finally, the predominant themes are compared between both genres. This structure aims to paint an accurate portrait of where each technique stands in each field, and how these techniques have helped to form the discourses that contribute to classical and CCM vocal pedagogies as a whole.

Registration

No other area of vocal instruction is as shrouded with mystery, semantic confusion, and controversy as the subject of registers and registration. (McKinney 1994, 93)

To me, as a singer of both classical and CCM music, the role that registers play in each discipline has been a point of both fascination and contention. While the aim of much classical vocal instruction is to erase any audible trace of the registers, CCM vocal stylings sometimes highlight not only the differing timbres, but also the register transition itself. To add to this confusion, there has been little consensus as to what exactly constitutes a vocal register, how many registers there are, whether they function differently in male and female voices, and what they should be named. This confusion is reflected in vast discrepancies of what is presented as fact in vocal pedagogy textbooks. In this chapter, I will discuss the way in which these discrepancies contribute to discourses of both racial and gender bias, as well as situate classical singing on the pedestal of the golden age. This is accomplished primarily through the devices of ‘pathologising’ and ‘othering’. For the purpose of this study, pathologising is defined as the practice of claiming that a particular technique is wrong or broken, or that it will do harm to the voice. Othering is the practice of contrasting those who belong to the acceptable ‘in-group’ and those who do not. This is achieved by over-simplifying characteristics of those who remain outside of the acceptable group, the ‘others’, often through the use of binary comparisons. The presence of these discourses, as we will see, suggests that these classical pedagogues implicitly view their discipline as superior to other styles of singing.

The Definition and Classifications of Vocal Registers: A History of Discrepancies

The confusion and inconsistency with which voice pedagogues and scientists have approached registration has been pervasive. Prior to the invention of the laryngoscope in 1827 and the first successful observation of the vocal folds by Manuel Garcia II in the 1840s, the vocal registers could be described only experientially by either the producer or the receiver of the tone; the singer or the listener (Henrich 2006). As a result, the registers acquired colloquial names like *voce di petto* or *voce di testa*, the chest voice or the head voice, two corporeal locations in which singers commonly feel resonance sensations. These experiences are contextually bound by the time periods in which they

existed; we cannot know exactly what the singers, teachers, or authors of the past experienced while producing any particular sound. However, the prevalence of similar terms in other languages (*voix de poitrine/voix de tete; Bruststimme/Kopfstimme*) suggests similar aural and kinaesthetic experiences across linguistic and cultural boundaries (Stark 2008, 58–63; Henrich 2006, 3; Steinhauer, McDonald Klimek & Estill 2017, 83; Large 1973, 10).

When Garcia first observed the distinct vibratory mechanisms that accompanied differing register timbres, his definition shifted from one of auditory and kinaesthetic experience to one of visual evidence of mechanical principle, an event that changed the way in which the registers would be defined (Stark 2008, 67–73; Henrich 2006, 3). Since then, there have been ongoing discussions as to exactly what constitutes a vocal register and exactly how many operate in the human voice. Is a register simply a laryngeal event – the result of a vibratory mechanism of the vocal folds? Or does the effect of the vocal tract also influence the register, due to its ability to alter what both the listener and the singer perceive as register? (LeBorgne & Rosenberg 2020, 123–124; Henrich 2006, 7–12; Stark 2008, 58, 81-90).

The current standard classification of the vocal registers was put forth in 1983. This was determined by an international committee of vocal scientists, coaches, pathologists, and physicians organised by the Collegium Medicorum Theatri (CoMeT) who “formed in an attempt to clarify the notion of vocal registers and to find a consensual position among the international voice community”. Its findings have since been reproduced and confirmed by means of laryngoscopy, cinematography, electromyography, and electroglottography based on the evidence of transition phenomena. Essentially, the breaks in the voice determine the presence of and boundaries between distinct vibratory mechanisms (Hollien et al., 1983; Henrich 2006).

The CoMeT came to the conclusion that there are four distinct laryngeal mechanisms. The mechanism described as the lower register, often called ‘chest’ or ‘modal’, is dominated by the thyro-arytenoid [TA] muscle, also called the vocalis muscle, which comprises the body of the vocal folds. For the purpose of clarification within this study, we will use the term TA-dominant register. The upper register, often called the female ‘head’ or ‘loft’ register or the male ‘falsetto’ register, is dominated by the crico-thyroid [CT] muscle. Likewise, we will use the term CT-dominant register in this study. The other two vocal registers that have been identified are the ‘glottal fry’, ‘pulse’, or *Stroh*bass register, described as a low popping sound resembling the sound of a creaky door, and the ‘whistle’, ‘flute’, or *flageolet* register, which sits at the very upper end of the range and

resembles the ring of a flute or a bell. Since both registers have limited use in classical or CCM singing, they are considered auxiliary vocal registers (Henrich 2006, 8–12; Hollien et al., 1983).

If the definition of a register is to include the influence of the vocal tract on the fundamental frequency – sometimes called a ‘secondary register’ – then the classification of vocal registers becomes more complex. In this case, other ‘register phenomena’ could be included in the definition, including ‘middle’ or ‘mix voice’, an acoustic phenomenon that blends the laryngeal function of TA- or CT-dominant singing with the aural qualities of the opposite register (Henrich 2006, 8–12). It could also include the secondary *passaggio* and the higher ‘pure head register’ sensation often described by classical sopranos. This secondary *passaggio* is characterised as a preemptive ‘lift’ in order to prepare for the formant shift that happens around the pitch D5, and the secondary ‘pure’ head register is often perceived as a lighter, more focused tone than the lower CT-dominant register (Stark 2008, 88; Henrich 2006, 11–12). Neither ‘mix voice’ nor the ‘pure head register’ are separate laryngeal functions, but they are phenomena influenced by the vocal tract that are perceived as independent register sensations by many singers.

This confusion between the physiological and the auditory / kinaesthetic experience of registration has led many voice scientists and pedagogues to put forth individual and sometimes widely varying theories for what constitutes a register and how they should be classified. Manuel Garcia himself vacillated between a two-register theory (chest and falsetto-head) and a three-register theory (chest, middle, and falsetto-head) (Stark 2008, 67–73). Many voice scientists and pedagogues have posited that women have a different number of registers than men (Stark 2008, 67–68; Henrich 2006; Large 1973, 12), while some posit that the entire voice, when correctly used, is but one register (Henrich 2006, 5). Some have even suggested that, since each note must be sung in a slightly different manner, perhaps every single note of a singer’s range could be considered its own register (McKinney 1994, 98; Large 1973, 9). Because of this confusion, several voice scientists have suggested other ‘uncontaminated’ naming paradigms, such as numbering the registers, in order to finally clarify the subject. However, this naming paradigm has only been retained among certain groups within the voice science community (Henrich 2006; Hollien et al. 1983).

Lastly, although most vocal register definitions include boundaries of pitch area, some contemporary pedagogues, including both Seth Riggs and Jo Estill, insist that the primary vocal registers are not necessarily bound by pitch area. Instead, they suggest that the limitations placed on the vocal registers are due to social and cultural norms, as well as lack of proper training to

balance the breath with the musculature responsible for registration (Steinhauer, McDonald Klimek & Estill 2017, 77–87; Riggs 1992, 33–37). Essentially, these pedagogues claim that with proper training, one can use both their TA- and CT-dominant registers throughout their entire range. For the purpose of this study, therefore, due to the complexities surrounding registration both scientifically and historically, I will use the term ‘register’ to simply designate the distinct vibratory mechanisms of the vocal folds.

Classical Pedagogy Texts and Registration

The distinction between head and falsetto remains a major point of confusion. (Large 1972, 24)

The vocal register definition of Manuel Garcia II, first published in his *Memoir* in 1840, is one of the most frequently cited definitions in pedagogy texts. Its primary tenets have become the blueprint for many subsequent register definitions, including those located in these pedagogy texts. It is as follows:

By the word register we mean a series of consecutive and homogeneous tones going from low to high, produced by the development of the same mechanical principle, and whose nature differs essentially from another series of tones equally consecutive and homogenous produced by another mechanical principle. (Garcia in Stark 2008, 68)

There are three facets to this definition: 1) the tones of each register occur within a consecutive pitch range; 2) they are homogeneous in quality; and 3) they are produced with the same physical mechanism. Despite the similarities, the number of registers and the naming paradigms recommended in each of these texts differ substantially. McKinney adheres to a four-register theory with focus on one primary singing register and three auxiliary registers (McKinney 1994, 93). Bunch asserts there are three registers despite inconsistencies within her classification structure (Bunch 1997, 76). Lastly, Reid emphasises the two-register theory with an importance placed on the ‘feigned’ voice as a functional bridge between the primary registers (Reid 1990, 64).

Common Research Cited in Classical Pedagogy Texts

In order to understand the vast discrepancies between these texts, it was important to survey the sources they cite. Although Reid does not cite any literature, both Bunch and McKinney's texts rely

heavily on the research of William Vennard, Janwillem Van den Berg, John Large, and Harry Hollien.

Vennard, a personal mentor to both Bunch and McKinney, was a strong proponent of the two-register theory. He also believed in a blended muscular function bridging the primary registers, and he called the resulting registers chest, middle and head in female singers and chest, head and falsetto in male singers (Finks 1992 37–45). Van den Berg vacillated between a three-register theory in his early career and a two-register theory later on (along with two auxiliary registers). His early research inconsistently named the middle register both middle and head, and insisted on differing physiological functions between male and female voices. Despite his later conclusions determining that the male falsetto and female head voice were in fact the same mechanism, his earlier research is cited in McKinney's text (Finks 1992, 23–29). Large was a proponent of the three-register theory; however, his personal bias against the use of the male falsetto ("when defined as the light, effeminate high voice of the male which cannot be swelled into the full head voice without a break") (Large 1972, 24) caused him to determine the falsetto to be: 1) different than the female head voice despite emerging evidence to the contrary; and 2) better relegated to an auxiliary status, along with *Stroh*bass and whistle, due to its use in current performance practice (Finks 1992, 34). Notably, this study is cited in both Bunch and McKinney's texts.

Harry Hollien's research influenced Bunch and McKinney, since they both use elements of Hollien's register-naming system: 'pulse', 'modal', 'loft', and 'whistle'. While Hollien was the spokesperson for the CoMeT's release on what is now considered the definitive classification of vocal registers (Hollien et al. 1983), his earlier research had stated that the four primary registers were classified thus:

The pulse register includes vocal fry, creak, and *Stroh*bass registers; the modal register includes chest, head, low, mid, and high; the loft register is the equivalent of the phoneticians' and speech pathologists' falsetto register, ... [and the] fourth register, the flute, whistle or pipe. (Hollien 1972)

In contrast to the CoMeT's findings in which 'modal' describes the TA-dominant register and 'loft' describes the CT-dominant register, Hollien's 1972 definition of the modal register includes both chest and head (as well as 'low, mid, and high' – whatever that means), which can easily be construed to mean the majority of the usable vocal range.

What is apparent in this varied and inconsistent research is three-fold. Firstly, the number of registers vacillates anywhere between two and five with 'middle' as a wildcard register that may

or may not exist physiologically. The second conclusion is that the labelling of registers differs for male and female singers, whether or not the mechanical function differs. The third conclusion is that there is an overlapping and confusing set of terminology, especially for the term 'head', which is used for both male 'middle' voice and female CT-dominant register. Because of this confusion, it is no wonder the classical pedagogy textbooks come to no solid consensus.

Real-Life Effects - A Discourse of the Fallible Scientist

The real-life effect of this inconsistent research can be found in Bunch's *Dynamics of the Singing Voice*. At first it states, "The low register is referred to as 'chest,' because singing in that register produces a feeling of vibration in the upper chest and lower neck. The upper register is called 'head' (female) or 'falsetto' (male), because vibrations are sensed high in the head" (Bunch 1997, 76–77). In the very next paragraph, however, the text contradicts itself by stating "current literature ... describes three basic registers: the glottal fry (or a gentle popping sound made by the vocal folds on a low pitch); a large area of regular or modal voice (including middle and head registers); and falsetto and the flute and whistle registers at the extreme top" (77).

These categorisations are confusing on two levels. In the first statement the male falsetto and female head voice both belong to the 'upper register', thus appearing to be similar, while in the second statement the male falsetto is compared to the female whistle register. Next, in the first statement, the female upper register is named the 'head' register, while in the second statement the regular, middle, and head registers (sex unspecified) belong to the overarching category of 'modal voice' – a term commonly understood to be synonymous with the TA-dominant register – and the female 'upper register' is reserved only for whistle register.

Unfortunately, this contradictory information, despite being based in the literature, is: 1) presented as a conglomerate fact and 2) intended to be taught in tertiary vocal pedagogy courses. The inconsistencies are never clarified; thus, the reader is most likely left without any clear understanding of how to teach registration. This brings us back to the scientific discourse mentioned previously: that science is in fact fallible, and that it is vulnerable to the biases of those conducting research.

McKinney's Preference for 'Modal Voice' – A Discourse of Pathology

Bunch is not the only pedagogue whose register definition is influenced by this varied research. McKinney similarly includes the majority of the usable singing voice in his classification of 'modal' register:

The modal voice is the normal register for speaking and singing. Some advocates of falsetto singing object to this statement because it seems to imply that the use of falsetto is abnormal. Their objection does not change the basic facts. It is rare to hear anyone speaking in falsetto, except for comic purposes; in fact, falsetto speech is classified as a functional dysphonia... The fact that people can and do sing in falsetto does not qualify it as a normal register in actual usage. (1994, 96–97)

To this, he adds that the confusion "concerning what a register is, and how many registers there are, is due in part to what takes place in the modal register when a person sings from the lowest pitches of that register to the highest pitches". He claims that breaks will occur if a singer holds either the length, tension, or mass of the vocal folds static as one rises in pitch. These breaks, which he contends are incorrectly identified as register boundaries, are "simply vocal problems which have been created by a static laryngeal adjustment that does not permit the necessary changes to take place" (97). While the concept of modal voice encompassing both TA- and CT-dominant vocal function is rooted in the literature that influenced McKinney, the insistence that the register transition itself is a 'vocal problem' rather than a physiological phenomenon is notable.

The inclusion of the lower CT-dominant register in 'modal voice' shows a disregard for the register boundary as being physiologically meaningful, as though the power and grounding of the lower CT-dominant sound is evidence enough for it to belong to another, more respected classification, thereby separating it from the ungrounded sound of the so-called 'falsetto'. Claiming that the register transition is a 'vocal problem', coupled with the implication that one must 'fix' the natural voice and erase all traces of register inconsistency, illuminates our first emergent discourse: the pathologising discourse. Pathologising occurs when one recategorises naturally occurring phenomena as being a pathology in need of healing. In the context of this study, pathologising appears in one of two ways: by stating that a naturally occurring vocal phenomenon is 'wrong' or 'broken', or by stating that a certain action which is not aligned with western-European classical performance practice will 'do harm' to the voice. As we will see, this discourse is pervasive throughout the classical texts profiled in this study.

McKinney's Distaste for the Falsetto Register – A Discourse of Gender Bias and Othering

Just as McKinney does not disguise his preference for the modal register, he does not feign his distaste for the 'falsetto'. In multiple instances he describes the falsetto in a negative light, as 'inherently breathy' with 'few overtones present', having 'limited dynamic variation', 'limited tone quality', and a 'simplicity of wave-form' (1994, 99–101). He goes further to state that the only proper uses for singing in falsetto include range extension in male-only choirs, range extension in solo singing especially for high pianissimo tones, for "comic effect ... especially when men are mimicking women", and for vocal development (101–102). Those who voluntarily choose to sing in falsetto fall into a few categories: falsettists (i.e. countertenors or boy sopranos), folk singers, yodelers, and pop singers. In each case, he warns of the dangers of singing extensively in falsetto, and that "unless he [the singer] plans to make a career as a falsettist", the only acceptable use of the falsetto is as "a means to an end; that end is to assist modal voice" (99).

In this list of negative attributes and warnings against the use of the falsetto, another discourse begins to emerge: one of gender bias. This discourse is exemplified by the accepted naming paradigm differentiating the female and male CT-dominant registers. The female CT-dominant register is often called 'head voice', a term that is situated within the body, while the male CT-dominant register is called the 'falsetto': a word that is not only translated to 'false' but which also contains a diminutive suffix. *Little false voice*. For female singers, the terms 'chest voice' and 'head voice' have equal weighting – both belonging to the body, both describing resonance sensations. As such, the implication is that the entire vocal mechanism stands on equal footing. On the other hand, pairing the terms 'chest voice' with 'falsetto' for male singers indicates a different relationship. The former has a sense of physicality and grounding; the latter contains a demeaning connotation, one that implies a fake sound, a childlike sound, one that is considered un-embodied. Since the presence of the male body historically suggests power, strength, and 'masculinity', a vocal sound that lacks the influence of the body is, by default, considered effeminate. Therefore, the refusal of voice scientists and pedagogues over time to admit the equivalence of the female 'head voice' and the male 'falsetto' is telling of the perceived negativity surrounding a male producing a 'boyish' or 'feminine' sound.

With this mind, let us consider the list of those who voluntarily choose to use the falsetto and the manner in which McKinney describes them. This, I posit, contributes not only to a gender bias discourse, but also to a discourse of othering non-classical singers. The first accepted use stated by McKinney is to aid in range extension in male-only choirs:

For choirs made up of adult men, composers often write cruelly high first tenor parts in an effort to spread the harmony and to avoid the excessive crossing of voices. Few tenors can maintain this tessitura for any length of time without resorting to falsetto for some of the quieter passages. Falsetto will be softer than modal voice on the same pitches and will involve less physical effort by the singer; when properly used, it can make possible some lovely tonal effects. (102)

In this case, the singer employing the falsetto belongs to a choir 'made up of adult men', a phrase that carries connotations of strength and masculinity, amplified by the phrase 'physical effort', which grounds the tenor in his body. For this singer, the intentional use of falsetto is by no means effeminate. The tenor is showing no weakness due to the 'cruelty' of the composer, and therefore the result is a 'lovely tonal effect' that is simply 'softer than modal voice'. Essentially, the masculinity and corporeal grounding of the tenor using falsetto is not in question while singing classical music within the confines of an all-male choir.

This singer, in addition to being a male who sings classical music, is likely to be highly educated since he is able to read these 'cruelly high first tenor parts'. The knowledge of staff notation can be viewed in this case as an access point to higher education and therefore privilege – a marker of class identity. With this example, McKinney is setting up the foundation for a binary comparison by introducing the high-class, educated, masculine singer who provides the model of acceptable singing practices. This singer becomes the standard against which the 'other' will be judged, based on examples of less-acceptable uses of falsetto.

The next example McKinney gives of those who use falsetto are the yodelers:

Yodeling is a technique which appears in the singing of Swiss and Tyrolean mountaineers and of certain Country-Western singers... There is no evidence that yodeling in itself is harmful to the voice; some cowboy yodelers are still singing at a ripe old age. Some teachers of singing, however, believe that a person should not engage in much yodeling if he plans to be involved in "serious" singing. (McKinney 1994, 101)

With this example, the binary comparison begins to come into view. Here, the unacceptable use of the falsetto is being employed by people who live in the mountainous regions of Switzerland, the Tyrolean region of Southern Austria and Northern Italy, and the country singers of the American southwest. These geographic groups are often stereotyped as being 'common mountain people',

usually of presumed lower-class standing, whose musical traditions are passed on without the aid of formal education or standard musical notation. Juxtaposing these groups against ‘serious’ singing implies that singing in these traditions is ‘un-serious’. It is a joke.

Even though it is deemed acceptable for the classical tenor to use falsetto, for the ‘common mountain person’ it is seen as unacceptable, un-serious, and pathological. It is a classic ‘us’ versus ‘them’ comparison. According to Hall, “people who are in any way significantly different from the majority – ‘them’ rather than ‘us’ – are frequently exposed to this *binary* form of representation” (Hall 2009, 228–229). This practice can be described as a discourse of ‘othering’, or setting apart from those who do not belong to the majority group by over-simplifying their distinguishing characteristics. This binary, established through the use of falsetto, implies that those who fall within the ‘in’ group – middle- or upper-class western-European singers – can use falsetto and still be viewed as serious, masculine singers. Those who fall outside of that group cannot employ the same technique without judgment.

It is also important to note that binary oppositions almost always highlight structures of power (for example white/black or high-class/low class), and those structures operate within and further solidify the existing binaries (Hall 2009, 235). With this in mind, consider the following passage in which McKinney discusses his preferred technique for correcting a breathy tone:

Another suggestion which might work is asking him [the student] to imitate a hillbilly or country-western singer, especially if the teacher asks for exaggeration or caricature. Any approach which encourages tightness, even as a means to an end, should be used with discretion and discontinued as soon as possible. (McKinney 1994, 86)

It is now clear that McKinney displays overt classism towards this group of people since he suggests ‘imitating a hillbilly’ with ‘exaggeration or caricature’. This further amplifies the notion that he considers this style of singing a joke. Even though I personally find it appalling that a respected author uses derogatory terms like ‘hillbilly’ in an academic text, McKinney’s willingness to do so, and the classism inherent in the term itself, cannot be overlooked. This style of singing is set apart from classical singing and, in so doing, further separates ‘us’ from ‘them’, the ‘serious’ singers from the lower-class ‘joke’ singers.

McKinney does not single out the other based only on class, but also on race and/or ethnicity. Consider the following passage:

Also, folk singers of varying ethnic origins incorporate falsetto in their singing... In addition, it

appears rather frequently in “pop” singers and rock groups, where it is used with so much force and strain at times that it can be permanently damaging to the voice. (102)

In this example, McKinney groups together a wide variety of singers, including ‘folk singers of varying ethnic origins’, to which one cannot deny a racial component. This sweeping generalisation suggests an element of stereotyping, since these genres are distilled to one simple characteristic: using the falsetto. According to Hall, stereotypes take the “simple, vivid, memorable, easily grasped and widely recognized characteristics about a person [or group of people], *reduce* everything about the person to those traits, *exaggerate* and *simplify* them, and *fix* them without change or development to eternity”. This act “divides the normal and the acceptable from the abnormal and the unacceptable” (Hall 2009, 258). In this passage, McKinney gathers this wide group of singers – all pop, rock, and ‘folk singers of varying ethnic origins’ – and reduces them to one characteristic, using the falsetto, which is then pathologised. This act further maintains the social order of binary power structures. It sets up a framework of the ‘normal’ versus the ‘abnormal’, the ‘healthy’ versus the ‘pathological’, and the high-class European singer versus the low-class, ‘non-classical’ singer.

The final use of the falsetto suggested by McKinney is for “comic effect in opera and musical comedy, especially when men are mimicking women” (McKinney 1994, 101–102). As we have seen, the use of falsetto in classically trained male singers is acceptable in the environment of an all-male chorus, since it is not viewed as effeminate. Similarly, in the case of a man mimicking a woman for a laugh, using the falsetto is acceptable since the masculinity of the singer, contrasted by the femininity of the sound, is not in question. Unlike the ‘un-serious’ practice of yodeling, this ‘un-serious’ practice is somehow given the green light by McKinney. This not only solidifies the ‘us’ versus ‘them’ mindset used in othering the non-classical voice, it further evidences the idea that McKinney considers the falsetto to be acceptable when it is produced by a highly educated classically trained singer, one whose masculinity is grounded and therefore unquestioned.

What’s more, McKinney pathologises any falsetto sound a male might make that appears to be effeminate by way of warning against them as potentially causing harm to the vocal mechanism. This is not supported by evidence but with hearsay of a general dissenting opinion. McKinney does not cite studies; he simply references ‘those that know’ – another way of separating ‘us’ from ‘them’ – by using phrases such as “there is some feeling that continued use [of men using whistle register] could result in a vocal dysphonia” (105) or “the writer has observed that older singers who have sung extensively in falsetto tend to develop obvious vibrato and intonation

problems” (104) or “it is possible that the vocal cords will lose the ability to return to their unstretched condition; laryngologists call this problem ‘bowed vocal cords’” (ibid.). It appears that these warnings of pathologies that might occur if a male sings in falsetto, being ungrounded in literature and steeped in a discourse of gender bias, are in reality simply warnings against appearing effeminate.

‘Is the Female Capable of Producing a Falsetto?’ – A Discourse of Gender Bias, Part II

It is interesting to note that after nine pages of discussion over the merits and demerits of the primary vocal registers, McKinney finally mentions the female voice specifically by asking the question:

Is the female capable of producing a falsetto? (103)

At this point, it becomes apparent that the previous nine pages had not been intended to address the registration of the female voice whatsoever. Not only this, but his first mention of the female voice is in relation to what is usually considered a male-specific register. Let us break this statement down into three parts:

1. Is the female
2. capable of
3. producing a falsetto?

The first portion of this sentence, ‘is the female’, implies a sense of objectification of the female singer. Firstly, due to the omission of the female singer from the previous nine pages, we can assume that the female singer is viewed separately from the other singers previously mentioned. Furthermore, grammatically, the sentence does not inquire about ‘female singers’ but rather about ‘*the* female’, set as an object by the article ‘the’ and who, by grammatical comparison (‘male singers’ vs ‘the female’), is further isolated from all of the singers previously mentioned. The next portion of the sentence, ‘capable of’, carries further gendered connotations. The term ‘capable’ holds an implied meaning of having achieved an ability rather than inherently possessing a trait, as though ‘the female’ may or may not be *able* to obtain a falsetto. It also implies that being able to achieve a falsetto might make the female a more ‘capable’ or complete singer – more like the male singer – despite McKinney’s opinion that the male falsetto is an inherently effeminate sound and therefore discouraged in most uses. The third portion of this sentence, ‘producing a falsetto’, is

enquiring about the ability of the female voice to produce what is often considered a male-specific sound. Therefore, asking the question, 'is the female capable of producing a falsetto?' creates a moot point. The answer to this question, given the scientific, social and historical contexts of the term, is both yes and no. A Shroedinger's falsetto. Female voices are certainly capable of producing a CT-dominant sound, but the resultant sound will most likely not be considered a falsetto. This passage shows a stunning misunderstanding of the female vocal mechanism and its position in comparison to the male voice, and its placement as an afterthought after nine pages of discussing the male voice shows an utter disregard for the place of female vocalists in the entire western-European classical voice tradition.

In this, we can see that the 'us' versus 'them' dichotomies that McKinney's text produces have been set to such narrow parameters. The singers othered in McKinney's text are not only those of different singing traditions, of lower-class standing, or of 'varying ethnic origins'; they are also women who sing within the very same musical tradition. It is apparent that the only people McKinney considers to be 'serious' singers are white, male, western-European, middle- or upper-class classical singers.

'Reversing the Usual Procedure' – A Discourse of Racial Bias

Although Reid's text lacks the blatant gender bias and othering found in McKinney's text, there remains an undercurrent of class and racial biases, especially regarding 'non-classical' registration stylings. These are revealed when he speaks about the way in which traditional registration practices are 'reversed' among female singers in CCM styles:

Although it has long been a general practice for female vocalists to avoid the chest register whenever possible, many singers of popular songs have for years reversed the usual procedure and employed the chest register when singing 'hot' jazz. ... Voices of this kind are crude, 'shouty' and masculine. (1990, 75)

Let us begin to unpack this passage by considering Reid's idea of 'the usual procedure'. This procedure consists of blending of the registers by bringing the lightness of the 'co-ordinated falsetto' into the chest region by use of the 'feigned voice' (Reid 1990, 102-107). Reid is implying that any register action that is not trained in this procedure, one that requires the aid of an educated mentor, is 'unusual'. This ignores the fact that the vast majority of people, financially and culturally, do not have access to an education in 'the usual procedure'.

Noting this exclusion, we can see that the ‘general practice’ of female vocalists avoiding the chest register is, in actuality, specific to western-European classically trained voices. Described as the ‘bourgeois voice’ by Grant Olwage in his essay on the black choral voice in colonial South Africa, the practice of singing primarily in the CT-dominant register is not only culturally seen as an upper-class white sound, but it is also not necessarily ‘general practice’ for most untrained voices (2004). The ‘anachronistic voice’, as Olwage describes it – the untrained voice of the common person – often naturally prefers the TA-dominant register in both male and female singers.

Furthermore, Reid’s specification of the genre ‘hot jazz’ as an example of improper registration has deep racial implications. Jazz was originally an African American musical genre, born in the early twentieth century in New Orleans and Chicago (Tucker & Jackson 2013). What’s more, according to Stephens, genres function as “systems of orientation, expectations and conventions that circulate between industry, text, and subject... Thus race, ethnicity, geography, and so on are fundamentally evoked by categories like rap, salsa, and country” (2008, 161–162). Viewed through this lens, evoking jazz specifically elicits cultural and racial associations that cannot be ignored. Placing the genre of ‘hot jazz’ in direct comparison to the ‘usual procedure’ is akin to placing black in direct comparison to white. The ‘usual procedure’ for *white women trained in the western-European classical music tradition* is to sing predominantly in the CT-dominant register, which is not necessarily the case for those coming from other traditions. Lastly, adding the term ‘hot’ to jazz has implications of promiscuity, which sexualises the women who use their TA-dominant registers, a stereotype that is also often associated with People of Colour (Hall 2003, 231).

The description of ‘voices of this kind’ being ‘crude’ and ‘shouty’ further resonates in this racial bias discourse. Historically, belting has been associated with the concept of the ‘shout’, an aesthetic often associated with black music-making (Olwage 2004, 215). The shout is significant to the history of African American genres, tracing its roots back to the slave music of antebellum-era America (and likewise further back to the African continent). Several forms of African American slave music invoked this aesthetic, including the ‘ring shout’ or the ‘field holler’. The significance of the ring shout culturally and historically has been described as “foundational to all subsequent Afro-American music-making” and the central qualities of the shout – including call-and-response devices, cries, hollers, polyrhythms, certain harmonic structures, blue notes, and interjections – have become “crucial to black musical expression” in subsequent African American musical genres such as blues and jazz (Floyd 1991, 266–267). Through this lens, we can see that Reid’s association of crude shouting with ‘hot jazz’ is significant. It evokes three separate racial

connotations: the presumed promiscuity of the Black body, the aesthetic of the shout, and the racial history of jazz itself. In this way, a racial discourse must be observed through this example.

‘The Direct Lineal Descents of Bel Canto’ – A Discourse of the Golden Age and Bodilessness

Reid’s deep-seated belief in the two-register theory is firmly rooted in the texts of the well-known writers of bel canto literature such as Tosi, Manicini, and Caccini. In his writings on registration, Reid reveres the past practitioners of the bel canto tradition by using phrases like ‘the early masters’ who authored ‘highly authoritative sources’, referring to them as the ‘direct lineal descendants of Bel Canto’. He describes the methods they employed by using phrases like the ‘original Bel Canto procedures’, which evolved “out of experience by trial-and-error ... covering many hundreds of years” (1990, 64–72). Reid frequently speaks of this great art, which modern singers have soiled. By divulging its long-kept secrets, Reid is singlehandedly raising the phoenix from the ashes in order to allow the bel canto tradition to continue in perpetuity. In this, a discourse of the ‘golden age’ arises. The golden age discourse is exemplified by reverent language for the method and the mentors, mentions of lineage, the idea that it was ‘better back then’, and the distaste for anything modern.

Reid is a proponent of blending of the vocal registers by the use of the ‘feigned’ voice, a technique that resembles what contemporary singers call ‘mix’ or ‘middle’ voice. He believes this register coordination is so important that he calls it the ‘lost secret of Bel Canto’ and labels his step-by-step procedure the ‘art of producing the voice’ (65). Consider this passage:

The registers form the cornerstone upholding the entire structure of the voice-building process. The extraordinary power, range and flexibility for which the voices of the Bel Canto singers were so justly famous has been a direct outgrowth of a fully developed and delicately balanced registration.

If, as this writer believes, it is desirable and essential to return again to those principles so clearly expressed in the writings of the leading exponents of Bel Canto, then it becomes necessary to prepare a complete revision of the modern pedagogical approach. The function of the registers alone, as understood and practiced by the early teachers, demands this fundamental realignment. (107)

In this passage, the golden age discourse is evident in the reverence of the ‘leading exponents of Bel Canto’, whose ‘desirable and essential principles’ built voices of ‘extraordinary power, range, and flexibility for which ... [they were] so justly famous’. We can also view the distaste for

modern practices in Reid's call for a 'complete revision of the modern pedagogical approach'. What exists now does not compare to what existed 'back then' and we must return to the procedures of the golden age to preserve the art of bel canto.

Most importantly, however, we observe the emphasis placed on the unification of the registers, which Reid paints as the 'cornerstone upholding the entire structure of the voice-building process'. The importance placed on erasing all traces of the register transition, although it is a naturally occurring phenomenon, is not unique to Reid. McKinney similarly states that "when properly done, all evidence of 'register' breaks or shifting of gears should disappear" (1994, 98). Bunch also addresses this technical challenge, writing that "teachers work hard to help singers make these transitions in registration easily so all the pitches sound with equal quality" (1997, 79).

In these passages, we begin to see another discourse emerge: the discourse of 'bodilessness'. The idea that the properly used voice requires the erasure of an audible physiological mechanism – the register transition – suggests that the natural body of the singer is unacceptable. However, each text claims that this very task is one of the primary objectives of voice training. This can be viewed as an attempt to erase the coarseness of the human body, the fallible and inconsistent nature of the voice, which inherently differs in sound from lowest to highest tones. It is as though classical training is used as a type of corset for the voice; sucking-in, tying-up, and smoothing-out anything that does not fit the accepted profile of what a beautiful sound is.

Through ample warnings of doing harm to the voice, discouraging un-serious forms of singing, elevating male voices over female voices, condemning aesthetic choices that are historically associated with Black music-making, and silencing the natural body, we can see that this aspect of classical pedagogy is heavily influenced by the troubled racial and patriarchal history of western Europe and North America. From this evidence, it is clear that the classical pedagogues profiled in this study invoke the devices of pathologising and othering, especially with regard to racial and gender differences, in order to elevate the classical voice and maintain the 'purity' of the golden age of bel canto.

CCM Pedagogy Texts and Registration

The key is to do less in order to do more. (Riggs 1992, 33)

Contrary to the classical pedagogy texts, the CCM texts profiled in this study have much more continuity as to what constitutes a vocal register. For example, all three methods express differences between a lower and upper register as well as the ability to bridge the registers with the use of different techniques. They also discuss the use of the registers, including their varying vocal colours, as useful tools of expression. There is, however, a sense of understating the complexities of registration, as well as a recurring theme of renaming certain processes or mechanisms, which I argue contributes to both a ‘magic pill’ discourse and a discourse of ‘commercialism’. The magic pill discourse is exemplified by over-simplifying a complex process in order to ‘cure’ the ailment of singing poorly, while the discourse of commercialism suggests that this over-simplification 1) is part of the advertising strategy of the pedagogue/entrepreneur and 2) stands as a promise of financial success to the potential buyer.

Mix Voice and Register Blending – A Discourse of The Magic Pill

While many CCM genres encourage the varied tonal colours that accompany the registers, each of these texts recommend a method of blending the registers through a ‘middle’ or ‘mix’ region. The foundation of Riggs’s method is *Speech Level Singing*TM, a technique in which the “larynx [remains] in a relaxed, stable position”, while singing throughout the entire vocal range (1992, 28). He insists that, through careful practice and monitoring of the position of the larynx, common registration issues are greatly eased. Throughout the text, Riggs maintains that when the larynx stays ‘at speech level’, the ‘thinning’ and ‘shortening’ of the vocal folds that occurs during register transition happens without audible breaks (35). Although it is impossible to know exactly how Riggs personally experiences this technique, his one-size-fits-all approaches may or may not provide an easy solution to a complex technical problem – an over-simplification which I argue contributes to the magic pill discourse. Consider the following passages:

The key is to do less in order to do more. To be specific, the higher you sing, the less air you should use. When you reduce the amount of air you send to your vocal cords, you make it possible for the

muscles inside your larynx to stretch your vocal cords by themselves. (Riggs 1992, 33)

You don't control your voice directly by working on or thinking about breath support, vocal cord adjustments, or resonance. These things are all by-products of speech-level singing. They happen automatically when you condition your larynx not to move... As you do the exercises in the training program, ... you will memorize the physical sensations you experience in your voice as you do each exercise correctly. Everything else will take care of itself. (36)

In these words, it is clear that Riggs views the solution to the arduous task of unifying the vocal registers as a simple fix. The magic pill discourse, evidenced here by phrases like 'these things are all by-products of speech-level singing' that will 'happen automatically', or 'as you do the exercises ... everything else will take care of itself' can be exemplified by offering simplistic and complete solutions. The problem that is presented is solved quickly and automatically by fixing two things – the laryngeal position and the flow of the breath. Once you have learned those techniques, you will no longer struggle with poor singing. The problem will be solved permanently.

Riggs is not the only pedagogue who engages in the magic pill discourse. Howard also simplifies the complex process of blending the registers:

As we ascend the scale, beginning ... in chest register, we begin with firm vocal folds and gradually decrease the firmness as we move into the upper range. In order for the belt mix to sound like chest register, the belt mix must be anchored in the mask... I refer to the belt mix as our "safety zone." (I also call this "the Elisabeth Howard throat by-pass"!)... This is safe belting, not harmful to the voice. (Howard 2006)

Here, Howard is employing this discourse by directing the singer to simply control the 'firmness' of the vocal folds, implying that the singer has direct control over the internal musculature of the vocal mechanism. While Howard's method of developing the mix voice is not quite as simplistic as Riggs's, it also suggests a one-size-fits-all approach, as though these steps will help all singers achieve their ultimate goal of 'safe belting'. Howard has also given her 'belt mix' its own specialised name, the 'Elisabeth Howard throat by-pass', which, although not trademarked, resembles Riggs's *Speech Level Singing*TM in that it takes ownership of and renames a physiological sensation that many singers may experience.

Although the tone of *The Estill Voice Model* is more academic than Riggs's and Howard's texts, it also exhibits similar renaming practices. Through her decades of research, Estill discovered that the behaviour of the vocal folds during phonation regarding registration could be distilled to the interaction between the body of the vocal folds (the TA or vocalis muscle and the deep and

intermediate layers of the lamina propria) and the cover of the vocal folds (the superficial layer of the lamina propria and the epithelium) (Steinhauer, McDonald Kilmek & Estill 2017, 74). She called this the 'Body-Cover' theory and, in so doing, discarded all previous terminology for registration. Estill recategorised the possible registers based on body-cover interaction, combined with the closed phase during phonation, into four main vibratory patterns: thick, thin, stiff and slack (73). These categorisations coincide with other common registration terms.

While these distinctions could be considered registers, Estill prefers to call them 'Estill Voice Qualities' since the term 'register' carries "inherent pitch range associations", namely lower pitch with TA-dominant register and higher pitch with CT-dominant register (77). Therefore, in this programme, the term 'Estill Voice Qualities' replaces the concept of 'register' entirely.

In this example, Estill is wholly reinventing the wheel of registration. Similar to Riggs's *Speech Level Singing*TM and 'Elisabeth Howard's throat by-pass', Estill has reimaged the concept of registration to something that more appropriately fits her observations. It is not simply described as the 'body-cover theory', but it is given the proper name 'Body-Cover', capitalised each time it appears. In fact, most of Estill's unique expressions are capitalised. Phrases such as 'Estill Voice Qualities' and 'Figures' – the translations of which would be 'registers' and 'exercises' – have all been re-conceptualized, even though these concepts have been discussed since the advent of voice science in the 1840s. Co-opting these terms and renaming them is unnecessary unless one is attempting to completely change the field. Notably, Jo Estill is not the only voice scientist who has suggested adjusting the register-naming paradigm²; however, she is the only pedagogue who has recommended naming them after herself.

What is in a Name? – A Discourse of Commercialism

In my opinion, the most fascinating aspect of each of these texts is the choice to rename or trademark common physiological functions. All three pedagogues engage in this behaviour, exemplified by 'Estill Voice Qualities', 'Elisabeth Howard's throat by-pass' and Riggs's *Speech Level Singing*TM. Since this pattern seems to be pervasive, it is important to inquire what drives this

² Harry Hollien recommended the naming paradigm of 'pulse, modal, loft, and whistle registers'; the CoMeT recommended numbering the registers from lowest pitch to highest, #1 for pulse/fry, #2 for TA-dominant register, #2A for 'that register' which some experience as mix, #3 for CT-dominant register, and #4 for whistle; and in 2006 Nathalie Henrich et. al suggested a different numbering system: M0 for pulse/fry (M standing for mechanism), M1 for TA-dominant, M2 for CT-dominant, and M3 for whistle. (Henrich 2006)

choice, the most telling evidence of which I argue to be the use of the trademark symbol of Riggs's *Speech Level Singing*TM method.

Considering the long history of the confusion around the vocal registers and the myriad texts, treatises, and studies on the subject, it is not only unlikely but also bordering on hubris that Riggs alone (or Howard or Estill for that matter) finally discovered the solution. Trademarking a physiological function, one that pedagogues as early as 1592 have discussed (Stark 2008, 58), begs the question: why would Riggs feel the need to trademark this technique? In order to answer this question, one must understand the purpose of a trademark. Defined as “a type of intellectual property consisting of a recognizable sign, design, or expression which identifies products or services of a particular source from those of others” (USPTO 2020), a trademark designates a product or service; the sign itself serves as an emblem of authenticity. This suggests a sense of commercialism in the intentions of Riggs. He is not writing this text to simply contribute to the canon of pedagogical texts; he is offering a valuable solution – a product – to a common problem.

The use of renaming practices and the trademark symbol not only supports the magic pill discourse, but these pedagogues also take it one step further, thus illuminating another discourse at hand: the discourse of commercialism. After all, what does one do with a magic pill if not capitalise on it? If we consider this from a marketing perspective, an advertisement often aims to *create* an ailment the consumer was unaware of in order to sell a solution. This is exemplified by a pharmaceutical advertising philosophy called the ‘pain, pill, pleasure model’, where a disease or ailment is intentionally branded in order to sell both the remedy as well as its secondary psychological benefits (Shimp & Dyer 1979; Berger 1974). Furthermore, it has been established that the concept of ‘magical thinking’ contributes to successful advertisement; engaging in magical thinking contributes not only to sales, but also to positive psychological reactions within the consumer who has chosen to purchase the product at least partially due to its supposed magical effects (St James, Handelman & Taylor 2011).

We can see a similar pattern in the way that these CCM pedagogues advertise their trademarked vocal techniques. The ‘pain’ that is branded is not simply poor singing, but rather not ‘being a star’. The ‘pill’ promoted is an over-simplified, trademarked method for solving all of one’s technical woes. Lastly, the ‘pleasure’ is found in easily smoothing over the vocal registers, which in turn secures both career and financial success.

It is notable that the core tenets of both classical and CCM registration are quite similar. Regardless of the number of registers, the terminology, or the supposed differences between male and female voices, the desired outcome is the same: an easily blended sound, devoid of unintentional breaks, from lowest to highest tones. Through this analysis, however, it is apparent that standard registration procedures and, most importantly, the discourses that drive these procedures are entirely different. The process of developing the registers within the classical pedagogy tradition is driven by maintaining the lineage of the golden age of bel canto, whereas the CCM registration methods are driven by offering a simplified, authenticated and commercialised product in order to inspire monetary and career success.

Vocal Colour

In hearing a voice, one also brings forth a series of assumptions about the nature of voice. (Eidsheim 2019, 12)

Vocal colour is an umbrella term that takes into account the objective, measurable quality of resonance, as well as the subjective quality of timbre. In this chapter, I will discuss both the idealised and discouraged vocal colours mentioned in these texts, as well as their discursive implications. This chapter centres around themes of classism and racism, especially as it pertains to the concept of talent and the body. Secondly, this chapter returns to the discourse of bodilessness and how inhibiting the sound of the body within the voice stands as a reflection of the racial history of certain musical genres. Lastly, it will focus on how the perceived ‘natural law’ of beautiful singing further solidifies this racial bias discourse through the use of dichotomies that suggest a belief in essential differences between styles of singing and the bodies of the singers themselves.

Resonance Versus Timbre

Resonance is the physical, quantifiable aspect to sound which can be measured through the use of the audio spectrometer. The spectrometer measures the frequency (pitch) and amplitude (volume) of any given sound, as well as any harmonic and formant peaks throughout the entire auditory range. While the terms ‘formant’ and ‘harmonic’ are often considered as synonyms, they are in fact not entirely equivalent. Harmonics are present in the very origin of the tone, the vibrating vocal folds, otherwise known as the ‘source’ or the ‘fundamental frequency’. The fundamental frequency produced by the vocal folds contains the harmonic series, just as a vibrating reed or string produces the entire harmonic series with or without the resonating body of the instrument (LeBorgne & Rosenberg 2014, 90-91). Formants, on the other hand, are the product of the relationship between the fundamental frequency and the length and shape of the vocal tract, also known as the ‘filter’ (Bunch 1997, 93). A formant is a peak of resonance found in a given frequency range that may be intentionally held consistent, even as the fundamental frequency changes.

Each register, vowel shape, and style of singing produces a different set of formants. The

spectrometer can measure the difference between the TA- or CT-dominant registers on the same pitch and intensity, different vowel shapes produced at the same pitch, or the stylistic difference between country ‘twang’ and musical theatre belt (Steinhauer, McDonald Klimek & Estill 2017, 17–19). In this way, a spectrometer allows the voice to be seen as well as heard. The unique physiology of each singer and its effect on the fundamental frequency is the cause for individual tone, and the strength of individual formants determines the colour of the sound (Stark 2008, 47–48).

The minuscule adjustments of the resonating spaces and articulators – including the chest, trachea, larynx, and pharynx; the oral, nasal, and sinus cavities; and the position of the jaw, tongue, and lips – are what allow the voice such a rich library of colour (LeBorgne & Rosenberg 2014, 87–93). This is, in fact, the foundation of modern vocal pedagogy: intentionally adjusting the vocal tract in order to amplify or dampen certain formants, thereby affecting the quality of sound (Stark 2008, 48). While most voice studios are not equipped with the technology that allows students the luxury of viewing a spectrographic image of their own voices, most singers are quite familiar with the physiological tweaks that affect their sound. Lifting the soft palate, dropping the jaw, relaxing the tongue, and keeping the muscles of the neck and chest relaxed are all ways in which the singer is able to intentionally alter the colour of the voice.

The resonance of the voice has been studied widely and much is known about the physical characteristics of the sound waves and formants that create certain sounds (Colton & Estill 1978; Estill 1981; Titze & Story 1997; Bloothoof & Plomp 1988). On the other hand, the perception of the sound quality is known as ‘timbre’. Described by Vennard as the “subjective aspect of the harmonic structure of musical tone” (in LeBorgne & Rosenberg 2014, 96), timbre has an experiential connotation. It occurs at the moment a tone is *interpreted by the listener*, and therefore is subject to the listeners’ filter of personal experiences and biases. Although many attempts have been made (Fennelly 1967; Slawson 1985), there has been no consensus on how or whether the description of timbre may be systemised or quantified.

The Paradox of Timbre

Timbre is the most distinctive parameter of a musical tone; it is in fact the very quality that sets any tone apart from another of equal pitch and intensity. Even so, we currently lack the ability to systematise or the terminology to describe timbre without using metaphoric language (Fales 2002,

57). On top of this, our perception of timbre is unable to be assessed without the combined effect of other musical parameters, such as pitch, intensity, and texture (Blake 2012, 3). Furthermore, western music culture prioritises the accuracy of other musical parameters over timbre. For example, when a musician plays something 'wrong', it is almost always an error of pitch, rhythmic duration, or intensity, not an error of timbre. Instead, differences in timbre are often considered a matter of opinion, taste, or artistry (Fales 2002, 56–58).

The evolutionary purpose of the perception of timbre is theorised to be the discernment of the source and direction of a sound, which is then classified through a catalogue of remembered experiences (Blake 2012, 3). This information tells the listener the location from which a sound may have originated, the possible source, and the medium through which it travelled. All this information is received automatically, before consciously interpreting the sound. Therefore, the process of perceiving timbre is described as 'reflectively unconscious'. This act is so automatic and ingrained that simply hearing a sound is often perceived as fact. For example, one does not think, 'I heard what I perceive to be the sound of a door opening', but rather one assumes that the door is already open (Fales 2002, 61–63).

To further complicate the matter, it has been shown that any sound one has perceived is often different than the physical sound produced at the source. This phenomenon can be exemplified by the way in which a listener fills in lost information when the source has been interrupted (e.g. extracting content from a poor quality phone call), subconsciously limits repetitive environmental sounds from one's perception (e.g. the ticking of a clock), or hears one's name uttered above the din of a crowd (Fales 2002, 58–64).

When one takes all of this into account, it is apparent that the perception of timbre cannot be achieved without the subconscious influence of the personal preferences or biases of the listener (Fales 2002, 62; Blake 2012, 3–4; Eidsheim 2019, 4–5). From this angle, we can see that the timbral descriptions and preferences found in the texts analysed are a greater reflection on the listener, not the producer of the sound. This is significant to the analysis of discourse, since the chosen words of these pedagogues will invariably be linked to their internal biases, thus shedding light on their subconscious associations.

Classical Pedagogy Texts and Vocal Colour

There is only one way of singing freely in the high, low, and intermediary ranges of the voice smoothly and easily, and that is the correct way. (Reid 1990, 29)

The *Chiaroscuro* Timbre

As previously discussed, the human ear unconsciously and immediately interprets the source, meaning, and cultural value of a sound based on timbre. Thus, a meaningful way to begin analysing discourse is by observing the descriptions of the ideal vocal tone. In the classical texts, it is described as rich, ringing, resonant, vibrant, dynamic, consistent, alive, and flexible (McKinney 1994, 77); clear, pure, solid, bold, without pinching or constraint (Reid 1990, 25); warm, round, full, bright, and clear (Bunch 1997, 82). While there is nothing immediately telling about these chosen adjectives, there is more below the surface than meets the eye.

A common term used to describe this idealised classical timbre is '*chiaroscuro*', which, translated, means *bright-dark* and is characterised as a dark, rich tone with a bright, ringing harmonic palate (Stark 2008, 34). Borrowed from visual art, the term *chiaroscuro* describes a painting technique in which bold contrasts between dark and light colour are used to heighten drama and emotional tension. The technique became popular in the late seventeenth century and was used extensively by the Italian high Renaissance painters like Da Vinci and Raphael (Augustyn ed., 2021). Referring to this vocal technique as *chiaroscuro* indicates the depth, beauty, and richness of tone the early bel canto proponents perceived the singing timbre to possess.

The *chiaroscuro* vocal timbre is created by two co-ordinated physiological functions: the lowering of the larynx and the manipulation of the vocal tract. In combination, these areas can be adjusted to achieve a band of resonance between 3000–4000 kHz, called the 'singer's formant'. The technique of intentionally lowering the larynx came into popular use around the 1830s. It was first identified in writing by Manuel Garcia who called it *voix sombre*, or dark voice, as compared to *voix blanche*, or white voice, which indicates the higher laryngeal position that was in common use prior to the nineteenth century (Daffern 2008, 41). As the hallmark of the *chiaroscuro* timbre, the existence of the

singer's formant shows the great effect that laryngeal position and vocal tract adjustments have on the timbre of the voice (Stark 2008, 39; LeBorgne & Rosenberg 2014, 87–93).

‘Drawn to That Which is Truly Beautiful’ – Discourses of Talent, Class, and the Body

While the *chiaroscuro* vocal timbre is the hallmark of modern classical singing, it is far from easy to produce. Regardless, Bunch, McKinney, and Reid all agree on the important role that ‘naturalness’ plays in creating this vocal colour, so much so that the concept of ‘talent’ is portrayed as having an integral role in the singer's ability to achieve success. In these texts, the concept of talent – the latent ability to be a great singer – is given two distinct characteristics. Firstly, it is portrayed as the instinctive ability to recognise and visualise ‘beautiful’ vocalisations. Secondly, it is described as the innate ability of the physical body to respond successfully to vocal training. Observe the following passage:

To a large extent the talent and ability of both student and teacher may be measured by the strength by which they are instinctively drawn to that which is truly beautiful... When the aesthetic judgment is correct the voice will immediately, if gradually, respond by a steady increase in power, resonance, range, and flexibility. (Reid 1990, 25)

Reid's model of talent is situated in a paradigm in which gifted singers are instinctively drawn to the ‘correct’ *chiaroscuro* tone. This, however, ignores the fact that in order to be drawn to a particular sound one must have access to hearing it. In our current technological age, it is arguable that awareness of any art form is reliant on connectivity – which carries its own financial limitations. However, when this text was first published in 1950, access to high culture came at a much higher financial threshold. The ability to attend concerts was dependent on income, proximity to concert halls, and access to transportation, while the ability to hear recordings of bel canto singing was likewise limited by the prohibitive expense of radios, record players, and television sets. At this time, access to hearing the *chiaroscuro* vocal timbre was greatly limited by financial means, and therefore the quantity of people able to show this instinctive talent was restricted.

McKinney similarly states that “beautiful sounds start in the mind of the singer. ... The best way to achieve the proper mental image of beautiful vocal sound is by listening intelligently to a sizable number of artist singers” (1994, 78). Likewise, Bunch states that “optimum resonance is derived from the singer's image of the sound together with what he senses when he makes that sound, the

physical response of the muscles of the pharynx and balance with the rest of the body” (Bunch 1997, 82). According to these pedagogues, the ability to make a beautiful sound is dependent on being intimately familiar with this idealised timbre, which is dependent on access.

Furthermore, Bunch’s sentiment introduces another element of talent: the idea that talent is innate to the physical body. Observe the following passages:

The most musically proficient student must be born with favorable physical characteristics if she/he hopes to become a great singer. (1997, 102)

Ideally the bony structures of the head are reasonably symmetrical... A high, wide dental arcade allows maximum space for resonance, and the shape and length of the vocal tract ... all help to determine potential quality. The truly great singer is likely to be well-endowed in these respects. (102)

When a singer undertakes to learn a correct technique of voice production ... The success or failure of his effort can only be accurately measured by the way in which the voice responds. (Reid 1990, 23-24)

Faulty muscular co-ordination is almost always responsible for the failure of a singer to perform freely and tirelessly throughout the entire range of the voice at all intensities. (23)

Here it is apparent that not only must one have access to hearing beautiful sounds in order to show an aptitude for producing them, but also the body is required to 1) be well-endowed with favourable physical characteristics and 2) respond in a specific way to the demands of voice training. This not only ignores the role that hard work and determination play in learning any skill, but it also ignores differing aesthetic tastes of what constitutes beautiful music. If a singer is instinctively drawn to another genre of music, if their vocal mechanism does not respond well to classical training but rather to jazz singing, are they less talented? In these passages, we can begin to see how the concept of ‘talent’ is associated with higher-class society and being born with a ‘favourable’ body. This leads to the next discourse uncovered in this analysis: how the *chiaroscuro* timbre is associated with the concept of bodilessness.

Undesirable Vocal Colours – Discourses of Bodilessness and Racial Bias, Part II

Timbres that are rejected among the classical pedagogues are listed as forced, strained, strident, too loud, resembling shouting or yelling, hoarse, breathy, weak, colourless, devitalised, inconsistent, shaky, wobbly, nasal, too bright, too forward, muffled, and too far back by McKinney

(77; 138). Bunch (80-82; 106-107) describes these as throaty, swallowed, shallow, white, spread, harsh, and unpleasant with undesirable inefficiencies. Reid (30-31) uses the descriptions loud, noisy, boisterous, aggressive, with drive and push. It is of special interest to note that many of these adjectives are rooted in the physical body. The adjectives nasal, throaty, hoarse, breathy, and swallowed each evokes the body, whereas the desirable characteristics of the *chiaroscuro* timbre – pure, rich, ringing, resonant – avoid being grounded in the body. It is as though the ideal vocal timbre, according to these pedagogues, is one in which only the vocal folds and resonating tract sound while the rest of the body is silent. Indeed, the discourse of bodilessness in classical vocal pedagogy texts is common. Consider the following passages:

When sustaining a sound, imagine that the sound is flowing freely out of your body... It is not necessary to make any movements of the tongue, lips, or jaw while sustaining a single sound... One of the marks of an inexperienced singer is the changing of articulatory posture while sustaining a sound. This can create unnecessary tension and can adversely affect the vowel being sustained. (McKinney 1994, 80)

Muscular over-reaction to what they are trying to accomplish causes singers the greatest trouble. An experienced teacher can look at a singer in action and predict the quality that will result by noting whether any of several observable signs of tension are present. (Bunch 1997, 102)

The great Alboni possessed a vocal technique that enabled her to sing tones which ‘poured out sonorously without the slightest effort, with sparkling facility.’ (Reid 1990, 28)

The emergent themes supporting the discourse of bodilessness follow two patterns. One is the encouragement of a ‘pure’ tone, without influence of the body, and the other is the discouragement of specific parts of the body that influence the sound, often described as ‘tension’. Within this discourse, all audible evidence of the body, including the anatomy required for singing (lips, tongue, etc.), is advised against for fear of interfering with the purity of the tone. The resulting timbre is revered to such an extent that the grainless voice becomes the hallmark sound of classical singing.

With this in mind, it is also important to note that the voice and the body are one and the same. Singing is the only institutionalised musical discipline that exists entirely within the confines of the human body; because of this, the voice stands for and represents the body and the individual in a way that no other instrument does (Olwage 2004, 206). Therefore, to deny the evidence of the body’s involvement in singing makes a strong statement on how the body itself is viewed, especially considering the previously identified discourse that talent is innately connected to the body of the singer.

There is one more important discourse underpinning the preferable classical vocal colour. The above list of undesirable characteristics not only included bodily-situated language; it also included adjectives of volume, including 'loud', 'noisy', and 'resembling shouting or yelling'. While remembering the history of the shout as previously discussed, the discouragement of this timbre is discursively significant. Consider the following passages:

The tone produced or focused in the throat involves too much muscular constriction, is of poor quality, and over a period of time will cause enough strain to the vocal folds to create muscular fatigue and or pathological changes to the folds. This undesirable method of singing is particularly common to rock, cabaret, and discotheque singers, and their resultant problems provide a busy practice for many laryngologists. (Bunch 1997, 107)

Singing in a heavy voice in too high a range creates vocal strain, muscle fatigue, and ultimately may lead to the formation of nodules on the vocal folds ... Young singers are influenced by the preponderance of heavy singing in the field of popular music and often find it difficult to appreciate and use higher pitches in their voices. (79-80)

'Loud' singing is both inartistic and injurious to the voice and is to be avoided at all costs... When a voice is 'noisy' all efforts at interpretation are circumscribed by the limited resources at the singers command. Because of the excessive 'drive' and 'push' needed to support tones of this type, hoarseness due to strain frequently develops and the voice becomes rough and uneven. (Reid 1990, 30-31)

Demanding too much from the laryngeal mechanism results in a sound which is described ... as pressed, tight, tense, hard, edgy, or strained... 'Hyperfunctional phonation,' if used persistently or if carried to the extreme, can result in severe vocal problems which may require the services of a medical specialist. ... Many other people do not recognize how badly they need help and go through life, for all practical purposes, as vocal cripples. (McKinney 1994, 87)

In these passages, a few themes begin to emerge. Firstly, loud singing is aesthetically described in a negative light, as being 'of poor quality', 'undesirable', and 'inartistic'. Secondly, these negative descriptors are accompanied by bodily-situated terminology, such as a tone that is 'pressed', 'strained', or 'focused in the throat'. Thirdly, this vocal colour is directly associated with the CCM genres of rock, cabaret, discotheque, and popular music. Fourthly, this practice is greatly discouraged through warnings that it will lead to 'pathological changes' or 'the formation of nodules' on the vocal folds, that 'hoarseness due to strain' will develop, and that one may even go through life as a 'vocal cripple'. Lastly, the singers mentioned in these passages are associated with inability, being described as having 'limited resources', not recognizing 'how badly they need help', and finding it 'difficult to appreciate' the use of other timbres. This suggests the classical pedagogues view loud singing not as an artistic choice, but rather a mark of inferiority. Together,

these discourses build a 'spectacle of otherness' within the CCM singer, whose artistic expressions are considered a mark of inability rather than individuality.

Interestingly, singing loudly within the classical tradition is not discouraged because the resonance of the singer's formant maintains the volume, not the power of the lungs or the chesty quality of the TA-dominant register. Therefore, it is not 'singing loudly' that is pathologised, it is specifically 'loud singing', including its bodily associations and racial connotations, that causes the classical pedagogues to discredit the resulting sound.

Furthermore, it is important to note that the presence of the body and 'loud singing' are not unrelated. According to Floyd, there is a strong association between the "physical presence of the body in the ring shout" and the "subsequent music/dance derivatives of black music" (1991, 273). Essentially, the history of the physicality of Black music-making has influenced subsequent genres (Keyes 2003, 107). Therefore, it is significant that the vocal timbres discouraged by the classical pedagogues invoke essential characteristics of Black music-making in two ways: in the materiality of the sounding body and in the 'loudness' of the voice.

Through this analysis, it is apparent that the vocal elements that characterize the *chiaroscuro* timbre are used to functionally elevate the classical singer above the other. The timbral descriptions are not simply different, they present the classical singer as healthier, more capable, and more artistic. What's more, the language used to describe CCM timbres parrots the marking of difference between Black and white historically by evoking 'the shout' and the coarse body; an act that perpetuates these racial discourses even today.

Singing in 'Strict Conformity with Nature' – A Discourse of Racial Bias, Part III

Knowing that the *chiaroscuro* timbre is embedded in a history of elevating the upper-class western European voice above the other, the insistence that this timbre is the 'natural law' of proper singing further supports the discourse of racial bias. Consider the following passage:

Perfect tone qualities find their equivalent expression in complete vocal freedom. Conversely, inferior or imperfect qualities are always limited by restrictions which are in direct proportion to the degree of imperfection. A truly beautiful tone has few limitations and, because the operation of the vocal organs is in strict conformity with Nature, genuine feelings are aroused... Therefore, a beautiful tone must be considered a factual condition and not a matter of personal opinion. (Reid

Here, Reid states that a tone produced within 'strict conformity with Nature' is not only the epitome of artistic expression, but that its beauty must exist as a 'factual condition' due to its balance within the 'laws of Nature'. This idea of identifying the 'natural order' of things further confirms the discourse of racial bias, since this was a central tenet of the 'scientific racism' of the late eighteenth and early nineteenth centuries (Richards 1997, 7-9; Hall 2009, 244; Eidsheim 2019, 16-18). According to Richards:

Scientific Racism intensified the conflation of the biological and the cultural as biological level explanations came to be considered more fundamentally 'scientific'. Cultural traits, good and bad, were interpreted as direct expressions of innate racial character, a message seductively packaged... [with] the constant invocation of physiological differences allegedly discovered by trustworthy doctors and anatomists. Adopting European anatomy and physiology as the norm, any deviation became quasi-pathological and described accordingly. (1997, 9)

The patterns visible in the way the scientific community historically supported racist beliefs are unfortunately familiar. They included a belief in the innate otherness of People of Colour, marked by the differences of their physical bodies. These differences were measured not only through physiological structures like skull shape and size, but also through cultural differences which were seen as innate traits. This led to a belief in the essential Black body, as well as the essential Black voice, which was believed to be identifiable by timbre alone (Eidsheim 2019 16-18; Olwage 2004). Lastly, the timbre of the voice became a hallmark of the fundamental difference of Blackness, exemplified, among several characteristics, by the 'loudness' of the voice itself (Eidsheim 2019, 61-90).

Through this lens, we are able to observe that the dichotomies presented in the above passage – 'perfect' versus 'imperfect', 'superior' versus 'inferior', and 'artistic' versus 'inartistic' – are not simply descriptions of the trained versus the untrained voice. They are also descriptions of the bodies of these singers. We can now see that the criteria for those who are able to perform with this 'perfect' *chiaroscuro* tone are limited to a very narrow subset of individuals: those who have access financially and culturally to hearing 'that which is truly beautiful'; those who are 'born with favorable physical characteristics' – an idea which now takes on deeper meaning; and those whose voices (and bodies) exist in 'complete harmony ... between aesthetic principles and those laws of Nature'.

It is clear that the primary tenets that dictate the ideal *chiaroscuro* vocal timbre are based in discourses of bodilessness, classism, and racism. This is supported by the idea that talent is

situated in the body and exemplified by being ‘instinctively drawn’ to a historically inaccessible sound. It is further supported by the list of discouraged timbres which fall into two primary categories, namely 1) language situated within the body and 2) language representing ‘loud’ singing. It is seen in the pathologising of loud singing, especially as it pertains to CCM genres. Lastly, these discourses are evidenced by the *chiaroscuro* timbre being identified as the ‘natural law’ of beautiful singing: language that is rooted in the troubled history of scientific racism.

CCM Pedagogy Texts and Vocal Colour

Just as the painter has greater freedom of choice by having more colors on his or her palate, you, the singing artist, have greater freedom to express yourself in a more exciting and emotional way by using the colors on your palette. (Howard 2006)

Vocal colour is perhaps the single most noticeable difference between classical and CCM singing. This difference is likewise exemplified in the discourses that drive CCM texts. While the classical texts insist on the perfect *chiaroscuro* tone, CCM texts insist that each movable part of the vocal mechanism is entirely variable and controllable. Furthermore, they insist that every potential tonal colour has a use in contemporary music. These values ultimately contribute to a discourse of ‘omnivory’, defined as 1) having the taste for multiple styles or genres, and 2) where no style or genre is better than another. This discourse suggests an even playing field – a markedly different opinion than the classical pedagogies – thus contributing to an ‘anti-establishment’ discourse which pushes against the long-standing classical paradigm.

The CCM Singer’s Timbre – A Discourse of Variability and Controllability

Jo Estill focused her decades of research on the movable structures that influenced the colours of the voice. She believed that all voices could be heard as beautiful and that “vocal beauty resided in the ear of the beholder” (Steinhauer, McDonald Kilmek & Estill 2017, 4). Because of this, Estill was driven to research the vocal colours that other voice researchers were uninterested in studying, colours she described with words like ‘twang’ or ‘sob’. Similarly, the other CCM pedagogues profiled in this study agree that the voice is an extremely malleable sound-making mechanism, and that learning how to manipulate each independent variable is of great importance. This is, in

fact, the very foundation on which Estill's research and subsequent vocal training method was built: "A system based on direct control of the larynx and vocal tract" (25). Consider Estill's description of the process of voice training:

1. You need to know the parts of the instrument you can control. There are three components and about 13 structures you can learn to control independently.
2. You need to know the feeling that goes with moving each part... In a way, these parts could be compared to the keys on any other musical instrument...
3. You need to know the changes in sound that occur when you move each of these parts into one of these two or three positions. (Steinhauer, McDonald Kilmek, and Estill 2017, 34)

In this passage, we observe an objective philosophy toward gaining direct control over the vocal mechanism. This can be exemplified with two key words: 'control' and 'independent'. These concepts occur repeatedly not only in Estill's text, but also in *Singing for the Stars* and *The Vocal Power Method*, suggesting that being able to independently control each parameter of the voice is a valuable asset to the CCM singer. Consider the following passages:

Vocal cord vibration determines the *initial quality* of your tone, but resonance determines the *final quality*... The difference is due mainly to the unique size and shape of your own resonance system. Both vocal cord vibration and resonance should work independently. (Riggs 1992, 27)

The quality or color of your voice also depends on your skill in the use of these various resonances and colors by controlling the shape of your vocal tract. (Howard 2006)

This desire for independent control is a key driver behind the step-by-step methods each of these texts contains. For Estill, these procedures were named the 'Figures'. Observe the way in which Estill discusses the purpose of the Figures:

The study [of the figures] is concerned with developing a mechanical awareness of the voice as a variable sound-making instrument. Compulsory Figures do for the singer what they do for the skater as they demonstrate expert control of the apparatus. (Steinhauer, McDonald Klimek, and Estill 2017, 24)

In this sense, we can see that control in and of itself is not the primary goal, but rather it is developing the voice 'as a variable sound-making instrument'. The ultimate goal is the versatility to produce any desired sound.

Not only are different voice qualities treated with the same importance in these texts, but the many timbres that are viewed as objectively negative in the classical texts – for example belting – are given as much consideration as their classical counterparts. Estill in particular discusses both the positive and negative associations of each vocal quality. For example, Estill notes that the timbre created by a higher larynx is very useful in today's commercial music industry, especially within

genres like musical theatre, country, and folk (136). Likewise, with regard to the ‘twang’ quality introduced by narrowing the aryepiglottic sphincter³ (AES), Estill states that “the tone can be exceedingly bright and even annoying to some ears. However, this option can be used as a secret ingredient to add power to the voice” (123). As we can see, even vocal qualities that are often rejected by classical pedagogues have a useful place in the CCM singer’s arsenal.

Bias Awareness – A Discourse of Omnivory

As a singer of both classical and contemporary genres, Estill was aware of the institutional bias toward non-classical styles of singing, and was highly attuned to the social implications related to certain vocal colours mentioned in her text. Consider the following passages:

A vertical thyroid tilt will convey a less cultured tone; less elite and more “real.” This quality is an advantage in some performing situations ... where the speaker is intended to sound like a regular, average person one might meet on the street. ... Rock and pop icons ... [use] a Vertical Thyroid to sound authentic and untrained. (Steinhauer, McDonald Kilmek, and Estill 2017, 100)

The AES figure provokes cultural and social biases of class. A bright twangy voice does not connote education and high culture... This is why the voice makeover is such an important plot element for the upwardly mobile heroines in *Pygmalion*, *My Fair Lady*, and *Pretty Woman*... A moderate degree of AES Narrowing is essential in the projected stage voice. This quality will be called strong, resonant, and commanding, but rarely will be identified as twangy. (124)

In these examples, a ‘bright’, ‘twangy’, ‘less cultured’, or ‘more real’ tone may be desirable to the CCM artist in order to project or to communicate particular personality or genre characteristics. A similar sense of egalitarianism is apparent in both Riggs’s and Howard’s texts. Consider the following passages:

Your ability to control the variations in resonance, color and volume can make a world of difference in your personal singing style. Just as the painter has greater freedom of choice by having more colors on his or her palate, you, the singing artist, have greater freedom to express yourself in a more exciting and emotional way by using the colors on your palette. (Howard 2006)

If we think of the voice as an instrument, then of course all the vocal colors we possess should be used to express emotion in the words. A rainbow of vocal colors is used to express the meaning of the words in jazz. (ibid.)

It doesn’t matter whether you sing pop, rock, opera, or musical theatre. You should sing with a technique that allows you to just relax and concentrate on performing—which is what it’s really all

³ A round drawstring-like muscular structure at the top of the larynx.

about, anyway—right? (Riggs 1992, ix)

In these passages we find evidence that versatility gives the CCM practitioner something unique: the ability to interpret song through a variety of colours. Howard suggests that the versatility of the singer deepens artistry, while Riggs insists that using the correct technique gifts the singer the ability to sing any genre. These views are starkly different than the classical texts, which imply that one specific timbre is preferable. While the classical texts agree with an air of exclusion, these CCM pedagogues seem to be suggesting the opposite: inclusion.

This is reminiscent of a sociological discourse identified in 1992 by Richard Peterson and Albert Simkus called the ‘omnivore theory’ in which “status is gained by knowing about and participating in (that is to say, by consuming) all forms” (in Blake 2017, 331). Musicologist David Blake identifies this as the discourse of ‘omnivory’, which he recognised at the institutional level as being an integral part of the ‘twenty-first-century musicological Zeitgeist’. He describes the discourse of omnivory as:

The equitable inclusion of diverse musical genres, perspectives, and peoples. Inclusivity stems from an interest in entangling the many disciplines, methodologies, and repertoires available in our present technological moment, as well as from the intention to redress cultural forces such as racism, sexism, classism, and ableism that exclude peoples and perspectives from disciplinary participation. (2017, 320)

The omnivory discourse arises in each of the CCM texts and can be exemplified by the idea that all timbres and genres are created equally. Implicit in this discourse is the awareness of the past from which CCM singing arose, one in which ‘non-classical’ timbres were highly discouraged. Likewise, this discourse displays an awareness, whether tacit or outright, of the biases previously uncovered in the classical texts, as well as a respect for the diverse histories from which many CCM genres arose. This can be seen in Estill’s recognition of the bias implicit in certain vocal colours.

The discourse of omnivory is contrasted by an older discourse, one displayed by the classical pedagogues, connecting higher education and class to the preference of ‘high-art’, which Blake connects to the theory of Pierre Bourdieu, a mid-twentieth century sociologist who “correlated high-class backgrounds and educational attainment with highbrow taste: a preference for high culture and a dismissal of low culture” (329). Bourdieu maintained that the educational institutions of his time (the text cited in Blake’s essay was published in 1982) were deeply tied to the taste-making practices of the educated and upper-class.

If one presumes this academic discourse was present during the time of the classical text's authoring, then we can further view the classical/CCM dichotomy not only as a division of high-class/low-class or educated/uneducated, but also as an institutional/non-institutional dichotomy. After all, classical music is heavily maintained within the universities and conservatories, while CCM is still fighting for its place at the proverbial table.

CCM and the Classical Institution – A Discourse of Anti-Establishment

If the discourse among classical pedagogues claims that CCM is a devaluation of the high-class, institutionalised art form, what underpins the CCM texts with regard to the institution of classical singing? Consider the following passages:

Voice teachers recognized her [Estill's] talent and cultivated her musical artistry, but were unable to provide her with reliable techniques for predictable control. (Steinhauer, McDonald Kilmek, & Estill 2017, 7)

Like many beginning voice teachers I knew nothing about teaching voice, so I collected many books and thought I would learn. All I learned was (a) I didn't understand the books any more than I had my voice teachers, (b) there was little agreement among them, either in their language or in their concepts, and (c) that what I read was not what I thought I was doing when I sang so beautifully. (2)

Classical training is a good foundation, but one must then study musical style in order to sing a specific, non-classical style authentically. (Howard 2006)

While it is apparent that neither Estill nor Howard wish to speak ill of the classical music institution, an anti-establishment discourse begins to emerge in these passages. This discourse can be exemplified by ideas like the 'good foundation' of classical training that subsequently lacks the stylistic direction needed for a singing career, the inability of traditional teachers to provide students with 'reliable techniques for predictable control', and the recognition of the inconsistencies among classical pedagogy texts.

Riggs further contributes to this discourse with a sense of disenchantment and resentment. Part of his lore as an unconventional pedagogue comes from his early dismissal from conservatory training. Despite this rejection, he claims to be invited regularly to reputable institutions to give masterclasses (Riggs 1992, 2–3). This myth carries an air of the 'uneducated genius', an attractive and inspiring reputation that resembles those of tech giants like Bill Gates or Steve Jobs, however Riggs seems to retain some bitterness toward the establishment that rejected him. Consider the

following passages:

In high schools and colleges, as well as in private voice studios, teachers often exploit the talent of their students. ... some students aren't fortunate enough to survive the "training" received by these teachers. Students come away from their voice lessons thinking they are stupid ... Actually, the teacher doesn't know what he or she is doing, and, if they do, he/she hasn't been able to communicate that knowledge to the student. (Riggs 1992, 119)

Another rarely admitted reason for the lack of attention to popular music is that most teachers, quite simply, can't teach it... Often a teacher will avoid his lack of ability in this area by saying that the student should learn the "right way" first, and then sing the songs they want later, implying that any singing that isn't opera, or lieder is a prostitution of the vocal art. Their usual methodology—badgering students about diction, breathing, tone color, posture, etc—... does not apply at all to popular styles such as country, rock, jazz, blues, and gospel. (124)

Teachers in colleges and universities create work for themselves by encouraging recitals and concerts, promoting the same vocal literature they had to learn in school. Their students are usually being supported by their parents and the teachers are being supported by the school, so nobody is ever required to learn anything which would enable them to go out and earn a buck. You cannot earn money doing the art song repertoire that you learned in school, outside of school. (125)

The themes that emerge in this anti-establishment discourse are 1) the classical institution exploiting students, 2) ineffective teachers who lack the ability to cultivate successful students both artistically and financially, and 3) the classical institution carrying an air of elitism.

With this in mind, when we remember the commercialism discourse identified in the previous chapter, we may extrapolate that the air of commercialism may not have arisen for selfish or nefarious purposes. While Riggs is obviously interested in furthering his own career by selling his book, it appears that he is also deeply invested in the career opportunities of other singers, as evidenced by his outrage at institutions preventing potential opportunities through their ineptitudes. In fact, it could be viewed as a discourse in and of itself that the classical texts omit any acknowledgement of the necessity of earning money. To the classical pedagogues, it is as though the art of classical singing speaks for itself, as though the well-trained voice will simply attract a lucrative career, regardless of business prowess or knowledge of the modern challenges in the enterprise of art, and that the 'purity' of the art is tainted by the desire to make a living. In the case of Riggs discussing the marketability of certain repertoire, statements regarding finances are not selfish; they are prudent.

It is also important to consider from where financial backing materialises in these two disciplines. CCM practitioners are required to build their careers from the ground up, thus demanding a sense

of entrepreneurship. In the classical tradition, however, pedagogues often work for the institutions, and therefore have ample resources at hand to perform, conduct research, and author articles or texts. The institutional bubble provides both financial security and artistic freedom, as long as it fits within the confines of institutional expectation. The safety and comfort of the institution further encourages pedagogues to recommend careers within the institution since a stable career is difficult to establish. In this sense, the classical institution is self-perpetuating. We can see that classical music is fully entwined with the universities and conservatories, who encourage its study and performance while reaping the benefits of high culture, reputation and funding it provides.

The standout anti-establishment theme in Riggs's text, however, is his perception of elitism in the classical institution. His recognition that the institution views the *chiaroscuro* timbre as the one correct way to sing is mocked by the scare quotes around the term 'right way'. He continues, stating that the implication is 'any singing that isn't opera or lieder is a prostitution of the vocal art'. The term 'prostitution' is of particular interest in this phrase, for three reasons. Firstly, it implies that any 'non-classical' singing is debasing the great art of bel canto, bringing it down to a coarse, disgusting level – *the level of the body*. Secondly, it carries a sense of blaspheming the holy sacrament of singing, as prostitution is often construed as blaspheming the holy sacrament of marital coitus. Thirdly, this blasphemous debasement is done for monetary purposes. Singing CCM, as Riggs attributes to the institution, is seen as lowering oneself to the gutter, spoiling the purity of the great art by bringing it to the level of the body, all in order to make a buck.

The discourses that underpin both CCM and classical pedagogy texts regarding vocal colour are disparately opposing. They seem, in a way, to actively push against one another, like similar magnetic poles. The discourses that drive classical pedagogy – themes of classism, racial bias, and bodilessness – speak directly against the core tenets of CCM singing. Similarly, the discourses of omnivory and the anti-establishment seem to be in direct response to CCM's exclusion from the classical institution. It is apparent that these discourses do not live in a vacuum. They are in fact reflections of and rebellions against one another; they are in part responsible for each other. It is then no surprise that the resulting vocal colours between these two styles of singing are so vastly different.

Vibrato

If we should hear all the successive changes, the result would be chaos in tone. (Seashore in Stark 2008, 147)

The vocal vibrato, described as the periodic oscillation of the voice, is not only present in, but is also the hallmark of many styles of singing. Its presence, or lack thereof, is often viewed as a marker of ability, artistry, or even identity as a specific type of singer. Furthermore, the way in which vibrato is (or is not) taught is a central tenet of both classical and CCM pedagogies. Therefore, it is a fitting vocal technique through which to analyse discourse. In the following chapter, I argue that the way in which classical and CCM pedagogy texts address vibrato reinforces and solidifies many of the discourses we have previously discussed. This includes discourses of naturalness, othering, omnivory, and commercialism. Therefore, vibrato serves as an effective metaphor for the discursive differences between classical and CCM pedagogy.

The History of Vibrato Research

Carl Seashore, the prominent vibrato researcher, undertook a massive study of vocal vibrato in the 1920s and 1930s. A century later, it remains some of the most in-depth research conducted on vibrato. As such, Seashore's definition is frequently cited in vocal pedagogy textbooks (McKinney 1994, 196–197; Bunch 1997, 75). Seashore defines vibrato as “a pulsation of pitch, usually accompanied with synchronous pulsations of loudness and timbre, of such extent and rate as to give a pleasing flexibility, tenderness, and richness of tone” (Seashore 1932, 1938). Vibrato includes the periodic oscillation of three distinct parameters of the voice: pitch, intensity, and timbre. While not every type of vibrato combines all three, most forms of vibrato include at least two (Stark 2008, 142; Katok 2016, 14–17).

Seashore determined that for ‘pleasing’ vibrato, the average rate of oscillation is between five and eight pulsations per second, the pitch variation is around one semitone, and the variation of intensity is between 2–3 dB (Bunch 1997, 75; Stark 2008, 140; McKinney 1994, 196). Oscillation of timbre can be measured through the use of the spectrometer, which provides a visual representation of the periodic variation of individual formants caused by the fluctuation of pitch

and volume (McKinney 1994, 197). A vibrato with a rate faster than eight pulsations per second is often referred to as a 'tremolo' and is described as nervous or trembling. A vibrato with a rate slower than five pulsations per second is referred to as a 'wobble' and is described as unsteady or out-of-tune (Stark 2008, 141). Both are considered 'vocal faults'.

While it is impossible to know the extent to which vibrato was present in western-European classical singing prior to the advent of recording technology, there has been much research that suggests that historically, vocal vibrato was less prevalent than it is in modern singers. Furthermore, this research suggests that vibrato was used primarily as an ornamental technique, rather than as a regular practice (Daffern 2008, 59). It is estimated that a regular, non-ornamental vibrato evolved around the same time as other now-standard bel canto singing techniques (including the *chiaroscuro* timbre), somewhere around the 1830s (133–143). Interestingly, many of the authors that defined the early Italian school of bel canto, namely Caccini, Tosi, and Mancini, never mentioned vibrato in their texts, which has led to much scrutiny regarding proper historical performance practice (142). As Stark so eloquently writes, however, "the absence of discussion of vibrato cannot be construed as proof that it was not an ordinary part of cultivated singing. This absence could equally well imply that vibrato was so ubiquitous and so natural as to not merit comment" (2008, 122–123).

It is well-documented through the comparatively brief history of sound recording that the standard rate of vibrato in classical singing has slowed since the late nineteenth century. A study published in 2011 showed a clear decrease in the mean rate of vibrato over the last century, while the pitch variation of vibrato increased (Ferrante, 2011). These cultural changes in what constitutes a 'normal' vibrato are likely due to the increasing size of performance venues, the further development of a darker *chiaroscuro* tone which requires more muscular antagonism, and shifting aesthetic values (Daffern 2008, 34; Stark 2008, 141–142).

The Physiology of Vibrato

Until relatively recently, the physiological cause of vibrato was unknown. It was theorised to be any number of things, from a by-product of the Bernoulli effect (Reid 1990, 128) to a direct result of intense emotion (Stark 2008, 145). Since the publishing of these three classical pedagogy texts, however, it has been concluded that vibrato is the result of a combination of three factors: airflow, the muscular balance of the CT and TA muscles, and the presence of 'neuromuscular tremor'.

(Kirkpatrick in Katok 2016, 19). Neuromuscular tremor is a phenomenon present in several muscular systems in which “muscles alternately contract and relax as a means of protecting against fatigue” (Stark 2008, 139). It is the same phenomenon experienced when one’s muscles tremble while lifting a heavy weight or maintaining a strained position. The vocal vibrato occurs, then, due to the antagonistic relationship between the TA and CT muscles when laryngeal tension is high enough (i.e. singing above a certain pitch and/or intensity). When these conditions are present, the phenomenon of neuromuscular tremor transpires in order to release tension within the larynx. In this way, we can see that vibrato is very much a naturally occurring phenomenon (Katok 2016, 20).

Different Styles of Vibrato

Aside from what is considered ‘normal’ vibrato today, there are several different styles of vibrato that are well-documented historically. These styles include ‘laryngeal vibrato’, ‘glottal articulation’, and ‘diaphragmatic vibrato’ (Stark 2008, 122). Laryngeal vibrato, also known as ‘throat vibrato’ or ‘*gropo*’, is described as the “rapid alternation between two adjacent notes,” (ibid.). This style of vibrato is frequently used today in jazz and pop music⁴. Glottal articulation, otherwise known as ‘epiglottis vibrato’ or ‘*trillo*’, occurs when the vocal tone is interrupted by a regular opening and closing of the arytenoid cartilages, resulting in a sound similar to a bleat or a giggle (Stark 2008, 122). This form of vibrato is used primarily as ornamentation, but is also commonplace in the French *chanteuse* tradition⁵. The third style of vibrato is called ‘diaphragmatic vibrato’, in which the respiratory muscles are consciously employed in order to raise and lower the pitch. Due to the Influence of larger muscular systems it also tends to be slower in rate and wider in extent (Stark 2008, 122). An example of diaphragmatic vibrato can be found at the end of Joni Mitchell’s long phrases.⁶

Although one cannot know exactly how they sounded, historically there were even greater numbers of vibrato styles. Reid’s text relates a letter penned by Palestrina in 1775 in which he describes singers who had “at their command the equivalent of our vibrato but also were able to produce at will many variations of this voice movement as a means of creating artistic and

⁴ See: ‘Blue Moon’ from Billie Holiday’s *Solitude* (1956) or ‘Hallelujah’ from Jeff Buckley’s *Grace*, (1994)

⁵ See: ‘La vie en rose’ from Edith Piaf’s *de l’accordeoniste a milord* (1986) or ‘Wild is the Wind’ from Nina Simone’s *Wild is the Wind* (1966)

⁶ See: ‘People’s Parties’ (starting at 1:40) from Joni Mitchell’s *Court and Spark* (1974)

emotional effects” (1990, 132). Each style had a descriptive name such as the *trepidatio* – trembling as with fear; *reverberatio* – throbbing quality in full voice; *vinnulae* – sweet; *voces tremulae* – trembling but different than *trepidatio*; and *crispatio* – pure vibrato (133).

The Perception of Vibrato and Sonance

The analysis of vibrato poses a challenge, since the listener’s experience is rooted in individual perception. Auditory perception, as previously discussed, is an act of unconsciously reflective interpretation, and can vary widely from individual to individual, even when listening to the same recording or performance (Stark 2008, 147-148). This act of perception is crucial to the enjoyment of vibrato since, as Carl Seashore states, “if we should hear all the successive changes, the result would be chaos in tone”. Instead, the human brain fuses this cacophony of oscillating tone, timbre, and intensity into one sound, resulting in “a pleasing blend which we call musical quality” (Seashore in Stark 2008, 147). The fact that the listener does not indeed perceive chaos is due to the phenomenon of ‘sonance’, defined as “the physio-psychological phenomenon where oscillating pitches fuse into one tone” (Katok 2016, 16). Sonance is the quality that makes any tremulous tone appear cohesive, not as a disorderly confusion of varying parameters. This is essentially why the tremolo or wobble is displeasing to the ear – the rate of vibrato, whether too fast or too slow, does not achieve sonance and consequently the listener is made aware of the oscillating pitch.

The Relationship of Straight Tone to Vibrato

Sonance is fascinating in that it may be attained outside of the accepted parameters of ‘normal’ vibrato. Simply stated, “to achieve sonance, vibrato rate must be fast enough and the extent must be small enough to avoid perceiving two separate pitches” (Katok 2016, 16). Straight tone, although not considered a style of vibrato, actually has an almost imperceptibly small periodic oscillation of pitch, intensity, and timbre (52). Because of sonance, the periodic vibration of a fully supported, free-flowing straight tone is essentially inaudible to the unaided ear, yet when viewed with the aid of a spectrograph, it has been observed that straight-tone does indeed have a slight vibrato.

By reaching what Kenneth Bozeman calls ‘flow phonation’ – a balance between subglottic pressure

and airflow – straight tone can be produced without tension (Bozeman in Katok 2016, 20-22). A properly produced straight tone is “round and clear in quality. It has minimal vibrato, yet shimmers with energy and pulsation” (Katok 2016, 52). This concept is contrary to the aesthetic preferences of many classical pedagogues who prefer ‘normal’ vibrato, and yet one can find many instances of a free and ‘pleasing’ straight tone occurring in early music, in choral performance, and in many genres of CCM. What’s more, there is an increasing need for classically trained singers to be able to comfortably employ the use of straight tone due to the increased likelihood that a portion of their income as a professional singer will come from either choral singing or from performing genres of music that require less vibrato (40).

Classical Pedagogy Texts and Vibrato

Vibrato is a natural concomitant of beautiful and expressive tone. The almost universal presence of vibrato in all types of musical performance has been verified time after time by research; it has been not only classified as necessary for beauty of tone but also for physiological reasons. (McKinney 1994, 197)

Carl Seashore was in fact not a voice scientist by profession, but a psychologist. His interest in studying the human vibrato was born from a curiosity about the way in which vibrato expressed “tender feeling through instability”. The impetus for Seashore to study vibrato was not simply its physiological mechanism; it included uncovering the emotional drive which caused the voice to tremble, thus uncovering the “nature of beauty in the vibrato” (Seashore in Stark 2008, 144-145).

This drive to understand the ‘naturalness’ of vibrato is not unique to Seashore; it is in fact a central theme to the discussions of vibrato in all three classical texts. The ‘naturalness’ of vibrato, as expressed in these texts, can be viewed from four different angles. It can be seen as ‘natural’ in the sense that the voice automatically trembles in the tension-release cycle of neuromuscular tremor. It can be seen as ‘natural’ in that it is often cultivated without the aid of intentional teaching or learning practices. It can be seen as ‘natural’ in the sense that any attempt to control or alter it is viewed as contrived or ‘unnatural’. Lastly, it can be seen as ‘natural’ in that its essential quality contributes to the perception of artistry in certain styles of singing.

Vibrato is Essential – A Discourse of The Natural

In the physiological context, vibrato occurs spontaneously as a tension-release mechanism. The parameters of ‘normal’ vibrato – between five and eight pulsations per second with an average variation of one semitone – is stated to be the ‘natural’ rate and extent of healthy vibrato, which multiple studies have confirmed (Dejonckere, Hirano & Sundburg 1995; Horii 1989; Rothman & Arroyo 1987; Shipp, Leanderson & Sundberg 1980). It is important to note, however, that these values have been determined primarily by studying the voices of classically trained singers (LeBorgne & Rosenberg 2014, 68–69). The lack of studying singers from other genres shows that there is in fact a wealth of uncovered knowledge about the vibrato. In this sense, although the existence of vibrato is indeed natural to the function of the voice, the rate and extent at which it might effectively serve its tension-release purpose in other musical traditions is still uncertain.

The second way in which vibrato is purported to be ‘natural’ is evidenced by the lack of recommended learning practices, as though proper vibrato should be instinctively acquired rather than taught. Consider the following passages:

When proper breath support has been established and some of the tension released, the vibrato will often appear on its own accord as a side effect. (McKinney 1994, 91-92)

In all probability such difficulties [the lack of vibrato] were known to resolve themselves by merely purifying the vowel qualities produced and by improving the balance and development of the registers. (Reid 1990, 134)

Vibrato cannot be regulated or controlled without injurious effect except by an indirect approach. *The vibrato must never be trained or cultivated!* (125-126)

Here we find discussion of an innate vibrato being uncovered by supporting the breath, releasing tension, purifying vowels, or balancing the registers. These passages suggest that the unencumbered voice vibrates in a way that is so ‘natural’ is essential to the voice itself, and that only incorrect practices could burden the mechanism enough to cause the vibrato to cease. Furthermore, any intentional cultivation of vibrato is pathologised by Reid, who claims it will cause ‘injurious effect’.

This pathologising discourse likewise occurs when any form vibrato that stands outside of the

accepted rate and extent is mentioned. This includes the tremolo, the wobble, and especially the straight tone. According to these pedagogues, any vocal tremulousness that falls outside of this preferred range is in fact *not* natural, and is considered a vocal problem. Observe the way in which Reid discusses the potential causes of the tremolo or the wobble:

The tremolo usually denotes the presence of throatiness, while the wobbly and unsteady tone shows that the instrument is being unduly strained and overburdened by forcing for volume. Persistent indulgence in either the tremolo or the wobble inevitably lead to a complete loss of voice. (1990, 127)

Presence of the tremolo and wobble is the direct result of [present day] teaching procedures wholly at variance with the principles of Bel Canto. (134)

In these two passages we can detect a few of the discourses previously identified. We can observe the discourse of bodilessness when Reid suggests the tremolo is the consequence of ‘throatiness’. We can see the golden age discourse as he waxes poetic about the teachers of today, ‘wholly at variance with the principles of Bel Canto’. Finally, the discourse of pathologising is present in the warning that engaging in the tremolo or wobble will ‘inevitably lead to a complete loss of voice’. Once again, these overlapping discourses, together, suggest that:

1. It was better back in the golden age;
2. The teachers and musics of today, which encourage the undesirable influence of the body, are debasing the great art of bel canto; and
3. Engaging in these practices will cause injury to the voice.

These overlapping discourses are also present in each classical pedagogue’s writings on the use of the straight tone – a timbre that is considered a staple of CCM singing. Consider the following passages:

Not even a poorly used voice will find this [straight tone] such an easy thing to do, while voices of really good quality will find it almost impossible. ... the process is an unnatural one and subjects the throat to constant strain and excessive effort... The voice quality itself is suddenly transformed ... to a tired, worn quality, and the entire apparatus becomes unmanageable and unresponsive... the voice not only suffers in quality but also fatigues with extreme rapidity. (Reid 1990, 131)

A common symptom ... is a limited or absent vibrato—the so-called ‘straight tone’ ... The easy rhythmic excursions of the vocal cords in normal, healthy voice production can be heard in the normal vibrato... This is not heard in breathy, strained, or harsh voices and is therefore of diagnostic significance both giving physical and psychological cause. (McKinney 1994, 88)

The influence of today’s rock, pop, and discotheque music has taken its toll of [*sic*] the vibrato. Many of these groups adhere to a singing style that resembles yelling or shouting... This kind of singing ...

puts an enormous strain on the vocal apparatus. The strain is obvious when one sees the sheer physical effort needed to produce the sound (evidenced by the large number of neck muscles that are visible when these people sing). (Bunch 1997, 75)

In these passages, we can immediately identify the pathologising discourse in phrasing like straight tone being ‘a common symptom’ of tight phonation, the ‘strain’ of which is ‘obvious when one sees the sheer physical effort needed to produce the sound’; that it is a technique which causes ‘the entire apparatus’ to become ‘unmanageable and unresponsive’; and especially in the notion that the straight tone is ‘of diagnostic significance both giving physical and psychological cause’. The discourse of bodilessness is evidenced by the idea of straight tone ‘subjecting the throat to constant strain and excessive effort’, producing a sound which requires ‘sheer physical effort’, proven by ‘the large number of neck muscles’ visible when one employs this sound. The given examples of genres which encourage straight tone singing, specifically ‘today’s rock, pop, and discotheque’ are historically Black or Black-influenced genres whose practitioners, according to Bunch, ‘adhere to a singing style that resembles yelling or shouting’, once again invoking the historical association of Black music-making with shouting. We can also see a blatant othering of CCM singers in Bunch’s description of the ‘neck muscles that are visible *when these people sing*’. Note both the visual description of the undesirable body – the prominent neck muscles – as well as the plural, impersonal determiner in the phrase ‘these people’. It is as though the singers who partake in such practices are distanced, separated from the acceptable in-group. It specifically denotes a sense of ‘us’ and ‘them’, not to mention the historical practice of using phrases like ‘those people’ to indicate specific othered groups, usually People of Colour or lower class standing.

What’s more, the dichotomies that have surfaced from these discourses – high-class versus low-class, bodiless versus embodied, etc. – are further solidified by Reid’s dichotomy of a ‘poorly used voice’ versus ‘voices of really good quality’. Amplified by its association with specific CCM genres, this seems to be the most straight-forward evidence of classical pedagogues tacitly stating that classical singing is ‘good’ and CCM singing is ‘bad’.

Vibrato is Artistic – A Discourse of Othering (Part II)

The final way in which the naturalness of vibrato is championed is through its cultural association with artistry. As was discussed in the previous chapter, the classical pedagogues associate the concept of naturalness with artistry, so much so that ‘natural’ often becomes synonymous with

‘artistic’. Consider the ways in which these texts connect the presence of vibrato with artistry:

Vibrato is a natural concomitant of beautiful and expressive tone. The almost universal presence of vibrato in all types of musical performance has been verified time after time by research; it has been not only classified as necessary for beauty of tone but also for physiological reasons. (McKinney 1994, 197)

The artistic quality of singing is frequently judged by the presence of vibrato in the sound... Ideally, vibrato occurs in practically all tones of artistic singing. (Bunch 1997, 75)

It is solely the perfection of the vibrato movement in the voices of the great Bel Canto artists that was directly accountable for the extreme feats of agility for which they were so justly famed. (Reid *Vibrato is Artistic - A Discourse of Othering and The Divine* 1990, 125)

Furthermore, Seashore’s often-quoted vibrato definition, “a pulsation of pitch ... of such extent and rate as to give a pleasing flexibility, tenderness and richness of tone”, is situated in descriptive language that implies a factual reality to artistry, as though what one should find ‘pleasing’ or ‘rich in tone’ is objective, not an aesthetic preference heavily influenced by one’s cultural environment. Seashore’s research concluded that “vibrato was present in the voices of *all great artists* in about 95% of their phonated time” and further claimed that the naturalness and artistry of vibrato is proven by the fact that “vibrato was also present in the voices of adult voice students, children, *and even in primitive peoples*” (Seashore in Stark 2008, 146 – italics added).

The sentiment that the artistry of vibrato is proven by its presence ‘even in primitive peoples’ is perhaps the most convincing evidence thus far of othering of non-western classical singers, elevated in this case by exemplifying *what is not art*. The simple use of the word primitive itself, a concept firmly rooted in the previously discussed scientific racism of the nineteenth century, is enough to tip the scales toward the perception of a discourse of both racism and othering. More importantly, however, is the fact that Seashore chose to study the voices of ‘primitive peoples’ as a counterpart to studying the voices of ‘great artists’. The binary that is essential for separating the ‘other’ from the accepted in-group is present in the very design of the study.

Using the existence of vibrato in ‘primitive’ voices as evidence of the artistry of the western-European classically trained voice is yet another example of the selective thinking we identified in both the registration and vocal colour chapters. Just as using falsetto does not make the CCM singer’s voice artistic, and just as ‘loud singing’ is pathologised in CCM genres despite its elevation due to the ‘singer’s formant’ in classical singing, vibrato does not make the voices of

‘primitive peoples’ more artistic. Instead, its presence in these voices proves the western-European classical singer to be more artistic.

Through this analysis, it is apparent that naturalness is the core tenet of the classical discourse surrounding vibrato. This varies greatly from the discourses that drive registration, where it is common to deny the natural break between the registers, and vocal colour, where the expectation of a ‘natural’ *chiaroscuro* sound forms an incredibly difficult task for the singer. When the naturalness of vibrato development is seen as a requisite for artistry, the lack of vibrato becomes synonymous with inability. This assumption leads to the further pathologising and othering, which we have witnessed within each vocal technique analysed thus far. With this, one can identify a discursive pattern emerging among these classical texts; that the accepted in-group – upper-class, western-European classical singers – are touted as being artistically superior. These texts employ multiple devices to support this idea, including the pathologising of ‘non-classical’ vocal techniques, the discouragement of ‘inartistic’ or ‘un-serious’ sounds produced in other genres, and the insistence that the proper tone must be elevated and bodiless in order to connect to the lineage of the golden age of bel canto.

CCM Pedagogy Texts and Vibrato

Vibrato must be controlled if your goal is to have a professional career in singing. (Howard 2006)

Among the three CCM texts, Elisabeth Howard’s *Sing! The Vocal Power Method* stands out because of its in-depth profile and methodical approach to teaching multiple styles of vibrato, while the other two texts mention it only briefly (Steinhauer, McDonald Kilmek & Estill 2017, 91, 101, 211; Riggs 1992, 116). Therefore, this section will focus primarily on Howard’s discussion of the vocal vibrato. As a contrast to the classical texts previously analysed, Howard’s text insists that vibrato must be flexible in production, that it can and should be taught, and that employing multiple styles increases artistry and commercial viability. These assertions contribute to the previously identified discourses of omnivory, class structure via championing ‘the underdog’, and commercialism.

Different Styles of Vibrato, Past and Present – A Discourse of Omnivory, Part II

While the classical pedagogy texts insist that there is one correct style of vibrato, Howard's text suggests that many styles of vibrato can be useful. She discusses four forms of vibrato, as well as their functions in popular genres: 'diaphragmatic vibrato on the breath', 'vocal fold flutter vibrato', 'throat vibrato', and 'shimmering vibrato', most of which have direct counterparts to the Baroque styles previously described. 'Diaphragmatic vibrato on the breath' is akin to what one might consider 'normal' vibrato. 'Vocal fold flutter vibrato' is similar to the 'glottal articulation' of the French *chanteuse* tradition, or the *tremolo* ornamentation of early music. 'Throat vibrato' is akin to 'laryngeal vibrato' or the historical *grosso*. The only unique vibrato that Howard describes is 'shimmering vibrato', described as 'a very fast throat vibrato, heard in faster tempo songs' (ibid.). According to Howard, shimmering vibrato is the fast, excited vibrato found in a coloratura aria, or in an up-tempo jazz scat solo.

One of the primary themes that occurs in Howard's text regarding these different styles of vibrato is their contribution to the artistry of the singer. She emphasises that vibrato is a 'tool of expression' and that "the type of vibrato and whether to use it or not is your choice as an artist. It depends on your personal taste and musical style ... Vibrato not only enhances the sustained tone, but can be used as a means of expressing the various emotions associated with a word or phrase" (ibid.). In this sentiment, Howard is suggesting that vibrato is not simply a source of beauty, but also a variable and expressive device that may be used to elevate the performance. This use of vibrato – as an ornamental tool – is reminiscent of the way in which vibrato was employed in early music. Furthermore, the recommendation of developing this toolkit of differing vibrato styles is reminiscent of the discourse of omnivory, especially when considering that omnivory not only accepts and encourages multiple genres, but also their historic implications. It seems as though the styles of vibrato that Howard touts, whose historic counterparts fell away from common use in the early- to mid-nineteenth century (Stark 2008, 134-137), are being resurrected in both form and function in modern CCM genres.

Also, despite the traditional emphasis on one correct style of vibrato, many classical pedagogues hold these historic varieties of vibrato as evidence that the great singers of the golden age were more highly skilled than the singers of today. In fact, Reid dedicates several pages to the reverence of the singers who could "produce any one of a number of voice movements at will" (1990, 132).

Despite this, Reid does not extend the same recognition to CCM singers who employ a similar vocal flexibility. This is yet another example of the selective thinking of the classical pedagogues: when the CCM singer employs varied styles of vibrato, it is considered pathological. However, when a vocal practitioner from the golden age employs these varied styles, the result is revered as wholly natural and supremely artistic.

Vibrato Can and Must be Taught – A Discourse of Class via ‘The Underdog’

The vibrato chapter in *The Vocal Power Method* is centred on the idea that “no one is born with a natural vibrato. It is learned” (Howard 2006). Contrary to the classical texts, Howard insists that “many singers say they have a natural vibrato, but it still is learned, whether by imitation of other singers or by the guidance from a voice teacher ... You can only sing what you can hear” (ibid.). This passage is of particular note, since Howard is recognising the oral tradition present in so many CCM styles of singing. This brings to the forefront the access point previously discussed to perceived higher-class music-making: reading music. When Howard illuminates the oral tradition of CCM genres, she is once again revealing the classical/CCM divide based on class. However this time, the focus is on championing ‘the underdog’ (in this case, the culturally perceived lower-class CCM singer) as possessing skills that allow them to artistically rise above those without the same flexibilities.

Furthermore, due to the relative accessibility of the vocal instrument as compared to other musical instruments (which require external resource to procure), the vast majority of vocalists sing for years before they begin officially studying the instrument. It is therefore impractical to imagine that any singer, classical or CCM, would not have external influences on their style of vibrato. In this way, we can see that elements of the oral tradition extend beyond CCM genres. This hypothesis was confirmed in a 2007 study of the average vibrato rate in classical singers enrolled in an undergraduate music programme. Over three years of study, those whose voices possessed a naturally a slower rate of vibrato increased, while those who possessed a faster rate decreased toward a mean rate of vibrato (Murbe et al. 2007). This study suggests that despite the myriad arguments of the naturalness of vibrato, there is no truly natural rate, even for an individual singer. Rather, the rate (and conceivably the style) of vibrato produced by the human voice is influenced by social and cultural environment.

The question then remains: if vibrato is a socially and culturally influenced phenomenon, should it

be taught? According to Howard, the answer is yes. She writes, “the control of vibrato is seldom explored in the study or teaching of voice, although it is one of the primary objectives in the study of stringed instruments and most wind instruments... Can you imagine a cellist or a flautist leaving vibrato ‘to chance?’ Or expecting vibrato to come naturally?” (2006). It seems as though the idea of leaving the vibrato ‘to chance’, according to Howard, is imprudent, especially given its ability as a ‘tool of expression’ to elevate the artistry of a performance.

Vibrato as an Asset – A Discourse of Commercialism, Part II

Elisabeth Howard’s vibrato method emphasises not only different styles of vibrato, but also the development of speed variations, delayed vibrato, and straight tone. These are all techniques that are regularly employed in many styles of CCM singing, and the ability to harness these techniques is seen as an invaluable asset to the artist/entrepreneur. This reinforces another previously discussed discourse: commercialism. Consider the following passage:

Vibrato must be controlled if your goal is to have a professional career in singing. (Howard 2006)

If your career is to include studio work, back-up or singing in a small ensemble or singing in a chorus, the ability to control your vibrato and straight tone with no vibrato, is a basic requirement. (ibid.)

Given CCM’s lack of institutional financial backing, building a marketable vocal technique is a necessity for the CCM practitioner. Without the ability to engage multiple styles of vibrato, Howard believes that one’s career possibilities are greatly reduced. Rather than seeing vibrato as a ‘natural concomitant’ of beautiful singing, Howard views vibrato as an effective and learnable tool to increase the marketability of one’s voice.

Vibrato as Function Versus Vibrato as Effect

Through the analysis of these discourses, what comes to light is the stark difference between the way that classical and CCM pedagogues view vibrato. While the classical texts insist that vibrato is a *natural function* that must not be altered, CCM pedagogues view *vibrato as effect*, a tool to be cultivated and used discretionarily. No single pedagogue contests the naturalness of vibrato itself, however the intended purpose of vibrato is so vastly different between the two disciplines. Howard’s text paints vibrato as an ‘expressive tool’ for the commercially viable artist, while the

classical texts suggest that the naturalness of vibrato stands alone, that it must not be considered an alterable tool of expression, and that it must exist purely in its most natural form as evidence of the perfectly functioning vocal mechanism.

In this way, vibrato seems to stand as the ultimate metaphor for the discourses of both classical and CCM pedagogy. In the classical texts, the existence of vibrato establishes the artistry of the *chiaroscuro* tone. Its function as a tension-release mechanism proves its unalterable naturalness, and consequently, *bel canto* may be viewed as rightfully elevated above other styles of singing. Most importantly, its beauty stands for itself, without the need for commercial drive. In essence, vibrato represents art for art's sake. Likewise, vibrato functions as a metaphor for the discourses underpinning CCM pedagogies. The multiplicity of encouraged vibrato styles supports the discourse of omnivory. Lastly, the development of these styles leads to superior versatility and, thus, commercial viability.

The discursive patterns that have surfaced consistently throughout this analysis reflect the characters of these divergent styles of singing. Despite recent social evolution in the classical vocal world, there remains a rigid set of guidelines as to what constitutes good singing, as well as narrow expectations regarding proper diction, appropriate repertoire, acceptable concert dress, and so on. In a tradition that has been so stubbornly rooted in its own traditions, it is no surprise that the discourses of classism, racial bias, pathologising, and othering have presented themselves. Similarly, the multiple genres encompassing CCM reflect the discourse of omnivory, and its lack of inclusion in tertiary institutions has led to the necessary consideration of the financial prospects of the artist/entrepreneur. In short, when considering the histories of these varied disciplines, the discourses that have manifested have been unavoidable. It is then necessary to consider the implications these discourses present for the future singers of both styles of music.

Conclusion

Review of Discourses Identified in Classical Texts

Through the process of this discourse analysis, several recurrent themes have emerged. The way in which registration is addressed in the classical texts first brought to light the discourse of the 'fallible scientist'; that the personal experiences and opinions of individual researchers effect conclusions, which in turn influences the way information is passed. Each of the discourses later identified were influenced by the fallible scientist discourse, since pedagogy texts depend on the leading research for content. The next two discourses that emerged in this analysis were those of 'pathologising' and 'othering'. The classical pedagogues invoked these devices by claiming that the register transition is a 'vocal problem' and that using non-classical registration techniques will harm the voice. Furthermore, through the example of the falsetto, the device of othering brought forth discourses of classism (through the example of the 'yodelers') and racial bias ('folk singers of varying ethnic origins'). The discourse of gender bias became apparent when McKinney revealed his lack of understanding of the female vocal mechanism after nine pages of discussion, as well as his extreme distaste for any sound which might emasculate the male classical singer. The discourse of racial bias was further amplified by Reid's discussion of women who appear 'shouty' when singing 'hot jazz', a sentiment that evokes both the historically racialised genre and the aesthetic of the shout. Lastly, a discourse of the 'golden age' emerged through Reid's myriad mentions of lineage and the modern 'contamination' of the great art of bel canto.

In the analysis of the classical writings on vocal colour, the discourses that emerged centred almost entirely around the body. This includes the way in which the physical structures of the body are conflated with 'talent' (or the lack thereof), as well as the insistence that bodily-influenced vocalizations are inherently negative. The discourse of 'bodilessness' was the foundation on which the other identifiable discourses rested, most notably racial bias. By reflecting on the undesirable qualities of 'loud singing' (Bunch 1997, 79-89, 107; Reid 1990, 30-31; McKinney 1994, 87), the classical pedagogues built up a 'spectacle of otherness', invoking its connection to CCM genres, its predilection to 'harm' the classical voice, its relationship to the coarseness of the body, and its historically racial connection to the aesthetic of the shout.

With regard to vibrato, the classical texts centered on a discourse of the 'natural'. This was

exemplified by touting the natural function of vibrato, pathologising 'abnormal' styles of vibrato, and connecting the concept of 'naturalness' to 'artistry,' thus elevating the art of classical singing above other styles of singing.

In retrospect, these discourses combined reflect the silent tools of oppression of patriarchy, classism, and racism, all which have deep roots in western European culture, and by extension the North American world-view reflected in these texts. Together, this suggests that these authors function (although perhaps not intentionally) within a worldview in which white, upper-class men of European descent are culturally, artistically, and even physically superior. This is exemplified by the lack of mentioning female singers for multiple pages, by the constant elevation of the classical singer's body (as compared to the coarse, debased CCM singer), the great art whose beauty 'must exist as a factual condition' (Reid 1990, 19-20) over other, 'lesser' genres, and in the constant binary comparisons of good/superior/artistic versus bad/inferior/inartistic music-making.

Review of Discourses Identified in CCM Texts

The discourses that emerged in the CCM texts were vastly divergent from those in the classical texts. The registration chapters revealed the discourse of the 'magic pill', exemplified by the use of over-simplifying and renaming techniques in order to 'automatically' achieve register coordination. Each pedagogue re-conceptualized registration in some way, whether by developing a system to effortlessly bridge the registers (Riggs 1992, 33-36; Howard 2006) or renaming the registers completely (Steinhauer, McDonald Kilmek & Estill 2017, 73-77). Furthermore, the magic pill theme tied directly into a discourse of 'commercialism' in which the pedagogues not only attempted to sell their products through the device of magical thinking, but also the promise of successful and lucrative careers for those who follow their methods.

The discourses that emerged regarding vocal colour were based on themes of variability and controllability, which lead to a discourse of 'omnivory'. Through omnivory, all styles and genres are accepted as being equal, thus carrying a sense of cultural bias awareness and a desire to 'make right' historical inequities and power structures. This awareness brought forth the relationship between the classical institution and CCM, and in so doing evoked an 'anti-establishment' discourse. This discourse further revealed the importance of entrepreneurship (and thus commercialism) for the contemporary artist, since CCM genres have little institutional backing.

Lastly, the writings on vibrato reinforced the discourses previously identified in the CCM texts. Through the recommendation of attaining multiple styles of vibrato the discourse of omnivory was re-established. This discourse was further solidified by championing the underdog through evoking the oral tradition present in all styles of singing, whether classical or CCM. Lastly, the discourse of commercialism was reinforced through the insistence that a variable and controllable vibrato is a prerequisite for a professional performing career.

Emergent Themes

Reflecting on these discourses, two overall themes emerge. The first is one of identity. The classical institution appears to identify itself as highbrow, as being connected to a lineage of larger-than-life figures, of being superior. These ideals both form and maintain the institution, which has historically held the power to communicate what is 'good' or 'correct' singing, and what is not. This self-identified superiority is most evident in the selective thinking employed by each classical author, exemplified when a vocal technique used by a member of the 'in-group' is viewed as acceptable or artistic, yet when used by a member of the 'out-group' is seen as distasteful or pathological.

The CCM identity that emerged in this analysis is one of the scrappy underdog who is neither seen nor accepted by the classical institution, but who continues fighting desperately to gain a seat at the table. Within this identity, there is a sense of both preoccupation and struggle to reach success, the pinnacle of which might be achieving a certain degree of respect from the classical institution. This is negotiated by finding unique, marketable techniques that might allow the author or method to rise above in order to finally get noticed.

The second finding is that the overall emergent discourses seem to be a direct reflection of each other. The classical pedagogues often mention CCM genres as examples of what *not to do* and how *not to sing*, while the CCM pedagogues often refer to the hypocrisy of the classical institution that 'exploits' its students without providing them the tools to create a successful career. It seems as though these discourses developed over time, not in light of but *because of* each other. It is as though the two musical disciplines are orbiting bodies in space, invisibly influencing each other through their wide gravitational forces. Their very identities depend on this orbital dance, slowly rotating around one another, yet never getting any closer, never touching.

The Implications of this Study

Referring back to the rationale of this research, the primary purpose of discourse analysis is to illuminate “the reciprocal influences of language and social structure of which [people] are normally unaware” in order to serve an ‘emancipatory’ effect (Titscher 2000, 147). While connotations regarding the musics and musicians of these disciplines have existed for decades (i.e. the elitist conservatory soprano at the boring opera or the broke blues singer at the smoky bar), it is now apparent that they are not meaningless, they in fact originate from somewhere and are implicitly perpetuated through these discourses. These associations are embedded in the very fabric of the institutions: their educational texts. Without illuminating the effect that these texts have on both teachers and musicians, these discourses might operate in perpetuity.

The ultimate goal, in my opinion, is for these two disciplines to be mutually accepting. This could potentially lead to the inclusion of CCM genres at the tertiary level, which would do wonders for the career prospects (and reputations) of CCM practitioners. It could open the door for more artistic cross-pollination and a cornucopia of unforeseen performance or compositional opportunities. It could even bring a level of accessibility that has been absent in the classical world for far too long. In order for this evolution to unfurl, however, more research is needed, including classifying and differentiating CCM-specific vocal techniques, systemising pedagogic methods for teaching CCM, and developing curricula that would facilitate a well-rounded CCM education at the tertiary level.

My hope is that, by illuminating the power structures that have functioned within vocal pedagogy texts since their inception centuries ago, the influences they exert may begin to weaken. The implicit biases of individuals and institutions may begin to fracture. Rather than an either/or world of dichotomies and gravitationally divergent disciplines, perhaps a both/and world of integrated genres, styles, and identities may begin to emerge. Perhaps this study can be a brick in the wall of understanding, of recognizing that the similarities between these disciplines outnumber the differences. Perhaps the periapsis of these two planets – the point at which their orbiting bodies are nearest each other in their universal traverse – might, over time, converge.

Bibliography

- American Association of Teachers of Singing. 2008. 'In Support of Contemporary Commercial Music (Nonclassical) Vocal Pedagogy'. *Journal of Voice*, 65(1), 7-10.
- Augustyn, A., ed. 2021. "Chiaroscuro". Encyclopedia Britannica. <https://www.britannica.com/art/chiaroscuro>. Accessed 15 April 2021.
- Berger, A.A. 1974. 'Drug Advertising and the "Pain, Pill, Pleasure" Model'. *Journal of Drug Issues*, 4(3), 208-212.
- Bjorkner, E., et al. 2007. 'Musical Theater and Opera Singing - Why So Different? A Study of Subglottal Pressure, Voice Source, and Formant Frequency Characteristics'. *Journal of Voice*, 22(5), 533-540.
- Blake, D. 2012. 'Timbre as Differentiation in Indie Music'. *MTO: A Journal of the Society for Music Theory*, 18(2), 1-18.
- Blake, D. 2017. 'Musicological Omnivory in the Neoliberal University'. *The Journal of Musicology*, 34(3), 319-353.
- Bloothoof, G. & Plomp, R. 1988. 'The timbre of sung vowels'. *Journal of the Acoustical Society of America*, 84(3), 847-860.
- Bookmetrix. 2019. <http://www.bookmetrix.com/detail/book/fe151851-12a6-4517-a6d7-8c2ffb98c6d2#readers>. Accessed 22 June 2019.
- Bourne, T & Garnier, M. 2012. 'Physiological and Acoustic Characteristics of the Female Music Theater Voice'. *The Journal of the Acoustical Society of America*, 131(2), 1586-1594.
- Bunch, M. 1997 [1982]. *Dynamics of the Singing Voice*. 4th ed. New York: Springer.
- Castellengo, M., Chuberre, B. & Henrich, N. 2004. "Is 'Voix Mixte', the Vocal Technique Used to Smooth the Transition Across the two Main Laryngeal Mechanisms, an Independent

Mechanism?" Proceedings of the International Symposium on Musical Acoustics. NARA, Japan.

Castellengo, M., Lamesch, S., & Henrich, N. 2007. "Vocal Registers and Laryngeal Mechanisms, A Case Study: The French 'Voix Mixte'". 9th International Congress on Acoustics. Madrid, Spain.

Colton, R.H. & Estill, J. 1978. 'Mechanisms of voice quality variation: Voice modes'. Paper presented to the 5th Symposium: Care of the Professional Voice. New York City: The Juilliard School.

Daffern, H. 2008. "Distinguishing Characteristics of Vocal Techniques in the Specialist Performance of Early Music". York: University of York. Department of Music and Department of Electronics: PhD Dissertation.

Dejonckere, P., Hirano, M. & Sundburg, J., eds. 1995. *Vibrato*. San Diego: Singular Publishing.

DeSilva, Bryan E. 2016. 'A Survey of the Current State of Contemporary Commercial Music (CCM) Vocal Pedagogy Training at the Graduate Level'. Philadelphia, PA.: Temple University: Doctor of Musical Arts Thesis.

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

Estill, J. 1981. "An analysis of the spectra of four voice qualities, Speech, Sob, Twang and Opera". Transcripts of the 10th Symposium: Care of the Professional Voice. New York City: The Juilliard School.

Estill, J. 1988. 'Belting and Classic Voice Quality: Some Physiological Differences'. *Medical Problems of Performing Artists*, 3(1), 37-43.

Fales, C. 2002. 'The Paradox of Timbre'. *Ethnomusicology*, 46(1), 56-95.

Fantini, M., et al. 2016. 'Estill Voice Training and Voice Quality Control in Contemporary Commercial Singing: An Exploratory Study'. *Logopedics Phoniatrics Vocology*, 42(4), 146-152.

Fennelly, B. 1967. 'Descriptive Language for the Analysis of Electronic Music'. *Perspectives of New*

Music, 6(1), 79-95.

Ferrante, I. 2011. 'Vibrato rate and extent in soprano voice: A survey on one century of singing'. *The Journal of the Acoustical Society of America*, 130(3), 1683-1688.

Finks, Patricia L. 1992. "Vocal Registration: History, Analysis, and Modern Pedagogical Applications". Charleston, IL: Eastern Illinois University: Master's Thesis.

Floyd, S.A. Jr. 1991. 'Ring Shout! Literary Studies, Historical Studies, and Black Music Inquiry'. *Black Music Research Journal*, 11(2), 265-287.

Gee, J.P. 2001. *An Introduction to Discourse Analysis: Theory and Method*. London: Routledge.

Gerbi, E. 2013. "To Belt or Not to Belt? Comparative Methodologies for teaching Musical Theater Singing". Winchester, VA: Shenandoah Conservatory of Music CCM Vocal Pedagogy Institute: Doctor of Musical Arts Dissertation.

Glover, S.L. 2002. "Cornelius L. Reid: Interpreting the Vocal Registration Tradition of Bel Canto". Seattle, WA: University of Washington: Doctor of Musical Arts Dissertation.

Gutting, G. & Oksala, J. 2019. "Michel Foucault". The Stanford Encyclopedia of Philosophy. <https://plato.stanford.edu/archives/spr2019/entries/foucault>. Accessed 2 February, 2021.

Hall, S. 2009 [1997]. *Representation: Cultural Representations and Signifying Practices*. London: Sage.

Harrison, Scott D. & O'Bryan, J., eds. 2014. *Teaching Singing in the 21st Century*. Dordrecht: Springer.

Heinrich, N. 2006. 'Mirroring the voice from Garcia to the present day: Some insights into singing voice registers'. *Logopedics Phoniatrics Vocology*, 31(1), 3-14.

Hoch, M., ed. 2018. *So You Want to Sing CCM (Contemporary Commercial Music): A Guide for Performers*. Lanham: Rowman & Littlefield.

Hollien, H. 1972. 'On Vocal Registers'. *Communication Sciences Laboratory Quarterly Report*, 10(1),

1-35.

Hollien, H., et al. 1983. "Report on Vocal Registers". Proceedings of the Stockholm Music Acoustics Conference (SMAC 83), 46 ed. Stockholm. Royal Swedish Academy of Music, 46(1), 27-35.

Horii, Y. 1989. 'Acoustic analysis of vocal vibrato: A theoretical interpretation of data'. *Journal of Voice*, 3(1), 36-43.

Howard, E. 2006. *Sing! The Vocal Power Method*. Topanga: Alfred Publishing Co.

Howard, E. 2019. Elizabeth Howard's Vocal power Academy. <https://www.vocalpoweracademy.com/about>. Accessed 1 June 2019.

Jennings, C.A. 2014. "Belting is Beautiful: Welcoming the Musical Theater Singer into the Classical Studio". Iowa City, IA: University of Iowa: Doctor of Musical Arts Dissertation.

Katok, D. 2016. "The Versatile Singer: A Guide to Vibrato & Straight Tone". New York City, NY: The City University of New York: Doctor of Musical Arts Dissertation.

Kelly, M. 2021. 'Michel Foucault (1926-1984)'. The Internet Encyclopedia of Philosophy. <https://iep.utm.edu/foucault>. Accessed 6 February 2021.

Keyes, C.L. 2003. 'The Aesthetic Significance of African American Sound Culture and Its Impact on American Popular Music Style and Industry'. *The World of Music*, 45(3), 105-129.

Lamesch, S., et al. 2007. "Investigating voix mixte: A scientific challenge towards a renewed vocal pedagogy". Proceedings of the third Conference on Interdisciplinary Musicology (CIM07). Tallinn, Estonia.

Large, J. 1972. 'Towards an Integrated Physiologic-Acoustic Theory of Vocal Registers'. *The NATS Bulletin*, 28(3), 18-36.

Large, J., ed. 1973. *Vocal Registers in Singing: Proceedings at a Symposium*. The Hague: Mouton.

- LeBorgne, W. & Rosenberg, M. 2014. *The Vocal Athlete*. San Diego: Plural Publishing.
- LeBorgne, W. & Rosenberg, M. 2020. *The Vocal Athlete*. 2nd ed. San Diego: Plural Publishing.
- LoVetri, J. 2014. 'Classical and Contemporary Commercial Music: A Comparison' In Hoch, M. A Dictionary for the Modern Singer. Lanham: Rowman & Littlefield. 207-211.
- McKinney, J.C. 2005 [1994]. *The Diagnosis and Correction of Vocal Faults: A Manual for Teachers of Singing & for Choir Directors*. Long Grove, IL: Waveland Press.
- Merriam, S.B. & Tisdell, E.J. 2016. *Qualitative Research: A Guide to Design and Implementation*. San Francisco, CA: Jossey-Bass.
- Murbe, D., et al. 2007. 'Effects of Professional Singing Education on Vocal Vibrato - Longitudinal Study'. *Journal of Voice*, 21(6), 683-688.
- Olwage, G. 2004. 'The Class and Colour of Tone: An Essay on the Social History of Vocal Timbre'. *Ethnomusicology Forum*, 13(2), 203-226.
- Reid, C.L. 1990 [1950]. *Bel Canto: Principles and Practices*. New York City: The Joseph Patelson Music House.
- Richards, G. 1997. *'Race', Racism, and Psychology: Towards a Reflexive History*. London: Routledge.
- Riggs, S. 1992. *Singing for the Stars: A Complete Program for Training Your Voice*. Los Angeles, CA: Alfred Publishing Co.
- Riggs, S. 2019. Seth & Margaretha Riggs: Singing for Legends. <http://theriggsvocalstudio.com>. Accessed 1 June 2019.
- Rothman, H. & Arroyo, A. 1987. 'Acoustic variability in vibrato and its perceptual significance'. *Journal of Voice*, 1(2), 123-141.
- Said, E. 1979. *Orientalism*. New York: Random House.
- Seashore, C. 1932. *Psychology of the vibrato in voice and instrument*. Iowa City, IA: University

Press.

Seashore, C. 1938. *Psychology of Music*. New York: McGraw-Hill.

SEIU Faculty Forward. 2021. <http://seiufacultyforward.org/wp-content/uploads/2015/07/FF-website-data-center-Tuition-Fees.pdf>. Accessed 2 February 2021.

Shimp, T. & Dyer, R. 1979. 'The Pain-Pill-Pleasure Model and Illicit Drug Consumption'. *Journal of Consumer Research*, 6(1), 36-46.

Shipp, T., Leanderson, R. & Sundburg, J. 1980. 'Some acoustic characteristics of vocal vibrato'. *Journal of Research in Singing*, 4(1), 18-25.

Slawson, W. 1981. 'The Color of Sound: A Theoretical Study in Musical Timbre'. *Music Theory Spectrum*, 3(1), 132-141.

St. James, Y., Handelman, J.M. & Taylor, S.F. 2011. 'Magical Thinking and Consumer Coping'. *Journal of Consumer Research*, 4(1), 632-649.

Stark, J. 2008 [1999]. *Bel Canto: A History of Vocal Pedagogy*. Toronto: University of Toronto Press.

Steinhauer, K., McDonald Klimek, M. & Estill, J. 2017. *The Estill Method: Theory and Translation*. Pittsburgh: Estill Voice International.

Stephens, V.L. 2008. 'Crooning on the Fault Lines: Theorizing Jazz and Pop Vocal Singing Discourse in the Rock Era, 1955-1978'. *American Music*, 26(2), 156-195.

Sullivan, J. 1989. 'How to teach the belt/pop voice'. *Journal of Research in Singing and Applied Vocal Pedagogy*, 13(1), 41-56.

Sundberg, J., Gramming, P. & Lovetri, J. 1993. 'Comparisons of pharynx, source, formant, and pressure characteristics in operatic and musical theatre singing'. *Journal of Voice*, 7(4), 301-310.

Sundberg, J., Thalen, M. & Popeil, L. 2012. 'Substyles of belting: Phonatory and resonatory characteristics'. *Journal of Voice*, 26(1), 654-660.

Titscher, S., et al. 2000. *Methods of Text and Discourse Analysis*. London: Sage.

Titze, I. & Story, B. 1997. 'Acoustic interactions of the voice source with the lower vocal tract'. *Journal of the Acoustical Society of America*, 101(4), 2234-2243.

Tucker, M. & Jackson, T.A. 2013. 'Jazz'. Oxford Music Online. <https://0-doi-org.innopac.wits.ac.za/10.1093/omo/9781561592630.013.90000358106>. Accessed 14 April 2021.

United States Patent and Trademark Office. 2020. 'Patent, or Copyright'. <https://www.uspto.gov/trademarks/basics/trademark-patent-copyright>. Accessed 9 September 2020.

Wicks, D. 2019. 'Seth Riggs - His CCM Legacy'. *The Journal of Voice*, 75(4),449-453.

Wilson, P.H. 2003. 'Sinful Modern Music: Science and the Contemporary Commercial Singer'. *Australian Voice*, 9, 12-16.

Young, A. 2018. "Mixed Up and Upside Down: Underdeveloped Registers in Men and Women Due to Vocal Trends in Popular Music; Turning Two Pedagogical Challenges into Opportunities in Today's Voice Studio". Oberlin, OH: Oberlin Conservatory of Music: Masters of Voice Pedagogy Thesis.