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TRANSFORMATIONS OF TENOR TECHNIQUE IN THE EARLY
NINETEENTH CENTURY: HISTORICAL AND PHYSIOLOGICAL
CONSIDERATIONS**

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ABSTRACT OF DMA PROJECT

Jason Christopher Vest

The Graduate School
University of Kentucky

2009

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TENOR TECHNIQUE IN THE EARLY NINETEENTH CENTURY:
HISTORICAL AND PHYSIOLOGICAL CONSIDERATIONS

ABSTRACT OF DMA PROJECT

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of
Musical Arts in the College of Fine Arts at the University of Kentucky

By
Jason Christopher Vest

Lexington, Kentucky

Director, Dr. Everett McCorvey, Professor of Voice

Lexington, Kentucky

2009

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ADOLPHE NOURRIT, GILBERT-LOUIS DUPREZ, AND TRANSFORMATIONS OF TENOR TECHNIQUE IN THE EARLY NINETEENTH CENTURY: HISTORICAL AND PHYSIOLOGICAL CONSIDERATIONS

The April 1837 debut of tenor Gilbert-Louis Duprez at the Paris Opéra sparked uproarious applause and inspired a new group of tenors with a different vocal technique from tenors of the previous generation. Whereas previous tenors of the nineteenth century sang in a graceful, light, and flexible style that complemented the operatic compositions of Gluck, Rossini, and Bellini, Duprez sang in a powerful, forceful voice that brought new dramatic fervor to the existing repertoire of French Grand Opera. Duprez' stentorian vocal representations of Arnold in Rossini's *Guillaume Tell* and Robert in Meyerbeer's *Robert le diable*, among others, inspired composers to write more prominent and dramatic tenor roles, eventually leading to the tenor roles in the operas of Verdi and Wagner.

Duprez' 1837 debut also marked the end of Adolphe Nourrit's eleven-year reign as the sole leading tenor at the Paris Opéra. Threatened by the prospect of competition, Nourrit eventually left France for Italy in pursuit of the same vocal technique that insured Duprez' fame. Nourrit studied with Donizetti and debuted at the Teatro di San Carlo in Naples, but grew impatient with his slow progress, disliked the sound of his new voice, and tried to turn back to his old way of singing. He failed to do so and lost his high notes, as well as his head voice. Nourrit's pursuit ended in 1839 as he threw himself from the third floor of his residence, his voice, his health, and his psyche all in shambles.

The shift in vocal technique involved a lowered laryngeal position, a raised velum, and a greater use of chest voice muscles in the higher ranges of the tenor voice. The resulting *voix sombrée* or "closed" or "covered" timbre, offers distinct hygienic and acoustic advantages, resulting in healthier vocalization and greater amplification of the upper harmonics of the voice. The *voix sombrée* allows the singer to sing at higher pitch levels with lower levels of tension in the vocal folds and the harmonics from the voice source are greatly enhanced at 2500-3200 Hz, the "singer's formant," the range at which the human ear is most sensitive.

By reviewing the writings of singers, teachers, and critics of the early nineteenth century and comparing their descriptions of singers' voices, and then comparing those descriptions with modern studies on the physiology and acoustics of the voice, one can paint

a more informed picture concerning the nature and sound of the voices of Nourrit and Duprez. Analysis seems to show that Adolphe Nourrit utilized the lighter vocal production typical of earlier Rossinian tenors, combined with the nasal vocalization of French singers of the early 1800's. His technique included a low velum, raised larynx, and a pure head voice in the high register. Conversely, Duprez sang with a lowered larynx and a larger degree of chest voice function in his high register. Duprez also incorporated Italian ideals of emphasis on the sound of the voice, rather than the French tendency to emphasize the words. Duprez's innovations, based in the vocal technique already being used in Italy in the early 1830's, propelled the *voix sombrée* technique into the French spotlight, and led to the eventual globalized use of the technique in the opera world.

KEYWORDS: Adolphe Nourrit, Gilbert-Louis Duprez, voix sombrée, ut de poitrine, French Grand Opera

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Part I

Tenors in Italy and France, 1800-1840

Chapter 1

Introduction

“Go, my friend! Go to the slaughter!”¹ Thus Alexandrine Duprez discouragingly bade her husband farewell as he left home for his debut at the Paris Opéra. Though Madame Duprez’ fears proved unwarranted, she had reason to be concerned. That night, April 17, 1837, Gilbert-Louis Duprez (1806-1896) took the stage in the role of Arnold in Rossini’s *Guillaume Tell* (1829). His appearance had been eagerly anticipated for months, yet many came to the theater that night hoping for an utter failure, and for the redemption of recently departed tenor, Adolphe Nourrit (1802-1839). Duprez’ debut followed close on the heels of Nourrit’s retirement and Duprez was seen by many as the reason for Nourrit’s withdrawal. Nourrit, the creator of the seminal roles of Grand Opera, including Arnold, had spent sixteen years securing the hearts of Parisians. One critic captured the public’s affection for Nourrit and their regret following his departure in the leading music journal *Revue et Gazette musicale de Paris*: “Nourrit was so esteemed, so loved! There existed such lively, such profound sympathies between him and the public, that each one, at the moment when these ties were broken forever, felt a wound so deep, that their feelings were addressed not just to the artist, but to the man himself, so honorable, so noble...”² However, the object of Paris’ affections quickly

¹ All translations are by Jason Vest unless otherwise noted. Gilbert-Louis Duprez, *Souvenirs d'un chanteur* (Paris: Calmann Lévy, 1880), 145. “Va, me dit-elle, va, mon ami! va à la boucherie!”

² Joseph d'Ortigue, "Représentation de retraite d'Ad. Nourrit," *Revue et gazette musicale de Paris*, April 17, 1837. “Nourrit était si estimé, si aimé! Il existait de si vives, de si profondes sympathies entre le public et lui, que chacun, au moment où ces liens se brisaient pour jamais, a ressenti une blessure d'autant plus profonde, que ses sympathies ne s'adressaient pas seulement à l'artiste, mais encore à l'homme, à l'homme aussi honorable, aussi noble...”

changed. As Gilbert-Louis Duprez stepped onto the stage of the Paris Opéra, few in the audience understood the magnitude of his debut for the opera world. One might say that April 17, 1837 marked a turning point in tenor vocal technique and accelerated the change in singing of all voice types. That night, the audience at the Paris Opéra held its breath as Duprez ascended the scale and sang the high C of his grand aria in full voice, the now-famous “ut de poitrine.” As he sang, an electric current of excitement spread through the audience and as the aria ended, the overwhelmed crowd let forth waves of frantic applause, “cheers such as an artist hears only twice or thrice in his lifetime, cheers that repay him sufficiently for his long and arduous labors.”³ The applause at the Paris Opéra ushered in a new act upon the stage of opera, a way of singing that fit the demands of grandeur and excitement the public desired.

Many have recounted the story of Nourrit and Duprez and the historical significance of the two singers.⁴ Henry Pleasants, in his book, *The Great Tenor Tragedy*,⁵ draws from Louis Quicherat’s biography *Adolphe Nourrit: sa vie, son talent, son caractère, sa correspondance*,⁶ and tells the story of Adolphe Nourrit’s death. Pleasants proposes reasons for Nourrit’s suicide, and seems to settle on his liver condition as the main suspect for his death. In this assessment, he is agreeing with Quicherat, who puts forth the same conjecture in *Adolphe Nourrit*. Pleasants also gives a general description of the voices of Giovanni Battista Rubini (1794-1854), the tenor voice of many of Bellini and Donizetti’s operas, and Gilbert-Louis Duprez (1806-1896). Evan Walker,⁷ known by many as the current leading scholar on the subject of Nourrit, insists

³ Hector Berlioz, *Evenings with the Orchestra*, trans. Jacques Barzun (New York: Alfred A. Knopf, 1956), 66.

⁴ Henry Pleasants, *The Great Tenor Tragedy* (Portland: Amadeus Press, 1995), Steven Austin, "Like the Squawk of a Capon' - The Tenor *do di petto*," *NATS Journal of Singing* 61, no. 3 (January/February 2005), Rodolfo Celletti, "Arnold, ou l'invention de l'ut de poitrine," *L'avant-scène opera* 118 (March 1989), Evan Walker, "Adolphe Nourrit (1802-1839): His Place in the History of the Operatic Tenor Voice" (DMA dissertation, Peabody Conservatory of Music, 1989), Stefan Zucker, "Seismic Shocker," *Opera News* 67, no. 8 (January 1983).

⁵ Pleasants, *The Great Tenor Tragedy*.

⁶ Louis Quicherat, *Adolphe Nourrit: Sa vie, son talent, son caractère, sa correspondance* (Paris: L. Hachette and Co, 1867).

⁷ Walker, "Adolphe Nourrit (1802-1839): His Place in the History of the Operatic Tenor Voice", Evan Walker, "Adolphe Nourrit," Grove Music Online ed by L. Macy,

that Nourrit was already using the *voix sombrée* or covered tone that made Duprez famous and that his use of falsetto was improbable. He maintains that the orchestras were too large, the opera houses too spacious, and the dynamics too loud to allow falsetto singing as a viable option in the tenor voice. Rodolfo Celletti⁸ and Stefan Zucker⁹ describe Duprez' debut at the Paris Opéra, the public reaction to his high C, and the significance of the chest high C to the history of opera. Indeed, from that point forward, an essential part of most operatic tenor roles was the grand high C. Celletti asserts that it wasn't until Duprez that tenors integrated chest voice into their high register, and that Nourrit most definitely utilized falsetto on the highest notes. However, when describing the vocal qualities of Nourrit, Duprez, Rubini, and other tenors, the writers of the studies listed above often speak in generalities, clichés, or vocal stereotypes. Perhaps only generalities have been possible because there are no sound recordings of these singers and so descriptions of their voices are based solely on eyewitness accounts. Neither can one travel back in time and observe the physical and acoustical differences in their singing.

Greater understanding of their vocal technique seems vitally important, however, as the vast *bel canto* repertoire in the theater today originated with Nourrit, Duprez, and the singers of their era in Italy and France. Knowledge of the characteristics of their vocal technique would clarify the history of modern singing and might reveal how these difficult roles can be managed. Modern tenors often struggle to sing the opera roles of Rossini, Donizetti, and Bellini, even at the most prestigious houses.¹⁰ If a clear break in vocal technique did occur between Nourrit and Duprez, should the roles written for Nourrit and the tenors that preceded him be performed using the old style of singing?

www.grovemusic.com, 23 April, 2007. Evan Walker, "The Fable of Adolphe Nourrit," *Journal of Singing: The Official Journal of the National Association of Teachers of Singing* 64, no. 4 (2008).

⁸ Celletti, "Arnold, ou l'invention de l'ut de poitrine."

⁹ Zucker, "Seismic Shocker."

¹⁰ The Metropolitan Opera revived *I Puritani* by Bellini in December of 2006 with Anna Netrebko and Gregory Kunde as Elvira and Arturo, respectively. Critics lamented the performance of Kunde, who had stepped in for an ill Eric Cutler. The *New York Times* recorded on December 29th, "His essentially bright lyric tenor voice has a reedy, slightly nasal tone, and some of his top notes were worrisomely tight."

Was the singing of Duprez truly an upheaval of the old ways or have the public and critical reactions been exaggerated?

This study will attempt to reconstruct the tenor voices of the past, focusing particularly on the talents of Adolphe Nourrit and Gilbert-Louis Duprez, but also covering such singers as Manuel Garcia, Sr., Domenico Donzelli, Giovanni David, and Giovanni Battista Rubini. The history of Italian and French vocal techniques will be examined, beginning with the turn of the nineteenth century and the teaching of the castrati in Italy, to the 1840's and the influences of Duprez and Manuel Garcia, Jr. in France. Utilizing first-hand accounts of their singing, the history of vocal pedagogy, and scientific analysis of voice characteristics, a reasonable hypothesis may be formed about the sounds of these singers' voices.

The first part of this study outlines the decline of the castrato voice in popularity and the attendant rise of the tenor voice. The teaching techniques of voice teachers and the singing techniques of their students in Italy and France at the beginning of the nineteenth century will be described. The discussion will be limited to the singers at the Paris Opéra, the Théâtre-Italien in Paris, and the Teatro di San Carlo in Naples, the main theatres of Rossini and Donizetti, and the location of some of the greatest opera singers and premieres of the early nineteenth century. The singers at these theatres played a pivotal role in the development of modern vocal technique and operatic trends often began in Naples and culminated in Paris with the same composers and singers. Adolphe Nourrit and his art will be placed in context of the old Italian *bel canto*, and compared to the innovation of Gilbert Duprez. An understanding of the reasons for Duprez' vocal change, and Nourrit's retirement and subsequent suicide should illuminate the true nature and degree of change in vocal technique in Paris in 1837.

The second part of the study will examine the physiological consequences of the vocal changes that occurred in the early nineteenth century in both Italy and Paris. The institution of the *voix sombrée* and the *ut de poitrine* created a new acoustical dynamic that presented advantages and challenges to the singer. The reasons behind such changes will be examined, including vocal health, increased sound intensity, improved projection of the voice through the use of shifted vocal formants, and the emotional reaction of the audience to a new, more exciting style of singing. A study of the above-named factors

should also lead to a convincing conjecture about the details of the vocal technique of Nourrit and Duprez, including aspects of breathing, laryngeal and velum posture, resonance, use of vocal registers, and style. A valid hypothesis about the sound or acoustical qualities of their voices may then be formed. By comparing these acoustical qualities with the descriptions of the singers' voices, and comparing the current studies on music and emotion with the public's emotional reaction to Nourrit and Duprez, perhaps a more precise understanding may be gained about the change in tenor vocal technique.

Immediately after Gilbert-Louis Duprez' debut at the Opéra, what may be called the "new Italian" style of singing gradually spread throughout the opera world. It is precisely this style that gave rise to what is now known as the international singing technique, found in every opera house around the world. Duprez utilized the new Italian style to great effect, granting him fame and fortune, and the pursuit of the same technique seems to have contributed to the eventual suicide of Adolphe Nourrit in 1839. What could have caused such diametrically opposed endings? Why did the Parisian public react with such shock and admiration to the voice of Duprez? What would cause Nourrit, a man once called the "Napoléon des arts,"¹¹ to leave his position and eventually lose his life while pursuing a new vocal technique after 11 years as the sole principal tenor of the Paris Opéra? What are the vocal modifications that Duprez made that now seem to influence the training of every operatic tenor? Should the operas of the nineteenth century, such as the works of Rossini, Donizetti, and Verdi, all be performed in the same manner vocally by modern tenors? The answers to these questions elucidate solutions for singers, voice teachers, and all those involved with the art of *bel canto*.

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¹¹ "Adolphe Nourrit à Lyon," *Revue et gazette musicale de Paris*, July 27, 1834.

Chapter 2

The Dawn of the Leading Tenor

As Napoleon rose to power at the beginning of the nineteenth century, a vocal power also began its rise into operatic prominence. The tenor voice, relegated for the two previous centuries to the secondary and supporting roles of opera, shortly became the hero and lover of almost every Italian and French opera written during the nineteenth century. The tenor's meteoric rise filled a void left by the dwindling numbers of castrati, who had sung many of the lead roles of opera in courts and theatres in Italy beginning in the early seventeenth century throughout most of the eighteenth century. Castrato singers were also featured on the stages in Spain, France, Germany, and England. However, after 1815, seeing a castrato on the opera stage would have been a rare occurrence.¹² What could have caused such a dramatic change in the places of the tenor and the castrati? Part of the answer lies in the changing taste of opera audiences as the influences of science and reason permeated European societies during the eighteenth and early nineteenth centuries.

Europe experienced a continental "globalism" in the eighteenth century as goods and ideas began to flow more freely across the continent. Societies began to experience greater freedom of expression and press, and scientific discoveries and theories sparked the Age of Enlightenment. The traditional institutions of monarchies and religions and the ideas of human origin began to be questioned. The scientific and social theories of Isaac Newton (1643-1727) and René Descartes (1596-1650) eventually led to the philosophies of Voltaire (1694-1778), Rousseau (1712-1778), Thomas Paine (1737-1809), David Hume (1711-1776), and Immanuel Kant (1724-1804). The Age of Enlightenment or Age of Rationalism advanced the idea that all problems could eventually find answers through Reason and the power of human thought. Weakening governments led to reformers such as Austria's Emperor Joseph II (1741-1790), who

¹² Giovanni Battista Velluti (1780-1861) is commonly known as the last of the great castrati. His professional career spanned 29 years, from 1801 to 1830, and during that time he created the roles of Arsace in Rossini's *Aureliano in Palmira* (1813) and Armando in Meyerbeer's *Il crociato in Egitto* (1824), among many others.

introduced religious freedom and freedom of speech. Even greater freedoms were then sought by the instigators of the American and French Revolutions.

Italy did not experience a wholesale revolution during the eighteenth century, but rather a series of reforms. A series of grave famines from 1763 to 1767 revealed Italian society and its deficiencies to its citizens and to the outside world. Facing the starvation of a large portion of the Italian population, “writers and politicians revealed to themselves and to the world the backwardness of the dominant economic mentality; the prejudices which guided the conduct of the peasants, the merchants, the administrators; the widespread and profound indifference toward the lot of the people; the incompetence, or at least the difficulty, in using the international market to try to remedy the food shortage.”¹³ The crisis forced the Italians to consider and institute methods of abolishing hunger, employing the poor, entering more fully into international markets, and strengthening their own markets through free trade. The efficiency and legitimacy of governments began to be questioned as the crisis deepened, and the decadent rule of popes came to be considered unjust. The quest for greater freedom, liberty, and social equality encouraged reform from the government and from the Catholic church, expanding the liberties of both men and women in the realms of free speech, business, religion, and education.

To an even greater extent, France experienced social reform in the eighteenth century, fueled by the writings of Voltaire and Rousseau. Ideas about social and political reform in France led to revolution and encouraged upheaval in countries throughout Europe. The increasing proliferation of scientific knowledge fascinated the Parisian public and tens of thousands in the capital flocked to public lectures on natural history, experimental physics, chemistry, navigation, astronomy, midwifery, surgery, optics, anatomy, languages, and mathematics. Audience members came from all social classes and educational backgrounds to learn of the latest theories and discoveries. As Voltaire said on the title page of his *Eléments de la philosophie de Newton*, “Science is for

¹³ Franco Venturi, "Church and Reform in Enlightenment Italy: The Sixties of the Eighteenth Century," *The Journal of Modern History* 48, no. 2 (June 1976): 218-19.

everyone.”¹⁴ Michael Lynn further explained, “Science expanded from private laboratories and royal academies and entered popular culture...The popularizers left little doubt that their chief goal was to teach people about the utility of science. They hoped, or at least claimed, that their courses would aid in the intellectual development of their audience and would thus contribute to the overall rationalization of society promised by the Enlightenment.”¹⁵ Like Italy, France also experienced widespread starvation, disease, and poverty during the Little Ice Age following the 1783 eruption of an Icelandic volcano and the subsequent red haze of sulfur dioxide that covered northern Europe. Crop failures, hailstorms, and irregular weather patterns followed. Amidst the turmoil, King Louis XVI continued to live sumptuously and recklessly as the national debt grew and poverty spread. The French Revolution followed soon after, leading to a new republican government and increased liberties for men and women. Women marched on Versailles, revolts were led against the Catholic church, and members of the aristocracy were systematically assassinated.

The public’s evolving opinions about art, government, science, and religion continued into the nineteenth century and eventually found their way into opera, a traditional bastion of the upper class and aristocracy. The castrato voice soon lost its favor with most audiences, especially outside of Italy, and descriptions of their voice changed from “sublime” to “unnatural” or “monstrous.” The castrati as mythological heroes did not resemble the real generals that led the revolutions of Europe. The public’s desire for more realistic and masculine images and sounds would no longer be satisfied by the castrati, and the practice of castration lost its support among the public and the clergy. Italian and French opera composers of the early 1800’s realized that the desire for drama and spectacle required a new sound, and they began to intensify opera orchestration and to use the voice in a more declamatory way. As these dramatic demands began to fall to the tenor voice, the interpreters of the new operas endeavored to create a more exciting and powerful sound. Thus, in less than forty years, from 1800 to

¹⁴ Voltaire, *Éléments de la philosophie de Newton*, trans. John Hanna (Paris: Prault, 1738; reprint, *The Elements of Sir Isaac Newton's Philosophy*, Cass Library of Science Classics no. 2, London:Cass, 1967).

¹⁵ Michael R. Lynn, "The Fashion for Physics," *The Historian* 64, no. 2 (December 2002): 335, 43.

1840, tenor technique evolved from middle-voiced, one-octave singing, to castrato-like falsetto and *fioriture* with extremely wide ranges, and finally to a more metallic, heroic sound.

The Decline of the Castrati

Just before the dawn of the nineteenth century, in 1798, Pope Leo XIII revoked the policy of forbidding women on stage. Previous to that date, women were not legally permitted to sing on stage in the papal states (although they did appear on stage in Venice and other opera centers of Italy), and women's roles had instead been given to the castrati. With Pope Leo XIII's declaration, the roles long occupied by castrati in papal-controlled Italian theaters could now be sung by female voices. Increased papal and state liberality contributed to the continued rise of the prima donna and her popularity would soon help diminish the demand for castrati.¹⁶ Additionally, Napoleon declared in 1806, "His Majesty (speaking of himself) has been unable to consider without indignation the barbarous practice of creating eunuchs in order to produce women's voices in men. As a result he has ordered, by the decree of 27 November, that in the future such people shall not be admitted into the schools at all."¹⁷ As Napoleon's empire included France, the kingdoms of Italy and Naples (beginning in 1806), the Empire of Austria and the Kingdom of Prussia [Germany] (1806), and Spain (1808), his declaration had implications for any possible up and coming castrato careers.

More than a half century earlier, the Pope implicated the practice of castration when he declared amputation illegal except in cases of necessity. Obviously, castration

¹⁶ Jonathan and Beth Glixon's recent work, *Inventing the Business of Opera: The Impresario and His World in Seventeenth-Century Venice*, provides valuable insight on the place of women in opera during the seventeenth century. While women were forbidden to appear on stage in the papal states, Venetian theaters featured women in lead and secondary roles of operas both comic and serious. Many of the best singers, in fact, came from Rome, where they had been banned from performing, and became the first *prime donne* of the opera. Their salaries quickly rose, becoming more generous even than for the castrati. However, finding female singers did not always prove an easy task because of social stigma. Women who chose singing as a profession were often seen as morally corrupt and gained scandalous reputations. Beth Glixon and Jonathan Glixon, *Inventing the Business of Opera: The Impresario and His World in Seventeenth-Century Venice* (New York: Oxford University Press, 2006).

¹⁷ Patrick Barbier, *The World of the Castrati: The History of an Extraordinary Operatic Phenomenon* (London: Souvenir, 1998), 227.

would be a case of amputation not considered vitally necessary. Growing disfavor with the castration of young boys and vocal protests from the French, who never cared for the castrati on their stages, all contributed to a new vocal order in the opera house.

Ironically, it was Girolamo Crescentini (1762-1846), among the most famous of castrati, whom Napoleon would name in 1806 as his favorite singer while appointing him to his court and awarding him the cross of the Crown of Lombardy, a military award.¹⁸

However, Crescentini would never appear on the French stage.¹⁹ He instead served as singing teacher to the royal family and sang for events and special guests.

With the decline of the castrati, it was the contralto voice that began to fill heroic operatic roles. Contraltos gained notoriety in the works of Handel and other early eighteenth-century composers. However, their numbers and the demand for them dwindled as the century progressed and as the taste for the higher voices of sopranos and tenors grew. As the eighteenth century came to a close, contraltos temporarily began to fill the gap left by the dwindling castrato numbers. Rossini, himself an eternal admirer of the castrati, wrote particularly for the contralto in operas like *Tancredi*, *Il barbiere di Siviglia*, *Cenerentola*, and *La donna del lago*.²⁰ He benefited from the vocal talents of his future wife, Isabelle Colbran (1785-1845), and Benedetta Pisaroni (1793-1872). It was Pisaroni whom the tenor Gilbert-Louis Duprez would replace in 1831 as she had been cast to sing the *tenor* role of Arnold for the Italian premiere of *Guillaume Tell* in Lucca.

The prime donne, both soprano and contralto, began their reign as the stars of opera and the admiration previously placed upon the castrati soon fell to them. The lead women ever-after held their position in rank and salary at the opera house, but they were soon challenged by their unexpected but needed counterpart, the tenor. And although the

¹⁸ “What?” exclaimed the military men, “Give this honor to a singer, and what is more, to a castrato?” This minor affair of state led Mme Grassini, the great Italian singer who shared the reign of the Court Theater with the castrato, to make an oft-repeated quip. When a group of officers and civil servants in a salon were raging at this inadmissible gesture that so humiliated the military and reduced the value of the decoration, Mme Grassini, shocked to hear such talk about her friend Crescentini, cried, “But gentlemen, you forget *his* wound!” Patrick Barbier, *Opera in Paris: 1800-1850*, trans. Robert Luoma (Portland: Amadeus Press, 1995), 23.

¹⁹ Henry Pleasants, *The Great Singers* (New York: Simon and Schuster, Inc., 1981), 90.

²⁰ *La donna del lago* is particularly curious as the tenor and female contralto *en travesti* compete for the affection of the soprano heroine.

famous castrati no longer earned their living on the stage, many began a new career as revered teachers, some teaching privately and some, such as Crescentini,²¹ teaching at the leading music conservatories in Europe. Their legacy as teachers would continue to shape singing technique long after their departure from the stage.

Four Tenors at the Teatro di San Carlo

The heroic tenor would rise to his throne in Paris, but the tenor ascendancy began in Naples. The San Carlo theatre (the Teatro di San Carlo) in Naples has been tied to the France from its origins and many singers who made their fame at the San Carlo then went to Paris to gain their fortune. The theatre secured its name from the enlightened ruler, King Charles III of Naples (1716-1788), who was of the house of Bourbon. The theatre's dedication took place in 1737 and it then served as the showcase for the great Italian opera composers of the eighteenth and nineteenth centuries, including Porpora, Paisiello, Cimarosa, Jomelli, and Piccini, who would come to Paris in 1766 at the request of Marie-Antoinette. Other composers at the San Carlo who then came to Paris include Rossini, Donizetti, Bellini, and Verdi. The theatre fell directly under the control of France from 1806 to 1815 during the successive reigns of Joseph Bonaparte and Joachim-Napoléon Murat. In 1815, the French occupation ended and Gioacchino Rossini (1792-1868) began his seven-year term as house composer and artistic director of the royal opera houses. Rossini's operas served as the very vehicle that launched the careers of four important tenors who established the central components of Italian tenor technique.

Giovanni David (1790-1864), Manuel Garcia (1775-1832), Andrea Nozzari (1775-1832), and Giovanni Battista Rubini (1794-1854) created most of the leading roles of the operas premiered in Naples from 1815 to 1825.²² Previous to these singers' arrival, tenor roles in Italian and French opera had risen in dramatic prominence to be included in leading roles, but the lack of sufficiently trained voices resulted in limited vocal ranges and abilities, and thus limited dramatic impact. Many tenor roles in the operas of Luigi Cherubini (1760-1842), Gaspare Spontini (1774-1851), and André-Erneste-Modeste Grétry (1741-1813) generally lay within about an octave range

²¹ Crescentini was appointed as professor at the Royal College of Music in London in 1816.

²² Richard Somerset-Ward, *Angels and Monsters : Male and Female Sopranos in the Story of Opera, 1600-1900* (New Haven: Yale University Press, 2004), 122.

approximate to a modern high baritone range (from about an E³ up to an F^{#4}).²³ Orchestration, especially from Spontini, Grétry and other French Grand Opera forerunners, greatly increased in texture, but rarely did the voice rise above an F⁴ and floridity was almost never broached. It is safe to assume that many of these tenors sang exclusively in a “chest voice” register that was functional but not necessarily worthy of the star roles, much as they had for two centuries. Nevertheless, some composers, notably Mozart and Gluck, began to highlight a few excellently trained voices and wrote roles for these singers that extended up to A⁴ and even B-flat⁴.

The arrival of David, Garcia, Nozzari, and Rubini ushered in a new style of tenor singing that would inspire the *bel canto* operas of Bellini, Donizetti, and Rossini. Their vocal technique probably most closely resembled that of the castrati, who served as their teachers.²⁴ These tenor voices were renowned for their floridity, the grace of their *spianato* singing (an extended, smooth, legato style of singing), and their extended high ranges, produced in a blended falsetto. Their sound, especially in the high range, would most likely have been like the castrati whom they replaced. The comparison seems particularly apt in the voices of Giovanni David and Giovanni Battista Rubini, a voice type known as the *tenorino* or *tenore di grazia*,²⁵ a light and flexible voice. One can observe from the roles written for these two tenors that they used full advantage of very high registers. Rubini, who some speculate sang women’s parts in falsetto at the beginning of his career, enjoyed a range that stretched at least up to F⁵. Though he sang the parts of Rossini, Rubini became the primary tenor of Bellini’s operas, premiering such works as *I puritani* (Théâtre Italien, Paris, 1835), *La sonnambula* (Teatro Carcano, Milan, 1831), and *Il pirata* (Teatro all Scala, Milan, 1827), as well as premiering many of Donizetti’s Italian works, including *Anna Bolena* (Teatro Carcano, Milan, 1830).

²³ All pitches are given using the nomenclature of a note name followed by a superscript. Middle C is written as C⁴, while an octave above would be C⁵.

²⁴ See “Singer Vocal Lineage” below.

²⁵ Edgardo Carducci, “The Tenor Voice,” *Music and Letters* 11, no. 4 (1930): 321.

Figure 2.1 An excerpt of “Nel furor delle tempeste” from Bellini’s *Il pirata*

In analyzing the vocal parts for these roles, it is clear Rubini had little trouble with florid singing, but composers desired rather to exploit the beauty of his expressive legato notes. Thus, the roles written for him lay very high, but are written in a long, melodious *spianato* style.²⁶ Chantal Cazaux, in her dissertation on the Donizetti operas of 1830-1837, links the *spianato* style of singing to future compositions of Donizetti, such as the 1835 *Lucia di Lammermoor* at the Teatro di San Carlo in Naples.²⁷ *Spianato* also seemed a more masculine style than the florid singing of the past. Gilbert-Louis Duprez created the role of Edgardo for *Lucia* and later created a role for Verdi, a composer who exemplified and intensified the *spianato* style. In this way, Rubini, who sang in a falsetto high voice, provides a link to the dramatic tenor through his lyric style.

Manuel Garcia and Andrea Nozzari, while still employing a mixed falsetto register at G⁴ and above,²⁸ possessed heavier voices of dramatic power. Listeners often testified to their great volume and the roles written for them demonstrate the dramatic force of their voices as well as their extraordinary agility. Both played Rossini’s *Otello* to great acclaim as the title character and Garcia often sang the title role in *Don Giovanni* (1787), which became his most popular role near the end of his career. Garcia repeatedly

²⁶ This *spianato* style of singing at such a high tessitura has presented a unique challenge for every tenor since Rubini. Just recently at the Metropolitan Opera, *I puritani* was produced to showcase the talents of Anna Netrebko. However, the two tenors who sang opposite her, Eric Cutler and Gregory Kunde, both were criticized for straining and singing tightly.

²⁷ Chantal Cazaux, "Pour une approche de l'écriture dramatique de Gaetano Donizetti de 1830 à 1837: contribution à l'étude d'Anna Bolena, de Maria Stuarda et Roberto Devereaux" (L'université Saint-Etienne-Jean Monnet, 2002), 377.

²⁸ Notes made by Garcia in some of his songs seem to corroborate with contemporary accounts of the use of *falsetto* above the staff.

made his way to Paris during the first quarter of the nineteenth century and there he met and began to privately teach young Adolphe Nourrit (1802-1839).

The vocal technique of all these singers would probably be very much alike as they all descended from the same teachers. The illustration below demonstrates the vocal lineage of these first primo tenors, as well as the vocal lineage of important singers who followed them.

There has been some question about tenors actually using falsetto during the beginning of the nineteenth century. Documents from this time, however, seem to correlate with first-hand accounts of the widespread use of head voice and falsetto in tenor voices. In the treatise of Giuseppe Aprile (1732-1813), “Modern Italian Method of Singing,” there is printed a set of “Necessary Rules.” Edward Foreman claims that these were probably copied from Giusto Tenducci (1735-1790), who like Aprile, was a soprano castrato. Rule IX states, “Never to force the Voice, in order to extend its Compass in the VOCE DI PETTO upwards, but rather to cultivate the VOCE DI TESTA in what is called FALSETTO, in order to join it well, and imperceptibly to the VOCE DI PETTO, for fear of incurring the disagreeable habit of singing in the Throat or through the Nose; unpardonable Faults in a Singer.”²⁹ Additionally, the Paris Conservatoire printed a *Method of Singing* in 1804 that outlined the techniques and exercises students at the conservatory and in other schools in France should learn. The first *Avertissement* of the treatise states that the principles outlined in the *Method* come from the school of the famous Bernacchi. Antonio Maria Bernacchi (1685-1756) was a famed Handelian alto castrato who taught many renowned singers, including Anton Raaff and Tomasso Guarducci (1720-1770). Guarducci then taught Bernardo Mengozzi (1758-1800). Mengozzi then taught Pierre Garat (1762-1823), and they both eventually became voice professors at the Conservatoire. Mengozzi and Garat are considered the two main contributors to the *Method of Singing*, Mengozzi having written most of it before he died. Garat also taught Louis Nourrit, the father of Adolphe Nourrit. Regarding tenor voices, the *Method* states that the highest note a tenor takes in chest voice is a G⁴.³⁰ The tenor then uses the head voice for A⁴ and above.³¹ Rodolfo Celletti also commented, “Rossini, an excellent baritonal tenor in his youth, loved falsetto, with which, it seems, he excelled.”³²

²⁹ Giuseppe Aprile, *The Modern Italian Method of Singing* (London: Robert Birchall, 1795; reprint, Edited by Edward V. Foreman. Minneapolis, MN: Pro Musica Press, 2001), 2.

³⁰ Jeanne Roudet, ed. *Les grandes méthodes romantiques de chant*, 7 vols. (Courlay, France: Editions Fuzeau, 2005), Vol. I, 26.

³¹ *Ibid.*, Vol. I, 17.

³² Celletti, “Arnold, ou l’invention de l’ut de poitrine,” 106. “Rossini, excellent ténor barytonnant dans sa jeunesse, aimait le *falsettone*, où, semble-t-il, il excellait.” Rossini’s

Critical accounts confirm that the concepts of singing teachers concerning vocal technique were implemented by singers in the opera house. Stendhal remarked in 1817 that Giovanni David sang with a thin, high-pitched, brilliant voice that was not well heard in the vast Teatro di San Carlo. He commented that David has picked up Nozzari's habit of singing trills with his "voix de tête."³³ The English critic John Cox (1812-1890) said that John Braham (1774-1856), an English tenor, "owed very much of the attractive fascination of his execution" to falsetto. He then noted: "Both Rubini and (Giovanni) Mario (1810-1883) also used this resource with the utmost advantage."³⁴ On the premiere of *I Puritani* (1835), a critic described Rubini's third act *romance*, "He attacks and holds the double-high F^[5], without any preparation, by a leap of a seventh, and that note from head voice sounds like it comes from the throat of a female contralto."³⁵ Cox later said of Rubini, "(his) voice was of the richest quality, of a compass of eleven or twelve notes, from about E flat^[4] or F^[4] to B^[4] or C^[5]. To this was added a falsetto certainly reaching to E^[5] or F^[5]."³⁶

The last quote raises some questions. That Rubini sang up to a B⁴ or C⁵ before using falsetto seems contradictory to the previous quotes. However, consider Bernardo Mengozzi's statement of 1804 in his *Méthode de chant du Conservatoire*: "There are certain tenors that sing up to A⁴ or B-flat⁴ with the chest voice, what the French call

prowess with the falsetto voice apparently did not impress English royalty in 1823. Richard Osborne relates, "On 29 December Rossini was received by George IV at the court in Brighton. His performance of Figaro's 'Largo al factotum' was well received, but his falsetto rendition of Desdemona's Willow Song scandalised staid opinion."

Richard Osborne, "Rossini's Life," in *The Cambridge Companion to Rossini*, ed. Emanuele Senici (Cambridge: Cambridge University Press, 2004), 17.

³³ Henri Beyle Stendhal, *Voyages en Italie*, ed. V. del Litto, Bibliothèque de la Pléiade, 249 (Paris: Gallimard, 1973), 36.

³⁴ John Edmund Cox, *Musical Recollections of the Last Half-Century*, 2 vols. (London: Tinsley Brothers, 1872), Vol. I, 64.

³⁵ "I Puritani," *Revue et gazette musicale de Paris*, February 1, 1835. "Il attaque et tient le *fa* sur-aigu, sans préparation aucune, par un saut de septième, et cette note de voix de tête sonne comme si elle sortait d'un gosier de contralto féminin."

³⁶ Cox, *Musical Recollections of the Last Half-Century*, 266.

Haute Contre; but tenors who have this range are so rare, that one need not make for them a particular genre of voice.”³⁷

Descriptions of vocal registers are historically problematic, particularly with regard to the tenor voice. Presently, teachers and scientists debate about what constitutes head, chest, and falsetto voice in singing. To provide some clarification, let us return to a castrato teacher of the past, Pier Francesco Tosi (1654-1732):

Voce di Petto is a full voice, which comes from the breast by strength, and is the most sonorous and expressive. *Voce di Testa* comes more from the throat, than from the breast, and is capable of more volubility. *Falsetto* is a feigned voice which is entirely formed in the throat, has more volubility than any, but is of no substance.³⁸

The teachers and treatises of the time speak of joining the *voce di testa* (head voice) with the *voce di petto* (chest voice) so that there is a seamless transition between the two. However, it appears that in Rubini’s case and with other *haute contre* voices, that the chest voice blend could only be sustained until B-flat⁴ or B⁴. After that, the quality of the voice changed and listeners noted a marked difference that they usually called falsetto. Or did Rubini actually sing in a chest-heavy blend up to B⁴? Adolphe Nourrit’s wife wrote, “Rubini almost never sings in chest voice.”³⁹ Indeed, many alleged that Rubini’s sound was old fashioned, even in his day. Bellini tells him in 1828, “If it were not for *Il Pirata*, where you could demonstrate your capabilities with music written for your voice, you would have left Milan with the reputation of an old-fashioned ‘cavatina’ tenor and not a great singer and actor.”⁴⁰ Reports and terminology conflict so much that it is almost impossible to conclude whether Rubini employed a mixed head voice or pure falsetto above the staff. However, it seems apparent that these first leading tenors employed a

³⁷ Roudet, ed. *Les grandes méthodes romantiques de chant*, Vol. I, 17. “Il y a certains Tenors qui vont au *LA* et au *SI* bémol avec la voix de poitrine, c’est ce que les français appellent Haute Contre; mais les Tenors qui ont cette étendue sont si rares, qu’on ne doit pas en faire un genre de voix particulier.”

³⁸ Pier Francesco Tosi, *Observations on the Florid Song*, trans. John Ernest Galliard (London: J. Wilcox, 1743; reprint, New York: Johnson Reprint Co., 1968), 22.

³⁹ “Rubini ne chante presque pas de voix de poitrine.” Quicherat, *Adolphe Nourrit: Sa vie, son talent, son caractère, sa correspondance*, Vol. III, 409.

⁴⁰ Philip Gossett, *Liner notes: Voce d’Italia, Arias for Rubini* (London: Decca, 2007), CD, B0010302-02.

much greater level of falsetto and head voice than do modern tenors.⁴¹ Singers and teachers of the time stressed that all sounds should be graceful and easy. An essential part of training was the *messa di voce* exercise, in which a singer could begin a tone in any part of their range at a *piano* dynamic, crescendo to a *forte*, and then decrescendo back to a *piano* without the slightest shift or defect in the voice. Thus, a correctly produced voice was flexible, balanced, easily produced, and never harsh. Rubini, Nozzari, Garcia, and David exemplified the Italian technique passed down to them from the tradition of the castrati and it served them brilliantly, particularly in the operas of Rossini, for which Nozzari, Garcia, and David were the primary creators of the tenor roles.

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⁴¹ Perhaps we can get a hint of how these singers used head voice above the *passaggio* by listening to the early 20th century recordings of Fernando de Lucia (1860-1925), who employed in the high voice both head voice and “full head voice,” or what some might call chest voice.

Chapter 3

Adolphe Nourrit at the Paris Opéra

Manuel Garcia, upon coming to France to sing at the Théâtre-Italien, took on a new student, Adolphe Nourrit. Garcia's new student would become the most important tenor in all of French Grand Opera. Nourrit's life intertwined with the theatrical world of the Paris Opéra from the very beginning. The circumstances of his early life destined him to eventually become the *premier tenor* and to carve out a special place in operatic history. Adolphe Nourrit's contemporaries included Berlioz, Liszt, Victor Hugo, Chateaubriand, Georges Sand, and Eugène Delacroix, among the giants of French Romanticism. From the beginning of the nineteenth century, Paris experienced a flowering of all the arts that corresponded with the rising popular desire for personal freedom and expression. The French quest for freedom issued mainly from a growing middle class, or bourgeoisie, that spurred the cries of change and revolution. Their reach extended even into the decadent world of opera audiences. After the July Revolution of 1830, the Académie Royale de Musique (Paris Opéra) opened its doors to Parisians of all social classes. Louis Véron aimed to make a subscription to the Opéra a social requirement for the rising bourgeoisie. Members of the nobility typically avoided the opera after 1830 because of the new audience, feeling "ill at ease in the new mix of diverse social classes."⁴²

As an example of the long reach of reform and revolution, Adolphe Nourrit, the star of the Paris Opéra, became a symbol of the July Revolution of 1830 as he went from theater to theater and to the tops of the barricades singing *La Marseillaise* and *La Parisienne*. He very much represented the Enlightened Man as well as a revolutionary thinker, seeking the improvement of society. Nourrit spent his early childhood backstage at the Opéra watching his father sing the leading tenor roles of Gluck, Méhul, Grétry, and Spontini. The same year of Adolphe's birth, Louis Nourrit began his studies with Pierre Garat at the Paris Conservatoire.

⁴² Barbier, *Opera in Paris: 1800-1850*, 113-14.

Garat exerted an enormous influence on French Grand Opera though he never once took the stage in an opera role. He began his career as a law student (like so many composers and singers of the past), but he felt he needed to sing. Garat honed his vocal technique listening to the Italian singers of the day and developed a flexible, expressive instrument with a range of more than three octaves. He then began singing at court for Marie-Antoinette, who grew particularly fond of him. Eventually, Garat began lessons with Bernardo Mengozzi, the Italian master at the Paris Conservatoire, and Garat himself became known as a master of French singing. His renown increased especially because of his interpretations of Gluck. Roger Blanchard and Roland de Candé explain, “Garat knew how to tie together French diction with fluid Italian vocalization, a synthesis which was not known, because French and Italian styles were generally considered opposites. In this regard, one may consider him as a precursor to the Rossinian reform of French singing.”⁴³

Adolphe Nourrit’s Singing Career

Louis Nourrit desired that his son, Adolphe, follow a different profession than opera. However, Adolphe felt that he wanted to sing and secretly began vocal studies with a friend of the family, Manuel Garcia, Sr.⁴⁴ Their lessons continued for 18 months and not until the end of that time did the elder Nourrit learn of them. By that point, Adolphe had developed a beautiful, light instrument and, at Garcia’s insistence, Louis Nourrit relented and allowed Adolphe to continue. Adolphe’s studies, however, came to an abrupt halt in 1821 when the Paris Opéra offered him a position. Both he and Garcia knew he required more study, but the offer appeared too good to decline. Thus, Adolphe Nourrit sang his first role in 1821 as Pylade in Gluck’s *Iphigénie en Tauride*. Such a debut must have seemed quite daunting for a 19-year-old, but he succeeded, and during the next four years he proceeded to sing at least twenty-five additional roles from composers such as Christoph Willibald von Gluck, Manuel Garcia, Gaspare Spontini,

⁴³ Roger Blanchard and Roland de Candé, *Dieux et divas de l’opéra* (Paris: Plon, 1986), 366. “Garat a su allier la clarté de la diction française à la fluidité vocale italienne, une synthèse qui n’était pas courante, puisqu’on opposait généralement les styles français et italien. A cet égard, on peut le considerer comme un précurseur de la réforme rossinienne du chant français.”

⁴⁴ Fromental Halévy, *Derniers souvenirs et portraits* (Paris: Michel Lévy frères, 1863), 139.

Rodolphe Kreutzer, Adrien Boïeldieu, Antonio Salieri, Nicolo Isouard, and others. Part of Nourrit's early education included dramatic training with François-Joseph Talma, the great French tragedian of the Comédie Française, whose hallmarks were beauty, clarity, and most especially, simplicity. During this time, Adolphe's father continued as the leading tenor at the Opéra, but with the arrival of Rossini in 1824, opera in France began to change.

Nourrit commenced singing lessons with Rossini in 1825 and Rossini subsequently groomed and prepared him to be the tenor of his upcoming operas. Over the next four years, from 1826 to 1829, a new type of Rossini tenor came into being, different from Giovanni David and Rubini, as Nourrit took over the lead tenor position from his father and created the tenor roles in *Le Siège de Corinthe* (1826), *Moïse et Pharaon* (1827), *Le Comte Ory* (1828), and *Guillaume Tell* (1829). These works, along with Auber's *La Muette de Portici* (1828), catapulted Nourrit to fame and glory. *Guillaume Tell* and *La Muette de Portici* also became the first great works of a new style of theater, French Grand Opera.

Le Siège de Corinthe was adapted by Rossini for the French stage from his opera *Maometto II* (1820, Naples, Teatro di San Carlo) and Nourrit's role of Néocles was created from a contralto *travesti* role in the first version. Rossini enlarged and elaborated *Mosè in Egitto* (1818, Naples, Teatro di San Carlo) and created the role of Aménophis for Nourrit. These Rossinian operas in French are packed with dramatic fervor and patriotism, frustrated love, and sometimes tragic endings, precursors to the later works of Meyerbeer, Halévy, Bellini, and Donizetti. And while Rossini's early French adaptations contain some of the florid vocalization by which his Italian works can be recognized, the French versions progressively highlight declamatory vocal lines. Critics noticed these traits in the voice of Nourrit: "This great singer has never been exclusively Italian in his method, even under the influence of the works of Rossini that preceded *Guillaume Tell*. Declamation and dramatic expression always appeared to be the first priority for him."⁴⁵

⁴⁵ Charles Merruau, *Le Temps*, March 23, 1837. « Ce grand chanteur n'a jamais été exclusivement italien dans sa méthode, même sous l'influence des ouvrages de Rossini qui ont précédé *Guillaume Tell*. La déclamation et l'expression dramatique ont toujours paru être pour lui en première ligne... »

Nourrit's predilection for dramatic expression may have been of necessity, as Nourrit never developed a propensity for *coloratura*. John Cox relates,

He was convinced that to become a really competent actor and singer he must study, and that severely, because he had many difficulties to contend against, not the least of which was that, although nature had given him a magnificent voice, she had not equally endowed him with flexibility in its management. That he was entirely successful, may not be admitted; but at least, by the determination of his will, and by incessant perseverance, he achieved all that study could accomplish; and if he did not thoroughly overcome every natural defect, his excellence in every other respect was so positive that no fault could justly be found with him. In the whole history of the Parisian, or of any other operatic stage, did any man ever, before or since, for ten years of his life work so severely as did Nourrit?⁴⁶

After Rossini's effective retirement from opera after *Guillaume Tell*, Nourrit cemented his own fame in Meyerbeer's *Robert le diable* (1831) and *Les Huguenots* (1836), and in Halévy's *La Juive* (1835), among other works.

Nourrit created a whole new kind of tenor voice, labeled at the time as a "dramatic tenor." Nourrit's dramatic tenor, however, possessed a voice quite different from Donzelli or the modern dramatic tenor. Nourrit placed foremost emphasis on drama. As Etienne Boutet de Monvel described, "Nourrit was, believe us, the most complete type of dramatic singer. Without having the virtuosity of a Rubini, or the ample style of a Duprez, he knew how to use his singing to create the most moving, colored, and living expression of the drama."⁴⁷ His pronunciation, phrasing, and style were considered elegant and beautiful. Finesse, grace, charm, and nuance were words often used in the critical description of Nourrit's performances. Halévy praised Nourrit in his *Derniers souvenirs et portraits*: "Nourrit deeply studied a role, and once he had imagined and outlined the work, he brought out the details by a well-informed distribution of dark and light. Eager to seek out all a role could grant, he always demonstrated a drive for the character he represented."⁴⁸ Upon reading the countless descriptions of Nourrit's gift for

⁴⁶ Cox, *Musical Recollections of the Last Half-Century*, 226.

⁴⁷ Etienne Boutet de Monvel, *Une artiste d'autrefois: Adolphe Nourrit, sa vie et sa correspondance* (Paris: Plon-Nourrit et cie., 1903), 3.

⁴⁸ Halévy, *Derniers souvenirs et portraits*, 150. "Nourrit étudiait profondément un rôle, et, lorsqu'il un avait conçu et dessiné l'ensemble, il en faisait ressortir les détails par une

pronunciation, nuance, and expression, one may wonder why so much critical emphasis was placed upon these features compared to today's singers. Perhaps the focus on words and the expression of them came because all works at the Paris Opéra, and indeed most of the works staged in Paris, were performed in French. These same comments were not made about the singers at the Théâtre-Italien and they are rarely made today. Instead, the critics focus on the beauty and evenness of tone. This is possibly because most opera-going Parisians would not have spoken Italian and most of today's operas are not performed in English, and thus the focus is not on the libretto or the language and its nuances, but on the beauty of the vocal tone. The debut of Duprez in 1837, however, seems to have begun this change at the Paris Opéra and the power of the voice took precedence over its ability to provide variations of "light" and "dark."

Many remarked that Nourrit did not just play a character, he was the character. His representations were sometimes so moving that the orchestra, in amazement, would cease to play, and his tragic portrayals were so realistic that in violent scenes, his fellow singers would feel afraid of him. In 1831, on the first anniversary of the July Revolution, Nourrit sang *La Parisienne* in the Panthéon and electrified the audience to such a point that they began to sing along: "Men cried...women fainted; the old felt moved in the depths of their heart."⁴⁹

Above all, Adolphe Nourrit considered himself an artist. He attempted to involve himself with the writing and composition of each opera in which he sang, sometimes to the composer's chagrin.⁵⁰ He believed it more important that the audience leave the

distribution bien entendue d'ombre et de lumière. Ardent à recherché tout ce qu'un rôle pouvait donner, il se montrait toujours ambitieux pour le personnage qu'il représentait."

⁴⁹ Boutet de Monvel, *Une artiste d'autrefois: Adolphe Nourrit, sa vie et sa correspondance*, 46-7.

⁵⁰ Meyerbeer recorded the greatest frustration with Nourrit's constant desire to change the final act of *Les Huguenots*, though he later expressed the utmost gratitude for Nourrit's help. On November 4, 1835, Meyerbeer writes, "Nourrit is tormenting me in such a way, and forces me to make so many alterations, that I am driven almost mad. Today we quarreled so much that I left the rehearsal." He writes again on November 8, 1835, "We no longer speak to each other; you can imagine how that hampers learning the role." [Heinz Becker, ed. *Briefwechsel und Tagebücher*, vol. 2 (Berlin: W. de Gruyter, 1959), 488-9.] Nourrit then quotes Meyerbeer's gratitude following the critical praise heaped upon the 4th act duet for which Nourrit insisted on multiple revisions. [Quicherat, *Adolphe Nourrit: Sa vie, son talent, son caractère, sa correspondance*. Vol. III, 370].

theatre changed than he sing with a perfect vocal technique. Quicherat, Nourrit's biographer, explained, "Nourrit gave art a moral goal and, thanks to his prestige, he desired to give good feeling to people's souls...Nourrit conceived something more than being the 'primo uomo' at the Opéra. He preferred a listener filled with emotion and the moral development of the masses to applause."⁵¹ Nourrit's moral drive found some of its origin in his devout Christian faith. His motives were also closely tied to the Saint-Simonian movement, for which Nourrit fought valiantly. Among the Saint-Simonian beliefs, that most dear to Nourrit might have been the power and duty of art to uplift and ameliorate the public.⁵² He held to the belief, shared with the Saint-Simonians, that man could be perfected through social efforts and religious belief. His idealism fueled the desire to sing *Robert le diable* throughout the provinces, believing it would have a religious effect upon theater-goers. In July of 1837, he wrote, "Art for the people, but wholesome art, art which causes people to love one another, religious art. Today it is through the theater that the people must pass in order to return to the Church."⁵³ He even dreamed of creating his own school and theater which would provide "art for the people" with low prices so any could attend and be uplifted.

In a letter to a student in 1836, Nourrit stated, "Music should go the heart, but it must pass through the ear."⁵⁴ Nourrit exemplified the tragedian and the social activist, but he also knew that his singing must please, or the public would reject the drama. Though his voice never gained the agility or power of other singers, Nourrit had trained his voice to be smooth and completely within his control. His pure voice was especially praised in the operas of Gluck and in the 4th act duet of *Huguenots*, in which he sang the

⁵¹ Quicherat, *Adolphe Nourrit: Sa vie, son talent, son caractère, sa correspondance*, ix. "Nourrit donnait à l'art un but moral, et grâce à son prestige, il prétendait introduire dans l'âme du peuple de bons sentiments...Nourrit concevait quelque chose de plus grand que d'être le premier à l'Opéra. Il préférerait aux applaudissements d'un auditoire privilégié l'émotion et le développement moral des masses."

⁵² Ralph Locke, *Music, Musicians, and the Saint-Simonians* (Chicago: University of Chicago Press, 1986), 98-9.

⁵³ Quicherat, *Adolphe Nourrit: Sa vie, son talent, son caractère, sa correspondance*, Vol. III, 56. "L'Art pour le peuple, mais de l'art salulaire, de l'art qui fait aimer, de l'art religieux. C'est aujourd'hui par le theater que le peuple doit passer pour rentrer dans l'Église."

⁵⁴ *Ibid.*, Vol. III, 15. "La musique doit aller jusqu'au coeur; mais il faut qu'elle passé par l'oreille."

Tu l'as dis in a “ravishing half-voice... This voice, so sweet, so tender, acquired an extraordinary vigor when the situation called for energy.”⁵⁵ Nourrit also worked to gain further agility, as Fétis records: “With *Siège de Corinthe* and other Rossini productions, the mechanism of light vocalization became a necessity for the first tenor: Nourrit understood that he must recommence his studies, and he did not draw back in the face of difficulty. If he never gained the brilliant agility of a Rubini, he could at least execute rapid passages in a sufficient manner.”⁵⁶ According to first-hand accounts, Nourrit propitiously utilized his falsetto and mixed voice, sometimes in a projected, brilliant fashion, to conserve himself for the most dramatic moments, thereby allowing him to endure the long, demanding roles of French Grand Opera. Halévy stated that Nourrit, “knew of necessity, through a well-managed and well-rehearsed transition, to link the softened tones of the chest voice with the even more subtle tones of his head voice, which was at once graceful and resonant.”⁵⁷ Edouard Monnais, a prominent music critic and journalist of the 1830’s, noted a difference in Nourrit’s voice with the new repertoire: “The voice of Nourrit has changed since his debut: in losing some of its silvery purity, of its spring freshness, it has gained several very brilliant head tones.”⁵⁸

Criticism of Nourrit’s Voice

With all the compliments heaped upon Nourrit’s singing, many promptly pointed out glaring defaults in his voice. The most common critique was the high degree of nasality in his voice. The cause of nasality in his voice probably partly arose from Nourrit’s vocal technique, which included singing in *voix blanche* or *voce aperta*, otherwise called open singing. The *voix blanche* technique functions contrary to the *voix*

⁵⁵ Ibid., Vol. II, 278-9. “Cette voix, si douce, si tender, acquérait une vigueur extraordinaire quand la situation exigeant de l’énergie.”

⁵⁶ “Avec le *Siège de Corinthe* et les autres productions du génie de Rossini, la mécanisme de la vocalisation légère devint une nécessité pour le premier ténor: Nourrit comprit qu’il devait recommencer ses études, et il ne recula pas devant les difficultés...s’il ne parvint jamais à l’agilité brillante d’un Rubini, il put du moins exécuter les traits rapides d’une manière suffisante.” François-Joseph Fétis, *Biographie universelle des musiciens et bibliographie générale de la musique*, 2nd ed., vol. 6 (Bruxelles: Culture et Civilisation, 1963), 335.

⁵⁷ Halévy, *Derniers souvenirs et portraits*, 153. “Il savait au besoin, par une transition ménagée avec beaucoup d’adresse, enchaîner les sons adoucis de la *voix de poitrine* aux sons plus fins encore de sa voix de tête, qui était à la fois gracieuse et sonore.”

⁵⁸ Edouard Monnais, *Le courrier français*, April 3, 1837.

sombrée. As pitch rises, the larynx rises as well. As the larynx rises, the soft palate, or velum, lowers, thus creating a nasal sound. According to critical accounts, singing through the nose appeared commonly as a trait of French singers of the time, but Nourrit was particularly cited for nasal production of high, falsetto notes. Perhaps his nasality accounted for some of the brilliance in his voice. Additionally, some criticized Nourrit for using too much soft falsetto in his singing, so much that some compared him to a castrato at the premiere of *Les Huguenots*.⁵⁹ Even in 1835, Berlioz noted in *Le Monde dramatique* that, “The high notes of Nourrit’s head voice have very much a feminine sound.”⁶⁰ These statements seem to refute Evan Walker’s assertion in the *New Grove Dictionary* that Nourrit could not have been singing in falsetto or head tones because of the dramatic orchestration written for his roles.⁶¹ Walker insists that Nourrit’s sound in the high voice would have been produced in much the same manner as Duprez’, but many critics, writers, and singers of the day seem to suggest otherwise.⁶² Fétis remarked in 1827 that, “Nourrit has taste, soul, and sings very agreeably; but his height, the volume of his voice, everything works against him playing the heroic roles. Nature has destined him to the graceful genre in which he has obtained and will obtain merited success.”⁶³ Henry Chorley (1808-1872), a prominent English critic, gave the following opinion of his voice in reference to Nourrit’s performance of Meyerbeer’s *Robert le diable*:

The full brilliancy of this character (Robert) has never been thoroughly brought out, save by him who created it (to use the French phrase) – I do not say its manliness – for the very elegance so highly prized and loudly regretted in poor Adolphe Nourrit by a portion of the Parisian

⁵⁹ Thomas Forrest Kelly, *First Nights at the Opera* (New Haven and London: Yale University Press, 2004), 195. “He moderated the head voice which he indulges far too much and which gives his voice the imprint of the third sex.” Taken from *La Chronique de Paris*, March 6, 1836.

⁶⁰ Hector Berlioz, *La Critique Musicale*, ed. Cohen and Bongrain, 4 vols. (Paris: Buchet/Castel, 1996-2003), vol. III, 217.

⁶¹ Walker, “Adolphe Nourrit.”

⁶² Henry Chorley writes in 1844, years after Nourrit’s death, that French singers “were afflicted with that diseased tendency towards a *falsetto*.”

⁶³ François-Joseph Fétis, *Revue musicale* March 1827, 100. “Nourrit a du goût, de l’âme même et chante fort agréablement; mais sa taille, la volume de sa voix, tout s’oppose à ce qu’il joue les rôles de héros. La nature l’a destiné au genre gracieux dans lequel il a obtenu et obtiendra des succès mérités.”

cognoscenti, bordered so closely upon a mannered over-grace and over-sweetness, that I never heard that fine singer, and never saw that elegant and careful actor, without feeling that neither his clear and metallic voice – nasal in its falsetto – nor his graceful postures, belonged to the greatest school of art. There was a smile when he threw his head back to sing, or to launch a *mot* at some one behind him – a mincing elongation of his “Oui”—s and “Patrié”—s and the other sounds, which sung in French are intrinsically offensive.⁶⁴

Chorley’s dislike of Nourrit’s singing and his belief that Nourrit’s acting was contrived may stem partly from cultural differences, as well as differing traditions on the opera stage. Nevertheless, it is informative to read the comments of an outside observer.

Nourrit and the Rossinian Reform of French Singing

Nourrit was praised for joining Italian melody and vocalization with intelligible expression and diction, so desired by the French, making Rossini possible on the French stage.⁶⁵ It seems, however, that Nourrit’s approach to singing never completely corresponded with Rossini’s ideas, as they were recently put forth by Emanuele Senici:

According to Rossini, ‘music is not an imitative art, but is at root entirely abstract; its purpose is to arouse and express.’ The musical parameter on which this abstractly expressive function mainly falls is melody, especially the kind of ‘beautiful,’ ‘Italian’ melody designated *cantilena* at the time. Rossinian *cantilena* expresses general and idealised emotions, never descending to the aesthetic lowness of giving prominence to single words, since this would ruin its beautiful, ‘musical’ flow. This, the older Rossini felt, was the ruinous direction taken by modern opera, a direction which he was proud never to have considered himself.⁶⁶

Adolphe Nourrit’s studies with Rossini and Garcia allowed him to sing in a more Italian manner, with a more consistent flow of melody, but it seems that his vocal technique was a mix of the Italian and French styles of singing. Laure Cinti-Damoreau (1801-1863) joined the Paris Opéra in 1825 and she embodied Rossini’s ideals of vocal expression. Cinti-Damoreau, who debuted at the Théâtre-Italien just before her 16th birthday,

⁶⁴ Henry Fothergill Chorley, *Music and Manners in France and Germany*, 2 vols. (London: Longman, Brown, Green, and Longmans, 1841-1844; reprint, New York: Da Capo, 1984), Vol. I, 62.

⁶⁵ *Journal général de France*, April 1, 1839.

⁶⁶ Emanuele Senici, "The Cambridge Companion to Rossini." (New York : Cambridge University Press, 2004).

developed a pure, florid style of singing perfectly suited to the principal soprano roles in Rossini's *Siège de Corinthe*, *Moïse et Pharaon*, *Le comte Ory*, and *Guillaume Tell*, all of which she debuted at the Opéra. Nourrit trained with Rossini to develop these same traits, beginning in 1825. Nevertheless, Nourrit considered expression of the words and their meaning of utmost importance. His determination to move the public through drama and his stress of the nuance of the word over pure vocal beauty drew criticism, especially from foreigners who perhaps did not share their appreciation of the French opera aesthetic.

The importance of the word or lyric in French opera cannot be overstated. Before an opera could be produced at a national theater, it first had to pass a jury consisting of literary and musical, as well as government officials. The jury's first task was an in-depth study of the libretto. If the libretto was approved, the composer could play musical excerpts for the jury. However, if the libretto proved to be of good quality, the music could be horrible to mediocre, and the jury would accept the opera. The French believed that text was more important than music and from their belief stems the dramatic, over-pronounced mannerisms of French singers.⁶⁷ François-Joseph Fétis, an important music journalist and critic in nineteenth-century Paris, justified the practice: "Gluck, the man of genius, accustomed the French to extremely dramatic expression; and as the entire nation had a fondness for shouting, singing methods were neglected, and the art of singing became less necessary."⁶⁸ These factors led to the development of *la mode d'aboiment*, or "barking style," which prevailed at the Opéra at the beginning of the nineteenth century and seems to have persisted despite the Rossinian reforms of singers like Nourrit, Levasseur, and Cinti-Damoreau.

⁶⁷ Barbier, *Opera in Paris: 1800-1850*, 50-1.

⁶⁸ Fétis, 100. "Le mâle génie de Gluck avait accoutumé les Français à une expression fortement dramatique; et comme toute la nation avait du penchant pour les cris, les forms chantantes avaient été négligées, et l'art du chant était devenu moins nécessaire." Patricia Howard confirmed the opinion of Fétis as she described accounts of Gluck teaching singers in Paris and his insistence on declamation and emotion at any expense, including the sacrifice of vocal technique. Patricia Howard, "A Very Individual Talent for Teaching Singers': Pedagogy and Performance Practice in Gluck's Operas," *Opera Journal* 34, no. 1 (March 2001).

Franz Grillparzer wrote after visiting France in 1836, “The men, who are called dramatic singers; that means: bad. They are highly expert in making the wretched doggerel of a libretto understood, but they are not capable of bringing to life the musical intentions of a good composition. To scream from within a chorus, or to shine a light from within a dark background of violins—they are men for that; let anyone else who wishes deal with lyrical singing.”⁶⁹ Charles de Forster remarks more specifically:

A few exceptional throats, richly gifted by youth, have introduced a frightful manner of singing, by forcing all the power of the lungs; and in shouting, rather than singing, they have borrowed against time...They call that “having energy”...We should say, furthermore, that the audience, who never enjoyed anything more, astonished and dumbfounded, finally accepted this style; and like those drinkers for whom there is no longer, so to speak, a strong enough liquor, any man who does not shout, who does not behave as though possessed, is nothing but a poor fellow, without talent and without means...Adolphe Nourrit, near the end of his career, already introduced this vicious style on the stage; but the arrival of Duprez finally implanted it completely.⁷⁰

Despite foreign criticism, Nourrit remained the darling of the Paris Opéra audience. His nuanced singing style and clear, forceful diction charmed the Parisian press and the public. He performed often at salons and private parties, introducing France to the songs of Schubert. Berlioz praised Nourrit in 1835 for his expressive qualities with Schubert lieder: “It is an honor to Nourrit to have understood that the songs of Schubert contain sensitivity and true inspiration; so many other singers would have only seen therein a series of notes without purpose or melody.”⁷¹ His artistry was praised and his singing sought after for 16 years. However, Nourrit and all of Paris would soon receive a shock with the arrival of Gilbert-Louis Duprez.

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⁶⁹ Kelly, *First Nights at the Opera*, 196.

⁷⁰ *Ibid.*, 196-7.

⁷¹ Hector Berlioz, *Journal des débats*, January 25, 1835.

Chapter 4

The New Italian School of Singing

Rossini arrived in France in 1824 to direct the Théâtre-Italien⁷², and a new generation of composers filled the void in Italy left by his departure. As the Rossini rage passed over the Alps to France, the operas in Italy after 1823 were very much imitations of Rossini. Many of Rossini's singers, including the tenors, also settled in Paris to continue their fortunes with a new Rossini-loving public at the Théâtre-Italien. Some, like Manuel Garcia, Sr., preceded Rossini and had already been in Paris for years. In Italy, Meyerbeer's *Il Crociato in Egitto* appeared in 1824 and the early operas of Donizetti and Bellini followed soon after. A new crop of tenors began their careers, filling the roles at Italian opera houses and serving as the creators of the new Donizetti and Bellini operas. Some of these singers, such as Rubini, sang in the traditional old Italian style. But there were others who found new sounds as they debuted a new, more dramatic style of opera. One of these tenors, Domenico Donzelli (1790-1873), helped to advance a new sonorous, powerful style of singing, later known as the *voix sombrée*, a technique which granted him fame in Bellini's *Norma* (1831) as Pollione and in Rossini's *Otello* (1816) as the title character.

Domenico Donzelli

Donzelli's first vocal technique originated in the early school of Italian singing, his teachers being Giuseppe Viganoni and Gaetano Crivelli (1768-1836), of which the latter sang the role of Adriano for the premiere of Meyerbeer's *Il Crociato*. Based on first-hand descriptions and the tessitura of the roles written for him, Crivelli sang with a baritone tenor voice much like that of Manuel Garcia. Donzelli began his career singing the light, agile tenor roles of Rossini, such as Argirio in *Tancredi* and Prince Ramiro in *La Cenerentola*. After resounding successes in Rome and Naples, including creating

⁷² Rossini had visited one year before, receiving a grand welcome from the Parisian audiences. However, he would continue on the England and not return to Paris until 1824.

roles for Donizetti⁷³ and Pacini,⁷⁴ Donzelli signed with the Théâtre-Italien in Paris where he sang from 1825 until 1831. He continued to sing the roles of Rossini, beginning with *Otello* and continuing with *La Cenerentola*, and *Matilde di Shabran*, but sometime around 1826, the descriptions of his voice began to change. Some in Paris did not agree with his vocal choices, notably François-Joseph Fétis (1784-1871), who in 1827 said that Donzelli shouted the role of Rodrigo (in Rossini's *La donna del Lago*) from one end to the other instead of singing it.⁷⁵ In 1828, Donzelli was to sing *Il Pirata* in Paris, but the composer, Bellini, did not agree with the choice: "In my opinion Donzelli should not sing *Il Pirata*, because it must be transposed three tones lower and then the music is not in the character of his singing."⁷⁶ Apparently, Bellini knew very well what music would fit the characteristics of Donzelli's singing, for three years later he wrote the role of Pollione in *Norma* (1831) for him. This role, full of powerful, declamatory singing, became a landmark role for the *tenore di sforza* or "tenor of force." Donzelli's voice after 1827 was noted for its great power and dark color. John Cox noted, "The most accomplished *tenore robusto* of his times, Donzelli, was the Otello to Malibran's Desdemona. This singer was, indeed, justly pronounced as the very first of his class, if not the first absolutely in Europe, after Garcia. His voice had a clearness, a brilliancy, and a power—a *metallo* or natural vibratory power—that belonged to very few, either before or since his time."⁷⁷

What could have caused such a shift in the power and color of his voice? Albert Mazzuccato claimed in 1842 that Donzelli had adopted what eventually became known as the *voix sombrée*, or closed timbre, equivalent to the sound of a modern dramatic tenor. The closed timbre is characterized by a darkened sound caused by a lower laryngeal position, higher soft palate, and expanded pharynx. These physical adjustments would have caused acoustical changes, enhancing the overall volume and color of his voice, as well as boosting the higher harmonics produced by his voice. *Voix sombrée* would also have resulted in a heavier sound production. Donzelli's high notes,

⁷³ The role of Almuzir in *Zoraide di Grenata*, 1822

⁷⁴ *Cesare in Egitto*, 1821

⁷⁵ *Revue musicale*, 1827, 586.

⁷⁶ Luisa Cambi, ed. *Vincenzo Bellini: Epistolario* (Milano: A. Mondadori, 1943), 141.

⁷⁷ Cox, *Musical Recollections of the Last Half-Century*, Vol. I, 171.

nevertheless, continued to be produced in the old-fashioned manner of falsetto or head voice, save with a different resonance. Donzelli himself explained, “The range, then, of my voice is around two octaves, from low D^[3] to high C^[5]. From the chest, I stop at G^[4]; and in this extension I can declaim with equal vigor and sustain all the force of declamation. From high G^[4] to high C^[5] I can use a falsetto that I employ with art and strength given a resource like ornamentation. I have sufficient agility, but which is far and away easier for me in descending than ascending.”⁷⁸ Though Donzelli used falsetto in the upper range of his voice, it seems he had greater power than others in the high range. John Cox explains further,

His tone was formed high in the head, his compass combining the falsetto to a very large extent; whilst he possessed such complete command over his vast volume of voice, that he could send it forth in all its body, or in its softest attenuation, at pleasure. He managed the junction of the chest and head registers with the utmost skill, so that it was quite impossible to discover upon what note the actual transition took place, although the fluty quality of the upper note immediately made its use apparent.⁷⁹

In an 1832 treatise on the human voice by Francesco Bennati (1798-1834), the author comments on Donzelli’s voice, and that his voice in the upper register is more laborious than that of Rubini or David. However, his notes are more sonorous and round.

⁷⁸ Maurizio Modugno, "Domenico Donzelli et il suo tempo," *Nuova rivista musicale italiana* 18, no. 2 (April-June 1984): 208. “L’estensione, dunque, della mia voce, è di quasi due ottave, cioè dal re basso al do acuto. Di petto, poi, sino al sol; è in questa estensione che posso declamare con egual vigore e sostenere tutta la forza della declamazione. Dal sol acuto al do acuto posso usare di un falsetto che impiegato con arte e forza dà una risorsa come ornament. Ho un’agilità sufficient, ma che mi riesce dig ran lunga più facile nel discendere che nel montare.” John Cox confirms Donzelli’s description of his own voice, “The ascending notes of his scales were generally given out from his chest voice until he rose very high, and passed into the falsetto, the almost inevitable consequence of which was, that they were sometimes too strong by their comparative volume. His descending divisions and *fioriture*, on the contrary, when they commenced upon the higher notes of his voice, were taken in falsetto, which he carried very low down before using his mixed or natural voice. From such extreme contrasts the ear was not seldom cheated into a belief of this having been done expressly to convey the notion of an echo or distant sound, the equality was disturbed, and the general effect of the performance diminished.” Cox, *Musical Recollections of the Last Half-Century*, Vol. I, 172.

⁷⁹ Cox, *Musical Recollections of the Last Half-Century*, Vol. I, 171.

He also states that a baritenor's range is usually composed of a single register. However, Donzelli sings with two distinct registers.⁸⁰ Donzelli's adopted use of the *voix sombrée* apparently allowed him greater power and force in all ranges of his voice, but also thickened his sound. As a result, the longer he sang, the more tenor roles needed to be lowered for him. In Turin on December 28, 1837, Adolphe Nourrit wrote to his wife that all the singers in Italy shout, to the point of making your throat hurt. He also said that Donzelli still sounded well, but that he was forced to lower all the parts, and he did not sing nearly as well as in Paris.⁸¹ Manuel Garcia may have preceded Donzelli in the use of *voix sombrée*. In Spain and subsequently in Italy, his voice was light, high, and flexible. However, when he later sang in Paris and England, his voice became noted for both flexibility and dramatic power. Fétis confirmed a different color in Garcia's voice in his 1829 review of Garcia playing Count Almaviva, "What was already noticed in the talent of Garcia, was a tendency to give his singing a dramatic tint, the importance of which was not felt, but since the advantages of which have been recognized."⁸²

The aforementioned *voix sombrée* proceeded to become the basis of the technique of Gilbert-Louis Duprez, a technique which led him back to the Paris Opéra in 1837. He claimed to have found the technique on his own as he sought a more dramatic form of vocal expression, but he was undoubtedly exposed to *voix sombrée* during his career in Italy. The pursuit of the *voix sombrée* also contributed to the eventual suicide of Adolphe Nourrit. Both of these singers would have known Donzelli well from his years in Paris, where he knew Nourrit, and from Duprez' years in Italy after Donzelli returned to his native land in 1831.⁸³ While some of Donzelli's vocal traits were also heard in Garcia and Crivelli, it seems safe to consider Donzelli as one of the fathers of modern vocal technique. His use of *voix sombrée* fueled the popularization of the technique in Italy and France and aided in the development of larger, more powerful voices.

⁸⁰ Francesco Cuvier Georges Bennati, *Recherches sur le mécanisme de la voix humaine*, 2nd ed. (Paris: Baillière, 1832), 51-2.

⁸¹ Quicherat, *Adolphe Nourrit: Sa vie, son talent, son caractère, sa correspondance*, Vol. III, 66.

⁸² *Revue musicale*, 1829.

⁸³ Interestingly, this year, 1831, is the same year in which Duprez sang his first *Guillaume Tell* and claimed to have found the *voix sombrée* and *ut de poitrine*.

Changing Orchestration for the Tenor Voice

As tenor technique evolved and composers wrote more dramatic operas, the orchestral writing that accompanied the singers also became more dramatic. The composer's personalization of orchestral texture is often evident in the arias written for the singer who premiered the work, particularly those at the beginning of an act, which were often added or subtracted to appease the singer. These arias and their orchestration should give additional clues to the changing tenor voice.

Adolphe Nourrit began his career at the Opéra in 1821 in the role of Pylades from Gluck's *Iphigénie en Tauride*. Gluck's opera from 1779 remained a favorite at the Paris Opéra through the first part of the nineteenth century. The vocal writing for the tenor role of Pylades demonstrates typical characteristics of lead roles written for tenors as their voice category rose in importance. In the Act II, scene 1 aria, "Unis dès la plus tendre enfance," Pylade sings to the accompaniment of bassoons, violins, violas, cellos, and basses. In addition to very light orchestration, Gluck eases the load on the voice by never requiring a dynamic louder than a *piano* while the voice is singing. Thus the singer's voice is not taxed and can be used in a very light vocal register.

The musical score for the aria "Unis dès la plus tendre enfance" from Gluck's *Iphigénie en Tauride* is presented in a standard orchestral format. It features six staves: Bassoon, Violin 1, Violin 2, Viola, Pylades (Tenor), and Bass. The key signature is two sharps (D major) and the time signature is common time (C). The music is in 4/4 time. Dynamics range from mezzo-forte (*mf*) to piano (*p*). The vocal line for Pylades includes the lyrics: "sir, ah! mon coeur appl au-dit d'av - ance au coup qui va nous re-un - ir".

Figure 4.1 An excerpt of "Unis dès la plus tendre enfance" from Gluck's *Iphigénie en Tauride*.

The Italian works of Rossini show a slight increase in the texture of the orchestra as the character Giacomo sings to flutes, oboes, clarinets, bassoons, horns, violins, violas,

cellos, and basses in the aria, “O fiamma soave,” from *La donna del lago* (1819). Again, the instruments play *piano* or *staccato* during most of the singer’s lines and the majority of the time, only the strings play while the tenor sings.

The image shows a musical score for the aria "O fiamma soave" from Rossini's *La donna del lago*. The score is arranged in a standard orchestral format with eight staves. From top to bottom, the staves are: Flute, Clarinet in Bb, Bassoon, Horn in F, Uberto (the singer), Violin 1, Violin 2, Viola, and Bass. The music is in 6/8 time and D major. The Uberto part includes the lyrics: "O fiam - ma so - a - ve. pie - to - sa ti". The orchestration is light, with most instruments playing *piano* or *staccato*. The strings (Violin 1, Violin 2, Viola, and Bass) provide a steady accompaniment, while the woodwinds and horns play light, staccato figures.

Figure 4.2 An excerpt of “O fiamma soave” from Rossini *La donna del lago*.

Giovanni David sang to similar orchestration during Rodrigo’s virtuosic aria, “Che ascolto,” from Rossini’s *Otello* (1816). For the heavier-voiced Nozzari in the role of Otello, Rossini added trombones and trumpets to the orchestration, composing the role lower so it never rose above an A⁴ and descended to A². Yet even though the tessitura is lowered, the orchestra rarely plays more loudly than *piano* while the tenor sings and the brass instruments are only used occasionally. These examples demonstrate a light orchestral texture, evidence of composers accommodating a lighter tenor sound.

Nourrit's first significant French Grand Opera role came with the debut of Gustave Auber's *La Muette de Portici* (1828). French Grand Opera composers began using greater orchestral textures with larger orchestras and greater choral forces to create drama and spectacle. For example, in the Act IV tenor aria, "Spectacle affreux," from *La Muette*, Nourrit sang with flutes, oboes, clarinets, bassoons, trombones, ophicleide, violins, violas, cellos, and basses, with trumpets and horns also joining in the opening recitative. The number and kinds of instruments employed increased compared to the operas previously sung by Nourrit. However, when the tenor sings during the aria, the orchestral accompaniment again remains at a *piano* dynamic and the use of brass remains very light, appearing mostly between vocal lines. Halévy presents a greater vocal challenge to Nourrit in the Act IV cabaletta, "Dieu m'éclaire," of *La Juive*. The tenor must sing high passages over flutes, oboes, clarinets, trumpets, horns, bassoons, trombones, tympani, and a full string section, all at a *forte* dynamic.

Flute *f*

Oboe *f*

Clarinet in B \flat *f*

Trumpet in B \flat *f*

Horn in F 1 *f*

Horn in F 2 *f*

Bassoon *f*

Trombone 1 *f*

Trombone 2 *f*

Timpani *f*

Violin *f*

Violin *f*

Viola *f*

Eléazar *f* S'il te don - ne la cou - ron - ne la cou - ro - ne du mar - tyr

Cello *f*

Double Bass *f*

Figure 4.3 An excerpt of “Dieu m’éclaire” from Halevy’s *La Juive*.

Nourrit faced a duplicate orchestra in the “Suivez-moi” section of Arnold’s cabaletta following “Asile héréditaire” in Rossini’s *Guillaume Tell*. The *sforzandi* and *fortissimo*

dynamics as the tenor rises to the high C might have overwhelmed or strained the “lighter” voice of Nourrit, and from many accounts, the effect was never appreciated until Duprez first sang the role.

The image displays a page of a musical score for the opera *Guillaume Tell* by Rossini, specifically the scene "Suivez-moi". The score is arranged in a standard orchestral format with multiple staves. The instruments listed on the left include Piccolo, Flute, Oboe, Clarinet in Bb, Bassoon, Horn in E, Horn in F, Trumpet in C, Trombone, Timpani, Arnold (likely a horn), Suisses (two parts), Violin I, Violin II, Viola, and Vc. and Cb. (Violoncello and Contrabasso). The vocal parts for the tenor (Arnold) and the chorus (Suisses) are also present. The score is in common time (C) and features a variety of dynamics, including *sf* (sforzando) and *ff* (fortissimo). The vocal lines include the lyrics "ci - de, ar - ra - chons, oui, cel - te". The orchestration is dense, with many instruments playing in unison or in close harmony, creating a powerful and dramatic sound.

Figure 4.4 An excerpt of “Suivez-moi” from Rossini’s *Guillaume Tell*.

Duprez' entrance on the Paris Opéra stage may have also contributed to the changing style of orchestration. Composers begin to insert militaristic, march arias into operas solely to highlight Duprez' declamatory vocal skills. For example, in Donizetti's opera *La Favorite* (1840), the composer wrote out "Oui, ta voix m'inspire" as a showcase for Duprez. The orchestra consists of flutes, oboes, clarinets, bassoons, horns, trumpets, trombones, ophicleide, timpani, bass drum, violins, violas, cellos, and basses, all swelling consistently up to ff on high notes in full *tutti* sections. Similar passages were written for Donzelli in Bellini's *Norma* of 1831 ("Meco all'altar di Venere") and for Duprez in Berlioz' *Benvenuto Cellini* of 1838 ("Seul pour lutter"). The large, loud orchestration of these tenor arias set the stage for the later vocal feats of Raffaele Mirate in Verdi's *Rigoletto* of 1851 ("Possente amor"), which contained the same full *tutti, forte* sections, while a choir was added to the texture for Carlo Baucardé in Verdi's *Il trovatore* of 1853 ("Di quella pira").

Violin I *ff* *Presser*

Violin II *ff*

Viola *ff*

Piccolo *ff*

Flute *ff*

Oboe *p* *ff*

Clarinet in A *p* *ff*

Horns *p* *ff*

Horns *ff*

Trumpet *ff*

Trumpet *ff*

Bassoon *ff*

Trombone *ff*

Ophicleide *ff*

Timpani *ff*

Fernand *ff*
 sous ton em-pi-re moi a-me sé-ni-vre de gloi-re ah! de

Violoncello *ff*

Contrabass *ff*

Figure 4.5 An excerpt of “Oui, ta voix m’inspire” from Donizetti’s *La Favorite*.

Increased orchestral textures in tenor arias reveal the augmenting demands placed upon the tenor voice. It is possible that composers seeking a more exciting sound wrote their operas in a new, more dramatic style and then singers out of necessity developed new means of producing more powerful sounds. Duprez describes his vocal breakthroughs as a necessary step when he first learned the role of Arnold in *Guillaume Tell*. Additionally, composers also tailored roles to capitalize on a singer's strengths. Thus, the orchestration of tenor opera arias became larger and heavier as the voices also enlarged through the use of *voix sombrée* and a heavier vocal production.

Chapter 5

The Engagement of Duprez and Retirement of Nourrit at the Paris Opéra

In March of 1836, while Duprez visited Paris with his wife, he received an unexpected visitor, the composer Fromental Halévy (1799-1862). Acting in the capacity of assistant director, he came with an offer from the new director of the Paris Opéra, Charles Edmond Duponchel (1794-1868). They desired to employ Duprez as first tenor at the Paris Opéra, sharing the position with Nourrit. Duprez remarks that Halévy and Rossini both campaigned for his cause, but Meyerbeer was not particularly fond of the choice.⁸⁴ After settling financial affairs, Duprez requested that the roles of *La Muette de Portici* and *Guillaume Tell* be conferred to him, as he said they were no longer played nor were they profitable at the Opéra.⁸⁵ He also asked to share evenly the newly created roles with Nourrit when the Opéra commissioned a composer with a new work.

With the news of Duprez' hiring in 1836 by Duponchel, Nourrit suddenly felt the pressure of competition, something heretofore completely foreign to him. These pressures increased his self-consciousness and, now subject to comparison, he suddenly became nervous and agitated about the audience's reaction to his singing as well as his future with the Opéra. Meyerbeer actually records as early as 1831 that Nourrit's voice had deteriorated, "unfortunately for *Robert le diable*."⁸⁶ Nourrit later admits that he was worried about his voice and had encountered difficulties. In 1837, he explained to his wife, "Sometimes I sang in *piano*, and when I was not perfectly well, I did not force, in the fear of convincing myself that I really was ill. However, I was not at rest, and I was correct, for in the evening the voice was no better than in the morning."⁸⁷ His growing

⁸⁴ Duprez, *Souvenirs d'un chanteur*, 126-7.

⁸⁵ *Ibid.*, 133.

⁸⁶ Giacomo Meyerbeer and Robert Ignatius Letellier, *The Diaries of Giacomo Meyerbeer* (Madison, NJ: Fairleigh Dickinson University Press, 1999), Vol. I, 401.

⁸⁷ Quicherat, *Adolphe Nourrit: Sa vie, son talent, son caractère, sa correspondance*, Vol. III, 52. "De temps en temps je me mettais au piano, et quand je ne me trouvais pas parfaitement bien, je n'insistais pas, dans la crainte de me convaincre que j'étais tout à fait mal. Cependant je n'étais pas tranquille, et j'avais raison, car le soir la voix n'était guère meilleure que le matin."

insecurities were probably further exacerbated by Duprez' arrival. Nourrit's friend, the actor Young from England, counseled him on December 6, 1836: "I know Duprez very well, and I am sure, if he succeeds in Paris, the kind of reputation he will make is so totally distinct from yours that your whole repertoire will remain perfectly intact. They must write expressly for him, if they wish him to succeed, for all his qualities (with the exception of energy) are different from yours, and therefore as I before said, your whole cart of characters will remain untouched."⁸⁸

In reality, Duprez wanted to take Arnold and Masaniello as roles that he would perform exclusively, roles originally written for Nourrit. As Duprez needed a flattering piece which he could use quickly for his debut, his request seemed to make sense. Adding insult to injury, Halévy's role of Guido in *Guido et Ginevra* (1838), first promised to Nourrit, was subsequently given to Duprez.

At first Nourrit felt confident, believing Duprez' arrival to be another opportunity to stimulate his love of art. He thought it would spur him to greater progress. After learning of Duprez' engagement, Nourrit first sang *Guillaume Tell* and Duprez was in attendance, to the ignorance of Nourrit. Nourrit recounts that he never played the role so well and the audience never applauded as they did that night, so much that Duprez said he no longer wished to debut with *Tell*. Nourrit then played *La Muette de Portici*, knowing that Duprez was in attendance, and he relates that he wanted to perform the role as he had never before, realizing the situation he was in and the concern of his family. Upon entering the stage, the public applauded, but the claque took up a veritable cheer. Nourrit, who always despised the practice of *claqueurs*, suddenly felt ashamed of "this stupid ovation."⁸⁹ He grew so irritated that he literally began to see red, and when he wanted to sing, his voice sounded veiled. The more he sang, the worse it got and he finally bowed out of the performance with two acts remaining. Nourrit suddenly realized that things would never be the same for him at the Opéra and he would now be facing competition and comparison. The unquestioned dominance and free reign for his creativity would now be changing. He felt as if his friends Rossini and Halévy had

⁸⁸ Ibid., Vol. III, 369. These quotes are given in the original English.

⁸⁹ Ibid., Vol. III, 20.

betrayed him, though he had agreed to Duprez' employment from the beginning.⁹⁰ Nourrit also acknowledged that Duprez was arriving with a fresh, young voice full of great power, perfect for the roles into which Nourrit was working, "and so that we can each find our proper place, it is necessary that I am relegated to the warbling lovers. No thank you!"⁹¹

Nourrit decided that the best course for him to take was to retire from the Opéra and tour the provincial theaters for about a year where he could gain twice what he would make in a year at the Opéra. He insisted that his family supported him, but the Parisian press begged him to remain. His farewell concert on April 2, 1837, proved a resounding success and was met with cheers, while Nourrit bade them farewell with tears in his eyes. He departed for the provinces, but his ideal retirement performance tour would not last.

Nourrit's first performances in Lyon and Marseilles were reported as resounding successes, but on May 19, 1837, disaster struck. He related to his wife that the first three acts of Halévy's *La Juive* proceeded marvelously, but as the demanding aria of Act IV, "Rachel, quand du Seigneur," approached, he felt a sudden hoarseness, could not even reach an F^[4] and had to finish the aria an octave down.⁹² The audience, having enjoyed a wonderful performance until the mishap at the end, applauded heartily, but Nourrit was crushed. He said to his wife, "I cannot tell you all the foolishness, all the follies that came to my head after this accident...now I must be ashamed or laugh at myself...already today I feel better."⁹³ He admitted to his wife that he had been singing for years with his voice not feeling quite right and had used large amounts of soft singing to cover up his weaknesses. However, his reaction in Marseilles seemed out of the ordinary. What he did not relate to his wife is that as he finished the aria, he grew pale, put his hand to his forehead, and then dashed offstage in despair. George Bénédict, in attendance, quickly left his seat and headed back to the dressing room, where he found

⁹⁰ Halévy, *Derniers souvenirs et portraits*, 173-4.

⁹¹ Quicherat, *Adolphe Nourrit: Sa vie, son talent, son caractère, sa correspondance*, Vol. III, 22. "Et pour que nous trouvions chacun notre place, il faut que je demeure relégué dans les amoureux roucoulants. Grand merci!"

⁹² *Ibid.*, Vol. III, 49-50.

⁹³ *Ibid.* "Je ne te dirais pas toutes les sottises, toutes les folies qui me sont passées par la tête après cet accident...il faut ou que je sois honteux ou que je rie de moi-même...Déjà aujourd'hui je me sens beaucoup mieux."

Nourrit violently striking the walls and crying out in despair. He played out a scene for them straight from a melodramatic opera, ending by him trying to throw himself out of the window, a task which he might have accomplished if his friends had not restrained him.⁹⁴ He never again was completely free from fits of darkness and depression. One cannot know if these periods of hoarseness came about because of pure vocal fatigue (as happened to his student, Cornélie Falcon), by oncoming illness, or mental and emotional distress, which may have exacerbated the deterioration of his physical health. For the next five months, chronic cough and dysentery plagued Nourrit, and he suffered from a liver condition that went largely untreated. It is poignant to consider the narrative of a man who believed so fervently in the perfection of the masses, here facing the glaring reality of his own imperfection.

Nourrit continued to perform sporadically in the provinces throughout the summer, but in the end, he said he could not bear to be away from his wife. He returned to Paris and shortly after attended the Opéra where he heard Duprez sing for the first time. He wrote, “I will repeat the words that came out of my mouth the day after I heard Duprez the last time: *I have decided I want to go to Italy.*”⁹⁵ With that, he prepared his affairs and left in December of 1837, leaving behind his wife and their five daughters in Paris. Why could he now leave his family that had just drawn him back from the provinces? What was he seeking? He let very few people know, avowing that his journey served the purposes of regaining his health and of sightseeing. However, his letters reveal that he sought the same *voix sombrée* technique that brought success and renown to Duprez. Nourrit was determined to transform himself into an Italian *tenore di sforza*, the pursuit of which sadly led to his unfortunate end.

The First *Ut de poitrine*

Gilbert-Louis Duprez began his singing career at the age of 11 in the private Parisian music academy of Alexandre Choron (1771-1834). Duprez' vocal training was firmly rooted in the old Italian tradition, mainly as a result of Choron's teaching. As stated by an early biographer, “According to him [Choron], there was nothing left to

⁹⁴ Georges Bénédict, *Revue et gazette musicale de Paris*, April 25, 1839.

⁹⁵ Quicherat, *Adolphe Nourrit: Sa vie, son talent, son caractère, sa correspondance*, Vol. III, 59. “Je vais te repeater les paroles qui sortirent de ma bouche le lendemain du jour où j’entendis Duprez la dernière fois: *Décidément je veux aller en Italie.*”

write in music after Palestrina, Handel, and Marcello for the church...and Hasse and Gluck for the theater.”⁹⁶ Choron’s aim was to improve the state of French singing, and in that effort, he established the Institution Royale de Musique Classique et Religieuse in 1817. The school eventually rivaled the Paris Conservatoire, but a cut in government funding during the July Monarchy put the school out of business. After many years of musical development and training, as well as a trip to Italy (mostly to distract him from his attraction to his fellow student, Alexandrine Duperron), Duprez finally sang his first leading role in 1825 in Paris at the Odéon Theatre. His debut as Almaviva in *Il Barbiere di Siviglia* at the age of 18 was significant for its insignificance. A critic at the concert noted that one would have to be seated in the prompter's box to hear him.⁹⁷ At the time, Duprez sang the roles of the *tenorino*, or light tenor. After unsuccessful attempts at making inroads at the Opéra Comique, Duprez married Duperron, a soprano at Choron’s conservatory, and returned to Italy to further his studies and seek new performing opportunities.

He initially studied with Maestro Pedroni (Duprez does not tell us his first name) in Milan, but after seven lessons the teacher conceded that he could not teach Duprez anything he did not already know. Duprez mentions no further vocal studies after Pedroni,⁹⁸ but during his stay in Italy, he was introduced to the vocal exploits of such tenors as Rubini, Nozzari, and most importantly, Domenico Donzelli. Duprez also worked with Donizetti, with whom he began to collaborate, and who later encouraged and taught the new “Italian” style of singing to Nourrit, the style that would ultimately result in Duprez' stunning debut at the Paris Opera. His reputation began to grow in Italy as he sang the lighter tenor roles, performing alongside his wife for the first few years, as well as the famed Giuditta Pasta (1797-1865). Donizetti wrote in 1833 to Alessandro Lanari (1790-1862), the impresario in Lucca, Italy, and explained that Duprez’ voice

⁹⁶ Antoine Aimable Élie Elwart, *Duprez: Sa vie artistique* (Paris: Victor Magen, 1838), 14.

⁹⁷ Gilbert-Louis Duprez, *Souvenirs d'un chanteur* (Paris: Calmann Lévy, 1880), 38.

⁹⁸ Elwart seems to support this in Duprez’ biography, mentioning no studies with a teacher while in Italy. Elwart, *Duprez: Sa vie artistique*.

sounded much like that of Rubini, though Rubini possessed twice the talent.⁹⁹ Duprez and his wife garnered particular acclaim in 1830 in the Italian premiere of *Le Comte Ory*, followed by another success in *Il Pirata*, Duprez' first serious dramatic role. He credited Bellini's *Pirata* with helping him eventually find a more dramatic sound, as well as a more dramatic method of acting.

In Lucca, the great contralto, Benedetta Pisaroni, fell ill and was not able to sing in the role of Arnold, transposed for her to perform there in the Italian premiere of *Guillaume Tell* in 1831. Duprez was called in to sing in her place with the part restored to its original tenor voicing. In preparing for the role of Arnold, which contained wholly new vocal and theatrical demands, Duprez decided he must find a way to convey the drama of the opera. He explained that in his preparation for Arnold, he found the *do di petto* or "high C from the chest" that would later make him famous. He further articulates his discovery and its importance in the context of *Guillaume Tell*: "Immediately, I understood. These male accents, these sublime cries, given with mediocre means, were nothing but a missed effect, almost ridiculous. It was necessary, to measure up to this energetic creation (*Guillaume Tell*), to concentrate all the will, moral and physical force of the interpreter. And by Jove, I cried, I may burst, but in the end I will succeed."¹⁰⁰ While singing more dramatic music, Duprez also began to sing in bigger halls and it was in response to these demands that he changed his voice, enlarging and darkening it. In explaining the changes he made, Duprez never spoke of any one technique, saying, in fact, that he didn't use one.¹⁰¹ However, he later described his use of voice as *voix sombrée*.¹⁰²

⁹⁹ Guido Zavadini, *Donizetti: Vita, musiche, epistolario* (Bergamo: Istituto italiano d'arti grafiche, 1948), 339.

¹⁰⁰ Duprez, *Souvenirs d'un chanteur*, 75. "Du premier coup je le compris: ces males accents, ces cris sublimes, rendus avec des moyens mediocre, n'étaient plus qu'un effet manqué, partant ridicule. Il fallait, pour se mettre à la hauteur de cette énergique creation, la concentration de toute la volonté, de toutes les forces morales et physiques de celui qui s'en ferait l'interprète...Eh! Parbleu, m'écriai-je en terminant, j'éclaterai peut-être; mais j'y arriverai!"

¹⁰¹ This claim seems to refute the assertion of certain scholars in journals of note that Duprez studied with Donzelli while he lived in Italy. Duprez, again seems to indicate just the opposite, saying he didn't study with anyone after his first teacher in Milan.

¹⁰² As described above on page 31.

Duprez received great acclaim as Arnold and his new style of singing brought a new dramatic quality to *Guillaume Tell* that many had considered lacking. In fact, after the first run of *Tell* at the Paris Opéra with Nourrit, it was rarely performed and fell out of favor with the public.¹⁰³ Duprez says that after the second or third performance in 1829, that Nourrit himself cut the aria “Asile héréditaire” and the ensuing “Suivez-moi” and they were not restored until Duprez’ return in 1837.¹⁰⁴ Quicherat insists that the cut did not happen until Louis Véron’s (1798-1867) instatement as director of the Opéra in 1831.¹⁰⁵ Whatever the case, Duprez’ *voix sombrée* brought a visceral excitement to the role of Arnold that appears to have been lacking in Nourrit’s interpretation, and Duprez’ performance in Lucca became a wild success. He subsequently began to debut the roles of Donizetti’s operas, and the composer wrote the role of Edgardo in *Lucia di Lammermoor* expressly for Duprez. It was Duprez himself who suggested the idea and outline for the final scene of the opera. The role of Edgardo contained impassioned, dramatic singing that displayed Duprez’ enlarged, exciting sound, and following *Lucia*, Duprez’ stock rose dramatically.

As mentioned above, the Paris Opéra sent Halévy in 1836 to woo the singer to accept a contract. Duprez says he rejected the Opéra’s initial offer and returned to Italy. However, he eventually changed his mind and accepted, with the stipulation that his first role in Paris should be Arnold in *Guillaume Tell*, leading to his acclaimed 1837 debut.

Upon arriving in Paris, Duprez made sure to attend Nourrit’s final performances, and praised Nourrit’s artistry and sense of drama. Knowing how much the Parisian public loved Nourrit, Duprez expected a chilly reception from the audience at his *Tell* debut, knowing how closely it followed Nourrit’s departure. Berlioz, who heard Duprez in Florence in 1832 and predicted his triumphant return to France,¹⁰⁶ wrote about the public’s opinion previous to Duprez’ debut, “The great majority of listeners were, however, armed in advance against him with cruel prejudices; we were able to easily convince ourselves in listening to the conversations that passed around us in the

¹⁰³ Barbier, *Opera in Paris: 1800-1850*, 79.

¹⁰⁴ Duprez, *Souvenirs d'un chanteur*, 67-8.

¹⁰⁵ Quicherat, *Adolphe Nourrit: Sa vie, son talent, son caractère, sa correspondance*, Vol. II, 323-4.

¹⁰⁶ Berlioz, *La Critique Musicale*, vol. I, 231.

greenroom and the boxes. The debutant, so they said, is a cold singer, without soul, without any knowledge of dramatic art, and what is more, excessively ugly.”¹⁰⁷

Happily for Duprez, the reception of his voice was far from chilly. Edouard Monnais described the surprise of all who heard Duprez: “It is difficult, in effect, to give you an idea of this sonorous and expressive voice, of such a unique timbre, as well as of his large and knowledgable technique. The talent of M. Duprez distances itself from all comparison, and he has little to fear, for he bears no resemblance to anyone that we know.”¹⁰⁸ After Duprez’ debut, Monnais continued, “A perfectly pure, balanced, and sonorous voice, extraordinary declamation...he sings simply and powerfully, according to his means...In the third act he restored an aria cut long ago: ‘Asile héréditaire,’ and it is there that his true victory began. This aria is his property, his conquest.”¹⁰⁹ The applause at his debut was ecstatic and his wild popularity spurred a 12-year career at the Opéra. The operas Duprez premiered after his Paris debut are now largely unknown. Among them are *Les Martyrs* by Donizetti, *Benvenuto Cellini* by Berlioz, *Guido et Ginevra* by Halévy, *Le Lac des Fées* by Auber, and *Jérusalem* by Verdi. However, the lasting legacy of Duprez’ new style of singing (*voix sombrée*), and his high C “from the chest” endure today as essential elements of tenor technique.

Recitative Style

As Duprez sang his first notes in *Guillaume Tell* at the Paris Opéra, the first stunned reaction from the audience occurred. The reaction came not because of high notes, but rather to Duprez’ approach to recitative. As he began his first recitative of the opera, a murmur of confusion spread through the audience. Duprez best explains why:

I knew that I used recitative in a completely different manner than him (Nourrit) and the singers that preceded me, for it was customary to breeze through them rather than sing them: they considered them...as a stepping stone from one piece to another; I, by contrast, saw in the recitative a solid part, indispensable to the action, essential to express well, making the base of vocal pieces.¹¹⁰

¹⁰⁷ Ibid., vol. III, 111.

¹⁰⁸ Edouard Monnais, *Revue et gazette musicale de Paris*, April 16, 1837.

¹⁰⁹ Ibid., April 23, 1837.

¹¹⁰ Duprez, *Souvenirs d'un chanteur*, 137. “Je savais encore que je me servais du recitative tout autrement que lui et les chanteurs qui m’avaient precede, car il était

Considering earlier statements above concerning the importance of the word and of declamation in French singing, Duprez' quotation seems contradictory. Nourrit surely did not gloss over the recitatives and probably presented the words and expression of the recitatives in exquisite detail. Duprez, however, seems to shed further light on his approach to recitative in his 1846 *L'Art du Chant*, which was subsequently ratified by the Paris Conservatoire for use in classes, "Recitative is always sung in full voice."¹¹¹ Singing recitative in such a manner may seem natural now to most singers, but at the Paris Opéra in 1837, the technique of singing recitative in full voice was altogether novel. Nourrit and other French singers used recitative much like speech. They focused on the meaning and color of the words and thus sang them with nuance and varied inflections. Recitative would have been a vehicle for text and expression of it. Duprez, however, used recitative as another vehicle for the beauty of the voice. In other words, recitative was an extension of the aria and as such should receive the same vocal energy and continuity through full-throated singing. Duprez' use of recitative follows trends in opera, from French Grand Opera to Verdi and Wagner, which increasingly broke down sharp distinctions between recitative and arias, duets, and other set pieces, and developed varied methods for creating a greater flow of the drama.

The combination of a darker timbre, differing activity in the chest and head voice, muscular and non-muscular approaches to high notes, and use of recitative made Duprez' singing a stark contrast from that of Nourrit's. Considering all these factors, it is easy to understand the initial shock and then frenzy of the audience at his Paris Opéra debut. It ignited a debate that still rages today among voice teachers and critics about which of the two styles is healthy, correct, and "natural." Quicherat, steeped in the ways of French singing, insisted in Nourrit's 1867 biography that clear, open timbre is natural and somber, and that covered timbre is artificial.¹¹² Meanwhile, Manuel Garcia, Jr., with his

d'usage alors de le débiter plutôt que de le chanter: on le considerait...comme une passerelle pour aller d'un morceau à un autre; moi, au contraire, je voyais dans le récit la partie solide, indispensable à l'action, essentielle à bien exprimer, servant de base au morceau vocal."

¹¹¹ Roudet, ed. *Les grandes méthodes romantiques de chant*, Vol. III, 222. "Le récit se chante toujours sur le plein de la voix."

¹¹² Quicherat, *Adolphe Nourrit: Sa vie, son talent, son caractère, sa correspondance*, Vol. III, 398-401.

newly invented laryngoscope (circa 1854), proposed that somber timbre is the most healthy and efficient for vocal beauty. Recent studies seem to confirm Garcia's assertions about the use of *voix sombrée* and justify its continued use on the modern opera stage.

Chapter 6

Nourrit's Quest for the *Voix sombrée*

Adolphe Nourrit, excited at the prospect of a new start, left France for Italy at the end of December 1837. He began touring through Italy for the first few months, lingering especially in Milan, where he sang at Rossini's salon to thunderous applause. The effect of his performance was so great that, months later, La Scala offered him a contract, though Nourrit thought it a disadvantageous position. They did not offer enough money and the theater already had a *tenore di forza*, the powerful Domenico Donzelli. Nourrit would be offered only the light tenor comic and lover roles, and he could not accept such an arrangement. Additionally, Nourrit's true purpose in coming to Italy was not just to start a new career elsewhere. As stated above, his ultimate goal was the achievement of the same type of voice brought back to France by Duprez. Nourrit hoped that with his artistry, combined with a powerful vocal delivery, he could return triumphant to France as the perfect artist. His was an ideal vision for an idealistic man.

And so, Nourrit eventually made his way to Naples, where he began vocal studies in March 1838 with Donizetti. He writes to his wife, Adèle, "Nothing will impede me from going forward; I burn my ships, I forget my past glory, my position as professor, my place as the top French singer. I start afresh with my career; I learn as someone who has everything to learn, and, in order to become great, I do not fear to make myself very small...What I know, I will recover later."¹¹³ Nevertheless, reworking his vocal technique proved more difficult than he imagined. During daily lessons with Donizetti, Nourrit worked immediately at eliminating nasal sounds, saying that in his career, "rather than sacrifice the word, I have sacrificed the quality of tone."¹¹⁴ He further explains, "I

¹¹³ Ibid., Vol. III, 156-7. "Rien ne va plus me coûter pour aller en avant; je brûle mes vaisseaux, j'oublie mon passé de gloire, ma position de professeur, ma place de premier chanteur français. Je recommence ma carrière; j'étudie comme quelqu'un qui aurait tout à apprendre, et, afin de devenir plus grand, je ne crains pas de me faire petit, petit...Ce que je sais se retrouvera plus tard."

¹¹⁴ Ibid., Vol. III, 168. "Plutôt que de sacrifier le mot, il m'est toujours arrivé de sacrifier la qualité de la voix." This assessment seems to confirm Duprez' statement about Nourrit's treatment of recitative on page 37.

have had to put aside certain qualities to which we are very attached in France, and which are not desired in Italy. We sing the way we speak, with our lips taut and a certain restraint, which in France is considered good form. Here everything is on the surface, everything is sonorous, all is music, even the language.”¹¹⁵ Madame Garcia, the wife of Manuel Garcia, Jr. who was also in Italy at the time, warned Nourrit that it would take him at least three or four months to rid himself of his nasal sounds and his French accent while singing, and so he knew there was no time to waste. Donizetti spared no criticism and let nothing go during their lessons and Nourrit quickly came face to face with his weaknesses. Not long after Nourrit arrived in Naples, Domenico Barbaja (1778-1841), the impresario of the Teatro di San Carlo, offered to open the theater and put on *Guillaume Tell* for Nourrit. However, Nourrit, now very focused on his shortcomings, no longer felt confident that he could sing the role, especially in Italian.

As he developed the new Italian style of singing with Donizetti, Nourrit lost his ability to sing in his old French manner. He therefore left behind all the nuances and mannerisms in singing that made his art unique. He warned his wife that his voice was no longer the same and that she may be shocked at its new tone. “I am no longer the *tenore tenore*, the lover with the sweet voice: I am a man arriving at the strength of age, with more masculine accents, a steadier bearing, more energetic passions, and greater power.”¹¹⁶

His wife arrived in Naples and, upon hearing her husband sing, tried to be encouraging. Eventually, she could not hide her dislike of the changes in his voice, “That voice so pure, so varied in its inflections, is no longer the same: in strength it is beautiful and full of timbre; but outside of strength, it seems broken. The impression I have is such that I close all the doors so as not to hear...I believed Adolphe would bring his qualities to Italy, thinking they would gloss over his faults; but I didn’t understand that he would

¹¹⁵ Ibid., Vol. III, 180. “J’ai dû mettre du côté certaines qualités auxquelles nous tenons en France, et qui sont mesquines pour l’Italie. Nous chantons comme nous parlons, avec les lèvres serrées et une certaine retenue qui constitue en France le bon ton. Ici tout est en dehors, tout est sonore, tout est musique, même le langage.”

¹¹⁶ Ibid., Vol. III, 240. “Je ne suis plus le *tenore tenore*, l’amoureux à la voix douceuse: je suis l’homme arrive à la force de l’âge, dont les accents doivent être plus mâles, la tenue plus posée, les passions plus énergiques et la puissance plus grande.”

transform himself.”¹¹⁷ Originally, Nourrit seemed encouraged and excited about his progress with Donizetti, but after his wife’s arrival and the censure of *Poliuto*,¹¹⁸ a Donizetti opera written for Nourrit’s debut at the Teatro di San Carlo, his excitement turned to discouragement. Many of the Parisian operas that had cemented his fame, such as *La Juive* and *Les Huguenots*, could not be performed in Naples because of the censors. His mixed and head voice disappeared and, coming face to face with his limitations and lack of success after only seven months of study, Nourrit decided he had made a mistake and tried to turn back and regain his “French” voice. He forsook the new Italian style he had been studying and plunged himself into anxieties and doubts, cursing himself for having given up what he did best. He exclaimed, “I have sinned through an excess of humility. I denied my gods, and I am punished.”¹¹⁹ He admitted to being tormented in his head, but insisted on pushing forward.

Attempting to regain his old style of singing, Nourrit found success and great critical acclaim in Mercadante’s *Il giuramento* at the Teatro di San Carlo in 1938. However, he found situations in Italian theaters well beyond his liking because of excessive rehearsal and performance demands, requiring him to sing every day in a rehearsal or performance, and he was frustrated by the few roles in the Italian theatres that fit his voice. Eventually, he realized that he could not regain his old French style. Madame Nourrit relates first, “He has renounced the *voix sombrée* that he sought, and

¹¹⁷ Ibid., Vol. III, 406. “Cette voix si pure, si variée dans ses inflexions, n’est plus la même: dans sa force, elle est belle et bien timbre; mais hors de la force, elle semble cassée, brisée. L’impression que j’éprouve est telle que je ferme toutes les portes pour ne pas entendre...J’avais cru qu’Adolphe devait apporter en Italie ses qualités, pensant qu’elles devaient faire passer ses défauts; mais je n’avais point compris qu’il dût se transformer.”

¹¹⁸ Neapolitan censors banned the opera from being staged because of its depictions of Christianity, even when portraying religion in a positive light. Nourrit wrote to Cherubini about his frustration with censors and the theater in Naples, “one cannot speak of God or of the devil; all patriotic sentiment is forbidden; love is only wanted under certain conditions; the kings and queens must never have any weakness, cannot be sad, and do not have the right to be evil; husbands can love none but their wives. Now, make dramas, make operas!” Julien Tiersot, ed. *Lettres de musiciens écrites en français du XVe au XXe siècle* (Turin: Bocca Frères, 1924), 260.

¹¹⁹ Quicherat, *Adolphe Nourrit: Sa vie, son talent, son caractère, sa correspondance*, Vol. III, 292. “J’ai péché par excès d’humilité; j’ai renié mes dieux, et j’en sui puni.”

struggles to return to the same place he was upon his arrival in Naples.”¹²⁰ She later writes to her brother, “Adolphe has seen the drawbacks of the system which Donizetti had him adopt: he wanted to return to his old ways, but *he can’t*: his voice is lacking; no more head voice, no more half-voice. He is obliged to leave out certain notes in head voice that he had placed in the role of *Il giuramento*, and he can’t sing those that are naturally written in the role of Pollione...Adolphe forces his voice; he darkens it, as Donizetti asked him to do.”¹²¹ It is telling that Adèle insists that Nourrit is darkening his voice even when he speaks of attempting to return to his old technique, demonstrating Nourrit’s struggle to sing. Unable to go back to his old “French” technique, he has no recourse but to return to Donizetti’s teachings.

Nourrit’s anxieties turned to severe depression and soon any expressions of admiration from others inspired terror in him and the belief that he could not measure up to their hopes. His depression grew until he was convinced he would have to soon be committed to a madhouse, and his voice became as inconsistent as his mental state. It is possible that a liver ailment, identified in his autopsy, could have caused or at least augmented Nourrit’s mental distress and even possibly his recurring hoarseness. Quicherat and the doctors whom he knew insisted the liver ailment was the source of all Nourrit’s troubles. I would contend that he would have faced the same trials and decisions even without his sickness, and I believe Nourrit’s unrelenting desire for improvement and perfection might have led him to the same end. Nourrit resolved to return to Paris, but he still had singing obligations to fulfill. Depressed, heartbroken, and ill, the night after a benefit concert, he went to the top of his apartment before dawn and threw himself to his death on March 8, 1839.¹²² Within a year of Nourrit’s death, his

¹²⁰ Ibid., Vol. III, 408. “Il a renoncé à la voix sombrée, qu’il avait cherchée, et tâche à se remettre au point où il était en arrivant à Naples.”

¹²¹ Ibid., Vol. III, 408-9. “Adolphe a senti les inconvenients du système que Donizetti lui avait fait adopter: il a voulu revenir au sien, mais *il ne le peut pas*: la voix lui manqué; plus de voix de tête, plus de demi-voix. Il est obligé d’ôter les quelques notes de voix de tête qu’il avait places dans le rôle du *Giuramento*, et il ne peut faire celles qui se trouvent naturellement et qui sont écrites dans le rôle de Pollion...Adolphe force la voix; il la somber, ainsi que le demandait Donizetti.”

¹²² Fétis claimed that Madame Garcia, the mother of Maria Malibran, was staying in the same villa as Nourrit, and believed his death was an accident. “In the hallway at the top of the house where Nourrit had climbed without a light to relieve himself, there were

brother, wife, and a son born in July of that year would all die. What could have precipitated such a sorry ending to an otherwise brilliant career? Nourrit probably could have continued his career in Paris, sharing the tenor roles with Duprez. However, Nourrit saw that Duprez' singing was so different and dramatic in sound that Duprez would soon take over all the dramatic roles to which Nourrit felt best suited. Singing had begun to change and Nourrit experienced it first-hand touring through Italy. He must adapt or fail, and in the end, he could not accept failure.

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many doors and a window that opened at the level of the floor. She thought that he made a mistake, believing he was opening the door to the bathroom where he was going, and that he unexpectedly fell to the street.” Fétis, *Biographie universelle des musiciens et bibliographie générale de la musique*, 337.

Part II

The Technique of *Voix sombrée* and the *Ut de poitrine*

Chapter 7

The *Ut de poitrine*

The historical record reveals that Duprez' use of the *voix sombrée* created a voice that sounded very different from that of Nourrit. Upon hearing Duprez sing, Nourrit knew that he must also obtain this new technique and set off for Italy to do so. Generic descriptions of tenor voices from the 1830's supply a very elementary understanding of the differences between the old Italian and French styles of singing, and the new Italian style used by Donzelli and further developed by Duprez. Why did Nourrit leave his family and his position to pursue a new style of vocalization? And why has the vocal technique popularized by Duprez become the standard of professional operatic tenor singing? Did Duprez truly sing a pure chest voice high C? The following chapters demonstrate the acoustical and physiological changes that occurred with the introduction of more powerful singing, and reveal the advantages that tenors enjoyed by using the *voix sombrée* and *ut de poitrine*. These benefits included a high level of singer's formant, healthier vocalization in the high range, greater emotional stimulation in their audience, and a more powerful, strident sound. However, these characteristics were sometimes gained at the expense of flexibility and ease of vocalization, especially in the highest register of the voice. The studies that follow illustrate how different the voices of Nourrit and Duprez must have sounded and why tenors in France¹²³ and Italy began to pursue the sounds of Donzelli and Duprez in their own voices.

One of the great legends at the center of the Nourrit-Duprez story concerns the *ut de poitrine*, or "high C from the chest." Those who attended Duprez' 1837 Paris debut did not mention a chest voice high C. Many mentioned the "Suivez-moi" passage as inciting rapturous applause, but only later was the *ut de poitrine* ever mentioned.

¹²³ Henri Blanchard, "Duprez," *Revue et gazette musicale de France*, November 8, 1840.

However, Berlioz wrote, “The second act trio arrives, and we heard with surprise almost equal to the rest of the audience, who did not yet know Duprez, the audacious artist sing *in chest voice, accenting each syllable*, the high B naturals of the andante, “Ô ciel! ô ciel! je ne te verrai plus!” with a force of resonance, a heartrendingly sorrowful accent and a beauty of sound of which nothing to the present day had ever given us any idea...for on the entrance: “Suivez-moi!” at this prodigious enharmonic gruppetto, thrown, still in chest voice, from g-sharp to g-natural, by the tireless singer, shouts which nothing could contain covered, almost to the end of the scene, the choir, the orchestra and Duprez himself, that one could no longer hear him.”¹²⁴ It is clear that something about his approach to the high notes differed from former tenors. In describing the premiere of *Guillaume Tell* in 1829, Fétis commented on Nourrit’s singing of the fourth act, “It starts with a superb air sung by Ad. Nourrit, followed by an active chorus of greatest beauty. It is easy to see in the final cadence of this *aria con cori* that the composer made a sacrifice in the final hours of rehearsal, for the principal phrase is only given one time. The public warmly applauded with enthusiasm this beautiful section.”¹²⁵ Fétis’ description of “beauty” does not seem to match the excitement and rapture of those who heard Duprez in the same passage. In Rossini’s reaction to Duprez’ singing during a visit in 1837, he praised his delivery, but he clearly disliked the sound and impact of the high C from the “Suivez-moi” passage of *Guillaume Tell*:

He sang to me most magnificently, I must confess, many passages of my opera; but, at the approach of “Suivez-moi,” I experienced the same apprehension that certain people feel at the scheduled moment of a cannon burst. At the end the famous C exploded. What a noise! I got up from the piano and hurriedly went to a cabinet full of Venetian delicacies... The tenor seemed satisfied with my exclamation, taking it for a compliment in my manner. “So, maestro, you like the C? Tell me sincerely.” “Sincerely! That which pleases me most about your C is that it is finished and I don’t run the risk of hearing it again. I don’t like at all its unnatural effect, and this C, with its strident timbre, hurts my Italian ears, like the squawk of a capon as its throat is cut.”¹²⁶

¹²⁴ Berlioz, *La Critique Musicale*, vol. III, 115.

¹²⁵ *Revue musicale*, August 3, 1829.

¹²⁶ Marco Beghelli, “Il do di petto: Dissacrazione di un muto,” *Il saggiautore musicale: Rivista semestrale di musicologia* 3, no. 1 (1996): 126.

Was Duprez' famous high C really in chest voice?¹²⁷ The answer probably lies in how one defines the term "chest voice." A professional tenor would be extremely hard pressed to produce a C⁵ (523Hz) with the same internal laryngeal muscular configuration as a G³ (196Hz). The result would most likely be painful for both the singer and the listener. Duprez himself possibly discredits the notion of a full chest high C as a viable technique in his *L'Art du chant*. In explaining ranges and registers in the tenor voice, Duprez used the following illustration (note the tenor clef):

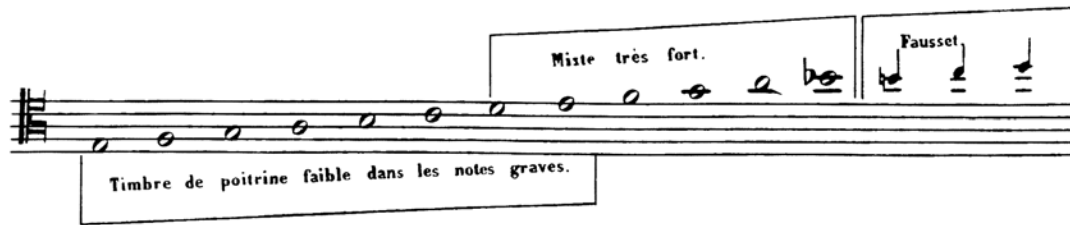


Figure 7.1 Gilbert Duprez' explanation of tenor registers in his *L'Art du chant*.

He labels all notes near and above the *passaggio* (D⁴ to B-flat⁴) as "very strong mixed voice" ("Mixte très fort") and above that as "falsetto" ("Fausset"). He says also that some tenor voices can cover their whole range in "chest voice" but that it is very rare. He states that the ability belonged to "southern singers" (perhaps Italian singers), formerly known as *hautes-contres*.¹²⁸ According to Edgardo Carducci, these were rare singers with vocal folds measuring about 15mm to 17mm, about the length of those of a pre-pubescent boy.¹²⁹ Again, from a writer in 1930, Carducci's statement seems to be pure conjecture. The majority of tenor voices would not have had these physical characteristics or have a pure chest voice up to the top of their range.

Instead of producing a high C in pure chest voice, Duprez' breakthrough was

¹²⁷ Some have questioned if the first *Ut de poitrine* was really a high C because of varying pitch standards in Europe. However, by 1823, pitch standards in Paris had risen to a=434 and sometimes a=440. (Bruce Haynes and Peter Cooke, "Pitch," *Grove Music Online*, ed. by L. Macy, March 6, 2009.) Even if the pitch standards had been as much as a half-step lower, the high B natural [B⁴] would have been above the tenor *secondo passaggio*, the highest register change in the tenor voice. The tones sung at B⁴ and C⁵ would be produced in the same manner by the singer and thus, sung in a "chest voice" by Duprez, would be equally astounding to the Paris Opéra audience of 1837. It is the high C that has received all the publicity, despite the equal challenge of a high B.

¹²⁸ Roudet, ed. *Les grandes méthodes romantiques de chant*, Vol. III, 101.

¹²⁹ Carducci, "The Tenor Voice," 321.

probably a matter of changing resonance (*voix sombrée*) and changing balance in internal laryngeal muscular activity. In the larynx, two muscular antagonists help govern the level of chest voice and head voice in the sound. The chest voice signals greater activity in the thyroarytenoid muscle, the muscle of strength in the larynx that makes up the main body of the vocal folds, whereas the head voice signals greater activity in the cricothyroid muscle, which pulls the thyroid cartilage forward and stretches the vocal folds. Duprez' increased use of chest voice in his entire range signaled a marked departure from Nourrit's extensive use of head voice. When also considering the implications of the differing thyroarytenoid and cricothyroid muscle activity involved in these two styles of singing, one can understand the shock of the Parisian audience.

The sound produced when one muscle group is used extensively over another is very different in quality and volume. Ingo Titze explains, "Consider the case where the vocalis (internal thyroarytenoid) muscle contracts and the cricothyroid muscle remains inactive. The length will decrease, resulting in a decrease of the stiffness of the cover. But the stiffness of the body of the folds may in fact increase...As the folds are shortened, the passive layers become more lax."¹³⁰ Thus, the contraction of the vocalis muscle as well as the loose cover of the folds creates a more complete and thicker closure of the folds. The full, thick closure and the subsequent opening of the vocal folds create a rich, full sound spectrum because of the lower rate of decay in the harmonics of the sound. The "chest voice" sound that such a production creates is rich and loud, but also can be unwieldy and muscular. In contrast, "Consider the case where the cricothyroid muscle contracts and the vocalis muscle is not active. The vocal folds will lengthen, the effective stiffness of all the vocal fold tissue layers will increase, and the fundamental frequency will increase."¹³¹ Though the inner muscle layer is loose as the cricothyroid action dominates, the outer tissue layers of the folds stiffen, resulting in a smaller area of closure. A lighter "head voice" production creates a sound that is not as loud or rich but is much more flexible and easy. In "head voice" phonation only the top edges of the vocal folds come into contact during phonation. However, with increased levels of

¹³⁰ Ingo Titze, "What Determines the Elastic Properties of the Vocal Folds and How Important are They?," *The NATS Bulletin* 38, no. 1 (September 1981): 30-1.

¹³¹ *Ibid.*

vocalis muscle activity (chest voice), greater closure of the bottom of the vocal folds occurs. Greater closure of the folds, and their subsequent open phase, in turn excites more upper harmonics and the voice “fills out” and becomes more powerful.¹³² If one assumes that Duprez sang the high notes with the heavier production of the active vocalis muscles and Nourrit sang with lighter cricothyroid action, the difference in their voices would have been dramatic with Duprez’ voice containing a much greater level of singer’s formant.

The Singer’s Formant

Since many of the studies used in this paper speak of the singer’s formant as an important factor in singing and the measurement of singing, an introduction to this voice characteristic would be helpful. All singers and speakers generate sound through vocal fold oscillation. The vocal folds are adducted or brought close together and rising air pressure from the lungs blows the folds apart. The negative pressure resulting from the opening of the folds, as well as the natural elasticity of the vocal folds, causes them to rebound and close, at which point the cycle begins again as the folds are once more blown apart. The combined elements of air pressure and muscular activity control the level of vocal fold closure, intensity, and pitch created from the folds. A sound spectrum emanates from the vocal folds in a raw form, containing a fundamental frequency [F_0] and a series of ascending harmonics.



Figure 7.2 The sound source spectrum.

These make up the *voice source spectrum*. If one heard the raw sound originating from the larynx, he or she might perceive a pitched buzzing sound with little to characterize it. Additionally, one hears the fundamental frequency most strongly because the harmonics

¹³² Ingo Titze, "Voice Research and Technology: About Vocal Fold Thinning," *Journal of Singing: The Official Journal of the National Association of Teachers of Singing* 62, no. 4 (2006): 435.

in a sound fall off in intensity at an average rate of 12 dB per octave.¹³³ A spectrum of a sound source, including average falloff, would look something like this:

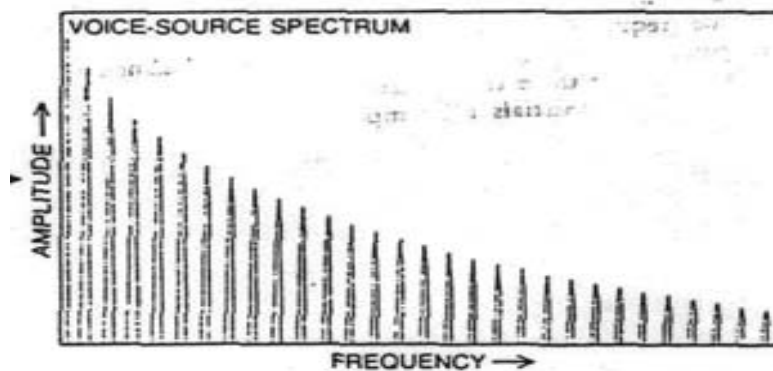


Figure 7.3 Average harmonic falloff.

However, the sound source is shaped by the space in which it resonates and the pattern of resonance allows us to distinguish timbre and type of instrument. The vocal tract, comprising the epilaryngeal tube, the pharynx, the oral cavity, and nasal cavity, naturally resonates at certain frequencies called *formants*. If frequencies of the harmonics in the voice source spectrum line up with formant frequencies, that is, the frequencies at which the vocal tract naturally resonates, those frequencies are amplified, or boosted in amplitude. Thus, ideal resonance is achieved in a voice or instrument when resonance formants align with source spectrum harmonic frequencies. Aligning formants with harmonic frequencies is called “formant tuning.” With these new boosts in resonance, the spectrum would now look like this:

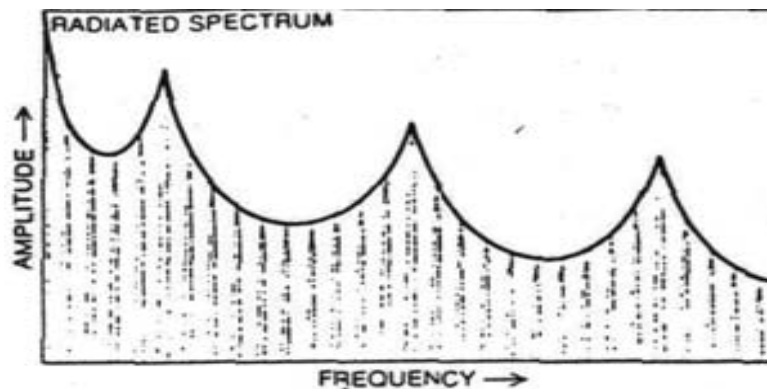


Figure 7.4 Sound source shaped by the formants.

¹³³ Johan Sundberg, *The Science of the Singing Voice* (DeKalb, Ill.: Northern Illinois University Press, 1987), 63-5.

The formants in the voice originate from different areas of the vocal tract and thus serve different purposes. The fundamental frequency $[F_0]$ is the main pitch heard and is derived from the oscillating vocal folds, also called the source. Formants one and two, $[F_1]$ and $[F_2]$, are called the vowel formants because their modification forms recognizable vowels. As the tongue, lips, and jaw move to change the shape of the oral cavity, these formants shift in resonating frequency as well. For example, a sound with a first formant $[F_1]$ of 250 Hz and a second formant $[F_2]$ of 2500 Hz would be perceived as an “ee” [i] vowel. Conversely, a sound with an $[F_1]$ of 250 Hz and an $[F_2]$ of 700 Hz would be perceived as an “oo” [u] vowel. Again, if these formants are lined up with natural harmonics produced by the source (the vocal folds), they receive a boost in amplitude. A professional opera singer would obviously desire the boost in power from formant tuning to be better heard over an orchestra in a concert hall. Sadly for the singer, the orchestra sound contains resonance peaks in those same frequencies and the singer is consequently covered up by the sound of a large, loud orchestra. Hence, an extra resonance peak is needed for a singer to be heard.

Finally, we come to the mystery of extraordinary resonance that characterizes heroic-sounding male voices such as those of Donzelli or Duprez. The third formant $[F_3]$ is proposed by some to be produced near the tip of the tongue, but is generally accepted as being produced in the laryngeal tube. The third formant usually remains about the same frequency near 2500-3200 Hz. The fourth and fifth formants $[F_4]$ and $[F_5]$ originate from a small space just above the vocal folds called the epilaryngeal tube.¹³⁴ If the epilaryngeal tube is enlarged by widening the lower part of the pharynx or by lowering the larynx, the frequencies of these formants dip. If the frequency of $[F_4]$ and $[F_5]$ are lowered enough, they can approach each other and even join with $[F_3]$ to create an extra boost in amplitude. The bunching of higher formants is commonly called the “singer’s formant.”

¹³⁴ Ingo Titze and Sung Min Jin, "Is There Evidence of a Second Singer's Formant?," *Journal of Singing: The Official Journal of the National Association of Teachers of Singing* 59, no. 4 (March/April 2003): 329.

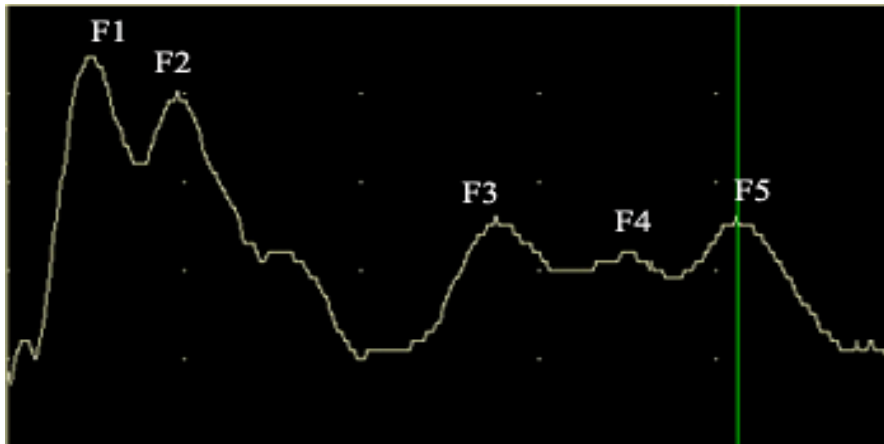


Figure 7.5 Spectrogram showing the amplitude of all 5 separated formants.

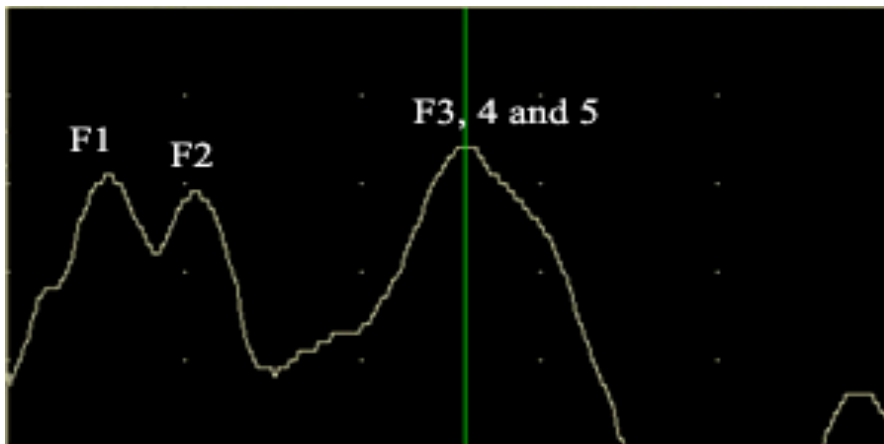


Figure 7.6 Example of a boosted "singer's formant," which in combination is louder in amplitude than the two vowel formants.

A singer's ability to produce the singer's formant is essential because the orchestra sound decays more rapidly at frequencies above 2000 Hz, as can be seen in the illustration below.

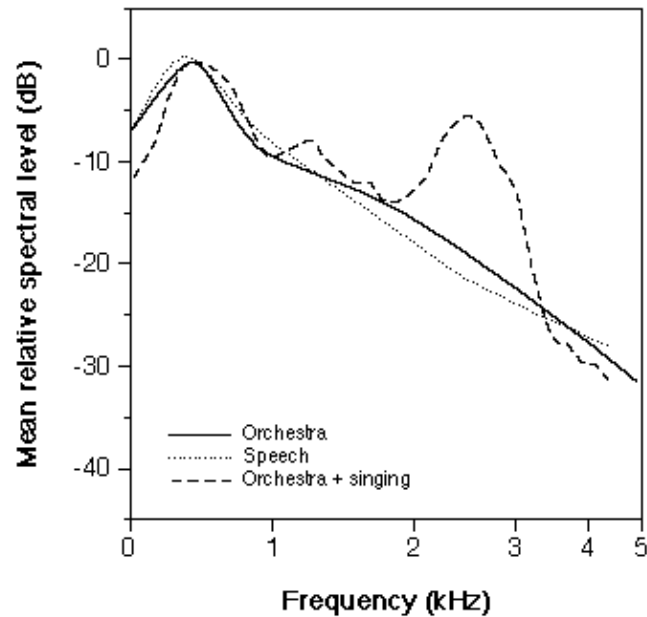


Figure 7.7 Average spectral decay overlaid with the singer's formant.

The production of the singer's formant is essential to male operatic voices and in some ranges of the mezzo soprano voice, but not necessarily for sopranos, as their smaller anatomy does not allow a singer's formant to be produced in the same way with a grouping of formants. Instead, frequencies in the soprano voice are pitched higher and thus the falloff near 3000 Hz is not as drastic as in the male voice. For the male voice, the singer's formant frequencies serve to project the voice with frequencies around 3000 Hz, which in turn enlarge the sound of the voice, adding a sort of metallic timbre to the sound.

Chest and Head Voice

In examining the demonstration of a new technique in tenor singing at Duprez' debut at the Paris Opéra in 1837, one is led to ask, "Why did one technique begin to dominate among the singing of tenors in the first half of the nineteenth century?" The answers lie within the works themselves written for these voices. The dominance of head voice or falsetto singing persisted for both social and artistic reasons. Audiences of the late eighteenth-century prized the singing legacy of the castrati: a highly ornamented, flexible, graceful, mannered style. The small larynges of the castrati and their honed technique allowed for sweet, lyrical passages, alternating with brilliant coloratura. Their

virtuosic prowess drew fanatic admiration from the public, comparable to the adoration that Paganini (1782-1840) received at the beginning of the nineteenth century. As tenors inherited the lead roles of opera, demands for the same virtuosity often fell to them. To sing the florid operatic roles of Rossini, Meyerbeer, Bellini, and Donizetti, tenors utilized a light, flexible technique, allowing them to sing extended high, virtuosic passages.

Such graceful, light singing activated the cricothyroid muscles of the head voice and stretched the vocal folds. Combined with relaxation in the vocalis muscle, high passages and coloratura passages could be sustained for long periods of time. (This is the classic definition of falsetto, in which the vocalis is passive and the cricothyroid is active.) The lower subglottal pressure required in the head voice also allowed a greater management of breath, meaning singers could sing longer extended passages, another hallmark of the castrati.

As the nineteenth century progressed, Romanticism and its focus on emotion and heroism began to take the place of the Enlightenment emphasis on rationalism. The public's desire began to shift to larger spectacles and lavish, historically-based productions with tragic heroes and doomed heroines. As plot situations intensified in Italian and French operas and composers began to write in a more dramatic style, singers like Donzelli and Duprez began to find more realistic means to portray their roles. Their vocal production probably involved a much greater level of thyroarytenoid (chest voice) activity in the larynx, creating a larger and heavier sound. Scientific studies of the past 50 years seem to support the previous conclusions of how vocalization changed, showing the effects of internal laryngeal muscle activity on phonation.

In the 1980's, Minoru Hirano and his collaborators performed an acoustic study of tenor sound production, and they discovered a significant drop in energy (measured in decibels) from chest/head voice to speaking voice to falsetto, with chest/head voice being of greater intensity and falsetto being of lower intensity. In addition, their study found a much higher level of gross spectral decay in falsetto singing than in chest/head voice.

All these imply that (a) in falsetto, higher harmonics including those in the singing formant range and the high frequency range were weak; (b) in head/chest, harmonics in singing formant range were markedly strong...the heavier the register is, the greater the energy of higher harmonics. Vocal fold vibrations in the heavy register (are) associated

with a fairly long closed phase and a steep slope of closing. These factors cause rich higher harmonics. As the register becomes lighter, the closed phase becomes shorter and the closing slope becomes less steep, resulting in poorer harmonics.¹³⁵

More recently, Johan Sundberg, using inverse filtering, confirmed a longer closed phase in chest/modal voice as compared to falsetto, the result of fuller contact of the vocal folds, creating a stronger signal. Conversely, the smaller contact area of falsetto voice creates a weaker fundamental signal (f_0).¹³⁶ Lindestad also found greater levels of medial vocal fold compression in modal voice as compared to falsetto.¹³⁷ Bloothoof¹³⁸ reported that the singer's formant increases with vocal intensity and decreases with increasing pitch. The increase of singer's formant occurs because higher vocal intensity requires a larger change of glottal volume velocity at the closure of the glottis (and a longer closed phase), which enhances the higher harmonics of the sound source. However, increasing pitch (F_0) requires reduced glottal volume velocity (and vocal fold mass), which means less enhancement of the higher harmonics. In general, the singer's formant is stronger in the male voice than in the female voice, and the falsetto voice is weaker in singer's formant than the male modal (or chest) voice.¹³⁹

These studies seem to confirm that Duprez' quest to create a more dramatic sound included a greater use of chest voice function in the high register. When considering the acoustical advantages he gained by doing so, it is not difficult to understand the reaction of the Parisian audience at his debut. By creating a sound with less spectral decay, his voice became richer in higher harmonics. The chart below demonstrates the acoustical differences between voices using varying levels of head and chest registers, with those

¹³⁵ Minoru Hirano; Seishi Hibi; Tomoaki Sanada, "Falsetto, Head/Chest, and Speech Mode: An Acoustic Study with Three Tenors," *Journal of Voice* 3, no. 2 (1989): 101, 03.

¹³⁶ Johan Sundberg, "Research on the Singing Voice in Retrospect," *The Royal Institute of Technology (KTH) - Speech, Music and Hearing Quarterly Progress and Status Report* 45, no. 1 (2003): 18.

¹³⁷ Per-Ake Lindestad and Maria Sodersten, "Laryngeal and Pharyngeal Behavior in Countertenor and Baritone Singing - A Videofiberscopic Study," *Journal of Voice* 2, no. 2 (1988): 138.

¹³⁸ Gerrit Bloothoof and Reinier Plomp, "The Sound Level of the Singer's Formant in Professional Singing," *The Journal of the Acoustical Society of America* 79, no. 6 (1986).

¹³⁹ Ibid.

using larger levels of chest voice experiencing a more gradual falloff in the decibels of higher harmonics from the sound source (the voice).

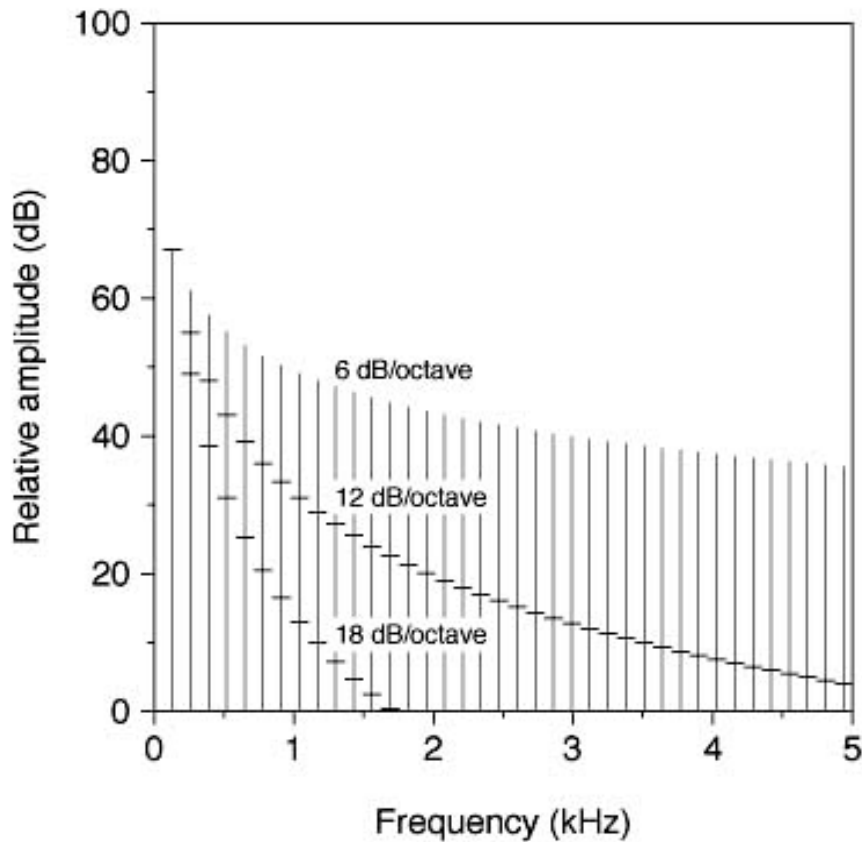


Figure 7.8 Differing spectral slopes reflecting timbres from “brassy” (the top line) to “fluty” (the bottom line).

Ingo Titze explains, “Spectral slope influences the timbre of the sound. A spectral slope of around 6 dB/octave, the least severe slope in the graph, results in stronger high frequencies, which yield a more 'brassy' or strident sound. The middle slope depicted, 12 dB/octave, is that of a normal vocal quality. The most extreme slope shown, 18 dB/octave, would result in a more 'fluty' sound; it has stronger low frequencies, as compared to the higher ones, which rapidly drop off in strength.”¹⁴⁰ Thus, Duprez’ voice, which would have been closer to the top 6 dB/octave falloff, would have sounded both

¹⁴⁰ National Center for Voice and Speech, "Graphing Phonation: Waves & Spectra," <http://www.ncvs.org/ncvs/tutorials/voiceprod/tutorial/graphing.html>, April 25, 2007.

darker and much brighter at the same time (*chiaroscuro*). The science seems to correspond with recorded descriptions of Duprez' loud, brassy, stentorian voice. Duprez' vocal production must have seemed a marked difference from the flutier sounding tenors of the day, especially in the higher ranges of the voice.

The previously cited studies raise another very important question. According to the studies, the falsetto register or full head voice produces some acute acoustical disadvantages. How, then, could Rubini and Nourrit make themselves heard over a full orchestra in a 2,000-3,000 seat theater¹⁴¹ if they sang in a falsetto upper register? How could the fluty sound, reported even in the high voice of Donzelli, compete in the opera house? The makeup of the orchestra might have provided some relief to the singer. String players still often used gut strings as opposed to the metal in today's instruments. Additionally, the acoustics of the Salle le Peletier were said to be phenomenal. However, opera singers still needed to project in a large theater. The singing of modern countertenors may demonstrate how greater projection was possible.

In a study of falsetto voice characteristics, Welch, Sergeant, and MacCurtain¹⁴² reported an interesting occurrence. It is generally held that in male falsetto voice, full closure of the vocal folds is not attained, meaning they do not come fully into contact along their edges during phonation. However, in Welch, Sergeant, and MacCurtain's study, electrolaryngographic analysis revealed a relatively long closed phase in all countertenor subjects. "We suggest that this may be construed as support for the notion that training and use can modify the soft-tissue contact within the falsetto register, and that such modifications may incorporate complete glottal closure...through training and consistent use, these countertenors have transformed their 'falsetto' register into their 'modal' register." The transformation of their falsetto register would dramatically increase the volume of the fundamental (F_0), as well as the higher harmonics of the sound, creating a strong, more resonant sound, albeit in falsetto. With the 200-year-old debate around the terminology of the head voice and falsetto voice, perhaps a clearer,

¹⁴¹ From 1790 to 1820, the Paris Opéra performed in the theater on the Rue de Richelieu which seated about 1,700 people. Then, from 1821 to 1873, the Opéra moved to the Salle le Peletier which accommodated about 2,200. The Teatro di San Carlo seated 3,300.

¹⁴² G. F. Welch; D. C. Sergeant; F. MacCurtain, "Some Physical Characteristics of the Male Falsetto Voice," *Journal of Voice* 2, no. 2 (1988): 160-2.

standardized definition would be helpful to singers and pedagogues. When the cricothyroid is active as in falsetto and there is vocal fold closure because of thyroarytenoid activity, this could be termed “head voice,” whereas phonation without glottal closure and with decreased engagement of the thyroarytenoid muscle would be “falsetto.”¹⁴³

Another study demonstrated a method to increase resonance in the “falsetto” voice. Lindestad and Södersten found that countertenors widened their pharynx, especially when increasing in volume. Widening of the lower pharynx seems in accordance with the method of creating a singer’s formant. Therefore, countertenors begin with a relatively weak register (falsetto) and strengthen it through developing vocal fold closure during phonation and a widening of the lower pharynx, thus enhancing the harmonics produced by the vocal folds to produce a singer’s formant. The result is a clear, flexible instrument, free of the noisy and erratic characteristics of an undeveloped falsetto. One might assume that singers like Rubini, Nozzari, David, and Nourrit would have developed these traits in their voices, aiding projection in the high register. Specialized training of the high voice seems especially probable because of the amount of emphasis placed on developing the head voice in the old Italian method of *bel canto*.

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¹⁴³ Kitzing effectively demonstrates glottal closure in falsetto function in a 1982 study. P. Kitzing, "Photo- and Electroglottographical Recording of the Laryngeal Vibratory Pattern During Different Registers," *Folia Phoniatrica* 34 (1982).

Chapter 8

Tenor Role Analysis

Perhaps the best proof of the level of thyroarytenoid versus cricothyroid muscle usage by Nourrit and Duprez can be seen in the music written for their voices. A voice produced with a high level of cricothyroid activity, hence a lighter mechanism, should be more flexible and able to sustain a higher tessitura since the muscles governing head voice are those that dominate. Conversely, a voice produced with greater levels of thyroarytenoid activity, particularly in the vocalis muscle, should prove more unwieldy. The cost of heavier production at the vocal fold level is reduced flexibility in vocalization. Additionally, tension in the vocalis muscle at high pitches cannot be sustained for long periods of time. These vocal limitations should manifest themselves in the roles written for Nourrit and Duprez. If it is true that Nourrit sang with more falsetto activity in the high voice and Duprez utilized more chest voice function in his high notes, then the tessitura (or average pitch level) for Nourrit's roles should be higher, and the number of high notes written for his voice should be greater.

A symbiotic relationship has always existed between singer and composer in the composition of an opera, and it was even more so in the nineteenth century than today. Singers from the beginning of opera have sought ways to enhance and suit their voices to the role written by the composer. A wholesale modification in timbre, such as the institution of *voix sombrée* by Duprez, is an extreme example of this change as he sought to make the role of Arnold more heroic and masculine. Previous to the 1830's, a singer would more often ornament his/her vocal part, adding roulades, appoggiaturas, and other modifications during the performance in an attempt to enhance the words and melody, as well as to exhibit his/her technical prowess. The singer understood his/her responsibility to ornament and the composer wrote to showcase a singer's talents. Rossini, desiring to exercise some control over the performance of his music, began writing out the ornaments for his singers. He declared, "So I say to you that the good singer, to fulfill his rôle, must be none other than the skillful *interpreter* of the designs of the master composer, seeking to express them with the appropriate efficacy and show them in the

appropriate light. The players must be no more than accurate *executants* of that which is on the page before them. In the end the composer and the poet are the only real creators.”¹⁴⁴ Composers continued to increase their control over the music written for a singer and its interpretation, as expressed by Berlioz in *Evenings with the Orchestra*:

When you accept a new role, do not allow yourself to make any changes in it except by the author’s leave. Bear in mind that a single note added, curtailed, or transposed may make a melody commonplace or distort its expression. You have in any case no right to do this at any time. To modify the music one sings, or the book one is translating, without saying a word about it to the man who wrote it only after much thought, is to commit a shocking breach of trust. People who borrow without giving notice are called thieves; unfaithful interpreters are libelers and assassins.¹⁴⁵

Composers essayed to tailor roles to a singer’s vocal gifts so as to maximize the effect upon the audience. Meyerbeer’s diaries show constant collaboration and consultation with singers as his operas were in various stages of composition. In 1841, he stated that he could not decide on an opera to compose because he had not heard the singers for whom he would compose.¹⁴⁶ Though the composer, librettist, stage designer, and director played large parts in the creation of an opera, the singer might have held the most power over how a composition eventually sounded. Alan Armstrong explained: “A beloved singer could—and did—ensure an opera’s success simply by appearing in it, or doom it to failure by refusing to appear. With such power a singer could easily hold a new opera for ransom, forcing the composer and librettist to revise, excise or otherwise alter the work to some self-serving end.”¹⁴⁷ Berlioz affirms the power of singers when speaking of Duprez premiering new operas in Paris, “he then accepts some which he gives up after three of four performances if he does not excel in them as he did before. In

¹⁴⁴ Leonella Grasso Caprioli, "Singing Rossini," in *The Cambridge Companion to Rossini*, ed. Emanuele Senici (Cambridge: Cambridge University Press, 2004), 190.

¹⁴⁵ Berlioz, *Evenings with the Orchestra*, 67.

¹⁴⁶ Meyerbeer and Letellier, vol. II, p. 53.

¹⁴⁷ Alan Armstrong, "Gilbert-Louis Duprez and Gustave Roger in the Composition of Meyerbeer’s *Le Prophète*," *Cambridge Opera Journal* 8, no. 2 (July 1996): 147. When Duprez took over the role of Raoul in *Les Huguenots*, Meyerbeer specially composed a new aria for him in Act V.

doing so he may spoil the career of a composer.”¹⁴⁸ Nourrit and Duprez both actively participated in the composition of roles written for them, sometimes drawing out the scenes or even composing some of the music for themselves. It may then be assumed that by examining the roles written for the respective singers, one can determine their vocal abilities, ranges, and ways in which they used their internal laryngeal muscles differently.

Using an analysis of two roles written for Nourrit and two roles written for Duprez, firm conclusions can be drawn about their abilities and technique. For Nourrit, the roles of Robert and Arnold from *Robert le diable* and *Guillaume Tell*, respectively, were analyzed. For Duprez, the roles of Edgardo and Fernand from *Lucia di Lammermoor* and *La Favorite*, respectively, were analyzed. Some initial observations are worth mentioning. The number of notes required of Nourrit is much higher than for Duprez. Counting both operas for each singer, Nourrit’s total is 10,389 and Duprez’ is 6,049, showing that almost twice as much singing was required of Nourrit in his two roles. Even more useful is the examination of the adjusted note sum in different ranges of their voices. The adjusted note sum is the number of notes on each pitch level multiplied by the note value, a quarter note counted as 1, half note as 2, eighth note as $\frac{1}{2}$, etc. The sum of adjusted note values reveals the true amount of singing done on each pitch level. In the upper register of the tenor voice, high G and above, the adjusted note sum is 1530 for Nourrit and 637 for Duprez. In the highest range, B-flat and above, the disparity is even greater with 169 for Nourrit and 14 for Duprez. The significantly greater number of pitches in the higher register backs the statements that Nourrit sang in mixed voice and falsetto, making singing in the upper ranges much easier to sustain than for Duprez. Surprisingly, the same drastic contrast occurs in the lowest register of the tenor voice, E natural and below. In the lower range, the adjusted sum for Nourrit is 123, contrasted with a sum of 18 for Duprez. Berlioz affirmed Duprez’ weakness in the lower

¹⁴⁸ Hector Berlioz, *Soirées de l'orchestre* (Paris: Michel Lévy frères, 1852; reprint, Evenings with the Orchestra, Translated by Jacques Barzun, New York: Alfred A. Knopf, 1956), 68. It is useful to note that Berlioz held a good deal of malice toward Duprez, whom he blamed for the failure of *Benvenuto Cellini* in 1838. It is true that Duprez did not really like *Cellini*, complaining that it did not possess the same melodiousness as the Italian operas he was wont to sing, but neither critics nor the public liked it either.

register in 1839, saying that the lower notes in Duprez' voice were tenuous and should be avoided at all costs.¹⁴⁹ The disparity in the number of low notes written for Duprez suggests that his lack of flexibility extended not only upwards but downwards as muscularity increased in his voice. It also highlights the wide range of Nourrit's instrument. In examining the following graphs a clear picture emerges of how differently their voices may have sounded.

¹⁴⁹ Berlioz, *La Critique Musicale*, vol. IV, 103.

Figure 8.1 Guillaume Tell: Adjusted Note Sum (Nourrit)

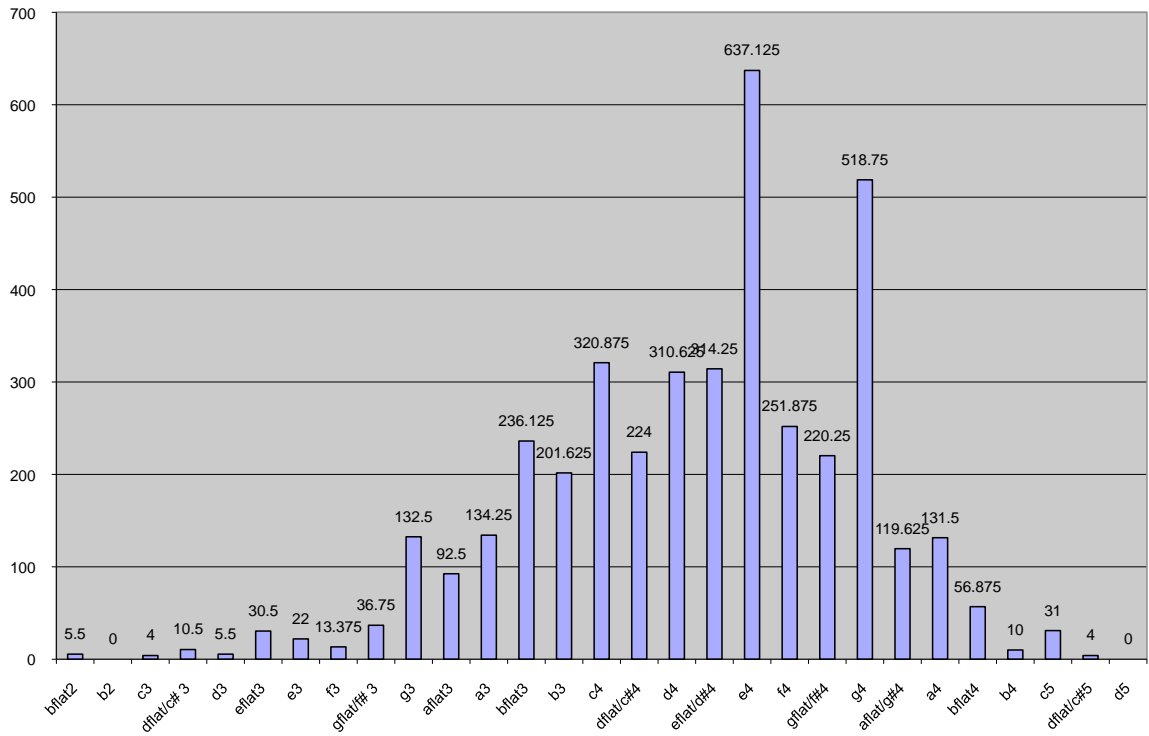


Figure 8.2 La Favorite: Adjusted Note Sum (Duprez)

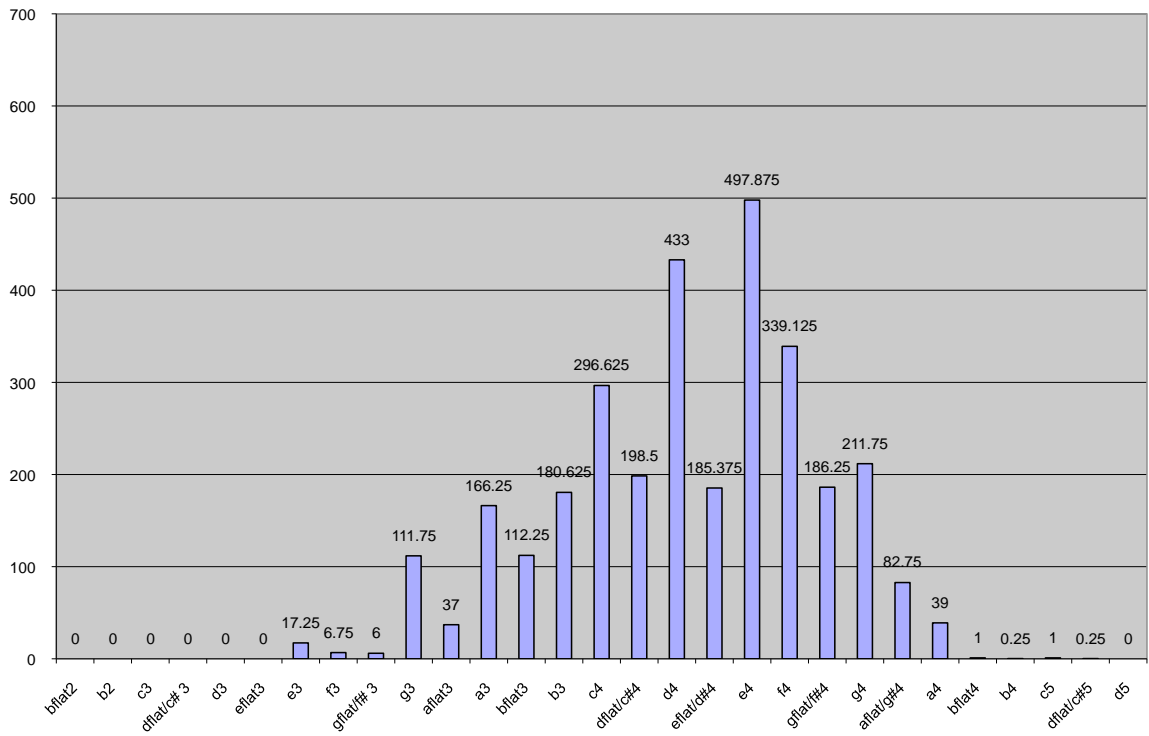


Figure 8.3 Robert le diable: Adjusted Note Sum (Nourrit)

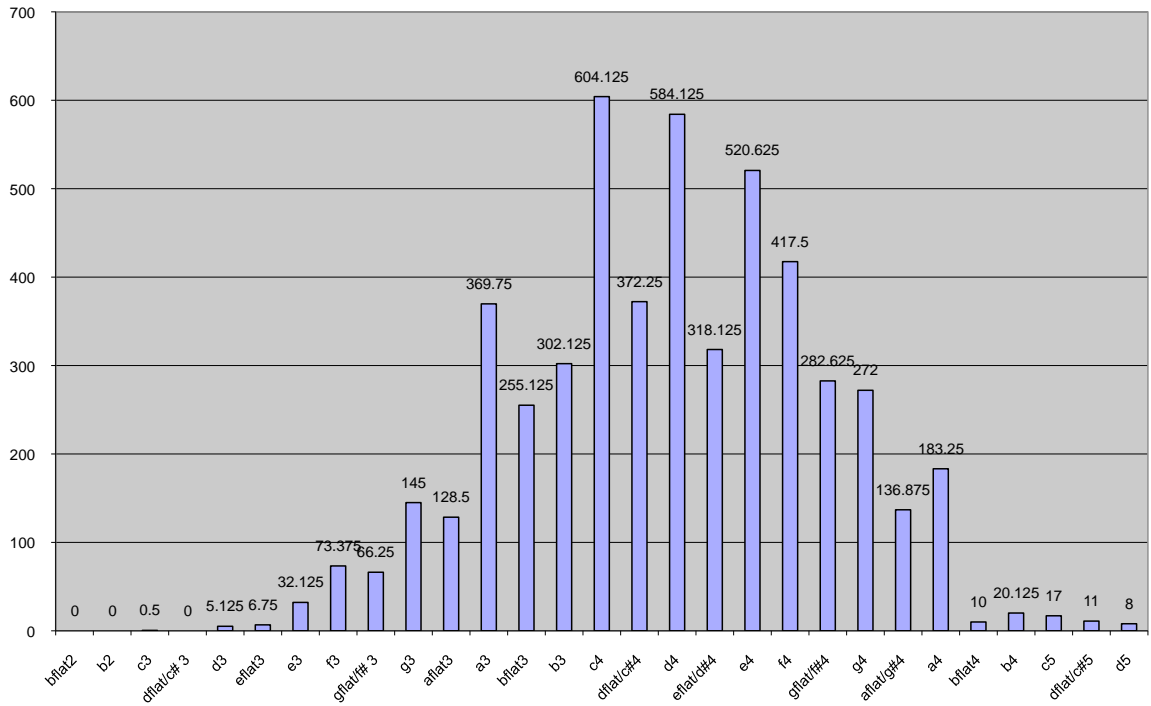
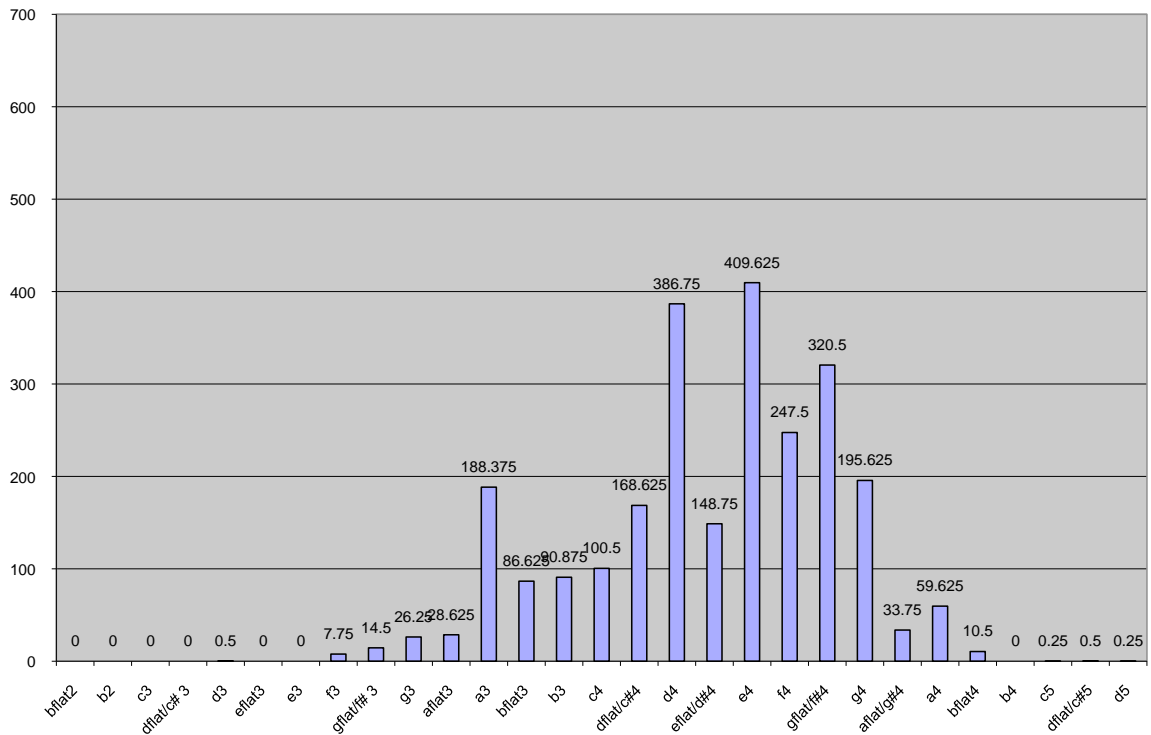


Figure 8.4 Lucia di Lammermoor: Adjusted Note Sum (Duprez)



Chapter 9

The *Voix sombrée*

One of the most obvious differences between the voices of Nourrit and Duprez arose from their use of different timbres. Their differences in timbre resulted from the position of the larynx and velum. As discussed above, Duprez described his voice timbre as *voix sombrée* or “darkened voice.” His voice production is also termed closed or covered, in opposition to Nourrit’s open, clear timbre, termed at the time “timbre clair” or “voix blanche.” The open, clear voice of Nourrit and the singers who preceded him required that the larynx and velum move towards each other as the scale rose. Manuel Garcia, Jr. explained in his *Complete Treatise on the Art of Singing (Traité complet de l’art du chant en deux parties)*:

When the voice rises in the chest register from the lowest tone to the highest tone, if the timbre is clear, the larynx occupies in the first moment a position a little lower than that of rest; then, by regular ascending movements, it follows the voice in its rise, carrying itself slightly forward. When the voice reaches the extreme of which it is capable in that register, the larynx moves against the jaw by a very pronounced rocking motion which one can verify by touching it. The tones produced in this last period of the ascension of the larynx are thin and strangled. At the last limits of the compass, the head tips back a little in order to facilitate the elevation of the larynx.¹⁵⁰

Quicherat confirmed Garcia’s statement in his observations of Nourrit’s singing, stating that Nourrit’s larynx rose as he mounted the scale and that everyone observed Nourrit’s head tilting back on the highest notes.¹⁵¹ He also insisted that Rubini utilized the same technique.¹⁵² In the “closed, covered, or darkened” timbre, the velum and larynx move in opposite directions at the onset of sound and maintain their opposite

¹⁵⁰ Manuel Garcia Jr., *A Complete Treatise on the Art of Singing*, trans. Donald V. Paschke, 2 vols., vol. 1 (New York: Da Capo Press, Inc., 1984), liv-lv.

¹⁵¹ Quicherat, *Adolphe Nourrit: Sa vie, son talent, son caractère, sa correspondance*, Vol. I, 398-401.

¹⁵² *Ibid.*, Vol. III, 398.

positions throughout the scale. Garcia, Jr., who later championed the *voix sombrée*, also described the technique in his *Complete Treatise*:

If the voice...keeps the sombre timbre for all the tones, the larynx remains fixed a little below the position of rest...One is obliged to facilitate this position by leaning the head forward a little...The velum rises for the sombre timbre until the posterior opening of the nasal fossae is completely closed.¹⁵³

Modern studies mostly confirm Garcia's statements, showing that covering (*voix sombrée*) involves elevation of the soft palate and an antero-caudal tilting and downward motion of the larynx.¹⁵⁴ Additionally, the supraglottal tract, hypopharynx, and laryngeal ventricles were found to widen.¹⁵⁵

Some scholars today insist that Donzelli began using the *voix sombrée* technique after he came to Paris in 1825. After Duprez sang *Guillaume Tell* in 1837, newspapers reported that every tenor began to try to imitate Duprez and to create the same sounds. The *voix sombrée* found its champions in the twentieth century as well in Arturo Melocchi, Julius Stockhausen, and Mario del Monaco, singers who used a lowered larynx, open throat technique. Modern terminology describes the two timbral approaches as closed voice (*voix sombrée*) and open voice (*voix blanche*). Richard Miller confirms, "In desirable 'closed voice' (*voce chiusa*)...as opposed to open voice (*voce aperta*), there is a stabilized laryngeal position—relatively low—and a somewhat widened pharynx."¹⁵⁶ The closed, covered timbre is now the prevalent style of singing for almost all operatic tenors.

¹⁵³ Garcia Jr., *A Complete Treatise on the Art of Singing*, lv, lix.

¹⁵⁴ Stellan Hertegard, Jan Gauffin, and Johan Sundberg, "Open and Covered Singing as Studied by Means of Fiberoptics, Inverse Filtering, and Spectral Analysis," *Journal of Voice* 4, no. 3 (1990). Meribeth Bunch, "A Cephalometric Study of the Structures of the Head and Neck During Sustained Phonation of Covered and Open Qualities," *Folia Phoniatica* 28 (1976). F. MacCurtain and G. F. Welch, "Vocal Tract Gestures in Soprano and Bass," *Proceedings of the Stockholm Music Acoustic Conference 1983* 46, no. 1 (1985). JB Van Deirse, "Registers," *Folia Phoniatica* 33 (1982).

¹⁵⁵ William Vennard, *Singing: The Mechanism and the Technic*, 5th ed. (New York: Carl Fischer, 1968), 153.

¹⁵⁶ Richard Miller, *The Structure of Singing* (New York: Schirmer Books, 1996), 151.

Advantages of Voix sombrée

Why would Donzelli or Duprez consider it necessary to change the timbre of their voice? What factors, in particular, spurred them to respond to the drama of the music by raising their palate and lowering their larynx? Quicherat and others insisted that the *voix blanche* or *timbre clair* corresponded with a natural production of the voice and that the *voix sombrée* sounded manufactured and artificial. Rossini's previously cited description of Duprez' voice implicates that his opinion matched that of Quicherat. To their argument that the clear timbre is natural, one might pose a question in opposition, "Is it natural for the human voice to sustain tones 440Hz and above for long periods of time, projecting over an orchestra into a large hall as did the tenors of the 1830's at the Paris Opéra and the Teatro di San Carlo?" One might be tempted to call this vocal abuse if done on a regular basis, to the detriment of the vocal organ.

Stockhausen, in his late nineteenth-century publication, *A Method of Singing*, states, "The speaking level, that is the natural position of the larynx, is not good for artistic singing; it produces, especially in the middle register, thin and poor notes."¹⁵⁷ Sonninen demonstrated that in "open" singing, the vocal ligament stretches as pitch rises and vocal fold mass increases, thus creating more stress on the vocal fold level.¹⁵⁸ As the ligament reaches its limit with rising pitch, it reaches a point at which it can no longer stretch and a change must occur. A clear break then occurs in the voice. In another study, it was found that with rising pitch in "open" singing, the activity of the vocalis and sternohyoid muscles increased dramatically until the activity suddenly dropped and the voice broke into falsetto.¹⁵⁹ The physiological characteristics of open singing seem to fit with Manuel Garcia's description of the increase in tension and laryngeal height until the voice breaks into falsetto. The process then begins again at the top of the singer's range. There is a clear break in the timbre of the voice and a clear falsetto is heard.

¹⁵⁷ Julius Stockhausen, *A Method of Singing*, Novello's Music Primers and Educational Series (London: Novello, 1884), 11.

¹⁵⁸ Aatto Sonninen, "The External Frame Function in the Control of Pitch in the Human Voice," *Annals of the New York Academy of Sciences* 155, no. 1 (1968): 86-7.

¹⁵⁹ William Vennard and Minoru Hirano, "Varieties of Voice Production. *A Series of Four Electromyographic Studies*," *NATS Bulletin* 28, no. 3 (1971): 31.

To maintain the timbre and unity of sound in the voice, the singer must retrain the muscles used in “natural” open singing, especially to reach the top notes of their range without a clear register shift. Again, Stockhausen states, “The blending of the chest and falsetto register can be achieved in ascending by using the sombre quality.”¹⁶⁰ By covering the voice, or using a closed quality, a singer may transition between registers without a clear shift at the passaggio. Stellan Hertegard explains why this is possible: “In covered singing both these intrinsic and extrinsic laryngeal muscles increased their activity more gradually as opposed to the open singing when the muscles seemed unable to increase the activity further at high pitches and the voice broke into falsetto.”¹⁶¹ Covering seemed to lessen the load on the external and internal laryngeal muscles, thus allowing the voice to sing higher with less tension.

Ingo Titze discovered a distinct advantage of covered singing when attempting to bridge the passaggio in the voice. He found that each voice has a fixed frequency at which the passaggio occurs. The frequency of the passaggio is determined by the subglottal, or tracheal, resonance. For optimal phonation to occur, the supraglottal and subglottal resonances must be tuned, or in phase. At the passaggio, these resonances naturally come out of phase and a shift occurs. However, the singer may, through supraglottal adjustments, maintain the phase relation and prevent a wholesale shift in register.¹⁶² A smooth register transition is, essentially, what covering accomplishes at the passaggio and the voice remains consistent in its timbre through the ascending scale.

Sound Improvements Through Covered Singing

Twentieth-century studies have found that covered singing creates less tension in the vocal folds and the amplitude of glottal vibrations increases, thus increasing the amplitude of the fundamental frequency. One could think of this as “fuller, floppier vocal folds.” The increased amplitude of the fundamental frequency creates a louder signal that is also richer in harmonics. A stronger fundamental frequency aids in

¹⁶⁰ Stockhausen, *A Method of Singing*, 13.

¹⁶¹ Hertegard, "Open and Covered Singing as Studied by Means of Fiberoptics, Inverse Filtering, and Spectral Analysis," 221.

¹⁶² Ingo Titze, "The Importance of Vocal Tract Loading in Maintaining Vocal Fold Oscillation," *Proceedings of the Stockholm Music Acoustic Conference 1983* 46, no. 1 (1985).

increasing the sound pressure level of the upper partials, thus augmenting the strength of the singer's formant.

Another distinct advantage of *voix sombrée* is the increased amount of singer's formant generated because of morphological changes in the vocal tract. The larynx is lowered in covered singing and as a result, the lower pharynx widens. Johan Sundberg explains the result:

Acoustically, the pharynx widening has the effect of isolating the larynx tube from the rest of the vocal tract so that its resonance frequency is not altered by articulatory movements outside it. Its resonance can be tuned to a frequency between the third and fourth formant in normal speech by adjusting the volume contained in the sinus Morgagni to the opening area of the larynx tube. An additional effect of a larynx lowering is that it increases the dimensions of the sinus piriformes and the length of the pharynx tube. This lowers the fifth formant frequency and in front vowels also the second. In this way a great deal of the acoustical differences between spoken and sung vowels in male voices can be explained with reference to the larynx lowering, the major articulatory gesture associated with the production of a "singing formant."¹⁶³

Sundberg adds that the lowering of the larynx becomes especially important in producing a singer's formant in the higher notes since a ratio of 6:1 must be maintained between the volume of the pharyngeal tube and the laryngeal tube.¹⁶⁴ Thus, the pharynx widens at the bottom while the laryngeal tube remains narrow, creating the ideal 6:1 ratio of space for the singer's formant to occur.

¹⁶³ Johan Sundberg, "Articulatory Interpretation of the Singer's Formant," *The Journal of the Acoustical Society of America* 55, no. 4 (April 1974): 843.

¹⁶⁴ *Ibid.*: 840.

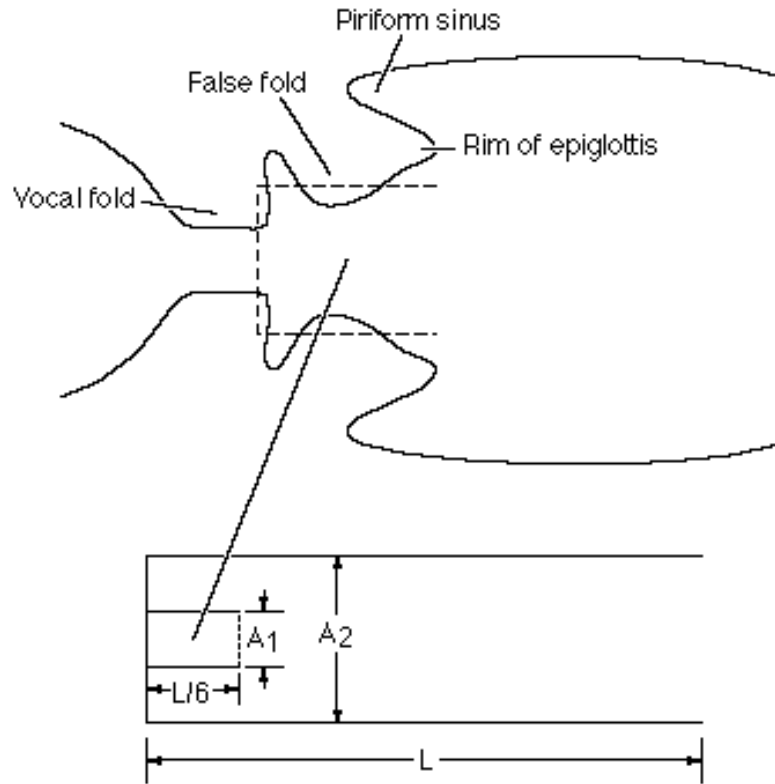


Figure 9.1 Cross-section of the larynx showing the area where the singer's formant is created.

When the 6 to 1 ratio occurs between the pharynx and the laryngeal tube, the fourth and fifth formants are lowered, creating the gathered singer's formant.

With a raised larynx, as in open singing, a 6 to 1 ratio between the pharynx and laryngeal tube is impossible because when the larynx rises, the wall tissues of the pharynx bunch up and fill part of the lower pharynx. Constrictor muscles of the pharynx also constrict the pharynx and decrease pharyngeal space. Thus the lowering of upper formants is impossible and a singer's formant, as described above, cannot occur.

What advantage would Nourrit and Rubini have had in raising their larynx? Sundberg has shown that raising the larynx does raise the frequency of the vowel formants, F_1 and F_2 .¹⁶⁵ Raising the vowel formants would have been of some acoustical advantage to the singers, creating a more shrill, piercing voice for greater projection. Additionally, the lowered velum, for which Nourrit received criticism because of a nasal sound, might have actually had a beneficial effect. A study published in 2002 revealed

¹⁶⁵ Sundberg, *The Science of the Singing Voice*, 114.

that professional operatic tenors actually used a degree of velopharyngeal opening (VPO) in their singing.¹⁶⁶ The effect was a lowering of the first formant, which enhanced the spectrum partials around 3000Hz, or about where the singer's formant is produced. Even without a grouping of formants, Nourrit's voice still would have gained an advantage in projection from a boost of formant frequencies around 3000Hz. Johan Sundberg also found that a VPO increased vocal tract resistance, which has been proven beneficial to glottal vibrations. Thus, a small degree of nasality actually seems beneficial to the tone.

Dangers of Open Singing or *Voix blanche*

Open singing creates heavy loads on the vocal ligaments as the vocal folds quickly stretch to their maximum length while singing an ascending scale. Research has linked excessive loading of the vocal ligaments in open singing with the occurrence of vocal nodules. Sonninen explains why this happens, "In the more primitive open-voice mechanism, voice strain is directed above all to the vocal ligament. When the injury to the ligament is great enough, the consequence is a secondary injury of the subepithelial tissue. Histological research has shown that in a vocal-cord nodule the epithelium is normal, and the changes occur in the subepithelial tissue."¹⁶⁷

These physiological connections may provide further insight into the fate of Adolphe Nourrit. It is known that as early as 1836, Nourrit began to suffer from hoarseness. It appears that with two months of rest from performing on stage (January-February 1838) his voice had improved and he began his lessons with Donizetti in March. He took on an entirely new and strenuous technique, and sang for multiple hours a day for the next six months. Eventually expressing displeasure with the *voix sombrée* technique, as discussed above, Nourrit tried to turn back to his old way of singing, with little success. He again experienced bouts of hoarseness, which plagued him until his death. It is worth noting that his pupil, Cornélie Falcon (1812-1897), suffered an even more severe loss of voice that resulted in her retirement from singing at the age of 26. Hoarseness and the loss of voice proved common in French opera singers at the

¹⁶⁶Peer Birch et al., "Velum Behavior in Professional Classic Operatic Singing," *Journal of Voice* 16, no. 1 (2002). Johan Sundberg et al., "Experimental Findings on the Nasal Tract Resonator in Singing," *Journal of Voice* 21, no. 2 (2007).

¹⁶⁷Aatto Sonninen, "Phoniatic Viewpoints on Hoarseness," *Acta Oto-Laryngologica* 69, no. 1, supp. 263 (1970): 79.

beginning of the nineteenth century and many careers ended in the same way as those of Nourrit and Falcon.¹⁶⁸ While one can never know for sure, it would be unwise to rule out vocal nodules as a cause of their vocal trouble, partly due to an “open” method of singing.

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¹⁶⁸ Barbier, *Opera in Paris: 1800-1850*, 152.

Chapter 10

Importance of the Singer's Formant in *Voix sombrée*

Perhaps another reason for the transformation of tenor singing lay within the ears of the listeners. Numerous studies have shown that the ear canal resonates at the same frequency as the singer's formant frequencies. Because of this, the singer's formant is amplified in the ear canal. Ingo Titze points out that the reason for this amplification lies in a corresponding length of the ear canal and laryngeal vestibule where the singer's formant is produced. Each measures about 2 to 3 cm in length and thus they are both "impedance matching tubes."¹⁶⁹ Titze adds that a singer could produce a sensation of pain in the listener if he were close enough and using the singer's formant to maximum effect. Hunter adds that standing next to a number of trained singers could be very uncomfortable because of the boost in frequency they produce in the most sensitive regions of our hearing.¹⁷⁰ Did the implementation of *voix sombrée*, then, occur partly because of a perceived increase in volume?

In 1946, Wiener and Ross performed an experiment to measure sound pressure levels inside the ear canal. They inserted a small condenser probe microphone measuring less than 0.1 cm in diameter into the ear canal. Sound samples were then played anywhere from 0 to 90° from the front of the subject's head. The experiment revealed an increase in amplitude inside the ear canal throughout the hearing range. However, at 3000 Hz, a 17 to 22 dB spike occurred in amplitude inside the ear.¹⁷¹ In a similar experiment, Miriam Hensch and Kris Chesky in 1999 played orchestral instrument

¹⁶⁹ Ingo Titze, "The Larynx and the Ear - How Well Do They Match?," *Journal of Singing: The Official Journal of the National Association of Teachers of Singing* 57, no. 5 (May-June 2001): 42, Ingo Titze, "The Larynx and the Ear--How Well Do They Match?," *Journal of Singing - The Official Journal of the National Association of Teachers of Singing* 57, no. 5 (May-June 2001).

¹⁷⁰ Eric J Hunter, "Voice Research and Technology: Overlap of Hearing and Voicing Ranges in Singing," *Journal of Singing - The Official Journal of the National Association of Teachers of Singing* 61, no. 4 (March-April 2005): 392.

¹⁷¹ Francis M Wiener, "The Pressure Distribution in the Auditory Canal in a Progressive Sound Field," *The Journal of the Acoustical Society of America* 18, no. 2 (October 1946): 404.

sounds at a 45° angle from the front of the head. They also inserted a probe into the ear, albeit a slightly more advanced model. Their experiment measured as much as a 30 dB increase in sound pressure levels at 3000 Hz inside the ear canal. They concluded that musicians, who spend extended amounts of time in practice and performance with their instruments, are at special risk for hearing damage because many instruments resonate in the most sensitive frequency areas of the ear.¹⁷² These studies clearly demonstrate that our ears are most sensitive to the exact range of frequencies which are produced in the singer's formant range.

Our increased sensitivity to pitches in the singer's formant range raises questions as to the level and type of emotion a trained operatic singer's voice can induce. Does amplification of the most sensitive range of human hearing translate as "exciting" or "thrilling," or instead does a trained tenor's voice sound "shrill" or "unpleasant?" Does our emotional reaction depend upon proximity to the singer and duration of exposure? Are there other voice factors? Before answering these questions, a brief overview of emotional induction through music and the voice should be approached.

Music and Emotion

Within the past decade, studies have shown more and more conclusively that music has the ability to induce emotion.¹⁷³ Through various methods, listeners have been tested and have shown emotional reactions to music. However, there is still much debate about the nature of the emotion and if it truly derives from the music itself.¹⁷⁴ Klaus Scherer published a convincing article in 2004 questioning music's power to induce emotion.¹⁷⁵ He first examines the three major assessment methods for emotional induction: "lists of basic emotions, valence-arousal dimensions, and eclectic emotion

¹⁷² Miriam A Henoch, "Ear Canal Resonance as a Risk Factor in Music-induced Hearing Loss," *Medical Problems of Performing Artists* 14, no. 3 (September 1999).

¹⁷³ Patrick Juslin, "Expression, Perception, and Induction of Musical Emotions: A Review and a Questionnaire Study of Everyday Listening," *Journal of New Music Research* 33, no. 3 (2004): 222-3.

¹⁷⁴ J. Trainor, "Processing Emotions Induced by Music," in *The Cognitive Neuroscience of Music*, ed. Isabelle Peretz and Robert J. Zatorre (Oxford; New York: Oxford University Press, 2003), 310-11.

¹⁷⁵ K.R. Scherer, "Which Emotions Can be Induced by Music? What are the Underlying Mechanisms? And How Can We Measure Them?," *Journal of New Music Research* 33, no. 3 (2004).

inventories.” Scherer asserts that none of these is truly adequate to measure the true emotional effect of music. Of particular interest to this paper, he examines the method of measuring emotional reactions to music through lists of basic emotions, such as *fear*, *anger*, *joy*, *disgust*. Studies often will limit subject responses to only four or five basic emotions. He goes on, “These (emotions) are utilitarian in the sense of having major functions in the adaptation and adjustment of individuals to events that have important consequences for their well being by preparing action tendencies (fight, flight), recovery and reorientation (grief work), motivational enhancement (joy, pride), social obligations (reparation), etc.”¹⁷⁶ As will be seen later, these basic emotions are also those measured in voice emotion studies. He contends that emotions experienced when listening to music are “aesthetic emotions” more akin to those experienced when observing a great work of art. Instead of basic fight/flight emotions, music incites a multiplicity of subtler emotions and moods. Scherer concludes that a new method of studying music emotion induction must be introduced to reflect more accurately these subtler shades of emotion. Sloboda mirrors Scherer’s opinion and adds that much of our emotional response to music stems from our past experiences relating to the music or style of music.¹⁷⁷ Thus, life experience emotions project themselves through the music even when we are not conscious that it is so.

On the other hand, many recent studies have accurately demonstrated activation of “utilitarian” areas of the brain in response to music. Stefan Koelsch validates that music is capable of producing strong positive and negative emotions in the most important emotion and reward centers of the brain. Utilizing both PET and fMRI, Koelsch found brain activity corresponded to expected strong emotions while listening to music.¹⁷⁸ Music perceived as pleasant by the listener provoked increased cerebral blood flow and BOLD (blood oxygen level dependent) levels in the frontopolar, orbitofrontal, and cingulate cortices, as well as the insula, posterior hippocampus, ventral medial prefrontal cortex, and ventral striatum. Music perceived as unpleasant produced an

¹⁷⁶ *Ibid.*: 241.

¹⁷⁷ John A. Sloboda, *Exploring the Musical Mind : Cognition, Emotion, Ability, Function* (Oxford; New York: Oxford University Press, 2005).

¹⁷⁸ Stefan Koelsch, "Investigating Emotion with Music: Neuroscientific Approaches," *Annals of the NY Academy of Sciences* 1060 (2005).

increase in BOLD levels in the amygdala, hippocampus, parahippocampal gyrus, and temporal poles. The increase in BOLD levels for unpleasant stimuli is probably inhibitory activity, especially in the amygdala and hippocampus as the brain attempts to shield these structures from damage resulting from negative events.

Zatorre affirms that the most basic emotional areas of the brain activate during music.

The pattern of activity observed in correlation with music-induced chills is similar to that observed in other brain imaging studies of euphoria and/or pleasant emotion. For example, activity in the nucleus accumbens, dorsal midbrain, and insula has been reported to increase, and that in the left amygdala and ventromedial prefrontal cortex to decrease in response to cocaine administration in cocaine-dependent subjects. In addition, animal studies support a critical role for ventral striatum, several midbrain areas, amygdala, and medial prefrontal cortex in circuitry underlying reward processes, including hedonic impact, reward learning, and motivation... food and sexual stimulation.¹⁷⁹

The above-cited studies used instrumental music to measure emotional induction, thus it seems clear that this type of music is capable of producing strong emotions in listeners, but is the singing voice also able to induce emotions as strong as those evoked with instruments? More specifically, does the professional male opera voice increase or decrease the emotional effect of music?

The Voice and Emotion

Convincing studies have recently been published revealing that emotion may be clearly perceived from a spoken voice. Most of these studies focus on the fundamental frequency variation, speech rate, and sound pressure levels of the voice.¹⁸⁰ They demonstrate that listeners are able to identify the correct emotion in a speaker's voice within a 64-100% correct response. Phonation frequency and sound pressure levels are shown to be at the highest levels in the expression of anger, then consequently

¹⁷⁹ Robert J Zatorre, "Music and the Brain," *Annals of the NY Academy of Sciences* 999 (2003): 12.

¹⁸⁰ A.M. Laukkanen et al., "Physical Variations Related to Stress and Emotional State: a Preliminary Study," *Journal of Phonetics* 24 (1996). Johan Sundberg, "Speech, Song, and Emotions," in *Music, Mind, and Brain: The Neuropsychology of Music*, ed. Manfred Clynes (New York: Plenum Press, 1982).

descending with fear, neutral emotion (such as boredom), and sorrow. A few recent studies have begun to also examine voice quality and its effect upon perception and identification of emotion. These studies filter out variances in fundamental frequency [F₀] and instead use [F₁₋₄] to examine listener cognition of voiced emotion. Interestingly, [F₃] and [F₄] (the formants making up the singer's formant) did seem to play a role in the expression of emotion. These formants in particular aided subjects in correctly identifying emotional valence (positive or negative) of each sound sample.¹⁸¹ [F₃] and [F₄] increased in amplitude for the expression of certain emotions, with high to medium high amplitudes in the articulation of enthusiasm, surprise, and anger. Amplitudes lowered accordingly in sadness and then neutrality, respectively.¹⁸² There do not seem to be any available studies covering emotional perception in the singing voice, though some of the same principles for the speech studies may apply to professional operatic singing with regards to fundamental frequency variation, sound pressure levels, speech rate, and voice quality.

The Singer's Formant and Emotion

No previous experiments have been published addressing the role of the singer's formant in emotion induction. It seems important to understand the role of the singer's formant as well as the effects of it upon the listener. One can then determine what level of use would be judicious in a performance, as well as its total effect upon an audience. Some preliminary questions fueled my research about the emotional effects of the singer's formant. First, was the addition of the singer's formant a significant factor in the fanatically positive reaction to Gilbert-Louis Duprez' singing in 1837 at the Paris Opéra? Second, since the frequencies of the ear and the singer's formant match so closely and the singer's formant is boosted in the ear by up to 30 dB, does the listener perceive this as exciting, or as annoying and potentially painful? Third, what is the emotion experienced by the listener when hearing a strong singer's formant? Is the sound perceived as angry, joyful, or some other emotion? Are there other factors that might influence a listener's

¹⁸¹ Teija Waaramaa, "The Role of F3 in the Vocal Expression of Emotions," *Logopedics Phoniatics Vocology* 31, no. 4 (2006): 153.

¹⁸² A.M. Laukkanen, "On the Perception of Emotions in Speech: the Role of Voice Quality," *Logopedics, Phoniatics, Vocology* 22 (1997).

perception, such as the higher fundamental frequency when the strongest singer's formant bands are produced?

In an attempt to address some of these questions, I devised a two-dimensional aural survey allowing listeners to rate singers according to activation of emotion and valence of emotion. Sixteen audio clips of about 15 seconds each were presented randomly to the listener using Sennheiser 202 headphones. These audio clips were excerpts of famous opera arias or operatic songs¹⁸³ sung by eight well-known operatic tenors.¹⁸⁴ Eight of the clips played in their normal state, and then these eight were edited using Audacity 1.3.2 Digital Audio Editor to reduce the singer's formant frequencies between 2500 and 3400 Hz. The samples were then scrambled before being presented to the listener. For each audio clip, the listeners were asked to rate activation of their emotions to the singer on a scale of 1 to 10, 1 being no emotion and 10 being strong emotion. They were also asked to rate the emotional valence felt for each singer, 1 being negative emotion and 10 being positive emotion. Thus, the listeners could respond that they felt a strong negative emotion when listening to the singer or possibly a weak positive emotion.

Nine participants were surveyed, ranging from 19 to 65 years old, varying from individuals with no musical training to doctoral vocal students. Four of the subjects were male and five female. All had normal hearing and the clips were played at the same volume for all subjects. An average of the subject ratings resulted in a clear positive emotional preference for sound clips containing a strong singer's formant.

¹⁸³ "Ah! lève-toi soleil" from Gounod's *Roméo et Juliette*, "Di quella pira" from Verdi's *Il trovatore*, "Una furtiva lagrima" from Donizetti's *L'elisir d'amore*, "Com'è gentil" from Donizetti's *Don Pasquale*, "Ideale" by Tosti, "Rachel, quand du Seigneur" from Halévy's *La Juive*, "Mes amis, écoutez" from Adam's *Le postillon de Longjumeau*, and "È la solita storia" from Cilèa's *L'Arlesiana*.

¹⁸⁴ The tenors were Jussi Björling, Franco Corelli, Jerry Hadley, Juan Diego Florez, Ben Heppner, Enrico Caruso, Nicolai Gedda, and Rolando Villazon.

	With Singer's Formant	Without Singer's Formant	Differential
Level of emotion	7.07	6.44	0.63
Valence of emotion	7.04	6.35	0.69

Figure 10.1 Listener reaction to audio clips of operatic tenors singing with and without singer's formant.

Compiling the sum of emotional activation and valence results in a 1.32 positive advantage for clips containing the singer's formant. The positive differential advantage appeared especially clearly when comparing the ratings of repeated clips from the same singer, with and without singer's formant. The audio examples containing the singer's formant maintained an average positive differential of 1.76 over clips without a singer's formant when gathered from the same singer.

The differences were especially marked in response to some of the singers. For example, with Juan Diego Florez, the difference in ratings between the clips with and without singer's formant was 4.01. The two clips are seen below. The one on the top is without singer's formant and the one on the bottom is with singer's formant. The top orange line is at 3000Hz, near the center level of the singer's formant.

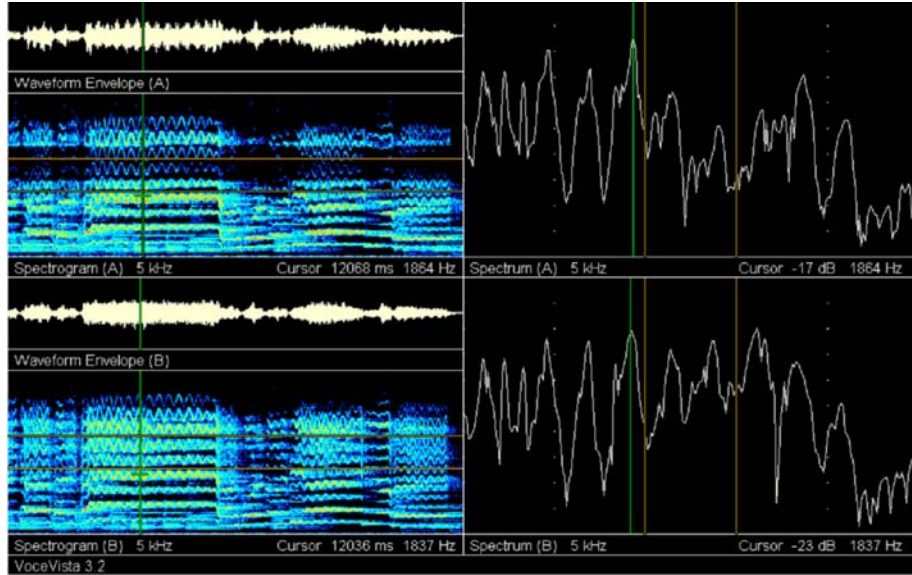


Figure 10.2 Juan Diego Florez singing “Com’è gentil” from Donizetti’s *Don Pasquale*. The lower spectrogram is unaltered, whereas the singer’s formant frequencies have been muted for the upper spectrogram.

Another significant difference was noted in the clips from Franco Corelli with a difference in emotional ratings of 2.22.

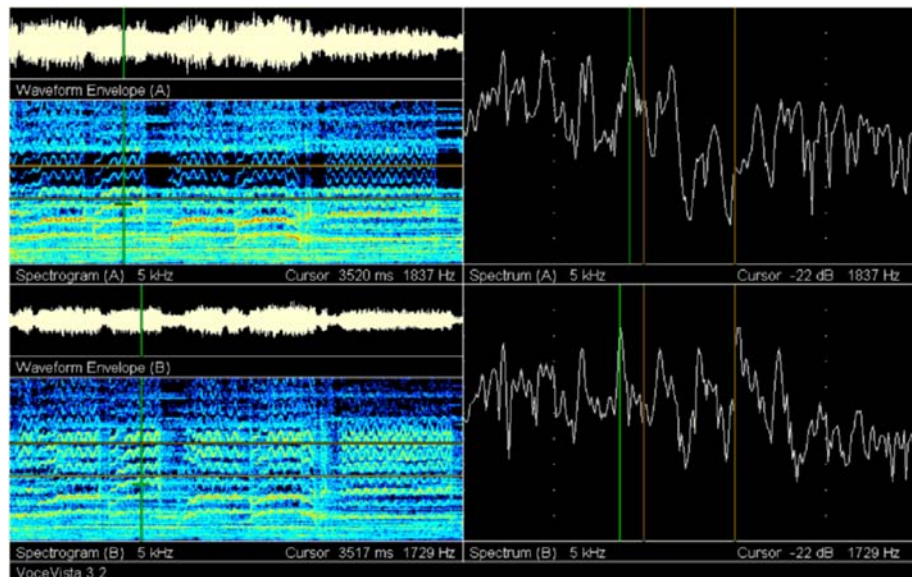


Figure 10.3 Franco Corelli singing “Nessun dorma” from Puccini’s *Turandot*. The lower spectrogram is unaltered, whereas the singer’s formant frequencies have been muted for the upper spectrogram.

I expected to see a decrease in emotional valence as the survey continued if the singer's formant caused discomfort or induced an emotion of fear. If this were the case, the emotional activation as well as the valence of negative emotion would have spiked as the survey progressed, according to the time-course of emotion.¹⁸⁵ However, a decline in emotional valence was not observed as reactions to clips with singer's formant remained fairly consistent and positive in valence. The effect seemed to be especially pronounced among the voice students surveyed. For them, examples with singer's formant were rated much higher on average than those without. Their responses seem to correlate with Peter Schneider's study in which he demonstrates that singers are generally spectral pitch listeners as opposed to fundamental pitch listeners.¹⁸⁶ Being a spectral pitch listener means that they hear the overtones or harmonics (such as the singer's formant) more easily than fundamental pitch listeners.

My experiment seems to confirm that the singer's formant sounds very exciting to our ears because of its correspondence to the resonance frequency of our ears. Singers with a strong singer's formant are able to project easily over an orchestra, as well as induce positive emotions from the audience as the sound is considered "exciting." One would expect to see activations in the reward centers of the brain, such as the frontopolar, orbitofrontal, and cingulate cortex, as well as the insula, posterior hippocampus, ventral medial prefrontal cortex, and ventral striatum when listening to a professional tenor. These areas of the brain often produce "chills" associated with beautiful music, and this corresponds to reports of chills and tears when listening to an excellent professional opera tenor. Stimulation of the pleasure centers of the brain when hearing the singer's formant in a voice may also explain why the tenor is often the favorite voice category for the majority of people, sparking phenomena such as "The Three Tenors."¹⁸⁷

¹⁸⁵ Stefan Koelsch, "Investigating Emotion with Music: Neuroscientific Approaches," *Annals of the New York Academy of Sciences* 1060 (2005): 416.

¹⁸⁶ Peter Schneider, "Structural, Functional, and Perceptual Differences in Heschl's Gyrus and Musical Instrument Preference," *Annals of the New York Academy of Sciences* 1060 (2005): 389.

¹⁸⁷ Luciano Pavarotti (1935-2007), Placido Domingo (1941-), and José Carreras (1946-). They first appeared together on July 7, 1990 in Rome, Italy and then again in 1994, 1998,

The Paris Opéra debut of Gilbert-Louis Duprez in the 1837 *Guillaume Tell* allows us to isolate when the physiological changes responsible for the singer's formant were first used throughout the range of the singing voice to legendary effect. The response of the audience and critics that night seems to imply that the electric emotion they felt as the tenor ascended to his famous high C originated from Duprez' laryngeal tube, producing a singer's formant that elicited an overwhelmingly positive emotion from the audience.

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2002, and various other appearances. Their albums and videos have sold millions of copies and have helped further the popularization of opera.

Chapter 11

Implications of the *Voix sombrée*

Vowel Choice in the Upper Register

From the rise of the tenor in the early 1800's, the difficulty and type of tenor roles have changed and evolved. A composer may consider certain factors while composing a role in an opera, such as tessitura, length of phrasing, frequency of high notes, and the vowels chosen for those high notes. The composer most likely knows about the chosen tenor's technique and how to best highlight each voice. When considering which part of a role to examine, it seems plausible that the arias written for these tenors most transparently show the composer's specific tailoring for each voice, since no other voices have to be considered (as in duets or ensembles). The aria is also traditionally a vehicle for the skill of a singer.

I have thus chosen a number of tenor arias and analyzed the type of vowels assigned to each high note of the aria as the composer probably chose vowels which best suited the voice or prevalent technique of the day. Of course, because of the supplied versification and syllabification of a libretto, a composer might not always be able to assign a certain vowel on a high note. However, in some cases, a singer could specifically request a syllable or vowel. For example, in the fourth act of *La Juive*, instead of a finale, Nourrit suggested that an aria be sung to end the act. Halévy wrote the music and Nourrit requested of Eugène Scribe (1791-1861), the librettist, that he be permitted to write the words for the aria himself. Halévy said, "He (Nourrit) wanted to choose the most resonant, the most favorable syllables for his voice."¹⁸⁸ Nourrit was an exceptional case, being a man of letters as well as being a musician. However, in examining arias written for tenors of the early nineteenth century, the composer seems to choose high notes and vowels that most favor the voice for which he is writing.

I have counted high notes in an aria as every note at G⁴ and above, the point at which vowel modification usually must happen with a lower larynx position. For every

¹⁸⁸ Halévy, *Derniers souvenirs et portraits*, 167. "Il voulait choisir les syllabes les plus sonores, les plus favorables à sa voix."

note at G⁴ and above, I then counted how many vowels were “bright” as compared to “dark.” In other words, I compared the percentage of vowels with a high second formant (F₂), such as [i, I, e, ε] to those with a lower second formant [a, o, u]. The “bright” vowels would more easily lead to or favor a high larynx position. Most often, critics describe the voice of a tenor with a high larynx as “bright, clear, or brilliant.” In contrast, the “dark” vowels, [a, o, u], more readily favor a lower larynx position, and the voice is characterized as “full, rich, and powerful.” I then calculated the percentage of bright to dark vowels.

Most results support my conclusions of which tenors sang with a high larynx and which sang with a low larynx. Traditionally, it was thought that before Gilbert-Louis Duprez and Domenico Donzelli, all tenors sang with a moveable larynx. In other words, as the pitch rose, so did the larynx. The practice of raising the larynx was in accordance with the theories of the time, which stated that the laryngeal level helped determine pitch, much as the slide of a trombone lengthens or shortens the resonating tract.¹⁸⁹ Thus, a higher larynx was believed to aid in higher notes and was endorsed by vocal teachers of the early 1800’s. In the case of the *voix sombrée*, the larynx is fixed in a lower position, no matter the pitch level.

According to my previous assumptions about tenor technique and the comments of Manuel Garcia, Jr., I surmised that the following tenors sang with a high larynx position: Adolphe Nourrit, Giovanni Battista Rubini, Giovanni David, and Andrea Nozzari. In contrast, I believed the following tenors sang with a lower larynx position: Antonio Poggi, Domenico Donzelli, Gilbert-Louis Duprez, and Gaetano Fraschini. My hypothesis was based upon recorded accounts of Nourrit singing with a high larynx and assertions of scientists and voice teachers that this was the accepted technique of the day. Following the tenor family line, Manuel Garcia, Sr. taught Nourrit and Garcia was taught by Aprile. Aprile also taught Nozzari, as did Giacomo David. Nozzari taught Rubini and Giacomo David taught Giovanni David. Thus, it seemed that a raised laryngeal technique would be common to all these singers. However, my results seem not to bear out all of these assumptions.

¹⁸⁹ Gregory Bloch, "The Pathological Voice of Gilbert-Louis Duprez," *Cambridge Opera Journal* 19, no. 1 (March 2007): 19.

In analyzing the vowels used for the high notes of the tenor arias, two tenors definitively matched my expectations. In the analyzed arias written for the voices of Giovanni David¹⁹⁰ and Giovanni Battista Rubini¹⁹¹ the vowels were overwhelmingly “bright.” For David, the percentage of vowels with a high [F₂] are 69% and 55%. For Rubini, the percentage of high [F₂] vowels is 61%. Brighter vowels would have favored the resonance of a high larynx and added to the brilliance or clarity of the voice. In fact, these two tenors were given numerous high notes to sing on an [i] vowel, the brightest of them all. As a particularly vigorous example, when Bellini wrote double-high f’s (F5) for Rubini in *I Puritani*, he placed them on an [i] vowel.

On the opposite end of the spectrum, certain singers seemed to be assigned a large majority of “dark” vowels or vowels with a low [F₂] and these corresponded with my expectations. For example, in the two arias analyzed for Duprez,¹⁹² the percentage of “dark” vowels assigned on high notes was 76% and 67% for *Lucia di Lammermoor* and *Benvenuto Cellini*, respectively. Donzelli¹⁹³ also seemed to favor the darker vowels, as he had 56% of his vowels in the “dark” spectrum. To this point, all my assumptions seem to bear out.

However, the results for Andrea Nozzari¹⁹⁴ do not seem to fit. Being of the same vocal lineage as David, Nourrit, and Rubini, one would expect brighter vowels corresponding to a higher larynx position in the upper register. Instead, Rossini composed the role of Rodrigo for Nozzari in *La donna del lago* and gave Nozzari 67% “dark” vowels in his aria. Nozzari’s voice has been described by critics as powerful and rich, and while he used falsetto in the upper register as did his contemporaries, it appears that he might have used a lower laryngeal position.

Nourrit’s results did not seem to favor vowels with higher second formants either. In analyzing *Guillaume Tell*, the percentage of “bright vowels” was about 40%. Perhaps

¹⁹⁰ Ilo from *Zelmira* (1822) and Rodrigo from *Otello* (1817), both by Rossini.

¹⁹¹ Riccardo Percy from *Anna Bolena* (1830) by Donizetti.

¹⁹² Edgardo in *Lucia di Lammermoor* (1835) by Donizetti and Cellini in *Benvenuto Cellini* (1838) by Berlioz.

¹⁹³ Pollione in *Norma* (1831) by Bellini.

¹⁹⁴ Rodrigo in *La donna del lago* (1819) and Antenore in *Zelmira* (1822) by Rossini.

the majority of darker vowels is one of the reasons the role never found great popularity with Nourrit, but became a success with Duprez.

A comparison with later tenors may be helpful and may reveal if the trend towards darkened vowels continued concurrent with continual use of the *voix sombrée*. Antonio Poggi¹⁹⁵ and Gaetano Fraschini¹⁹⁶ were some of the first Verdi tenors at La Scala in Milan, and were known as *tenore di sforza*. One would expect “dark” vowels to have been assigned to their arias because of their voice type. However, I found the vowels written for them on notes above the staff were “bright” at least 50% percent of the time. The brighter vowels may have to do with the fact that the roles written for them were very low by tenor standards as they rarely rose above f-sharp and never went above a-flat.

Overall, the results of my aria analysis seem to indicate that tenors with a higher laryngeal position favored brighter vowels in the high register. Composers seemed to know that these vowels would most benefit their vocal sound and composed the arias accordingly. Conversely, tenors with a known lower laryngeal position received arias with darker vowels in the high register. Darker vowels would be consistent with the vowel modification necessary with a lower larynx position, though even with brighter vowels, a lower larynx may be achieved through vowel modification. My study also indicates that analyzing the vowel upon which a composer places a high note in an aria might give clues to certain sound characteristics of the singer who premiered the role.

Importance of High Second Formant to Tenor Singing

The voices of Rubini and David might have garnered an advantage from singing vowels with high second formants. Bloothoft reported that progressively higher second formant vowels produce higher levels of singer’s formant. He found over a 10 decibel advantage in the sound pressure level of the singer’s formant for [i] over the vowel [u].¹⁹⁷ The acoustical advantage of a louder sound may be one of the reasons that singers systematically raise the second formant on all their vowels (except [u]), especially in the

¹⁹⁵ Carlo VII in *Giovanna d’arco* (1845) by Verdi.

¹⁹⁶ Corrado in *Il Corsaro* (1848) by Verdi.

¹⁹⁷ Bloothoft and Plomp, "The Sound Level of the Singer's Formant in Professional Singing," 2030.

high voice.¹⁹⁸ Cleveland reported that the higher level in the second formant actually distinguished the timbre of a tenor voice, differentiating it from a baritone or bass. His results demonstrated that the second formant was raised by all tenors in his study for all vowels except [u].¹⁹⁹

Lung Volume and Breath Pressure

Recent research has shown that covered singing requires both greater lung volumes and greater subglottal pressure. Lung volume, in fact, has been implicated in the position of the larynx. It has been shown that increased lung volume is associated with a lower larynx and that decreasing lung volumes correspond with a rising larynx.²⁰⁰ Lower laryngeal position arises partly from the caudal pull exerted by the trachea on the larynx during deep inspiration. Tracheal pull originates from the diaphragm, and as air is released and the diaphragm rises, the downward pull of the trachea diminishes. A downward pull is also exerted on the larynx by the inferior strap muscles of the neck during inspiration. Lamperti seems to support maintaining a downward pull of the larynx as he says the breath should be “held back” with the muscles of the body opposing exhalation, particularly in the diaphragm.²⁰¹ Balancing the forces of inhalation (with its accompanying lowered larynx) and exhalation is typically referred to as *appoggio* in the vocal world, and is especially important at higher lung volumes when the recoil force of the diaphragm is much higher.²⁰²

Covered singing also requires greater lung volumes because it uses higher airflow as opposed to open singing which uses less airflow. Subglottal pressure demands also

¹⁹⁸ Ingo Titze; Sharyn Mapes; Brad Story, "Acoustics of the Tenor High Voice," *The Journal of the Acoustical Society of America* 95, no. 2 (1994).

¹⁹⁹ Thomas Cleveland, "Acoustic Properties of Voice Timbre Types and their Influence on Voice Classification," *The Journal of the Acoustical Society of America* 61, no. 6 (1977): 1628.

²⁰⁰ Jenny Iwarsson and Johan Sundberg, "Effects of Lung Volume on Vertical Larynx Position During Phonation," *Journal of Voice* 12, no. 2 (1998).

²⁰¹ Giovanni Battista Lamperti, *Vocal Wisdom : Maxims of Giovanni Battista Lamperti* (New York: Taplinger, 1975), 23-4.

²⁰² Thomas J. Hixon, *Respiratory Function in Singing: A Primer for Singers and Singing Teachers* (Tuscon, AZ: Redington Brown, 2006).

rise with covered singing.²⁰³ These findings reiterate the need for singers to gain extensive development of the respiratory muscles.

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²⁰³ Hertegard, "Open and Covered Singing as Studied by Means of Fiberoptics, Inverse Filtering, and Spectral Analysis."

Chapter 12

Conclusion

When considering the acoustical and hygienic advantages of the *voix sombrée*, as well as the emotional reaction it incites, it is no surprise that the practice quickly became the *status quo* in regards to tenor singing. Closed timbre allowed the singer to convey more advantageously and healthily the drama inherent in a particular tenor role. Tenors singing with a close timbre created a more heroic sound as the activity of chest voice muscles increased and the amplitude of the upper harmonics of the voice were boosted. Conversely, one can also understand why earlier tenors used an open, light technique in their singing. The technique allowed them to produce the graceful, lyrical, virtuosic, and flexible vocal passages so prized by audiences of the early nineteenth century. However, as greater verity was desired and represented on the opera stage in the 1830's, particularly at the Paris Opéra, a new era began and the old ways fell out of favor. Alas, the sad case of Adolphe Nourrit demonstrates that the new techniques were not always easily attained, especially for those steeped in the old tradition.

After the Paris Opéra debut of Duprez in 1837, audiences began to demand tenors who used the *voix sombrée* and the *ut de poitrine*, and tenors, like Nourrit, began to seek the same technique of sound production. More visceral and exciting singing began to be expected of French and Italian tenors as the 1840's began, and they began to expand the techniques of the new Italian School of singing. Enrico Tamberlick (1820-1889) performed primarily in Naples and Paris and gained particular renown for his high C# (c#⁵) from the chest. Jean de Reszke (1850-1925) sang Faust at the opening of the Metropolitan Opera in 1883 and was noted for his heroic, dark sound. These tenors represent only a small part of the new singing tradition that included Enrico Caruso (1873-1921), Beniamino Gigli (1890-1957), Giacomo Lauri-Volpi (1892-1979), Mario del Monaco (1915-1982), and Franco Corelli (1921-2003). It seems that tenors also used varying degrees of *voix sombrée* in their singing, as well as varying degrees of chest voice function in their high notes. One can hear in the sound recordings of the early twentieth century that tenors moderated their use of chest voice in the high register more

than they do today. However, operatic tenors, as a whole, never returned to the old style of singing on the professional opera stage.

Lastly, it seems wise to consider performance practice issues for the operas of Rossini, Bellini, and Donizetti. These operas were written expressly for Rubini, Nourrit, Donzelli, David, Garcia, and Duprez, meaning their particular style of vocal production allowed them to succeed in these roles. And composers such as Rossini and Donizetti seem to have been proponents and teachers of vocal techniques, with Rossini teaching the lighter, agile voice and Donizetti later teaching Nourrit the *voix sombrée*. After considering the changes that occurred in tenor singing in the 1830's involving laryngeal musculature, open and closed voice, and other stylistic factors, should we expect a modern voice equivalent to Duprez to be able to consistently sing the roles written for Nourrit, or Rubini for that matter? Just as has happened in the revival of Baroque music, should the opera world seek for more accurate performance practice with greater use of pure head voice in the roles of Rubini and David? Would this result in a whole new voice category, a new tenor *fach*?

These questions are worth considering when researchers are faced with such overwhelming evidence of the difference in voice production of singers like Nourrit and Duprez. Taking into account all of the changes made in the development of modern tenor vocal technique, it is not difficult to envision the shock of the audience at the Paris Opéra as Duprez took the stage on April 17, 1837. His innovative singing, as well as his role as one of the first “Verdi tenors,”²⁰⁴ places Gilbert-Louis Duprez at the head of the family of modern tenors. Duprez did not stand alone in changing the tenor sound, as the use of *voix sombrée* had been previously developed by Manuel Garcia, Sr., Antonio Crivelli, and Domenico Donzelli. There is some evidence also that some Italian tenors, including Donzelli, had begun to use a greater mix of chest voice in their high registers. However, Duprez carried these techniques further, extending the use of chest registration and the timbre of *voix sombrée* to some of the highest notes in the tenor repertoire. His work made possible the future tenor roles in Verdi, Wagner, and Puccini, and while some may lament the lost beauty and grace of the voices of Rubini and Nourrit, none can dispute the exciting sound produced by the now-ubiquitous *voix sombrée*.

²⁰⁴ Duprez created the role of Gastone in Verdi's *Jérusalem* at the Paris Opéra in 1847.

It seems clear that as Adolphe Nourrit began his tour through Italy in 1837, most tenors were singing with the *voix sombrée* technique and a greater degree of chest voice involvement during phonation. The technique also began its immediate spread through France after 1837 and was accepted as necessary for the success of a tenor. Nourrit's letters reveal that he sought the same technique and failed in his attempt, losing the ease in his voice as well as his high notes, and his vocal failure greatly contributed to his eventual suicide. Considering the points put forth in this paper, special attention should be paid to the training of modern tenor voices. Many young tenors enter university or conservatory studies singing with a high larynx. Sometimes, this is corrected by teachers who understand the acoustical and hygienic advantages of a comfortably low larynx. Nevertheless, voice teachers often hesitate to correct or do not notice when the larynx is high. The young tenors progress through their vocal studies without ever correcting the problem and when they sing subsequent auditions, they find they are not hired by opera companies or given scholarships by graduate programs. Given the overwhelming evidence supporting the use of a low larynx and greater chest voice function in operatic singing, voice teachers should be vigilant in the training of young voices and insure that the technique popularized by Duprez and sought by Nourrit continues to be taught in the private voice studio.

Appendix A

The Tenor Roles of Nourrit and Duprez

Roles with an asterisk (*) indicate an opera's debut

(partially reprinted from Quicherat)

Adolphe Nourrit at the Paris Opéra

<u>Role</u>	<u>Opera</u>	<u>Composer</u>	<u>Date</u>
Pylade	<i>Iphigénie en Tauride</i>	Gluck	1821
Achille	<i>Iphigénie en Tauride</i>	Gluck	
Démaly	<i>Les Bayadères</i>	Catel	
	<i>Lasthénie</i>	Hérold	1823
Polynice	<i>Oedipe à Colone</i>	Sacchini	
Renaud	<i>Armide</i>	Gluck	
Orphée	<i>Orphée</i>	Gluck	1824
Salem	<i>Les deux Salem</i>	Garcia	1824
Le Tasse	<i>La Mort du Tasse</i>	Garcia	
Nouradin	<i>Florestan</i>	Garcia	
	<i>Vendôme en Espagne</i>	Boïeldieu, Auber, Hérold	
	<i>Sapho</i>	Reicha	
Icile	<i>Virginie</i>	Berton	
Aladin	<i>Aladin ou la Lampe merveilleuse</i>	Nicolo	
Lyncée	<i>Les Danaïdes</i>	Salieri	
Calpigi	<i>Tarare</i>	Salieri	
Tamorin	<i>La Caravane du Caire</i>	Grétry	
Fernand Cortez	<i>Fernand Cortez</i>	Spontini	
Licinius	<i>La Vestale</i>	Spontini	
Cassandre	<i>Olympie</i>	Spontini	
Abel	<i>Abel</i>	Kreutzer	
	<i>Ipsiboé</i>	Kreutzer	
Lubin	<i>Le Rossignol</i>	Lebrun	
Colin	<i>Le Devin de Village</i>	Rousseau	
	<i>La Belle au Bois Dormant</i>	Carafa	
	<i>Pharamond</i>	Berton, Kreutzer, Clodion, Boïeldieu	
Néoclès*	<i>Le Siège de Corinthe</i>	Rossini	1826
Macbeth	<i>Macbeth</i>	Chélar	
Aménophis*	<i>Moïse</i>	Rossini	1827
	<i>François 1^{er} à Chambord</i>	De Ginestet	
Adolar	<i>Euryanthe</i>	Weber	
Masaniello*	<i>La Muette de Portici</i>	Auber	1828
Comte*	<i>Le Comte Ory</i>	Rossini	1828
Arnold*	<i>Guillaume Tell</i>	Rossini	1829
Le Dieu	<i>Le Dieu et la Bayadère</i>	Auber	1830
Guillaume*	<i>Le Philtre</i>	Auber	1831

Robert*	<i>Robert le diable</i>	Meyerbeer	1831
*	<i>Le Serment</i>	Auber	1832
Gustave*	<i>Gustave III</i>	Auber	1833
*	<i>Ali-Baba</i>	Cherubini	1833
Don Juan	<i>Don Juan</i>	Mozart	
Eléazar*	<i>La Juive</i>	Halevy	1835
Raoul de Nangis*	<i>Les Huguenots</i>	Meyerbeer	1836
Phoebus*	<i>Esméralda</i>	L. Bertin	1836
Stradella*	<i>Stradella</i>	Niedermeyer	1837

Adolphe Nourrit at the San Carlo (Naples)

Viscardo	<i>Il Giuramento</i>	Mercadante	1838
Reina	<i>Elena da Feltre</i>	Mercadante	1838
Pollione	<i>Norma</i>	Bellini	1839

Gilbert-Louis Duprez at the Paris Opéra

<u>Role</u>	<u>Opera</u>	<u>Composer</u>	<u>Date</u>
Arnold	<i>Guillaume Tell</i>	Rossini	1837
Guido*	<i>Guido et Ginevera</i>	Halévy	1838
Cellini*	<i>Benvenuto Cellini</i>	Berlioz	1838
Albert*	<i>Le Lac des Fées</i>	Auber	1839
Polyeucte*	<i>Les Martyrs</i>	Donizetti	1840
Fernand*	<i>La Favorite</i>	Donizetti	1840
Gerard*	<i>La Reine de Chypre</i>	Halévy	1841
Dauphin*	<i>Charles VI</i>	Halévy	1843
Sébastien*	<i>Dom Sébastien, roi du Portugal</i>	Donizetti	1843
Otello	<i>Otello</i>	Rossini	1844
Edgard	<i>Lucie de Lammermoor</i>	Donizetti	1846
Gaston*	<i>Jérusalem</i>	Verdi	1847

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