BACH'S TENOR, MODERN IDEOLOGY AND HISTORICAL PRACTICE: RE-EXAMINING VOCAL TECHNIQUES FOR THE UPPER REGISTER

BY

MICAH LAMB

Submitted to the faculty of the
Jacobs School of Music in partial fulfillment
of the requirements for the degree,
Doctor of Music
Indiana University
May 2015

Accepted by the faculty of the

Indiana University Jacobs School of Music,

in partial fulfillment of the requirements for the degree

Doctor of Music

Doctoral Committee

_____

Daniel Melamed, Research Director

_____

Wendy Gillespie, Chair

_____

Nigel North

_____

Elisabeth Wright

27 April 2015

Acknowledgements

I would like to thank the members of my research committee for their help and support in bringing this project to fruition and extend my gratitude to Dr. Daniel Melamed, research director, for his patience and words of encouragement.

I owe a huge thank you to my wife Alex for her support during the entire doctoral program and for diligently keeping me on task while writing this document. I could not have done it without her help.

Table of Contents

List of Examples

List of Charts

List of Tables

List of Appendices

Chapter I: Introduction

The tenor voice is by far the most difficult in the whole range. For the tenor sound is not a natural sound. It has to be fabricated. Yet it has always electrified opera-goers more than any other kind of voice – male or female. Something about the physical quality of this sound and of its vibrations, to say nothing of those high notes right at the top of the register, seems to arouse an instant, visceral excitement in the audience.

--José Carreras

Singers have at their disposal a number of vocal tools that they use to perform repertoire from many eras. As the performance of pre-19th century repertoire has become increasingly common, the question of performance practice of earlier eras has also increasingly demanded knowledgeable answers to guide performers. Did singers of earlier eras use the same vocal tools as modern performers? At least with respect to tenor singing, historical sources suggest that singers from earlier eras made use of a specific tool that has been all but discarded by modern vocal pedagogy: falsetto singing in the upper register.

This document has two parts: the first argues for the historical basis of tenor falsetto singing and examines, both in modern and historical contexts why it is no longer being broadly taught or used in performance of pre-19th century repertoire. The second part attempts to connect theory and practice by examining the sacred vocal works of Johann Sebastian Bach, in particular the cantatas of his first annual cycle while cantor of the Thomasschule in Leipzig.

If historically informed performance matters, then using historically appropriate tools should also matter. For tenors, re-learning to use the tool of falsetto in the upper register in Bach's cantatas is important because it changes the sound of the voice and significantly changes the way his music is experienced.

Historical Evidence

Beginning in the mid sixteenth century vocal tutors began to appear and the flood of singing manuals has continued to pour forth unabated. The early tutors are often frustratingly vague, but most provide at least a cursory picture of the sort of sound the author was intending potential students to produce. Early instruments, particularly organs, provide valuable evidence relating to the various performing pitches in use at the time Bach's music was being performed.[1] The structures in which Bach's music was performed and the specific performance context provide some indication of the type of sound that might have been expected from his singers. Lastly, there is the music itself, which, through its combination of range, tessitura and sheer technical difficulty presents some interesting sonic possibilities for the adventurous singer.

It is not the purpose of this document to recount a history of the tenor voice. John Potter has already successfully accomplished that feat.[2] Rather, I intend to take a small slice out of the pie and examine the piece that deals specifically with singing the music of Johann Sebastian Bach. In order to accomplish this goal it will nevertheless be necessary to take into consideration how Bach's singers were formed into the individuals who had the honor, and no doubt sometimes the great challenge, of performing his music. Likewise it is absolutely essential to examine how today's tenor has arrived where he is, particularly because this has proved to be a considerable obstacle to getting back to where Bach's tenor was. A number of developments have changed the way tenors approach the upper range, including the expanding size of performing venues, larger orchestras, and vastly different performing contexts, among others. These changes have

---

[1] Bruce Haynes, "Pitch Standards in the Baroque and Classical Periods" (PhD diss., Université de Montréal, 1995), 248.

[2] John Potter, *Tenor: history of a voice* (New Haven; London: Yale University Press, 1999).

conditioned the way audiences listen and shape their expectations. Whether those expectations can be reshaped enough to embrace a significantly different aesthetic remains to be seen.

The Modern Tenor Paradigm

What type of sound do today's discerning listeners expect a classically trained tenor to produce, particularly in the upper register, and how is that aural paradigm sustained? As good a place to start as any is to briefly consider the statement above by tenor and opera star José Carreras. What can be said about the claim that the tenor sound is not natural, but fabricated? Underlying this assertion is the tacit implication that the sound most classically trained tenors produce, particularly in the upper register, is not a sound anyone would ever classify as natural. More than any other voice type, the operatic tenor sound is produced to conform to a specific aesthetic ideal, which as Carreras aptly points out, is to thrill. And what of those high notes right at the top of the register? What quality must they possess in order to do their work and thrill an audience? Providing an answer to these questions, modern voice pedagogy has built a model of the paradigmatic tenor sound and sustained it in three key ways: first, with the aid of voice science and the philosophy of efficiency; second, with the myth of legitimacy, and finally, by arguing for the necessity of commercial viability.

Efficiency

Using the voice efficiently, or to put it another way, using the voice in such a way that it produces a certain result using the least effortful means possible, is hardly a new concept. Conrad von Zabern, in his "De modo bene cantandi" of 1474, urged singers to not sing through the nose or produce too throaty a sound. He likewise recommended not shouting the highest notes.[3] Jump

[3] Conrad von Zabern, "De modo bene cantandi," in *Readings in the History of Music in Performance,* ed. and trans. Carol MacClintock, (Bloomington: Indiana University Press, 1974), 12-16.

ahead 200 years and one will find similarly authoritative admonishments from contemporary pedagogues trying to extract from a voice the best possible sound with the least amount of effort. Advice regarding how to produce the best possible sound, or create a sound in the physiologically most efficient manner possible, ignores the reality that "best" and "efficient" cannot be defined as free-standing, objectively verifiable concepts. I may envision my "best" sound as being quite different than yours, and certainly a best sound, in regards to the voice, has evolved considerably as a result of changing singing conditions. Surely we don't imagine that the "best sound" for a man seated on a stool, plucking a lute and singing for an audience of fifteen patrons in a room not much larger than the average living room is the same as that of a man standing center stage in a massive concert hall attempting to be heard over a substantial orchestra. Can we compare the best sound of a man participating in a worship service, recounting the passion story of Jesus to that of the heroes of *verismo* opera and the singers who bring them to life?

Efficiency is subject to the same qualifications as best. For instance, many musical instruments play the same pitches but produce different tone quality requiring more or less effort. A tuba and a trombone are both capable of playing low pitches, but the tuba makes more sound on the pitches with less effort from the player. Which instrument is more efficient for playing low tones? Well, the tuba is clearly more efficient but that doesn't make it the right choice for every situation requiring a bass instrument. The singing voice is no different. Physiological function is a choice that depends on the desired outcome of the singing. Richard Miller and other pedagogues object, and rightly so, to a singer who is forced to choose one outcome to the exclusion of all others because of a lack of technical proficiency.[4] Singers who are forced to use nothing but falsetto in the upper register are indeed at a disadvantage because much mid to late 19th century and most 20th century repertoire was not composed with upper register falsetto singing as a

[4] Richard Miller, *National Schools of Singing: English, French, German and Italian Techniques of Singing Revisited*, Rev. ed. (Lanham: Scarecrow Press, 1997), 107.

paradigm. If one is of any mind to sing this repertoire, the ability to access the upper register in a manner consistent with what Miller describes as the traditional Italian school is a must.[5] As will be explored more fully in chapters to come, this manner of singing high notes is by no means a given, and becomes less and less likely to be the norm (or even practiced at all) the farther back in time we travel.

The Italian school of singing beginning in the second half of the 19th century and continuing to the present day is not a model that is endorsed by pre-19th century historical sources or that makes much sense given the extra-musical variables of pre-industrial social conditions and the demands of the repertoire itself. For the singer who utterly censures the use of falsetto and finds himself unable to use his voice in the upper register without the necessary "efficiency" to compete with the trombone section of a large orchestra is now in the same position as the technically deficient modern tenor who cannot produce a robust enough sound to do justice to the repertoire. If historically informed performance is a meaningful objective for the performer, would it not be better for both tenors to simply have a valid choice of technique and sound quality based on the historical context and the demands of the repertoire being performed?

Legitimacy

For a long time, "authenticity" was the by-word of the spin doctors of the Early Music movement, signifying a magical return to a lost sound, something better, truer and closer to the original than a sound produced on modern instruments by players using conventional playing techniques. This concept has since been challenged by Richard Taruskin as a basically specious construct; he maintains that what he refers to as an "authentistic" performance is in fact a very

[5] Ibid., 117-118.

modern performance, founded on a modern performance aesthetic.[6] The context and the methods used (i.e. copies of original instruments) may be historically accurate, but the spirit is entirely modern. Taruskin's debunking has itself been the subject of a serious counter-debunking by early music scholars/performers such as Andrew Parrott, who argues that historical accuracy is critical to the power and meaning of earlier repertoires, and can be ascertained to a degree profound enough to significantly affect performance practice.[7] So in Parrott's view, the authenticity of a given performance depends not only on the intelligence, worldview and emotional commitment of the modern performer but also, and perhaps mainly, on the original performing context of the work in question, gleaned through study of historical sources.[8]

The term "legitimate" in the writings of renowned American vocal pedagogue Richard Miller seems to claim the same sort of authority in the teaching of vocal pedagogy as "authenticity" once did for the Early Music movement.[9] What makes a vocal technique, a singing style or a type of sound legitimate? From whence does a singer's art derive its legitimacy? In his discussion of national singing styles Richard Miller challenges the "legitimacy" of falsetto singing in two ways: first, he questions the historical legitimacy of falsetto singing by the tenor voice; second, he questions the physiological legitimacy of tenor falsetto singing; These arguments combine to virtually preclude the use of falsetto by a tenor in performance except for the most extreme coloristic effects or as a result of the most rank ineptitude.

---

[6] Richard Taruskin, *Text and Act: Essays on Music and Performance* (New York: Oxford University Press, 1995), 106.

[7] Andrew Parrott, "Composers' intentions, performers' responsibilities," *Early Music* 41, no. 1 (February 2013): 37-43, accessed January 14, 2014, http://dx.doi.org/ 10.1093/em/cat007.

[8] Andrew Parrott, "Composers' intentions, performers' responsibilities," 41-42.

[9] "Within the English, French, and German Schools there are groups of teachers who believe that the legitimate male head voice can be developed through exercising the effeminate falsetto sound…" Miller, *National Schools of Singing*, 106. The word crops up throughout his writings. The preceding citation is one among many.

Miller begins his analysis of vocal registers by resisting what he refers to as the temptation to join in a discussion of the historical meanings of register terminology.[10] He admits the relevance of such a discussion, then undermines its validity with the following comment: "The question is by no means an academic one, inasmuch as a number of current pedagogues, to be found in Germany, France and England (and of course in America) stress the use of falsetto as a means of accomplishing the upper male voice, believing themselves to be practicing an old Italian method, supported by historical evidence."[11] Miller is making a crucial point with this seemingly innocuous statement about terminology. He implies that these rogue pedagogues endorsing falsetto singing are deluded into imagining their teaching has a basis in historical fact. Mr. Miller then proceeds to an interesting discussion of falsetto usage in the early 19th century (which I shall return to later) but he says no more of the mistaken pedagogues wrongly interpreting 17th and 18th century historical evidence to advocate tenor falsetto singing. No sources are mentioned; no repertoire discussed, no performance contexts are investigated; we are left to accept the argument and take Mr. Miller at his word.

Any male voice can produce a falsetto sound; even the famous castrati were capable of, and indeed encouraged to, make use of falsetto singing in the upper register. Thus at some level it seems absurd to level the accusation of unnaturalness, or physiological wrongness, at the male falsetto voice, since it uses the same vocal folds, same breath flow and same intrinsic and extrinsic muscle coordination as the "natural" tenor voice. The male falsetto sound certainly seems more natural than some modern recording techniques that amplify or otherwise alter a singer's modal vocal character. And as José Carreras points out, thrilling though it may be, the sound produced today by many operatic tenors in the upper register is hardly one that most

[10] Ibid., 104.

[11] Ibid., 104-105

listeners would call natural. Falsetto is sometimes referred to as the false voice, a telling moniker that implies deviation from the true, or legitimate. Indeed, the so-called false voice carries its stigma of physiological unnaturalness for two reasons, both unrelated to the actual vocal organs found in a singer's throat.

First, the falsetto sound, even when it is expertly produced, resembles the sound of the female voice more than it does that of the modal tenor voice.[12] Some modern listeners find this gender-bending quality extremely off-putting, and although physiologically it is no more or less natural than any other sound, the perception is still one of strangeness.[13] Second, poorly produced falsetto, from the time of Caccini on, has been specially recognized for its uniquely unpleasant quality. Early writers and modern pedagogues seem to be in complete agreement on this point. Miller's objection to falsetto on a physiological basis is very similar to the efficiency argument, namely, that falsetto singing betrays a lack of physiological coordination, thus robbing a singer of the full expressive potential of his voice above the staff. For instance, in discussing registration events ("passaggi" in the traditional Italian school) Miller makes the following comment:

> Failing to understand the mechanical practices of traditional vocal registration (and therefore unable to direct the student toward access to the legitimate upper voice), a number of pedagogues in the non-Italian schools seem increasingly to be persuaded that the 'easy, effortless' falsetto upper voice is preferable to the time consuming rigors of ironing out the techniques of passing into the fully resonated upper voice.[14]

It must be understood from reading such a statement that there is a very clear aesthetic agenda underlying the physiological argument. What, for instance, is traditional vocal registration?

---

[12] Johan Sundberg defines modal voice as the normal register for the male voice, "which is used for lower phonation frequencies." Johan Sundberg, *The Science of the Singing Voice* (Dekalb: Northern Illinois University Press, 1987), 50.

[13] Peter Giles, *The History and Technique of the Counter-tenor: A study of the Male High Voice Family* (Aldershot: Scholar Press, 1994), 42.

[14] Miller, *National Schools of Singing*, 107-108.

Again, what makes the upper voice Miller is praising more legitimate than another sound, particularly in the context of different historical eras, when "legitimate" might mean something else entirely? Unless one is any way familiar with historical sources and the challenges of performing early repertoire in the modern, "legitimate" way, it is easy to accept Miller's argument at face value, without examining the underlying assumptions, particularly because they reinforce what many pedagogues and informed listeners are already conditioned to expect.

Commercial Viability

Is there any sense in practicing and perfecting a sound that in the end will not likely have much commercial viability, at least for the foreseeable future? Such is the question faced by any tenor studying historical singing techniques willing to go out on a limb and attempt something that is not simply a pale copy of the same sounds produced by a tenor performing mainstream repertoire. In his article discussing the motivations behind learning a truly historically appropriate singing technique, Richard Wistreich describes the dilemma in a nutshell while recounting the developing commercial viability of the Early Music movement.[15] When it came time to record music that had traditionally been the sole territory of the established classical tradition, "neither the record company executives nor those conductors who could see that they, too, might be able to negotiate a route to the top, were prepared to countenance the same singers or singing styles that had been deployed in early music up until this point."[16] Superb musicianship aside, a singer's career depends largely on the quality of voice; perhaps, in today's market, even

[15] Richard Wistreich, "Practicing and Teaching Historically Informed Singing – Who Cares?" *Basler Jahrbuch für historische Musikpraxis* 26 (2002): 19.

[16] Ibid., 22.

principally on vocal quality. CD releases bearing titles such as "The Beautiful Voice[17]" leave little doubt that audiences are interested, first and foremost, in the sound of the voice. Financially, much was, and is, at stake in putting a forth a sound that is recognizable and likely to receive both critical and commercial approbation.

Today's tenor sound is well known. It is heard across the board, in Early Music and other repertoire alike. Falsetto singing as a conscious choice in certain repertoire has very little support from the pedagogy establishment. Richard Miller makes no bones concerning what he believes is at stake for a tenor in the mainstream, Italianate tradition as far as the upper register is concerned:

> Today, certainly, quite apart from historical speculation, no singer of international repute who can sing his top voice legitimately (be he bass, baritone or tenor) will resort to falsetto in public unless he is ill…falsetto is reserved for the amateur, the so-called countertenor, the ensemble singer (particularly of pre-Renaissance music), and that segment of modern schools of singing wherein it is believed that falsetto techniques are the rediscovery of the old Italian *voce di testa* as it was executed among practitioners of *bel canto*.[18]

He is far from alone in his assessment of the value of tenor falsetto singing in the pedagogy establishment and the marketplace. Anthony Frisell remarks in 1964, thirteen years before Richard Miller penned *National schools of Singing*, that "present day singers are expected to sing upper tones with a great amount of resonance drawn from the lower register, which limits their upper extension. If our present day tenors were to sing upper tones in a falsetto manner their production would be criticized as being false and unrelated to the natural voice."[19] Little has changed in the almost forty years since the publication of *National Schools of Singing*.

---

[17] Rene Fleming, "The Beautiful Voice," recorded August 21-28, 1997, with Jeffrey Tate and the English Chamber Orchestra, streaming audio, accessed September 17th, 2014, http://purl.dlib.indiana.edu/iudl/variations/sound/AJW8955.

[18] Miller, *National Schools of Singing*, 109.

[19] Anthony Frisell, *The Tenor Voice* (Boston: B. Humphries, 1964), 21.

The following chapters will explore a range of issues relating to tenor falsetto singing as a viable tool for performing the music of J.S. Bach. These issues encompass the views of modern voice science regarding falsetto and vocal registration, ideological obstacles to falsetto singing, historical evidence, falsetto singing in other national traditions, and finally the evidence offered by Bach's own music and the unique historical circumstances in which it was performed. While a major shift in established pedagogical practice will doubtless be necessary to make falsetto an accepted tool of the tenor technique again, I hope the following pages will at the very least contribute to rescuing the practice of tenor falsetto singing from the realm of historical speculation to which it has been unreasonably consigned.

Chapter 2: Voice Science and Vocal Registration

To understand why falsetto is a viable tool for modern tenors to use in the music of Bach and other early repertoire, the tool must be clearly defined. What is falsetto? There is considerable diversity in how voice scientists understand the phenomenon of falsetto singing and no agreed upon definition. Sundberg provides a basic, non-scientific definition when he describes falsetto as the register "which is used when males attempt to imitate the female voice character." Ingo Titze calls falsetto the lightest male register. He also points out the simultaneously vague and specific connotations of the term when he writes, "although falsetto does little to clarify physiology, sensation, or anything else scientifically or artistically, it is a unique term that should probably be kept. It cannot be confused with much else."[20] There seems to be a trend, however, that distinguishes between two types of falsetto. For instance, Frederic Husler describes both a "collapsed falsetto" and a "supported falsetto."[21] The former "is an extremely thin, breathy tone quality. It cannot be modified, nor is any transition possible from it into the full voice," while the latter is "a tone quality of greater tension, strength and carrying power, one which is modifiable to a certain extent and out of which the full voice can be developed."[22] Richard Miller implies a very similar distinction in his own discussion of falsetto in *National Schools of Singing*. On the one hand, there is the unpleasant falsetto associated with the beginner while on the other hand it is possible to develop a well-supported falsetto with a more

[20] Ingo R. Titze, *Principles of Voice Production* (Upper Saddle River: Prentice Hall, 1994), 253.

[21] Frederick Husler and Yvonne Rodd-Marling, *Singing: The Physical Nature of the Vocal Organ* (London: Hutchinson & Co. Ltd, 1976), 59.

[22] Ibid., 59.

pleasing quality. [23] Vennard also mentions two falsettos, one soft and effortless, due to the lack of laryngeal tension, while the other can produce a "loud clear tone," the result of a greater contact between the folds brought about by significantly increased breath pressure.[24]

Part of the difficulty in understanding and properly classifying falsetto singing is that it falls under the broader, rather foggy concept of vocal registers. There is no consensus in modern voice pedagogy as far as an answer to the question of vocal registration is concerned, though to be fair, that lack of consensus is simply the continuation of a long tradition of discord dating back to the first vocal tutors. Some teachers believe in a two- register voice (chest and falsetto), some in a three-register voice (chest, head, falsetto) and some disavow the phenomenon of registration at all. Modern voice science, for its part, has made clear that registers are somewhat of a misnomer as far as physiology is concerned. The term implies a neat, recognizable division, almost as though the vocal organ comprised several different shelves that one pulls out and pushes back in at will to achieve a certain tone quality, rather than an organic continuum encompassing the entire vocal range.[25]

Although the wording is sometimes different, modern voice science proposes fairly internally consistent definitions of vocal registration. Vennard defines the process, as "when one's laryngeal function is so crude as always to be static, with breaks between different adjustments, we hear what are called registers . . . pitch is a very important factor in registration,

---

[23] Miller, *National Schools of Singing*, 106-107. Miller is not endorsing falsetto singing in any way, rather making a point that some pedagogues mistakenly believe the more powerful falsetto he describes is an effective way to access the legitimate upper voice.

[24] William Vennard, *Singing: The Mechanism and the Technique*, 36.

[25] Miller, Donald. *Registers in Singing: Empirical and Systematic Studies in the Theory of the Singing Voice*, (Groningen: Rijksuniversiteit Groningen, 2000), xx. Something of this idea is implied in Miller's discussion of the integrated approach to registration.

but the real distinction is in *quality* of tone, the result of difference in production."[26] Sundberg states that "the most common description is that a register is a phonation frequency range in which all tones are perceived as being produced in a similar way and which possess a similar voice timbre."[27] Likewise, Titze writes that "the term register has been used to describe perceptually distinct regions of vocal quality that can be maintained over some ranges of pitch and loudness."[28] In reality registration events occur as the vocal organ makes minute in-the-moment physiological adjustments to account for rising or falling pitch. The quality of a sound, its timbre and volume, change as the vocal organ makes its adjustments. In broad terms, the more intensely involved the vocalis (the internal thyroarytenoid muscles, forming the edges of the vocal folds),[29] the longer the closed phase of the vocal fold vibration and the greater the length of the vocal fold vibrating, the more the sound will possess the quality of what has traditionally been described as chest voice. In contrast, the lightest sound, what modern pedagogy describes as falsetto, will involve far less muscular activity, a longer open phase of vocal fold vibration and less of the vocal fold actually vibrating.

With the above descriptions of falsetto in mind it is no wonder that the connection between historical sources and the modern conception of falsetto and vocal registration can be fraught. What should be clear from any discussion of historically informed performance and current scientific/pedagogical views of vocal registration is evident: multiple outcomes are possible with greatly varying results, depending on which vocal tool is used. Voice science has

---

[26] William Vennard, *Singing: The Mechanism and the Technique* (Ann Arbor: Edwards Brothers, 1950), 33.

[27] Johan Sundberg, *The Science of the Singing Voice* (Dekalb: Northern Illinois University Press, 1987), 49.

[28] Ingo R. Titze., *Principles of Voice Production* (Upper Saddle River: Prentice Hall, 1994), 253.

[29] William Vennard, *Singing: The Mechanism and the Technique,* 32.

little to say about which vocal tool is historically appropriate, just how that tools function physiologically.

Vocal Registration Events

Modern tenors are essentially working with the same raw materials as Bach's singers, but the demands of varying historical circumstances have called for the discovery and development of different tools - differing responses working within the same basic physiological framework. Three fundamental characteristics of human vocal function that have a significant impact in the context of historically informed performance are the predictability of vocal registration events, the reliable link between unique physiological processes and attendant tone quality and finally, the process of register equalization. Bach's singers did not have super voices that worked in a different way from those of modern tenors - his singers worked with the same building blocks but used different tools.

A prime example of the confusion between the basic vocal material and how it is deployed based on circumstance (what tools the singer chooses to use to get the job done) is the issue of vocal evolution. René Jacobs has claimed that the human voice, unlike instruments, has not evolved over the years and is identical to the voices of the past.[30] Although his assertion seems to state the obvious, the argument may not be as neat and tidy as all that. Herbert Moller has discussed the timing changes to pubertal onset and voice change in boys' voices over the years and his discussion also encompasses technical capabilities of the voice (such as range) that might have been altered due to environmental factors such as poor nutrition.[31] The research is not

[30] Rene Jacobs, interview by Jacques Doucelin, *Le Monde*, November 1993, quoted in Richard Wistreich, "Practicing and Teaching Historically Informed Singing – Who Cares?," *Basler Jahrbuch für historische Musikpraxis* 26 (2002): 19.

[31] Herbert Moller, "Voice Change in Human Biological Development," The *Journal of Interdisciplinary History* 16, no. 2 (Autumn 1985): 246-253, accessed January 15, 2014, http://www.jstor.org/stable/204176

at a point to provide any concrete insight into how the voice of the baroque singer is different than that of his modern counterpart, but the possibility at least exists that the evolutionary status of the voice has not remained as static as Jacobs suggests. Even if we credit that the physiological apparatus of the singing mechanism has not remained entirely unchanged, it has changed little enough to drastically alter how sung tone is produced throughout the range. Vocal registration events, intrinsic to any voice production, whether sung or spoken, are emblematic of that constancy. Registration events are attendant on all voices and voice types (barring the random, unique voices that defy the norm); in the male voice, these registration events, in general terms, follow roughly the same path from category to category and voice to voice: the heavier mechanism of the chest voice can only be carried so high before a physiological change must occur; and likewise, falsetto can only be carried down so low into the range before it can no longer be produced. These two events utterly define vocal registration in the male voice and provide years of angst for the budding professional singer trying desperately to erase the aural presence of register transitions from his vocal product. In his seminal work on the melding of voice science and vocal pedagogy, "The Structure of Singing" Richard Miller provides a chart, based on years of scientific and teaching experience, mapping out the physiologically predictable registration events for each voice type and *fach*. Titze acknowledges this predictability in his own discussion of registration, writing that "a major unresolved issue in the study of registers is the consistency with which involuntary register changes occur at specific fundamental frequencies."[32] Our study does not aim to resolve the issue of why registration events occur predictably on certain pitches, only to establish the fact that they are involuntarily present and must be voluntarily "erased" with years of practice. Lacking any convincing evidence to the contrary, it seems reasonable to assume that Miller's findings would apply also to singers of previous generations and eras.

[32] Titze, *Principles of Voice Production*, 262.

If we acknowledge that Bach's singers, and his tenors in particular, were negotiating predictable registration events in the singing voice, we must ask first, how does Bach's vocal writing for the tenor voice relate to the registration events (passaggi) in the upper register, and second, how did Bach's tenors negotiate those registration events? The answer to the first question will be dealt with in detail when we examine Bach's first annual cycle of cantatas for performance in Leipzig, but suffice it to say as a preliminary statement that few repertoires make as strenuous demands on the tenor voice to deal with registration events as does the vocal music of Bach. As far as the second question is concerned, we know how our own tenors are taught to cope with vocal registration events, and as we have made clear, recourse to falsetto singing is not a favored method of modern pedagogy. As will become equally clear in the following chapters, it is by no means certain that Bach's tenors managed those same registration events without the use of falsetto singing. In fact, quite the opposite seems likely, that conspicuous use of falsetto singing was not only a viable but encouraged method of singing in the upper register.

Vocal Registers and Tone Quality

Voice science has proved fairly conclusively that certain vocal processes result in reliably consistent tone quality. So when Sundberg writes "Thus register is dependent on the vocalis activity from the beginning; in a heavy register the vocalis activity is greater than in a lighter voice"[33] we might think of this statement in reverse, that a powerful, heavy tone is indicative of significant vocalis activity, while a soft, light tone points to just the opposite. Taking this observation into consideration, we must ask what sorts of vocal sounds early sources call for and mark as ideal in the upper register, and to what concomitant physiological processes these adjectives point. For while we can never know the exact meaning of the term falsetto or chest in

[33] Sundberg, *Science of the Singing Voice*, 56.

pre-20th century tutors, we can rely to some extent, and with caution, on the descriptors that accompany those terms. The adjectives "loud" or "soft" may not be precise register markers, but surely they tell us something concrete about the tone quality in question and the vocal production used to obtain it. For instance, Hiller's 1778 Treatise on Vocal Performance and Ornamentation offers the following advice to novice singers: "In the beginning, the singer should use only a small range of the voice, which allows him to produce the tones with ease, lightness, and in tune, even if only eight or ten notes are employed at a time."[34] The ideal presented here, ease of production and lightness of tone quality, is achieved by gradually involving the entire compass of the voice to obtain the desired result. It follows logically that the attendant physiological process ought to be one not involving a great deal of vocalis activity or strong sub glottal pressure. What kind of impact does this have on establishing a technique specific to performing early music? Richard Miller claims (and we believe many teachers of voice would agree) that "one does not sing Bach and Puccini with the same degree of vibrancy or vocal coloration but one does not need two different singing techniques to accomplish both literatures. The physiology and the acoustics of the vocal instrument are unalterable givens."[35] If one truly invests in the possibilities suggested by four hundred years of vocal instruction Mr. Miller's claim does not seem so clear cut.

Register Equalization

Both modern literature and historical sources after the early 18th century dealing with vocal pedagogy suggest that register equalization is a major component of any singer's training. Sundberg was previously quoted defining a register as a frequency range wherein "all tones are perceived as being produced in a similar way and which possess a similar voice timbre." The

[34] Johann Adam Hiller, *Treatise on Vocal Performance and Ornamentation*, ed. and trans. Suzanne J. Beicken (Cambridge: Cambridge University Press, 2001), 54.

[35] Miller, *National Schools of Singing*, xviii.

goal of register equalization is to extend the perception of similarity, both in means of production and timbre, across multiple registers to create the illusion of "one voice".[36] The question for a singer to consider, apart from how to accomplish this difficult feat, is to choose what type of timbre to which each register should conform. Modern voice pedagogy almost uniformly strives to emulate the timbre of the powerful modal, or chest voice, throughout the range. This is not to say that modern singers sing unmusically, or without any dynamic or timbral variation, only that the basic quality of the sound remains modeled on the modal voice regardless of the register. In this way, even well above the secondo passaggio in the tenor voice, it still seems as though the voice is being produced in the same way, and possesses the same full, powerful, muscular quality as the modal voice.

How would this process sound if the modal voice were not trained to project above a large orchestra, if the larynx were not sustained in a perpetually lowered position, and significant amounts of sub glottal pressure not applied to the vocal folds? What if a lighter upper register served as the model for equalization instead of a heavier modal voice? Some idea of what this type of voice sounds like can be obtained by listening to ensemble singers, who typically have no need to project above an orchestra, have safety in numbers, and also frequently deal with a tessitura that makes heavy modal voice as a paradigm of register equalization well-nigh impossible to sustain. In fact, an article by Salomão and Sundberg investigating male singers' own perceptions of modal and falsetto registers reveal that some tenor singers are not even aware of a difference between modal and falsetto voice. These authors write that "many singers, especially tenors, sometimes appear to resort to falsetto register when singing in the upper part of their pitch range. Also, they typically strive to reduce the timbral differences between these registers. Indeed some singers even doubt that there are any clear differences between modal and

[36] Sundberg, *Science of the Singing Voice*, 27.

falsetto,"[37] leading Salomão and Sundberg to conclude that "this implies that these singers had indeed reduced although not eliminated the voice source differences between the two registers."[38] In this conclusion lies the very heart of the acceptance or rejection of falsetto singing in the upper register for the tenor. It is physiologically possible to equalize falsetto and modal voice, but the quality of timbre thus achieved cannot be what we are accustomed and conditioned to hearing: namely performances of romantic and verismo operatic repertoire by tenor voices trained in the modern way where a powerful, ringing modal voice has come to represent the tenor voice par excellence.

[37]Gláucia Laís Salomão and Johan Sundberg, "What do Male Singers Mean by Modal and Falsetto Register? An investigation of the Glottal Voice Source," *Logopedics Phoniatrics Vocology* 34 (February 2009): 74, http://dx.doi.org/ 10.1080/14015430902879918.

[38] Ibid., 81. The authors by no means claim that falsetto and modal voice are produced in the same way, only that voice source differences between the two can be minimized. Their findings indicate clear voice source differences between modal and falsetto registers.

Chapter 3: Ideological Obstacles to Tenor Falsetto Singing

Quite apart from the issues of vocal physiology, technical production and historical relevance, the sound of tenor falsetto singing has hardly been heard in modern voice studios and performance venues for reasons relating as much to deeply held, culturally based ideologies that define and prescribe what sorts of sound are acceptable for a certain voice type. These ideologies are often reinforced by the accrued traditions, attitudes and standards of the singing profession. To challenge those standards is to challenge the validity of the profession that endorses them, and in a sense, to challenge the culture that created them and which sustains them. In his article, "Voice and Identity", Eero Tarasti has highlighted some principal aspects of voice production having ideological significance: gender, social identity and nationality.[39] These three categories have conspired together to construct a vocal identity for the classically trained tenor that virtually excludes any sanctioned use of the falsetto register, regardless of the repertoire.

Gender

Peter Giles highlights the most basic cultural issue related to falsetto: the gender associations it entails: "Despite the ever increasing influence of 'pop' culture on the taste of the public, it would still seem possible to make this claim: that the majority of older adults retain the notion that the serious singing voice must express gender in the most obvious way of all, by its pitch."[40]

---

[39] Eero Tarasti, "Voice and Identity," *Teorie Opery*, (2004): 443-460.

[40] Peter Giles, *The History and Technique of the Counter-tenor: A study of the Male High Voice Family* (Aldershot: Scholar Press, 1994), 6.

A man ought to sound like a man, and a woman ought to sound like a woman. *What* exactly a man ought to sound like has both physiological and cultural implications. Gender identity is associated with the modal speaking voice in both sexes, just as it always has been by other traditional physiological markers of sex such as male/female genitalia and reproductive organs. Or, as one author puts it: "In other words, what you hear is not simply a certain pitch, you also hear a body."[41] Although there is a certain margin of error, so to speak, that is culturally tolerable, such as the deliberate androgyny of certain popular music figures, Western culture still draws a line beyond which anything that exists is out of the ordinary. Anthropologist Mary Douglas, in her discussion of purity rituals and the communal taboos listed in the Hebrew Testament book of Leviticus, commonly referred to as the abominations of Leviticus, notes that each of the tabooed items or activities is something that in some way defies ready classification.[42] The act of classification, or assigning objects and activities to categories in order to more readily apprehend and understand their nature, is one of the most basic cognitive functions we possess; as Douglas explains, when that impulse is stymied by objects/things/beings/activities that are considered unclassifiable the result is quite confounding, the next impulse being to proscribe the aberrations, or "abominations" in the moral/theological language of Leviticus.[43] As far as the gendered speaking/singing voice is concerned, average modal vocal range with some acceptable variation is the current standard for defining gender. As Peter Giles recounts, countertenors have dealt with this stereotype since Alfred Deller returned solo countertenor singing to the mainstream of

---

[41] Joke Dame, "Unveiled Voices: Sexual Difference and the Castrato," in *Queering the pitch: The New Gay and Lesbian Musicology*, ed. Philip Brett, Elizabeth Wood, Gary C. Thomas (New York: Routledge, 2006), 143.

[42] Mary Douglas, *Purity and Danger: An Analysis of Concepts of Pollution and Taboo* (London: Routledge and Kegan Paul, 1966), 55.

[43] Ibid., 55.

Western classical music.[44] If he wishes to seriously incorporate falsetto singing into his technique, now the tenor must also contend with society's definition of gender "in the most obvious way of all, by its pitch."

Social Identity

Intimately related to gender in the definition of the singing voice is social identity, for while gender is an issue at a basic physiological level, it also carries deep cultural meanings, along with other vocal identities. Tarasti investigates the singing voice from the standpoint of musical semiotics, in which "another issue concerns the voice as both bearer and signifier of meanings."[45] In the tradition of Western classical music, those meanings are identified and de-coded by the cultural consumers of that music, concertgoers and record buyers. They understand the identities presented by a given vocal sound. So what are relevant identities presented in the traditional tenor sound that might affect the perception and "legitimacy" of falsetto singing by the tenor voice in the repertoires where it might have been appropriate, such as the vocal music of Johann Sebastian Bach?

Perhaps the most powerful identity projected by the traditional tenor sound in the upper register is that of the essence of the male character, the traditional "man" and everything that ideology represents culturally: strength, power, virility and heroism. Richard Miller touches on this idea when he describes the transition of tenor singers from 18th to 19th century repertoire, toward the traditional roles of German Romantic and Verismo opera that embody the romantic paradigm of male heroism.[46] While the culture of the twenty-first century may be more inclusive

---

[44] Giles, *History and Technique of the Countertenor*, 138.

[45] Tarasti, *Voice and Identity*, 446.

[46] Miller, *National Schools of Singing*, 113-115.

of different visions of masculinity than in the past, the canon of Western opera, clung to with a certain economically motivated desperation by opera-houses and concert halls, is firmly rooted in the late nineteenth/early twentieth century culture of patriarchal/masculine supremacy. While any attempt to incorporate tenor falsetto singing in modern opera is a dubious enterprise because of the large size of most orchestras and halls, never mind ideological barriers, the early music repertoire presents a totally different picture. Countertenor soloists have gradually been reincorporated into the performance of Baroque and pre-Baroque sacred repertoire for historical and practical reasons. Evidence is strong that prior to the 19th century women did not participate in musical performances during worship services, thus treble and alto solo work was handled by adult male falsettists or by boys. Likewise, the range of some early Renaissance polyphony is exceptionally wide and suits the countertenor's ability to easily switch between modal and falsetto registers.[47] If there was equally compelling evidence to advocate for tenor falsetto singing in some early music repertoire, as the sources seem to suggest, why object to the practice if not for gendered identities that insist the tenor sound (by definition the male sound sine qua non) must be one that will "arouse an instant, visceral excitement in the audience."

Besides projecting the paradigm of traditional manliness, the modern tenor sound, falsetto free, has come to narrowly define the voice type itself, with little room for difference of opinion. As the quote from Jose Carreras at the beginning of the first chapter suggests, the modern tenor is almost obsessively evaluated with regard to his ringing upper notes. In this he has suffered as modern concert pitch has slowly risen and his registration options in that tessitura have gradually declined. The vocal adjustments required to cope with a high tessitura constantly projected with as much force as physically possible (lowered larynx, systematic low breathing, pervasive vowel equalization) have dulled the quality of individual vocal color so voices have

[47] Rebecca Stewart, "Voice Types in Josquin's Music" *TVNM* 35 (1985): 97-193.

less possibility of being unique and instantly recognizable, and, paradoxically, the possibilities of various vocal colors and text declamation options have correspondingly become less "dramatic."[48] In addition to a well-nigh stentorian upper register, the modern operatic/concert tenor must also possess a voice able to express intense emotional drama. Consider the praise opera critic Roger Pines directs to Canadian tenor Ben Heppner:

> This voice carries conviction, whether embodying a noble knight, a fervent poet, or a rough fisherman. Sincerity is the keynote, consequently the listener's heart responds to every phrase. An audience accustomed to worrying, "Is he going to make it?," can relax with Heppner; he possesses not only the vocal amplitude, but also the technical armory, to meet such challenges with confidence. Among today's heroic tenors, Heppner exceeds all in terms of the 'Golden Age' virtues: beauty and evenness of tone; outstanding flexibility and musicality; effortless legato phrasing; subtle dynamic shading.[49]
>
> -- Roger Pines

There are three questions to ask related to the above quotation: first, can any of the qualities of Heppner's singing be produced by different technical means? Second, can a tenor singer be any good without possessing these "golden age" qualities, or is the modern definition of tenor synonymous with the sort of adjectives used to describe Heppner and many other tenor singers of the past hundred years? And finally, is the type of singing our modern tenor produces really appropriate for the individuals who would have been singing tenor parts composed prior to the 19th century? Vocal designations have developed over the years from simply describing the function of a voice part in a composition to the complicated Fach system of today's professional singing culture. The pre- 19th century designation of "tenor" may have been intended to indicate

---

[48] George Newton, *Sonority in Singing: A Historical Essay by George Newton* (New York: Vantage Press, 1984), 85.

[49] Ben Heppner, *Great Tenor Arias*, The Munich Radio Orchestra, conducted by Roberto Abbado, recorded on September 27-Octtober 2, 1993, and July 4-8 and December 6-8, 1994, Munich, BMG Music 09026-62505-2, 1995.

more than simply range and tessitura but the extra-musical meanings cannot have been the same as those that are so important today in placing a singer in the correct ideological framework. [50]

Nationality

National voice types play a significant role in the conversation concerning pedagogical approaches in the voice studio insofar as a singer's vocal tools are limited and shaped according to the national ideal. While it seems evident that the French student is more likely than not to learn the French approach to vocal production, and likewise the Italian and German students their own national approaches, the North American singer is not as constrained and may choose any road deemed most beneficial.[51] Perhaps this eclectic approach can itself be considered a national school. Nationality in singing is based on a number of cultural realities (i.e. language, education system etc.) and ideologies that while not immutable are certainly strongly ingrained in the individual and not easily set aside or challenged. As Tarasti states, "Nationality is a kind of fate. It determines in what kind of vocal community people are acculturated and imprints them with that acculturation definitively, and for the rest of their lives."[52] Small wonder then that singers and teachers of singing are loathe to stray from the fold if such change moves against the current of national tonal ideals, even if the historical evidence may suggest such a move.

National schools of singing may also affect a singer's pedagogical training and subsequent vocal tools by appealing to an idealized history that is creatively re-written to

---

[50] Gustav Adolf Theill, *Beiträge zur Symbolsprache Johann Sebastian Bachs, 1. Band: Die Symbolik der Singstimmen* (Bonn: Max Brockhaus), 22-39.

[51] Miller, *National Schools of Singing*, 200-203.

[52] Tarasti, *Voice and Identity*, 453.

legitimize a modern sound that did not actually exist [53] Tarasti describes an example of such thinking that relates to vibrato in the singing voice. Quoting a landmark study of vibrato by Carl Seashore strongly advocating the pervasive presence of vibrato in "feelingfilled self-expression", Tarasti concludes that "in this quotation a certain cultural practice, vibrato, is legitimized as something universal, almost given by nature."[54] Yet in his discussions with what he calls voice specialists, he finds no compelling evidence to extend Seashore's claim to that most celebrated age of song, the Bel Canto.[55] Clive Brown, in his textbook on classical performance practice, has compiled the sources relating to vibrato from the time of Bach to the mid-twentieth century, and the evidence is overwhelming that until the mid-twentieth century pervasive continuous vibrato was absolutely not a normal part of sound production, in the human voice or from string and woodwind instruments, unless it was used as an ornament.[56] Yet continuous vibrato in the singing voice has been, and continues to be, one of the most hotly contested topics related to singing early music. [57] Why cling to this clearly 20th vocal identity if the evidence so strongly points to a more historically likely alternative? Very much the same situation pertains to falsetto singing in the tenor voice, where, unlike vibrato, it has been excised from rather than being inserted into history, exemplifying the argument for the existence of wishful thinking in some scholarship related to national schools of singing and historic singing techniques.

---

[53] Richard Wistreich and John Potter, "Singing Early Music: a conversation," *Early Music 41* (February 2013): 25-26, doi:10.1093/em/cas155. Accessed January 14, 2014.

[54] Tarasti, *Voice and Identity*, 453.

[55] Tarasti, *Voice and Identity*, 453.

[56] Brown, *Classical and Romantic Performing Practice*, 517-535.

[57] Ellen Hargis, "The Solo Voice in the Renaissance," in *A Performer's Guide to Renaissance Music, ed. Jeffrey Kite-Powell* (Bloomington: Indiana University Press, 2007), 5-7.

Musical Darwinism

In addition to the well-intentioned re-writing of national singing traditions, there is a kind of subtle Darwinism present in the evaluation of early singing techniques that underlies the entire modern argument against tenor falsetto singing. In Miller's view, it seems tenor falsetto singing is a long step back on the evolutionary journey of singing technique, if indeed that is how one chooses to view the history of singing. It is portrayed as a story in which the singers of earlier musical epochs, out of ignorance and ineptitude, used but a small fraction of the potential of the "legitimate" singing voice, whose full value did not begin to be realized until the technical developments of the mid-19th century. By this reasoning, the singing of earlier repertoires had little to do with the aesthetic requirements of that repertoire, the available performing forces, the performing venues or any other extra-musical factors that might have affected the sort of sound a singer produced. Or rather, all of the above-mentioned factors were dictated by the supposed limitations of the singers' technique.

A Case Study – The Neapolitan School

Consider the following case: in his discussion on the falsetto register in the male voice, Miller turns his attention to the early to mid-19th century, and singles out one piece of evidence, an excerpt from a voice tutorial of late 19th century pedagogue Emil Behnke, who is himself quoting a source in support of the claim that before the rise of Duprez and the so-called chest voice "high c" tenors managed the entire upper register in falsetto instead of the modern head voice.[58] Miller seems to concede that falsetto singing in the upper range *was* the norm in performance of Italian opera up until the time Duprez sang his famous "do di petto" at the Paris opera, and for some time after. What Miller gives with one hand, however, he takes back with

[58] Miller, *National Schools of Singing*, 109-111.

the other. Behnke, and the source he quotes, lament the gradual disappearance of the falsetto register in tenor singing and the changing public taste, which increasingly favored the more muscular sound of the modern head voice.[59] To explain the change in what the public came to value, Miller offers the following explanations, worth quoting in full:

> The Duprez-Nourrit incident can hardly serve as firm historical evidence that one singer converted the world away from the general usage of falsetto overnight, in 1836. The incident might better illustrate the growing international standards of vocalism expected in opera houses where audiences were no longer content with male singers who could not properly registrate the upper voice because of technical limitations.[60]

> Although one may wish to question the Gloggner-Castelli [the source Behnke quotes] interpretation of the Duprez-Nourrit incident, it would be musicological blindness to ignore its implications; it is a parable of the new realization of the fuller potential of the legitimate tenor voice, manifested through the stylistic enlargement of the potential of the voce di testa [head voice] dynamic range.[61]

How can one objectively evaluate the most historically informed manner of performance when this agenda implicitly suggests that earlier instrumental and/or singing/playing techniques are by definition inferior and less evolved, as though by using these techniques one is somehow cheating an audience out of what it is rightly entitled to hear? Arguments of this ilk have even come out of the Early Music movement itself, questioning the validity of pursuing historically informed performance practice if it is believed that modern performers can do it better using modern playing or singing techniques. Peter Phillips, in an article written in 1978 for *Early Music* discussing the performance of 16th century English choral music puts it thus: "We can, however, guess at the type of sound produced by 16th-century choirs, and the evidence suggests that

---

[59] Miller, *National Schools of Singing*, 110-111.

[60] Ibid., 111.

[61] Ibid., 113.

imitation of them would be highly undesirable."[62] This is not to say that Phillips does not present good reasons why the Tallis Scholars might have an advantage in some respects over their sixteenth century counterparts, but the notion that what the Tallis Scholars are presenting is better than or superior to what would have been offered by individuals who lived in the culture in which the music they performed was created is another matter.

The arguments Miller assembles to bolster this musical Darwinism are as suspect as the underlying theory it supports. Miller contends that there are singers today who are capable of singing the highest lying passages in early 19th century repertoire in "legitimate head voice," although they are rarely heard on stage because their voices are not of sufficient amplitude to please modern audiences, used as they are to hearing the colossal instruments now regularly put in service of the Verismo and German Romantic repertoire.[63] The possibility should at least be considered that voices of the size capable of singing the highest lying passages in the early operas of Rossini and the more challenging vocal music of Haydn and Mozart are of the type where "legitimate head voice" and reinforced falsetto can scarcely be differentiated. As John Potter suggests, these singers may very well produce a sound nearly akin to that of the modern operatic countertenor – "powerful and thrilling," but still of limited dynamic level relative to the fully reinforced head voice of the modern operatic tenor.[64] The reluctance of Western classical music audiences to hear these singers may have less to do with the size of the voice than with the aversion of the educated listener, one who knows what a "tenor" ought to sound like and who is disinclined to endure what is perceived as a faulty technique.

---

[62] Peter Phillips, "Performance Practice in 16th – Century English Choral Music," *Early Music* 6, no. 2 (April 1978), 195.

[63] Miller, *National Schools of Singing*, 112.

[64] John Potter, "The tenor-castrato connection, 1760-1860,"*Early Music* 35, no.1 (February 2007), 97.

Miller's second and third arguments can be dealt with in tandem since they speak to the same issue. In essence, Miller is claiming that there is far less high lying material in the bel canto repertoire than we imagine, particularly related to cadenzas, and that no expectation existed that that high-lying material that *does* exist (mostly confined to cadenzas) would need to be performed by every singer who tackled the part.[65] This assertion flies in the face of both historical evidence and common sense. The art of ornamentation was still alive and well throughout the 19th century.[66] As with vocal music from the time of Caccini on, the score told only part of the story, and much remained to be added by the imagination of the singer. If contemporary accounts are to be trusted, even the most stylish and musical ornamentation far exceeded what we are accustomed to hearing from modern performers. If the upper part of the tenor range was usable, and appreciated for what it was (falsetto), it seems to us highly unlikely that it was not exploited extensively in improvisatory practices of the day, even if that practice is not reflected in the written tradition. As far as cadenzas are concerned, it is certainly true that not every singer would feel obligated to sing the particular cadenza notated by the composer; cadenzas were improvised and tailored to a singer's vocal strengths and imaginative powers. This certainly does not provide any proof that the many unrecorded cadenzas ignored the very upper reaches of a tenor's range. Cadenzas were meant to show a singer's vocal prowess, and it is hard to imagine, that, like today, this practice did not include interpolated notes in the upper register. Verdi did not notate the "do di petto" (chest voice high C) in the cabaletta of Manrico's aria *Di Quella Pira* in *Il Trovatore*,[67] and yet how many modern tenors today, if they can sing the notes, will choose to ignore that

[65] Miller, *National Schools of Singing*, 112.

[66] Will Crutchfield, "Vocal Ornamentation in Verdi: The Phonographic Evidence," *19th Century Music* 7, 1 (Summer 1983): 3-54, accessed September 18th, 2014, http://dx.doi.org/10.2307/746545.

[67] Crutchfield, *Vocal Ornamentation in Verdi*, 16.

unwritten tradition and pass up the opportunity to display their craft in all its glory? Why should the early singers of Rossini and his contemporaries have been any different?

Historical evidence can easily be subject to modern ideological qualifications and re-imaginings. The Neapolitan school involves tenor falsetto singing of a different type than in the music of Bach, but the way the historical evidence has been treated does not differ. In both cases, falsetto singing is written out of the picture and/or denigrated with little historical support.

Chapter 4: Historical Sources and Circumstances

Since no aural evidence exists to show which tools Bach's tenor singers used to sing notes in the upper range, the main sources of information are historical accounts of singers and pedagogical tutors. Clearly both sources are subjective and lack the convincing and irrefutable authority a recorded source would provide, but written sources still permit us to gain a fairly accurate picture of how students were taught to sing in the upper register. Presumably at least some if not the majority of students sang in the manner in which they were taught.

15th and 16th Century Sources

Among the earliest evidence of pedagogical advice for singers with explicit recommendations concerning high singing is Conrad von Zabern's 1474 treatise *De modo bene cantandi choralem cantum.* If high notes are to be sung, he writes, they must not be shouted or squeezed. Conrad describes three ways in which the voice must be used, each corresponding to a different register: "The low notes are to be sung entirely from the chest, the middle ones with moderate strength, the high ones with a soft voice."[68] Moving between these three classes of notes must be done gradually and imperceptibly. In addition to producing a more beautiful sound, singing the higher notes softly will enable a singer to increase overall range: "On the contrary, by singing softly, avoiding abuses, one benefits by being able to sing considerably higher than by unnatural straining of the voice."[69] The question here of course is what precisely Conrad has in mind by soft singing. He does not explicitly mention falsetto, although his description of the three uses of the voice is reminiscent of the three-register division endorsed by many later writers. Still, in 1474, his description is far more likely to refer to falsetto singing than

[68] Conrad von Zabern, *De modo bene cantandi*, 15.

[69] Ibid., 16.

it is to the modern *voix mixte* or head voice. Like some later writers, Conrad exhorts singers to sing chant in a comfortable middle register encompassing a range of about an octave, eschewing extremes of both low and high - - this is one of his six requirements for good singing.[70] Far from being a condemnation of falsetto singing, Conrad's explanation of this rule makes clear that he is suggesting a practical approach, knowing some singers, lacking talent and without the benefit of individual training, will not possess a good upper or lower range, but that most will have a usable middle.

Hermann Finck gives much the same advice in 1556 in his *Practica musica* when he states that "the higher a voice rises the quieter and lovelier should the note be sung; the more it descends, the richer the sound, as in an organ, wonderfully assembled of different kinds of pipes structured of greater and lesser ones; the greater do not drown out the lesser, nor do the lesser, by their sharp sound, overcome the greater…"[71] Also like Conrad, Finck makes no mention of falsetto or vocal registers, so we must rely on his vague descriptors *quiet* and *lovely* to deduce the sort of sound he had in mind. In light of the repertoire being sung (chant and sacred polyphony in a church context and ornamented madrigals or similar material in a secular performance) and the attendant performing forces (light accompaniment by a single keyboard or stringed instrument) at the time, it seems unlikely that Finck meant what Richard Miller calls *voce piena in testa* (full head voice), the sound a professionally trained operatic singer of the twenty-first century uses to maintain a decibel level sufficient to project over a substantial orchestra.

Numerous other examples from sixteenth century treatises can be cited to support the rule of singing softly in the upper register and more forcefully in the lower register. In her study of

---

[70] Ibid., 13.

[71] Hermann Finck, "Practica musica," in *Readings in the History of Music in Performance,* ed. and trans. Carol MacClintock, (Bloomington: Indiana University Press, 1974), 62-63.

choral pedagogy in 16th century Germany, Betty Wilson examines a number of well known and lesser-known sources for evidence of technical instructions relating to vocal production.[72] In addition to the negative evidence railing against a certain practice and by implication pointing to the opposite behavior as desired (i.e. Ornithoparcus's humorous rant against over-loud German/Saxon singing) there is substantial positive evidence reinforcing Finck's advice, sometimes almost word for word. Among others, Wilson cites Cyriacus Schneegass, who states that "however much [by whatever amount] the song is extended, by that same amount is the voice sung more subdued and sweeter,"[73] while Seth Calvisius explains that "the more a voice rises, the smaller is to become its volume, and vice-versa, so that the more muted and persistent lower tone strikes a right balance with the high tone and both, in their confluence, will be pleasing to the audience."[74] Again, we are not dealing with nouns specifically naming vocal registers but rather the most subjective description of tonal quality.

One further factor to consider, mentioned by Richard Wistreich, is that even a cursory appraisal of solo and ensemble repertoire of the 16th century will reveal that its range rarely calls for the use of any head-voice/falsetto singing techniques, the overall ambitus rarely exceeding a tenth. [75] In Italy, no further proof is needed beyond an examination of the various singing tutors to emerge in the late 16th/early 17th century containing ornamented versions of popular solo songs for the pedagogical benefit of the novice singer. While the style of ornamentation of each composer is idiosyncratic to a certain degree, the vocal ranges remain quite similar. In Germany,

---

[72] Betty Karol Fairchilds Wilson, "Choral Pedagogy: Crossroads of Theory and Practice in Sixteenth-Century Germany" (PhD diss., Boston University Graduate School, 1995).

[73] Ibid., 580.

[74] Ibid., 584.

[75] Richard Wistreich, "Reconstructing Pre-Romantic Singing Technique," in *Cambridge Companion to Singing,* ed. John Potter (Cambridge: Cambridge University Press, 2000), 179.

the ensemble music of Praetorius makes few demands (in terms of range), and even the later, more sophisticated solo writing of Schütz, while in no way easy to sing, is still manageable in one register. [76]

The sixteenth century male singer, were he to venture into that part of his range between the primo and secondo passaggio, or beyond the secondo passaggio would have only three options at his disposal: falsetto, the reinforced head voice (Garcia's *voix sombre*, a mid-nineteenth development involving a depressed larynx and systematic vowel modification), or a scream. There is absolutely no reason to believe that the singers to whom the sixteenth century tutors are addressed would have had any notion how, or any need, to produce the modern operatic head voice.

17th Century Sources

The next treatise of significant import to offer advice concerning singing in the upper register is the third book of the *Syntagma Musicum* (1619) of the influential composer and writer Michael Praetorius. Like Conrad and Finck, Praetorius advises singers to choose a range among the four common at the time (soprano, alto, tenor and bass) in which modal voice can be used exclusively with no recourse to falsetto.[77] Unlike the earlier treatises, Praetorius uses the actual term falsetto, and his dislike of the sound is evident. As John Butt observes, this may be a result of the influence of the Italian singer and composer Giulio Caccini,[78] the preface of whose *Le*

[76] Heinrich Schütz, *Kleine Geistliche Konzerte: Erster und Zweiter Theil*, ed. Philipp Spitta, Sämtliche Werke, Band VI, (Wiesbaden: Breitkopf & Härtel, 1970). Of all the pieces in this volume with a part notated in tenor clef, none exceed written g5.

[77] Michael Praetorius, *Syntagma Musicum III*, ed. and trans. Jeffrey Kite Powell (New York: Oxford University Press, 2004), 215.

[78] John Butt, *Music Education and the Art of Performance in the German Baroque* (Cambridge: Cambridge University Press, 1994), 73.

Nuove Musiche also expresses an aversion for falsetto singing: "From the falsetto voice no nobility of good singing can arise; that comes from the natural voice, through the whole range, able to be controlled at will with the breath used only to demonstrate of all the best mastery of all the best effects necessary to this most noble manner of singing."[79] Several points need to be considered in regard to Caccini's statement. First, it tells us that falsetto singing was not uncommon at the turn of the sixteenth century in Italy. One seldom condemns a non-existent practice. Second, Caccini is expressing a highly subjective opinion that may not accurately reflect actual performing practice. That is to say, even though Caccini expressed a dislike for falsetto singing, it is unlikely that as a result of his dislike every male high voice singer in Italy stopped using falsetto to sing in the upper register.[80] The same can certainly be said of Praetorius and German tenors. Finally, Caccini's aversion to falsetto may be explained by his particular aesthetic agenda. As Peter Giles points out in his discussion of the history of countertenor singing:

> While we might applaud a composer for being so sensitive to his text, we should not overlook the significant point: that Caccini had natural utterance as one of his first considerations… A feigned voice – assuming for the moment that the term is supposed to apply to falsetto in all its varieties – could not reasonably be described as 'normal, usual utterance' for 'talking in music'. Caccini seems to have attacked falsettists (in one or other shades of meaning) as (un)dramatic secular performers, for reasons which can be discerned even if not always agreed with.[81]

---

[79] Giulio Caccini, *Le Nuove Musiche*, ed. and trans. H. Wiley Hitchcock, Recent Researches in the Music of the Baroque Era 9 (Middleton: A-R Editions, 2009), 56.

[80] Interestingly, in his second *Nuove Musiche* volume of 1614, Caccini explicitly advocates for singing across voice types when he includes songs that have a range that he claims could be sung by a tenor or a bass with a wide enough range. He includes no songs that extend the tenor range upward nor does he make mention of falsetto singing. Giulio Caccini, *Nuove musiche e nuova maniera di scriverle*, edited and translated by H. Wiley Hitchcock, Recent Researches in the Music of the Baroque Era 28 (Middleton: A-R Editions, 1978).

[81] Peter Giles, *The History and Technique of the Countertenor*, 205-206.

In summary we may conjecture that in mid to late 16th century Germany, as solo singing began to develop and come under the influence of Italian practice, singers (and not just tenors) were sometimes encouraged to sing within one register. It further seems likely, at least as far as the complaints of Praetorius and others are concerned, that when singers were forced to exceed an octave and sing outside their comfort zone, their recourse generally was falsetto.

Music Education and Bach's Singers

Before discussing treatises of the mid to late 17th century and the 18th century (our main concern) it would be well to provide some context for pedagogy in Germany of the late Renaissance/Baroque period as it relates to high voiced singing and to identify the principal questions that must be addressed and answered: First, what was the end goal of voice pedagogy in the German Baroque?; second, what sort of students received a musical, and specifically vocal, education?; third, when did vocal education begin and when did it end?; fourth, of what elements did a vocal education consist?; and finally, who was responsible for administering a musical and vocal education? The following discussion is indebted to John Butt's *Music Education and the Art of Performance in the German Baroque*.

Bach's Singers in 1723

Who sang for Bach and his colleagues in the German church establishments? This may seem like a very basic inquiry, but the answer is different enough from modern expectations in a similar situation that the answer should be underlined. As Cantor of the Thomasschule in Leipzig Bach was responsible for music in four churches, only one of which regularly performed the most difficult concerted music composed by Bach himself. He drew his upper-range singers and instrumentalists in large part from the Thomasschule, the educational institution for which he was musically responsible. His primary high singers were thus mostly boys. As Butt points out,

because of the difficulty of supplying the lower parts (tenor and bass) with boys' voices, Bach was forced to employ musicians outside the school to fill those parts.[82] Bach may have hired university students or professionals for his tenor and bass parts, and they may (or may not, as Bach complained to the town council) have been remunerated for their services.[83] It is possible, however, that Bach would not always have been able to rely on outside assistance, and thus would have been depending on the oldest boys, the recent graduates, whose voices had just broken, to sing his tenor and bass parts.[84] The point is that even with university students or young professionals who were willing to work for very little (or nothing at all) the level of comfort and time spent singing as a mature adult with a fully changed male voice must have been small. What sort of technical facility in the upper range had these young men had time to develop, and assuming they were not professional, what sort of skill level were they expected to develop?

Bach's Tenors in 2014

The situation in our modern (North American) church culture could not be more different. Although church schools still exist, and boys are sometimes used to supply the top parts of anthems, as far as concerted music is concerned, at an ecclesiastical institution recognized for excellent music (like the Thomasschule), there is an expectation that solo parts will be taken by mature adult singers, usually professional and well-recompensed. They will have already had considerable experience singing as adults. These singers will have had years of university or conservatory training as adults with regular lessons from a single teacher whose only

[82] John Butt, *Music Education and the Art of Performance*, 23.

[83] J.S. Bach, "Short But Most Necessary Draft for a Well-Appointed Church Music, with Certain Modest Reflections on the Decline of the Same," in *The New Bach Reader: A Life of Johann Sebastian Bach in Letters and Documents*, eds. Han T. David and Arthur Mendel, rev. and enlarged by Christoph Wolff (New York: W.W. Norton & Company, 1998) 147-150.

[84] Ibid., 147-150.

responsibility it is to teach singing. They will already be conversant with the basic elements of the language of music, and, if they are top-shelf performers, they will require little in the way of musical guidance. They will have been able to avail themselves of coachings with specialists in the repertoire and the performance language and be well prepared even before the start of regular rehearsals. In short, they will arrive with a commanding grasp of vocal technique and performing experience as adult singers.

Vocal Training

We can also glean some useful information by asking at what point in their lives Bach's singers were performing his music. If it is boys we are speaking of, we know that, if they had promising voices, they started quite early. According to Betty Wilson in her study of choral pedagogy in 16th century Germany, "although a boy's formal education may have begun at age six, matriculation in the Latin schools generally began at age eight. His studies generally continued until he was eighteen."[85] Indeed Butt mentions that musically gifted boys were sought after and given what may seem like preferential acceptance into the traditional Latin schools, while in addition to easier acceptance these same boys would have benefited from more thorough and rigorous training than the more modestly gifted pupils.[86] A small number of boys were likely to receive truly exemplary vocal training, and they would have received most, if not all of their significant training while singing with an unchanged voice.

Herbert Moller argues that boys' voices seemed to change much later in Bach's time than is customary now, so that it was not inconceivable for a boy to still be singing soprano or

[85] Betty Wilson, *Choral Pedagogy: Crossroads of Theory and Practice*, 49.

[86] John Butt, *Music Education and the Art of Performance*, 22.

alto at age sixteen or seventeen.[87] When the voice change occurred, those students would have had little time remaining as a pupil at the Latin school. When those among Bach's boy sopranos, as their voices changed, began singing as tenors, were they re-trained to sing using their mutated adult voice? Then as now, the voice change did not occur seamlessly with no effect on a pupil's ability to sing. Mattheson notes that "many voices are beautiful in youth. However, especially the male ones change with the waxing of years so that all flexibility, pliancy and suppleness is lost in the process."[88] Given that no normative vocal pedagogy culture existed at that time it seems unlikely that boys would have received any further specialized vocal training after the voice change occurred. Whatever training they received would have been applied to an unchanged voice. Barlow and Howard, writing about the effect of training on unchanged and changed male voices, offer the following insight from their study: "It can be concluded from this that pubertal development causes a significant and measurable change on the voice production of adolescent male singers, and furthermore, that training has a significantly different effect on the voice production of the changed male voice than it does on the unchanged, which exacerbates the difference between the voices."[89] We must ask whether the voice production typical of boy sopranos, transferred to the adult male voice, might be more apt to produce a sound modern voice pedagogy encourages, or if the physical sensations and tone quality of the boy soprano were transferred wholesale to the emerging tenor voice, producing a quality in the upper range much more in accord with the reinforced falsetto of the countertenor than with the still muscular *voce piena in testa* we prefer in our tenor voices? We know from modern studio voice and from

---

[87] Herbert Moller, *Voice Change in Human Biological Development*, 240-241.

[88] Johann Mattheson, *Der vollkommene Capellmeister*, ed. and trans. Ernest C. Harris (Ann Arbor: UMI Research Press, 1981), 240. The next sentence in the citation makes it clear Mattheson is referring to voice change and not simply to the effects of aging in general: "This is called mutation, and is a meaning of the word *mutatione*, which is essential to know, and which hitherto was not present in dictionaries."

[89] Christopher Barlow and David M. Howard, "Electrolaryngographically Derived Voice Source Changes of Child and Adolescent Singers," *Logopedics Phoniatrics Vocology* 30 (2005), 153.

Richard Miller's writings that one of the most important aspects, if not the primary goal, of teaching tenor voices today is to give access to the "legitimate" upper voice, by Miller's admission a tedious, time-consuming process geared to making a career possible under modern performing conditions.[90] Since there would have been little reason for one of Bach's tenors to learn to sing with a highly reinforced head voice, and little time to learn to do so in any case, the likelier alternative is that the technique that worked for a boy's voice would also work for a man's given some adjustments and practice.

Goal of Music Pedagogy

What was the end goal of musical/vocal pedagogy in Baroque Germany? This is a question raised by John Butt and the answer has interesting implications. By the paucity of actual technical detail they provide (i.e. breathing, tone production, etc.) sixteenth century sources reveal what students would not have been taught. Butt points out that that what is a given in any 21st century conservatory or university voice department, a standard culture, a pre-existing conception of vocalization, vocal quality, vocal fach, etc. was almost totally lacking in sixteenth century sources.[91] This includes the standard repertory of aesthetic/emotional responses associated with and expected of certain types of vocalization. As Butt states, "Beyond this it is clear that elements of vocal technique are directly connected to the various 'manners'; in other words, techniques are directly connected to musical interpretation, expression and ornamentation. Never do these form an abstract, normative voice culture."[92] This situation changes during the seventeenth century, so that by 1656, Christoph Bernhard is able to describe two different but parallel vocal practices. One is the earlier, *cantar sodo* type in which communication of the affect

[90] Miller, *National Schools of Singing*, 107-110.

[91] John Butt, *Music Education and the Art of Performance*, 49 & 69.

[92] Ibid., 74.

of a given piece of music is not sought through vocal means such as varying dynamic levels and changing vocal color. This practice, like the performance of polyphony in Josquin's day, would have been truly affect neutral. The more progressive, *cantar d'affetto* is one that takes advantage of rhetorical techniques to express the affect of the music. Butt reminds us that these two practices carry on side by side well into the eighteenth century,[93] when a "normative voice culture" has begun to develop in earnest and technical instruction is no longer a cursory by-product of performance.[94] But even the normative voice culture of the mid-eighteenth century must be somewhat qualified. We are certainly not dealing with anything like the voice studio expectations of the last fifty years, with its focus on tone quality and development of an upper register capable of dealing with the standard operatic literature and the de rigueur large modern orchestra attendant on that repertoire. To quote Butt a final time: "Certain fundamentals – correct pronunciation, the avoidance of nasal singing, and the cultivation of a naturally balanced, flexible voice – seem to apply to the performance of three generally accepted musical epochs: the late Renaissance, Baroque and early Classical styles."[95] It is debatable how much effect changing musical style had on vocal performance techniques, in particular tone production and quality, throughout these three epochs, but it seems like a development as conspicuous as the powerful upper register of the tenor modern audiences are accustomed to hearing would not have gone un-noticed had it appeared at any point in the 18th century.

An important question for the singer and instructor of singing to consider is to what degree either of the practices Bernhard described obtained in Bach's Leipzig, and what effect these differing aesthetic objectives would have had on the technical/vocal aspects of liturgical

---

[93] John Butt, *Music Education and the Art of Performance*, 82-83.

[94] Ibid., 169

[95] Ibid., 95.

performance. We have seen that the modern "normative voice culture" has an agenda, so to speak, regardless of the type of music being performed or the particular performance context. This is not to say that modern voice teachers instruct their singers to sing every type of music the same way, without regard for musical and extra-musical considerations, only that a certain type of sound is encouraged or even expected, regardless of the repertoire. Ian Bostridge or Mark Padmore may not sing Bach and Schubert exactly the same way (i.e. stylistically the performances will be different) but they seem to produce the same vocal quality throughout the range in both 18th and 19th century repertoire. And that is precisely what a modern pedagogy demands and prizes: a technique that will encompass any repertoire and maintain a number of basic, unchanging elements, such as the presence of continuous vibrato, blending of registers to maintain the tonal quality of the modal voice throughout the range and avoidance of falsetto at all costs other than for very limited special effects. Is this really how tenors singing Bach's music would have approached vocal production? We must now turn back to the sources to discover what the rapidly emerging awareness of performance practice, in the technical sense, can tell us.

17th & 18th Century Sources

It turns out the sources are increasingly able to tell us more, and in greater detail, concerning performance practice and vocal technique. Beginning in the early eighteenth century the most influential vocal tutors are almost unanimous in their advice concerning high singing for male voices. It is at this point that vocal tutors begin to move beyond basic adjectives as descriptors of vocal tone to include discussions, albeit of the still sketchy sort, of vocal registration and how a singer ought to approach production in different registers. Three of the most important tutors of the eighteenth century, as far as singing is concerned, are those of Pier Francesco Tosi, Johann Friedrich Agricola, and Johann Joachim Quantz. These works are among the most widely read and easily accessible performance practice sources of the eighteenth

century. The contents of these sources are no secret nor ever have been. Why then have the contributions of these important sources relating to vocal performance technique had so little impact on actual performance practice?

Pier Francesco Tosi

Tosi's treatise is important largely because of its border-hopping influence and also in part as a result of its historical position bridging two different eras. Tosi was a castrato who had a long career as both a singer and teacher, spending time in Italy as well as England and Germany. His treatise is addressed to the soprano singer but there is no reason to suppose that the advice was meant to apply only to castrati. In addition to being the star performers of the late 17th and 18th centuries, castrati were also celebrated teachers, and not only of other castrati. In his article "The Tenor-Castrato Connection, 1760-1860," John Potter discusses two interesting points of connection: first, that most celebrated singers of the Baroque had a castrato singing teacher, tenors included; as Potter states, "Since the greatest singers of the day were often *musici* [castrati] it is not surprising that voices of many tenors-to-be were nurtured by a musico from an early age . . . When boys' voices broke, the castratos inevitably found themselves passing on their knowledge and experience to a relatively large number of young tenors."[96] Seen in this light, Tosi's recommendations concerning registration, far from being irrelevant to other voices types, take on a new force, particularly as the tenor voice is concerned. Second, and more interesting perhaps, is Potter's contention that "the teachers of the earliest castrato successes were invariably male, often not themselves castratos, and likely to have been tenors if they were singers at all."[97] Here we have a sort of chicken and egg dilemma; the art of the castrati did not spring fully formed from the mouth of the first castrato, and we must assume that while the physiological

[96] John Potter, *The Tenor-Castrato Connection*, 99-100.

[97] Ibid., 99.

potentialities of castration were likely evident fairly early on, there must have been some outside craft behind the spectacular use of that added potential, at least initially. If, as Tosi writes, blended registers and access to the falsetto voice were absolute essentials for a successful singer, it certainly provides a window of insight into early tenor technique to consider that such priorities might have initially been fostered by a tenor teacher. Interestingly, a late 17th century German source specifically singles out the tenor voice when providing a description of the falsetto register, reinforcing the notion that it was common to hear tenors singing in both modal and falsetto registers.[98]

How many German singing teachers are likely to have read Tosi's treatise? Unless they had studied in Italy or were particularly influenced by the music and performing traditions emerging from Italy, the answer, at least shortly after its publication in 1726, is likely not many. As Butt points out, the singing tutors of the early 18th century are remarkable for their continuity with past traditions and most are still highly indebted to earlier German works, upon whose content they add and amend.[99] However, the art of the castrato was pervasive, and it is not unthinkable that German musicians like Bach, working in an affluent court or larger religious establishment, might have been influenced by Italian practice.[100]

Johann Friedrich Agricola

Agricola's work is an important pedagogical marker for a number of reasons. First, by virtue of being a translation of a seminal treatise published nearly thirty years previously, Agricola's worldview remains firmly rooted in the Italian tradition of the latter half of the

[98] Geoffrey Webber, *North German Church Music in the Age of Buxtehude* (Oxford: Clarendon Press, 1996), 178.

[99] John Butt, *Music Education and the Art of Performance*, 11.

[100] John Butt, *Music Education and the Art of Performance*, 84.

seventeenth century, that generation of singers and teachers of singing to whom Tosi belonged and with whom he clearly identified. Second, Agricola was a diligent pedagogue and scholar, and many of his annotations to Tosi were forward looking, particularly his inclusion of scientific explanations related to the vocal apparatus, voice production and registration. This combination of the old and the new signified an unusually broad perspective, one which offered, up until this point, the most lengthy, complete account of vocal registration available.

While Agricola's more profound treatment of registration phenomena distinguish his work from earlier treatises, he unfortunately shares with his predecessors a lack of terminological specificity that engenders some confusion. The first chapter of his translation of Tosi's treatise contains the passages relevant to registration and vocal production. Let us examine his claims point by point and see whether the evidence he presents in any way supports the case being made for greater use of falsetto singing in the tenor upper register. Agricola begins his discussion of registration by explaining Tosi's remark to the voice teacher that he must instruct the student to seamlessly join the chest and falsetto registers and use the falsetto to increase range in the upper register.[101] Agricola attempts to bring clarity to Tosi's discussion by defining some key terms. Figure 1 summarizes the various statements made by Agricola concerning each of the three vocal registers he endeavors to define: chest, head and falsetto:

[101] Johann Friedrich Agricola, *Introduction to the Art of Singing*, ed. and trans. Julianne Baird (Cambridge; New York: Cambridge University Press, 1995), 67.

Table 1. Summary of Johann Friedrich Agricola's statements describing chest, head and falsetto registers from *Anleitung zur Singkunst*.

Chest Voice	Head Voice	Falsetto
• Generally stronger than the head voice (p.73). • Capable of singing as high as head voices (p.73) • Low notes louder and more forceful than those of head voice (p.74). • If chest voice is predominant, singer will prefer middle range (p.74). • More troublesome than for head voice to execute certain divisions with agility (p.74). • More present than head voice (p.75). • More difficult to negotiate trills and other small ornaments (p.75) • Chest voice will last longer than head voice; keep it until old age in good condition (p.75)	• One whose head voice is predominant will prefer to keep to the higher range (p74). • Requires greater proximity than chest voice to be heard clearly (p.75). • When performing trills, because of too great facility, can sink through lack of care into faintness, bleating, and the trill of a third (p.75).	• Italians sometimes confuse what should be called falsetto with head voice (p.75) • Described by scientists and musicians as forced tones and forced voice (p.75) • Some adult male singers have nothing but pure falsetto notes, and these singers are actually called falsettists (p.76). • All singers are capable of adding some falsetto notes to their upper range in the natural voice (p.76). • Both chest and head voices have falsetto notes…chest voices have more unforced notes (p.77) • Falsetto for (tenor) chest voices begins with the **a**… and in the head voices begins with e' or f'…maybe why Italians confuse head and falsetto registers (p.77). • There are very few low falsetto notes and they are weaker than the natural low notes (p.77). • Falsetto low notes can never maintain the same power and beauty as the natural notes. The falsetto notes in the upper register are just as strong and beautiful as the natural high notes with many singers who know how to handle them (p.77)

Agricola seems to make a distinction between chest/head voice as a register and chest/head voice as a type of voice; that is to say, one could be a tenor chest voice singer with some notes available in head voice and falsetto, and vice versa.[102] What this means is difficult to decipher; it could simply be a precursor to the modern system of vocal classification by *fach* whereby singers of the same voice type are classified differently according to vocal qualities such as weight, color, timbre, and tessitura. In fact, Agricola suggests this possibility when he describes the comfort level of chest vs. head voices in different tessituras.[103] Another possibility is suggested by Peter Giles in his categorization of countertenors by the degree of falsetto they employ in singing, from pure falsetto soprano countertenors like Randy Wong to what we now often call altos, a voice like Gerard Lesne perhaps, which on the chest/falsetto or heavy/light continuum incorporate some chest tinged sounds. This is what Giles calls pharyngeal voice,[104] and it is an interesting possibility to imagine a tenor mainly utilizing this type of voice because it implies a top down approach in which the pharyngeal voice would be the principal mode of production, not simply an extension used only for upper notes. This latter possibility seems likelier than the former, and indeed Agricola's language strongly supports this interpretation.

As for the registers as registers and not as voice types, Agricola's descriptions are, not unsurprisingly, quite similar in many ways to modern characterizations of what seem to be the same, or at the very least similar vocal phenomena. Agricola describes chest voice as strong, with powerful low notes and forceful presence, while head voice is characterized as weaker than chest voice, particularly in the lower register, but more suitable for divisions and ornaments.[105] This

---

[102] Agricola, *Introduction to the Art of Singing*, 73-77.

[103] Ibid., 74.

[104] Peter Giles, *History and Technique of the Countertenor*, 229-231. The author provides a detailed description of his conception of pharyngeal voice.

[105] Agricola, *Introduction to the Art of Singing*, 74-75.

observation is confirmed by modern experience. Recorded evidence from the 1950's and 1960's bears witness to singers with a muscular technique attempting to cope with the coloratura demands of Bach and Handel, not to mention even earlier repertoire where articulation is vitally important, and where singers were praised for the quality of their 'throats.' For instance, compare the effect of a 1965 recording of the *Christmas Oratorio* conducted by Karl Richter and the aria "Frohe Hirten, eilt, ach eilet," sung by Fritz Wunderlich to one recorded in 1987 with John Eliot Gardiner on the podium and Hans Peter Blochwitz singing the same aria.[106] The tempos chosen by each conductor dictate what kind of articulation the singer will use. Under Richter the aria runs 4:34, and Wunderlich uses the typical 20th century, diaphragmatic articulation, which he can do beautifully because the tempo is so slow. Gardiner clips through the aria in 3:18, forcing his singer to use a much lighter articulation. Wunderlich is consistent while Blochwitz vacillates between clear, glottal articulation and a more legato, diaphragmatic articulation. Neither singer articulates in exactly the way the sources advocate, in which each note is distinct and separated from the preceding and following notes without the use of audible aspiration, though Blochwitz comes closer to the ideal than Wunderlich.[107]

In addition Agricola seems to make a clear distinction between head voice and falsetto. Richard Miller, in his discussion of falsetto in "The Structure of Singing" states that "eighteenth and early nineteenth century treatises on singing frequently are misread with regard to the

[106] J.S. Bach, Weihnachts-Oratorium, with the Müncher Bach-Chor and Bach-Orchester, conducted by Karl Richter, recorded February 6-15, 25-28, March 1-4, and June 8-9, 14-15, 1965, Munich, streaming audio, accessed September 28th, 2014, http://purl.dlib.indiana.edu/iudl/variations/sound/ACN7184; J.S. Bach, Christmas Oratorio, with the Monteverdi Choir and English Baroque Soloists, conducted by John Eliot Gardiner, recorded January 1987, London, streaming audio, accessed September 28th, 2014, http://purl.dlib.indiana.edu/iudl/variations/sound/AKP2090.

[107] Agricola, *Introduction to the Art of Singing*, 151-152.

meaning of the term *falsetto* as it was used in a prescientific age."[108] He then cites Franceso Mori to bolster his argument, with Mori claiming that whenever earlier writers mention the falsetto register, they really mean the head register.

But there do not appear to be historical sources in which the author uses the term falsetto but then clarifies his intent by explaining that when he wrote falsetto he really meant head, or that imply this. It is by no means certain (as evidenced by Agricola's somewhat perplexing explanation) that head and falsetto are interchangeable; in fact, Agricola seems to imply just the opposite.[109] If indeed Agricola's head voice is the sort of deeper, pharyngeal falsetto-lite production Peter Giles imagines, we can again infer from modern countertenors who sing with such a technique that Agricola's observations are correct; those singers frequently possess great vocal agility, but less power relative to chest voice.

Agricola's comments regarding the nature of falsetto singing touch on the way a modern tenor approaches vocal production in the top of his range. First, Agricola describes two points at which a tenor might begin using falsetto, either e'-f' or a, depending on whether he be a chest or a head-voice singer, respectively.[110] Of course, the pitches must be taken as approximate, because we cannot be sure what pitch standard Agricola has in mind, but, for simplicity's sake, let us assume he is referring to a Cammerton somewhere in the neighborhood of A=415hz, the pitch at which voices would have performed most of Bach's Leipzig cantatas. Surprisingly, the head voice singer in Agricola's description engages his falsetto very low, much earlier than the chest voice singer, or more accurately stated, the head voice singer switches to pure falsetto sooner than

---

[108] Richard Miller, *The Structure of Singing: System and Art in Vocal Technique* (New York: Schirmer Books, 1996), 119-120.

[109] Agricola, *Introduction to the Art of Singing*, 75.

[110] Ibid., 77.

expected, though physiologically this makes sense, because in the d'-f' pitch range his vocal apparatus will begin demanding a choice regarding registration, and there is no reason for a singer already employing a light mechanism to retain more vocal weight any longer than necessary. The chest voice singer, on the other hand, will wait as long as possible before engaging his falsetto, in the g-a' pitch range and near the secondo passaggio; at this point he will have little choice, because he has taken his chest voice sound, or heavy mechanism, as far up as it can be carried. As Agricola concedes, every voice is unique, and the pitch ranges he has provided for the transition to falsetto are general and can vary slightly from voice to voice.[111] With this observation in mind, it is worth noting that nowhere does Agricola describe a singer who manages the upper register with no recourse to falsetto. The transition to falsetto is presented as the norm.

Second, Agricola describes the quality of falsetto. Somewhat confusingly, he relates that scientists and musicians describe falsetto as the "forced voice", and falsetto-sung notes as "forced tones."[112] Is this because falsetto was not considered a part of the "natural" voice, and thus tones sung in falsetto were forced beyond what was natural? Or is it truly a description of tone quality – tense, pinched and laborious? That description is not typical of accounts of falsetto in other sources, nor is it really in sync with what follows in the same treatise, suggesting the possibility at least that "forced voice" is not a description of tone quality, but rather a term labeling the vocal phenomena as part of the dichotomy natural-unforced/unnatural-forced. Like head voice, Agricola describes lower tones sung in falsetto as being few in number, weak and less beautiful than those produced in the natural voice.[113] His next comment is significant, because, to the best

[111] Agricola, *Introduction to the Art of Singing*, 77.

[112] Ibid., 75,

[113] Ibid., 76.

of our knowledge, it is the first time in the pedagogical literature of the Renaissance and Baroque that the tone quality of falsetto is positively extolled and compared favorably to tones produced in the modal, or so-called natural voice: "The falsetto notes in the upper register are just as strong and beautiful as the natural high notes with many singers who know how to handle them."[114] Besides the obvious implications of this statement, that falsetto notes in the upper register can be both strong and have an attractive tone quality, the less explicit message is that upper-register falsetto singing needed to be practiced and skillfully deployed to be effective, as was the case with the singers who 'know how to handle them.' The contrapositive of this realization is that some singers did not know how to handle them and thus did not sing well in falsetto. In the context of modern voice pedagogy, the notion that by consistently working falsetto in training tenor voices and thereby achieving a usable, performance worthy register and not simply as a short term means to producing better head or chest voice is almost totally absent. The falsetto sounds produced by tenors in today's voice studios may indeed not be worthy of the concert stage, but surely a technique which is rarely, if ever, seriously practiced or refined is unlikely to produce, except by accident, a good result.

Agricola claims that for most singers who are not professional falsettists, pronunciation is more difficult in the falsetto register.[115] Why this should be the case is not altogether clear. Falsetto should require little vowel modification to preserve good tone quality. This is quite the opposite of the situation if the modal voice is carried up beyond comfort either by sustained pushing or by employing the now nearly universal practice of modifying vowels to match formants and increase ease of utterance. Agricola explains the dilemma quite succinctly by observing "That which is easily pronounced in speaking cannot be enunciated as easily in singing

[114] Agricola, *Introduction to the Art of Singing*, 77.

[115] Ibid., 77.

if the voice is to continually maintain a good sound."[116] It may be that Agricola is referring to those who have little experience or skill singing in falsetto, and thus everything about it, including enunciation, is more awkward than in the modal voice, the principal singing register.

Agricola greatly expands Tosi's instructions concerning the transition from modal to falsetto register, providing the singer with far more specificity. Much of what he describes concerning the bridge between registers should be familiar to the modern reader as the concept of *voix mixte*, a blend of chest and falsetto permitting the passage from one register to the other without notice. As Agricola points out regarding chest/head voice, likewise the terminology *voix mixte* is figurative and not literally descriptive of the actual physiological process. One does not achieve mixed voice by adding equal parts chest and head, then stirring vigorously. Physiologically, Vennard describes the phenomenon of mixed voice as the gradual adjustment of the muscles and cartilages of the vocal apparatus away from the heavy mechanism towards the light mechanism.[117] Agricola counsels that the highest notes in chest and the lowest in falsetto must be sung with the same quality. He also provides the well-worn truth that not all voices are created equal; blending the registers is difficult, and some singers will possess the gift to do it well while others will not.[118]

Agricola's insistence on maintaining the same quality in both registers is significant. The presumption here is that all parts of the part of the voice can be made to sound alike and possess a pleasing uniformity. But the possibilities for register equalization are limited. Our modern voice studios present one paradigm: the modal voice is carried up as far as possible, at which point singers learn to "cover" the tone and use a greatly reinforced head voice that preserves not only

---

[116] Agricola, *Introduction to the Art of Singing*, 63.

[117] William Vennard, *Singing: The Mechanism and the Technique*, 39-41.

[118] Agricola, *Introduction to the Art of Singing*, 77.

the tone quality but in many cases the volume of the modal voice. Historically informed performance advocates an alternative paradigm of register equalization, wherein the reduced demands for volume permit a less muscular and more modest modal voice to be matched in quality by a well-trained falsetto. Agricola's text presents this approach as normal, not at all unnatural, and aesthetically pleasing. Moreover, the history of the singing voice makes it clear that the tenor sound modern studios produce did not exist before the mid-nineteenth century.

Agricola's greater emphasis on developing the bridge between the two registers was likely attributable to the current state of singing and teaching in Germany, which by all contemporary accounts was deplorable.[119] What German audiences and congregations had likely grown accustomed to hearing was an abrupt and aesthetically unattractive shift from modal to falsetto registers. That shift was the result of a combination of an old-fashioned pedagogy as well as declining quality and quantity of vocal education in the German Latin schools. As Butt notes, the separation of music from its primary pedagogic role in a sacred institution toward a secularized, rhetorical art aimed at amateurs ultimately spelled its doom as a primary area of pedagogical concern.[120] Agricola's treatise was well-received at the time of its publication; as Julianne Baird points out in the introduction to her translation of Agricola's treatise, it was an influential publication from a prominent composer active at one of the most important courts in Europe.[121] The vocal technique described and endorsed by Agricola had been inherited from Tosi and nearly 100 years of castrato wisdom and experience, and was subsequently emended to address current conditions. Despite some elements peculiar to German performance practice, for

---

[119] John Butt, *Music Education and the Art of Performance*, 166-167.

[120] John Butt, *Music Education and the Art of Performance*, 88.

[121] Agricola, *Introduction to the Art of Singing*, 1. The Grove article on Agricola claims that the *Anleitung* came to be considered a "landmark in the teaching of singing." E. Eugene Helm and Darrell Berg. "Agricola, Johann Friedrich." *Grove Music Online*. *Oxford Music Online* (Oxford University Press), accessed March 15, 2014, http://www.oxfordmusiconline.com/subscriber/article/grove/music/00312.

at least 20 years before its publication and for the next hundred years it was also the prevailing ideal in Italy and Germany, and eventually in England and France as well to some degree.

Johann Joachim Quantz

The general acceptance of Agricola's writing can be confirmed on two fronts, one secular and the other sacred. His colleague at the court of Frederick the Great of Prussia, the composer and flautist Johann Joachim Quantz, in his *Versuch einer Anweisung die Flöte traversiere zu spielen (1752)* writes the following concerning the ideal singer:

> The chief requirements of a good singer are that he have a good, clear, and pure voice, of uniform quality from top to bottom, a voice which has none of the major defects originating in the nose and throat, and which is neither hoarse nor muffled . . . In addition, the singer must know how to join the falsetto to the chest voice in such a way that one does not perceive where the latter ends and former begins; he must have a good ear and true intonation.[122]

Quantz, repeating advice passed down from the 15th century onwards, also advises singers not to scream out high notes and to maintain a moderate quality of voice from the low to the high register. In addition to the usual advice concerning soft singing in the upper register Quantz, like Agricola, emphasizes the joining of the two registers, exhorting the singer to maintain a uniform quality from top to bottom.

Quantz and Agricola represent a particular point of view, that of the court composer writing for and hearing performances by professional singers. Can it be assumed that the aesthetic was the same in church, especially those in more rural areas? Bach left no writings concerning vocal pedagogy and nothing anecdotal survives describing what sort of sound his singers

[122] Johann Joachim Quantz, *On Playing the Flute*, 2nd ed., ed. and trans. Edward R. Reilly (New York: Schirmer Books, 1985), 300-301.

produced or what he liked to hear,[123] so we must rely on evidence from circumstances similar to those in which Bach lived and worked. One of Bach's successors as Cantor at the Thomasschule in Leipzig, Johann Friedrich Doles, like Cantors at German Lateinschülen since the Lutheran reformation, produced a singing tutor for his students dealing with the basic elements of a musical education, including brief discussions of voice types, typical vocal ranges for each part, clefs, intervals, modes, tactus and ornamentation. In the section dealing with ideal qualities a singer ought to possess, Doles offers the following advice: he must know "how to join the natural or chest-voice with the falsetto or head-voice in the sustaining of the notes in diatonic order, rising and falling, so that one cannot perceive where the one begins or the other ends."[124] He also lists the typical range of the tenor voice as extending from written C4 to A5.[125] As we shall see, this is mostly the case with Bach, though his music routinely exceeds the written pitch of a4 extending to written Bb5 and occasionally even B5.

Dole's treatise is in close enough to Bach to be a reasonably trustworthy source for pedagogical practices and expected outcomes, and may represent practices established during Bach's lifetime.

Johann Adam Hiller

Nearly three decades after Bach's death, much of what was current in vocal pedagogy around 1750 had not changed significantly. Writing in 1778, Johann Hiller, one of the century's most energetic and accomplished teachers of singing, echoes much of the advice given by

[123] Andrew Parrott, *The Essential Bach Choir* (Woodbridge: The Boydell Press, 2000), 161. The best evidence we have comes from audition reports and recommendation letters where Bach may refer to a voice as good, strong, passable and the like.

[124] John Butt, *Music Education and the Art of Performance*, 93.

[125] Johann Friedrich Doles, *Anfangsgründe zum Singen*, ed. Armin Schneiderheinze (Frankfurt am Main: C.F. Peters, 1989), 19.

Agricola and Quantz. We find the same emphasis on seamlessly joining the modal and falsetto registers: "Since the highest tones of the chest register will always be somewhat more shrill than the neighboring tones of the falsetto register, the point is to make some of the former tones milder and the latter ones stronger, which can be achieved through diligence and practice."[126] Like Agricola (and Tosi) Hiller acknowledges the positive effects of joining the registers. He writes that "by uniting both registers the voice can be expanded to cover a considerable range."[127] And finally, using slightly different words but conveying the same meaning, is the warning to not force the voice in the upper register: "Young students of singing, both male and female, especially those with a wide chest range, cannot be cautioned enough against the dangerous practice of trying to force their highest tones, as they will not only lose their voices but do harm to their bodies and health as well."[128]

Such statements bear out Butt's contention that for nearly three centuries the focus of vocal pedagogy in German sources remained remarkably consistent. Falsetto or a sound very close to falsetto on the modal/falsetto spectrum in the upper register of the tenor voice was a normal, accepted, encouraged and expected practice for singers in Germany. This practice is supported by historical sources and at least not contradicted by external evidence such as the requirements of a performing space, instrumentation, etc. The question is not what was done then but what should be done in modern performance. If historical evidence shows that falsetto singing was for many years the normal, viable option for tenor singers, should that knowledge have any effect on the performance in a modern context?

---

[126] Johann Adam Hiller, Treatise on Vocal Performance and Ornamentation, 53,

[127] Ibid., 54.

[128] Johann Adam Hiller, Treatise on Vocal Performance and Ornamentation, 54.

Excursus: Other National Traditions

Sources in the German tradition suggest very strongly that tenors used, and were encouraged to use, falsetto as a tool in the upper register. The musical establishments of France and Italy had their own respective schools of singing, and it is worth investigating how those schools influenced what happened in Germany. Is there corroboration from French and Italian traditions that falsetto was the favored tool for high tenor singing? As with pedagogy today, the main point of contention/confusion revolves around what vocal timbre constitutes falsetto. Although the evidence is not unambiguous, there is good reason to believe that falsetto singing must have been part of both the French and Italian traditions that may in turn have influenced German practice.

France

There is strong documentary proof in the French tradition that the 18th century French *haute-contre* consciously avoided use of pure falsetto in the upper register and employed a one-register technique in which the modal voice was carried up to the very highest notes of the range. Andrew Parrot provides ample evidence in a concise article revisiting the subject of falsetto singing in 18th -century France that the French neither liked nor generally employed pure falsetto singing in the male high voice.[129] Contemporary accounts point to an ample, brilliant and penetrating tone. There can be no doubt from the case presented by Parrott that the French haute-contre singers did not produce a weak, unattractive sound like what our pedagogues condition us to expect from tenor falsetto singing. It appears that the French haute-contre sang in the upper register with a sound less close to the falsetto end of the modal/falsetto spectrum, but still not

[129] Andrew Parrott, 'Falsetto and the French: "Une toute autre marche",' *Basler Jahrbuch für historische Musikpraxis* 26 (2002), 129-148.

embracing the modern *voix sombre*, the operatic head voice. In this regard the technique is in some manner connected to the falsetto practices of Bach's singers.

In his monograph on the haute-contre singer, Marvin Regier reasons that, "since the widest range listed for the haute-contre (Eb3-C5) at modern pitch equals (Db3-Bb4) and within a high tenor's range, it appears as though there was no need to use falsetto."[130] Although Bb4 does indeed fall within the range of most modern tenor voices, as any tenor who has ever attempted to sing an haute-contre part will admit, range isn't really the critical issue. Tessitura has a decidedly greater influence on production than range -- how many times and in what manner high notes must be sung. It seems difficult to credit that a tessitura as high as the haute-contre could be sustained using a technique in which the heavier mechanism was carried up as high as possible. Bach's writing for tenor voice also involves a high tessitura, and it is worth considering how singers from each tradition coped with that high tessitura since physiologically, using modal voice well into the *zona di passaggio* is extraordinarily taxing, and impossible to accomplish after the second registration event. German and French tenors each found a way to cope that I would consider some kind of falsetto.

Good diction was a major preoccupation of French singing teachers;[131] Lully adapted the rhythms and musical structure of his music to accommodate the qualities of the French language and French poetry; there was no tradition in France of extemporaneous improvisation of passaggi and textual clarity and integrity was maintained. All this points to clarity of French enunciation; the French evidently liked to understand their singers. How was this understanding ensured when their haute-contre stars spent so much of their time singing in the upper register where

[130] Marvin Paul Regier, "The Haute-Contre Voice: Tessitura and Timbre" (PhD diss., University of Oregon, 1996), 59.

[131] Benigne de Bacilly, *L'art de Bien Chanter* (Paris, 1679). Bacilly devotes an entire section of his treatise to proper pronunciation of French vowels and consonants.

intelligibility is notoriously hard to maintain? This same question pertains to singers in the German tradition where, as I will discuss in Chapter 5, good diction was equally important.

There are three possible scenarios to consider: In the first scenario, the haute-contre singer carries his modal voice up as far as he can, using the techniques of a fixed, low larynx position to lengthen the vocal tract and darken the tone and gradually transition to the powerful modern head voice. In the second scenario, the haute-contre singer carries his modal voice up as far as he can, but without resorting to modern techniques of a fixed, low larynx and vowel modification/unification. He must resort to quasi-shouting when he reaches a critical registration point in his upper register. Beverly Jerold, in her article discussing the authorship of Jean-Antoine Berard's *Art du Chant (1755),* brings forward several colorful descriptions by French critics characterizing French singing as little more than constant screaming to be heard over the opera orchestra.[132] In the third scenario the haute-contre singer carries his modal voice up as far as possible, reaching a critical registration event at which point he transitions to a falsetto sound that could be characterized as full and sonorous by the French and harsh or even shrill by foreigners.

While not well documented, the third scenario makes sense when we consider that the haute-contre in particular gained fame because the best of their kind sang with a beauty and a presence that captivated French audiences. As Jerold writes, "Singers of talent needed support to resist what could bring them instant applause. Perhaps the reason the critics constantly singled out Fel (who had studied with an Italian teacher) and Jélyotte for praise was because they avoided the crowd pleasing exertions of most singers and came closest to the Italian style of voice production."[133] The best of these singers clearly delivered a sound the French loved, bright and strong, but produced in a manner unlike their countrymen, a manner not involving seriously

---

[132] Beverly Jerold, "Mystery in Paris, the German Connection and More: The Bérard-Blanchet Controversy Revisited," *Eighteenth Century Music* 2, 01 (March 2005), 91-112. Accessed December 19, 2012, http://dx.doi.org/10.1017/S1478570605000266.

[133] Beverly Jerold, *Mystery in Paris, the German Connection and More*, 103.

pressed phonation, perhaps a falsetto closer on the modal/falsetto spectrum to model than falsetto than tenors of other nations.

It may be that the reluctance of both 18th century and modern commentators to characterize the haute-contre sound as falsetto has more to do with semantic connotations than resistance to the concept of a two register singer per se. Regier discusses the concept of vocal timbre and how that concept was understood historically and now by modern voice scientists. He argues that timbre is partly related to voice source function and that the haute-contre timbre was unique because of its strong nasal quality, achieved mainly by use of a high laryngeal position and naso-pharyngeal resonance.[134] In contrast, throughout the work Regier characterizes falsetto as a weak sound. In this respect his conclusion that the haute-contre did not employ falsetto seems to hinge more on the modern pedagogical understanding of the physiological and aural differences between pure falsetto and the other traditional registers: pure falsetto is weak, modal voice is strong, ergo a strong sound in the upper register cannot be falsetto.

But the assertions he makes at the end of his discussion of vocal timbre do not seem entirely consistent with this conclusion that haute-contre singers did not use falsetto. He accepts Vennard's description of two types of falsetto, one of which produces a stronger, more brilliant sound,[135] and he asserts that the second of Vennard's falsettos might produce an haute-contre like timbre.[136] He suggests that the haute-contre likely used a production very similar to the call voice, or yell, of the *zona di passaggio*.[137] Finally, he states that the strident, nasal quality of the haute-contre in the chest voice may have enabled him to change registers un-noticed, without

[134] Marvin Paul Regier, *The Haute-Contre Voice*, 108-127.

[135] Ibid., 120.

[136] Marvin Paul Regier, *The Haute-Contre Voice*, 120.

[137] Ibid., 132.

specifying to which register the singer would be changing.[138] He also makes a case for the haute-contre production being as healthy as the Italian manner of falsetto singing.[139] All of this suggests very strongly that the resistance to ascribing falsetto use to the haute-contre rests mainly on the semantic burden of the term falsetto, which as we have already discussed, as it relates to the tenor voice, is entirely inflexible and designates one type of sound, with no shades of grey. If the haute-contre sound was not chest voice, not the modern head voice, not the pure falsetto of the Italian tenors, resembled the call voice of the *zona di passaggio* and yet remained a healthy manner of production, what was it? Between the two extremes of the heaviest and lightest mechanisms, what have traditionally been called chest and falsetto/head voice, there exists a large spectrum of possible sounds. The haute-contre timbre may very well have been a falsetto sound described by 18th century sources as sonorous or strident that fell further on the spectrum from pure falsetto than what was normal in Italy or Germany.

Italy

The situation in Italy was the opposite of that in France, with the Italians clearly favoring the use of pure falsetto in the upper register. Parrott has presented contemporary observations (both French and Italian) confirming Italian singers' predilection for falsetto singing above the staff. Several points he makes are relevant to German practice.

First, Germans authors such as Quantz plainly acknowledged the difference in national singing styles between the French and Italian and, as we shall see, just as plainly favored the Italian where falsetto was used to extend the upper register. What occurred in practice is another matter. Based on the number of exhortations in German treatises to sing softly in the upper

[138] Ibid., 133.

[139] Ibid., 113.

register, from the humorous Ornithoparcus to the more serious Hiller, German singers did not always follow their singing masters' wishes, and may have embodied the French over the Italian aesthetic.

Second, the sorts of adjectives used to describe the falsetto sound of Italian singers, like the tone-quality of French singers, is subject to considerable interpretation. Some French critics found falsetto unpalatable, though the many references to its unnaturalness makes one wonder how much of the objection is ideological and how much aesthetic. Italians, who accepted and liked falsetto singing in their tenor voices, coincidentally also revered the castrato voice which the French almost universally loathed. Many of the quotations from French critics Parrott presents to describe the *quality* of falsetto use adjectives that are very nearly interchangeable with some descriptions of haute-contre singing from the mid-18th century. For instance, Rousseau minces no words: "Indeed the haute-contre in a man's voice is not natural; one has to force in order to carry it to this register: whatever one may do, it always has a *sharp-edged quality* and rarely good intonation."[140] Compare Rousseau's sentiments with an excerpt Parrott has found in the Mercure de France describing a French tenor voice as "without the *sharp edged quality* of falsetto…"[141]

Parrott mentions this coincidence in passing, but he is focused more on the recurrence of the characterization of "unnatural" and the verb "forcer" rather than the similarity in the actual quality of sound. This highlights the great difficulty in making judgments based solely on subjective descriptions of tone quality, because it is not always clear what tone quality is an exact corollary to our modern understanding of a given register. The following quotation from Lalande that Parrott uses to illustrate the difference in French and Italian singing in the upper register is clear in some respects and equally confusing in others:

---

[140] Andrew Parrott, *Falsetto and the French*, 141.

[141] Ibid., 146.

> The [Italian] tenore goes from C to g' in full voice and up to d" in falsetto or fauset; after g' our haute-contre ordinarily ascends in full voice to Bb', whereas after g' the tenore enters into falsetto – but that is not without exception; Babbi ascended to c'' in full voice, like Caribaldi, until the age of 48. Amorevoli, who was a little older, went up to d.[142]

Lalande very helpfully provides ranges and clearly associates the given ranges with registers, but his terminology raises the same sort of questions that we have already discussed concerning the term "falsetto" and how this does not necessarily, or even likely, describe one type of sound. We know from modern voice science and spectrographic analysis as well as direct observation of the vocal folds that there is no such thing as "full voice" once a certain frequency has been reached, if what we mean by "full voice" is the traditional chest voice/heavy mechanism; the unavoidable and consistent registration events require some kind of change, either abrupt (the voice breaking or cracking into pure falsetto), subtle (gradual transition into some degree of falsetto) or something else entirely like Garcia's *voix sombre*. Lacking any evidence in support of *voix sombre* production in the mid to late 18th century in any national tradition, we have to figure out what Lalande had in mind. It is possible that Babbi, Caribaldi and Amorevoli had exceptionally high set voices in which traditional registration events occurred significantly later than usual (altogether possible), but given that historical circumstances in no way favored the modern operatic head voice production, the most reasonable conclusion is that the upper register singing of tenors like Babbi, Caribaldi and Amorevoli was accomplished in a falsetto that convincingly mirrored the quality of clear, clean, penetrating modal voice, just as modern tenors' head voice achieves the same feat by emulating a powerful, ringing modal voice.

In some respects the German tradition of vocal pedagogy is less open to interpretation than the French or Italian because there is less evidence to interpret or misinterpret, as the case may be. As far as Bach's tenors are concerned, the main take-away of the above discussion is

[142] Ibid., 136.

that as a tool for upper register singing, falsetto was not confined to one nation or to one national tradition. Falsetto singing was discussed extensively in both France and Italy. In the French tradition, the best source of evidence, the music itself, coupled with the physiological limitations of the voice, make it likely that French haute-contre made recourse to some shade of falsetto, though not one that modern commentators are willing to characterize as such. The Italian tradition is clearer, with falsetto being the favored manner of production in the upper register, though some terminological confusion is still present. At the very least, in 1720's Leipzig, Bach's tenors would certainly not have been confronted with influences from other national traditions where falsetto singing was unheard of.

Chapter 5: Performing Conditions in Early 18th Century Leipzig

A solid foundation of theoretical evidence has been presented to support the assertion that it was the practice of Bach's time was for tenors to rely on falsetto singing in the upper register and that modern tenors use a different tool, the operatic head voice, to manage the same range. Does J.S. Bach's own music and do performing conditions in early 18th century Leipzig in any way contradict that practice or support the current practice of singing the upper notes in the powerful head voice? In answering we can consider range, tessitura, vocal writing and text declamation in relation to performances of Bach's music in Leipzig, with the particular focus on the works of Bach's first annual cycle of cantatas (1723-1724).

Range

Bach's vocal music has a reputation among tenors as being difficult to sing for a number of reasons, among which is its range. First, the range of arias and recitatives in the first annual cycle of cantatas is remarkably consistent, very infrequently straying far from a basic ambitus of d-a'. Of the fifty-six arias and recitatives surveyed for this study, fourteen, or twenty-eight percent, conform exactly to that ambitus. Forty arias have an upper range of a', ten have an upper range of g', g'# or a flat, while not one has an upper range lower than g'. Table 1 below presents the arias and recitatives with their respective ranges. Unlike other repertoire of later periods (Schumann songs, for instance) where range can vary significantly from work to work, Bach stays quite closely within the same written range from cantata to cantata. Even the major vocal works of his first year in Leipzig (the Magnificat in Eb and first version of the St. John Passion) do not push the envelope considerably. In fact, only five of the arias and recitatives surveyed exceed written a' and never extend beyond b'.

Table 2. Vocal ranges for works from Bach's first annual cycle of cantatas for Leipzig[143]

BWV	Name	Form	Range - low	Range - high
24	Die Redlichkeit ist eine von den Gottesgaben	Recit	f	g'
24	Treu und Wahrheit sei der Grund	Aria	d	a'
37	Der Glaube ist das Pfand der Liebe	Aria	e	a'
40	Das Wort ward Fleisch und wohnet in der Welt	Recit	c	a'
40	Christenkinder, freuet euch!	Aria	d	bb'
44	Sie werden euch in den Bann tun	Duetto TB	f#	g'
44	Ach Gott, wie manches Herzleid	Chorale	b	ab'
48	Hier aber tut des Heilands Hand	Recit	d	a'
48	Vergibt mir Jesus meine Sünden	Aria	d	a'
60	Herr, ich warte auf dein Heil	Aria - Arioso	d	a'
60	O schwerer Gang	Recit AT	e	a'
60	Mein letztes Lager will mich Schrecken	Duetto AT	e	a'
65	Verschmähe nicht	Recit	d	a'
65	Nimm mich dir zu eigen hin	Aria	d	a'
67	Mein Jesus ist erstanden!	Aria	e	a'
73	Ach! Aber ach!	Chorale & Recitative	f	g'
73	Ach senke doch den Geist der Freuden	Aria	eb	a'
76	So läßt sich Gott nicht unbezeuget	Recit	g	a'
76	Hasse nur, hasse mich recht	Aria	c	g'
76	So soll die Christenheit	Recit	d	g'
81	Herr! Warum trittest du so ferne?	Recit	d	g#'
81	Die schäumenden Wellen von Belials Bächen	Aria	d	a'
83	Eile Herz, voll Freudigkeit	Aria	c	a'
86	Gott macht es nicht gleichwie die Welt	Recit	f#	a'
86	Gott Hilft gewiß	Aria	f#	b'
90	Es Reißet euch ein schrecklich Ende	Aria	d	a'
90	Doch Gottes Auge sieht auf uns als Auserwälte	Recit	f	a'
95	Ach könnte mir doch bald so wohl geschen	Recit	f#	g'
95	Ach, schlage doch bald, selge Stunde	Aria	d	b'
104	Der höchste Hirte sorgt vor mich	Recit	f#	g'
104	Vergibt mein Hirte sich zu lange	Aria	e	a'
105	Kann ich nur Jesum mir zum Freunde	Aria	d	ab'
109	Des Herren Hand ist ja noch nicht verkürzt	Recit	c	a'
109	Wie zwiefelhaftig ist mein Hoffen	Aria	e	a'

[143] While the part of the Evangelist in BWV 245 (St. John Passion) has some of Bach's most challenging recitative for the tenor voice, the scope of this document made it necessary to focus only on the arias and arioso for tenor.

119	Gesegnet Land! Glückselge Stadt!	Recit	c	a'
119	Wohl dir, du Volk der Linden	Aria	d	a'
136	Ach, daß der Fluch	Recit	e	a'
136	Uns treffen zwar des Sünden Flecken	Duetto TB	e#	a'
148	Ich eile, die Lehren	Aria	f#	b'
148	Bleib auch, mein Gott, in mir	Recit	e	a'
153	Du sprichst zwar, lieber Gott	Recit	d	a'
153	Stürmt nur, stürmt, ihr Trübsalswetter	Aria	e	a'
154	Mein liebster Jesu ist verloren	Aria	f#	a'
154	Wo treff ich meinen Jesum an	Recit	c#	a'
154	Dies ist die Stimme meines Freundes	Recit	d	a'
154	Wohl mir, Jesus ist gefunden	Duetto AT	e	a'
166	Ich will an den Himmel denken	Aria	d	a'
167	Ihr Menschen, Rühmet Gottes Liebe	Aria	d	a'
179	Das heutge Christentum ist leider schlecht bestellt	Recit	d	a'
179	Falscher Heuchler Ebenbild	Aria	e	a'
181	Der Schädlichen Dornen unendliche Zahl	Aria	c	a'
245	Ach, mein Sinn	Aria	e	a'
245	Erwäge, wie sein blutgefärbter Rücken	Aria	e	a'
245	Mein Herz, in dem die ganze Welt	Arioso	e	ab'
243a[144]	Deposuit Potentes	Aria	d	bb'
69a	Meine Seele, Auf, erzähle	Aria	e	a'

Second, while many tenors accustomed to the extremes of range introduced by the high c"-crazy opera culture of the 20th century may think a' or even b' not especially high, Bach's challenging melodic writing and the overall difficulty of his music for vocalists exacerbates the issues of singing any notes written above the primo passaggio.

Tessitura

[144] BWV 243a may have been performed at tief cammerton (a= 390) in Leipzig, thus the high range written bb' of "Deposuit Potentes" would have sounded as ab (at A=440).

Range is only part of the story, and the lesser of the reasons Bach is difficult to sing for tenor voices. The greater concern is tessitura, the part of the range wherein notes are written with the greatest frequency. While the range of Bach's arias and recitatives may not be high by modern standards (though still by no means low!), more importantly, the tessitura is high and exacerbates the difficulty and complexity of Bach's melodic writing. Physiologically the average male voice is capable of carrying chest voice only so high before a transition to some other means of production becomes necessary, be it falsetto, reinforced head voice or exceptionally pressed phonation verging on outright screaming. Along the way the voice encounters several registration events, or passaggi, places where a registration change can (and eventually must) be made to facilitate further phonation. Richard Miller's registration event chart from *The Structure of Singing* illustrates registration events for a variety of vocal *fach*, the system now used to classify subcategories of voice type based on variables such as range, vocal timbre and vocal amplitude. The only relevant tenor vocal categories in Bach's time are the first and second lines of Miller's chart, the *tenorino* and *tenore leggiero*. Miller 's table illustrates the pitches at which the primo and secondo passaggi occur for those voice types.

Approximate Register Events		
Category of Voice	*primo passaggio*	*secondo passaggio*
tenorino	F_4	$B\flat_4$
tenore leggiero	E_4,($E\flat_4$)	A_4,($A\flat_4$)
tenore lirico	D_4	G_4
tenore spinto	D_4,($C\sharp_4$)	G_4,($F\sharp_4$)
tenore robusto (tenore drammatico)	C_4,($C\sharp_4$)	F_4,($F\sharp_4$)
baritono lirico	B_3	E_4
baritono drammatico	$B\flat_3$	$E\flat_4$
basso cantante	A_3	D_4
basso profondo	$A\flat_3$,(G_3)	$D\flat_4$,(C_4)

Table 3. Chart of Register Events for Males Voices from The Structure of Singing[145]

[145] Richard Miller, *The Structure of Singing: System and Art in Vocal Technique* (New York: Schirmer Books, 1996), 117.

Miller's table assumes a modern pitch of A= 440Hz. The majority of the vocal works from Bach's first Leipzig cantata cycle were performed at Leipzig Cammerton, which equates to roughly A = 415Hz. Even accounting for the variance of a minor second, the median range of Bach's cantatas (d5 – a5) still encompass both passaggi, and routinely exceed the secondo passaggio.

Moreover, and of greater significance as far vocal stress is concerned, the tessitura of Bach's music forces the tenor to spend a significant amount of time in the *zona di passaggio*, the fourth or fifth between the two registration points, a very difficult place for the voice to be comfortable. For instance, Bach, in a single aria, "Die schäumenden Wellen von Belials Bächen" BWV 81/3, taking into account the da capo form, requires the singer to produce written g4 41 times and written a4 14 times. The aria "Erwäge" BWV 245/32, is even more taxing; if the A section is repeated to honor the da capo form, written g4 will be sung 59 times, with written ab5 being sung 19 times. Of course not all of Bach's arias have such a high tessitura, but most make more than modest demands on a singer's upper register, and easily justify the pedagogical insistence on developing the falsetto register and learning how to unite it with the chest voice.

Charts 1 and 2 below show, respectively, the overall percentage of notes written in the *zona di passaggio* for all of the recitatives and arias combined and the percentage of notes for each recitative and aria surveyed for this study that lie within the *zona di passaggio*.

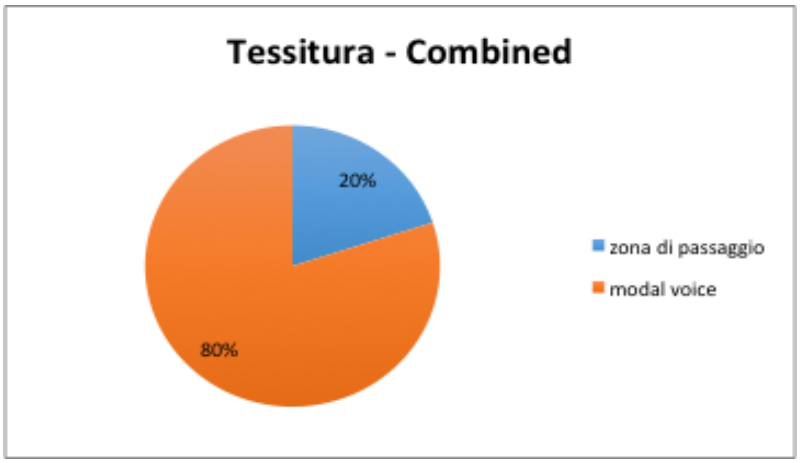


Chart 1. Combined percentage of notes sung in modal voice and notes falling in the *zona di passaggio*[146]

Overall, roughly twenty percent of the notes in a given aria or recitative will fall in the *zona di passaggio*. Seventeen of the arias and recitatives surveyed have at least a fifth of the notes fall in the *zona di passaggio*, while some arias, like "Ach, schlage doch bald, selge stunde" BWV 95/5, have nearly forty percent of the notes fall in the *zona di passaggio*. Only one aria, "Hasse nur, hasse mich recht" BWV 76/10 has less than ten percent of the total notes occur in the *zona di passaggio*, and it is no coincidence that this is one of the arias whose overall range extends only to written g4. While twenty percent may not seem like an overwhelming number, it must be remembered that in an aria whose note count exceeds six hundred with the da capo scheme (like "Es Reißet euch ein schrecklich Ende" BWV 90/1 with 691 total notes) the *zona di passaggio* will be visited 161 times. The modern approach is to sing each of the 161 notes using

[146] The combined percentage refers to all of the movements identified in Table 1 with the exception of "Deposuit Potentes" BWV 243a which may have been performed at a lower Cammerton than the other works listed. *Zona di passaggio* refers to the range of F4 – Bb4 and corresponds to the line "tenorino" on Miller's registration chart. Miller's chart assumes a pitch of A=440Hz. At Leipzig Cammerton, the range F4 – Bb4 would sound as E4 – A4 at 440Hz, splitting the difference between the three ranges Miller lists for "tenorino" and "tenor leggiero," the only categories of tenor voice relevant to 1720's Leipzig. Percentage was determined by the number of times a note occurred, not taking into consideration its duration.

the "legitimate" head voice, a tiring exercise in which the singer's vocal tone sounds little different than in late 19th and 20th century repertoire, and as the following sections will show, limits the singer relative to the demands of Bach's music in other ways.

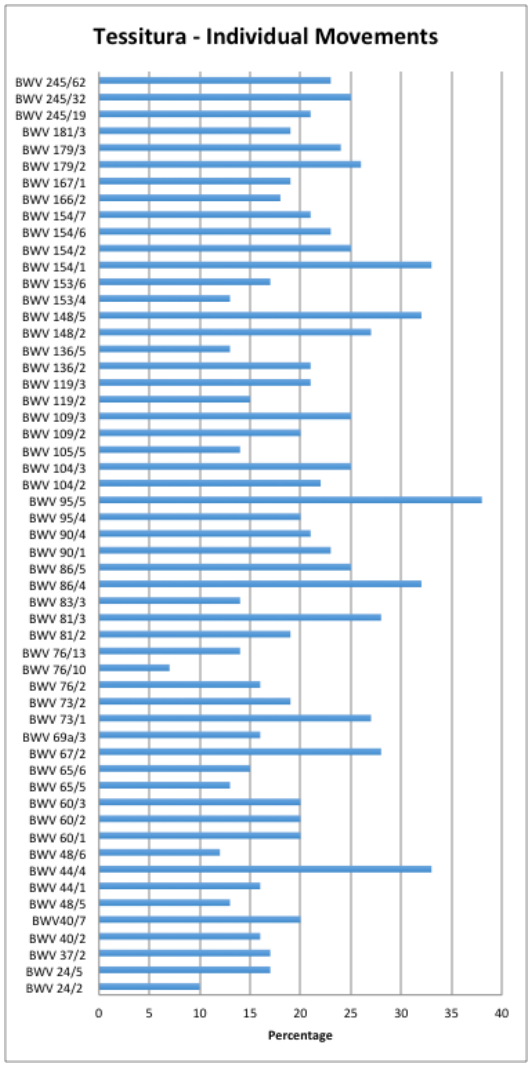


Chart 2. Percentage for each individual movement of notes sung in modal voice and notes falling in the *zona di passaggio*.[147]

[147] Individual percentage refers to all of the movements identified in Table 1 with the exception of "Deposuit Potentes" BWV 243a which may have been performed at a lower Cammerton than the other works listed.

In general, the frequency of the notes written in the *zona di passaggio* for Bach's recitatives is smaller than for the arias, and this makes sense, given that the recitatives are speech-like in nature and the pitches would tend to follow the variegated highs and lows of speech. The arias, with more notes and less text, are more consistently high. The choice of vocal tool in the upper register for Bach's tenors could not be casual, but would significantly affect the performer's ability to even sing the aria. It is inconceivable given the state of vocal pedagogy in Germany in 1723 that a tenor would have at his disposal the tool of modern head voice or think to use such a tool when it would make his already challenging task so much more difficult.

Coloratura

Another way in which a tenor must judge how best to use his upper register tools involves florid writing, a vocal phenomenon less and less encountered in the music of the later 19th and 20th centuries, and usually not presented in the same way as Bach. While much of the music of Rossini and Bellini and their contemporaries is quite florid, coloratura in the music of Baroque composers such as Bach presents a different challenge for several reasons. First, authors of singing treatises in the Baroque era, from the very first in the late 16th/early 17th centuries are very particular about how coloratura should sound. As with vocal production in general, most of these authors reveal little of the technical know-how necessary to sing rapid coloratura, but they are unusually clear concerning what they would like to hear. In 1757 Agricola provides a detailed and, unusual for the time, a very scientific gloss on Tosi's original advice concerning how to sing divisions. He explains that, in order to achieve the detached effect Tosi describes, "one must, when practicing, imagine that the vowel sound of the division is gently repeated with each note . . . During this gentle articulation of the vowel in singing, however, the tongue must not make any special movement; and the air necessary for the divisions that is emitted from the lungs is subdivided into as many small parts as there are notes – which are, as a result, articulate

and clear."[148] Twenty years later, Hiller echoes Agricola's advice: "The entire beauty of passaggi lies, as Tosi says, in their being performed on pitch, staccato, roundly and clearly, evenly, with articulation, and fast."[149] He likewise states that

> There are two ways in which these figurations and the passaggi made up of them can be performed: one is legato, the other is staccato…In legato performances, the vowel, which is pronounced with the first note, will be held, without repeating it, for an entire breath just as a violinist plays a number of notes with a single bow. The tone, however, must not become unclear, but must, rather, be firmly on pitch.[150]

And finally:

> A singer can produce a staccato neither by bowing nor by using his tongue; as a matter of fact, he must keep his tongue completely quiet in his mouth. For him it depends upon gently repeating the vowel with which the passaggio is sung, so that each note can be heard separately. He must, for example pronounce as many a's as there are notes in the passaggi. However, he must beware that he does not say ha or ga, instead of a.[151]

Thus each note should be clearly defined and articulated without, however, resorting to an audible aspiration to achieve the desired articulation. This sort of singing had been present in vocal writing since the late 16th century, but confined more to the low and middle range of the voice where rapid and clean articulation can be accomplished with relative ease (assuming sufficient skill and much practice as prerequisites). Coloratura sung in the manner described by Agricola and Hiller is much more difficult to sing rapidly in the upper register because of the greater tension in the vocal folds and the higher degree of airflow and sub-glottal pressure. Of the arias Bach composed during his first Leipzig cantata cycle, 15 have at least one measure of divisions extending beyond the primo passaggio. Frequently the divisions are spun out to several measures

---

[148] Agricola, *Introduction to the Art of Singing*, 151-152.

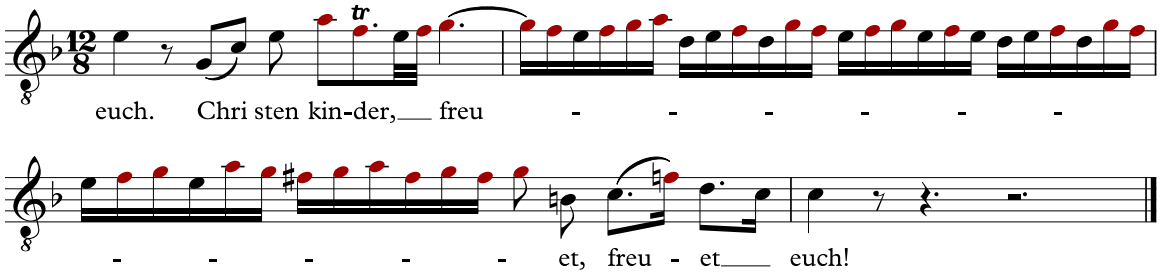
[149] Johann Adam Hiller, *Treatise on Vocal Performance and Ornamentation*, 103.

[150] Ibid., 103.

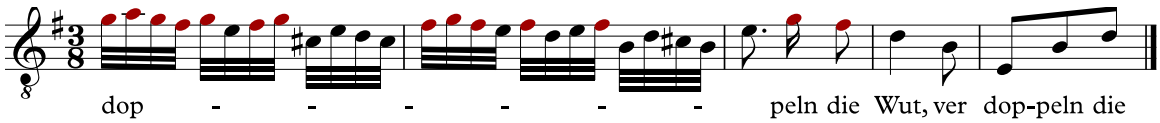
[151] Johann Adam Hiller, *Treatise on Vocal Performance and Ornamentation*, 105.

in length, while the approach varies greatly, sometimes beginning in the lower register and gradually working above the primo passaggio with others staying mostly above the primo passaggio.

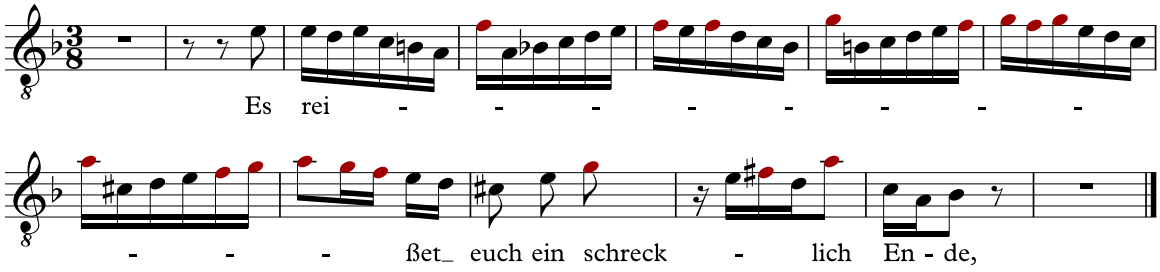
Example 1. "Christenkinder, freuet euch" BWV 40/7, mm. 15-18. Coloratura notes written on or above the primo passaggio are marked in red.



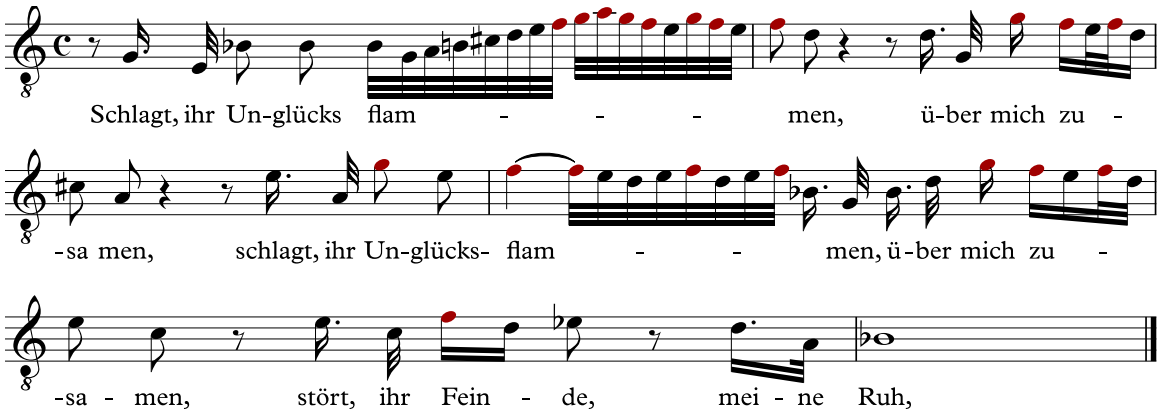
Example 2. "Die schäumenden Wellen von Belials Bächen" BWV 81/3, mm. 29-32. Thirty-second note coloratura notes written on or above the primo passaggio are marked in red.



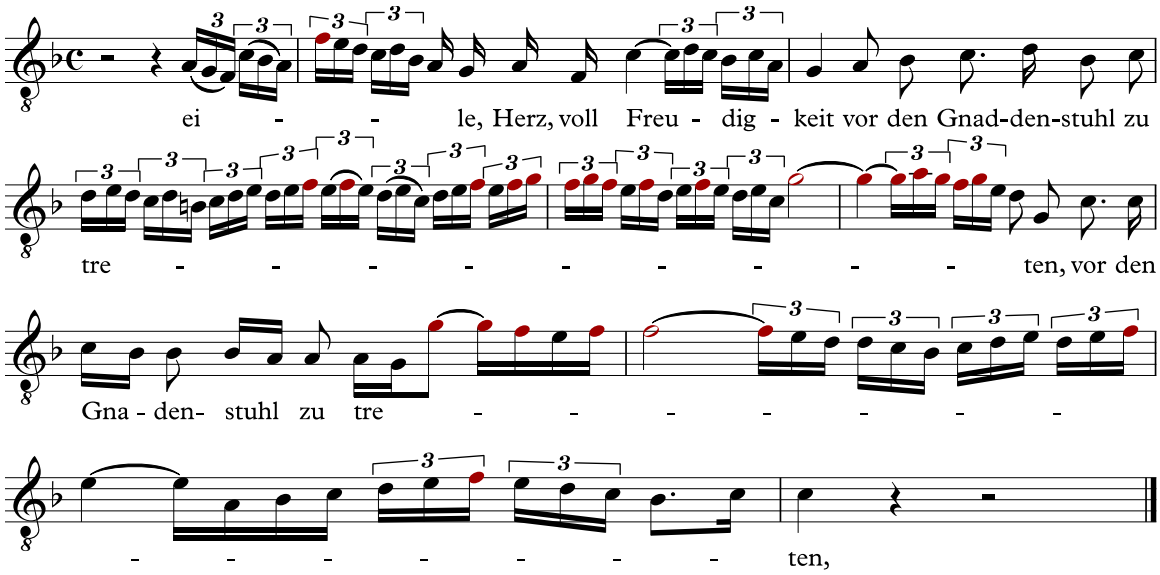
Example 3. "Es Reißet euch ein schrecklich Ende" BWV 90/1, mm. 72-84. Coloratura involving register changes by step and leap. Notes in the *zona di passaggio* are marked in red.



Example 4. "Stürmt nur, stürmt, ihr Trübsalswetter" BWV 153/6, mm. 18-23. Thirty-second note coloratura notes written on or above the primo passaggio are marked in red.



Example 5. "Eile Herz, voll Freudigkeit" BWV 83/3, mm. 10-19. Extended passage of coloratura moving from modal voice into the *zona di passaggio*. Notes in the *zona di passaggio* are marked in red.



Coloratura written in the upper register of the voice can be more difficult to produce because in addition to managing the vocal processes necessary to cleanly produce rapid passaggi, the singer must also contend with a greater tension in the vocal apparatus due to the rise in pitch. How do the modern and historical approaches differ in singing high, rapid coloratura? The

historical approach, with falsetto production, would enable the tenor to sing the notes using a glottal articulation, with a slight puff of air opening and closing the glottis between notes to achieve the detached effect sources describe. Glottal articulation can be used because there is far less tension in the vocal folds than for modal voice. The modern approach differs in that the modern tenor, who in addition to singing high, must also sing high and loud, with a low, fixed larynx and relatively uniform, neutral vowels. This has meant a very significant loss of flexibility because there is a lot of muscular tension in the vocal folds and glottal articulation is extremely difficult, if not impossible, to achieve. Modern tenors use diaphragmatic articulation where each note is given a slight pulse of air from a contraction of the intercostal muscles, but there isn't really a distinct separation between each note. Articulation of this type is difficult to accomplish at a fast tempo. Choosing a different tool in the upper register when singing high, rapid coloratura, like a strong falsetto production, would significantly mitigate that loss of flexibility.

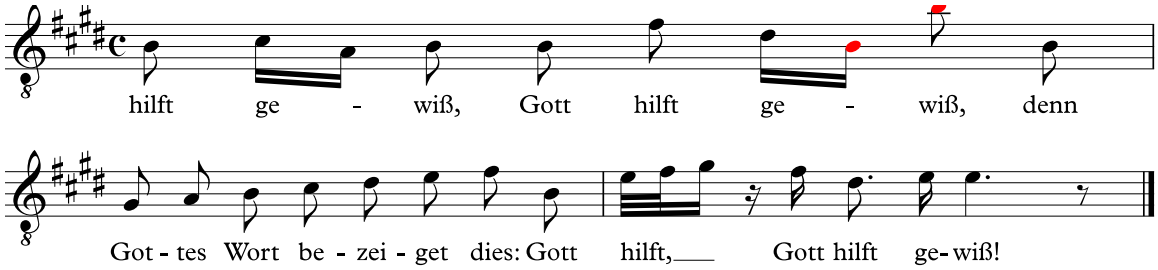
Register Transition

Beyond the factors of range, tessitura and florid writing, there remain the vocal challenges imposed by Bach's melodic writing that would have made it difficult for his tenors to successfully navigate his music without falsetto singing in the upper register being a major part of their technique. First, there is the issue of rapidly switching from one register to another. Both Quantz and Agricola have addressed this issue in comments cited above wherein the singer is exhorted to make the change from one register (chest) to another (falsetto) as seamless as possible. This kind of register transition can occur in two contexts: through either a step-wise approach or by leap. Both types of transition pose challenges for the singer.

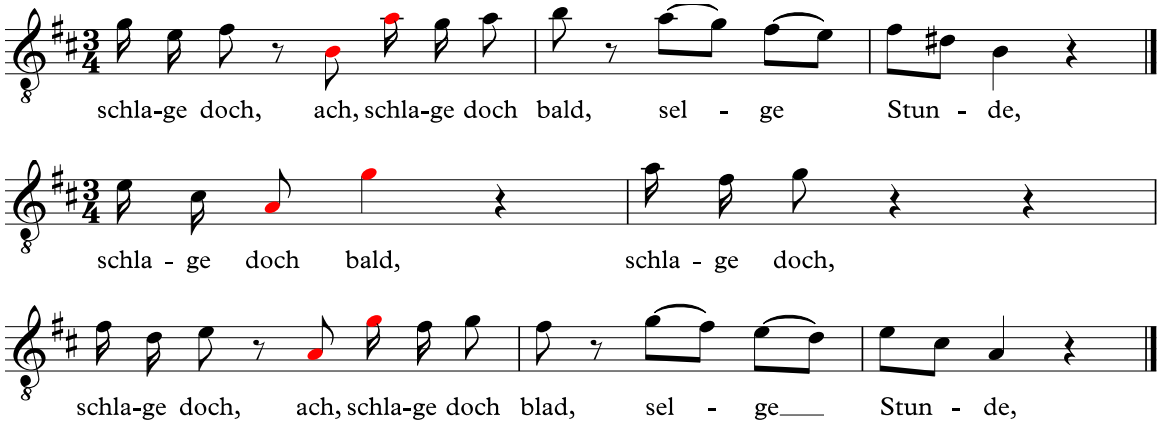
The following examples strongly demonstrate that Bach wrote octave jumps or other leaps that extended into the *zona di passaggio* and beyond at a frequency and of such difficulty that choosing the appropriate tool, or technical solution, could not have been left up to chance and

significantly affected how the music would sound. Modern tenors, choosing to sing these leaps by transitioning directly from a powerful modal voice to a highly reinforced head voice, simply are not making a sound that would resemble what sources suggest was the norm for a good voice: a sweet, flexible and pure sound quality. Moreover, attempting to sing large leaps while maintaining the timbral quality of the modal voice introduces a host of other issues that falsetto singing tenors would not have dealt with, or dealt with to a far lesser degree, such as having the highest note of the phrase always be the loudest because it is not singable any other way.

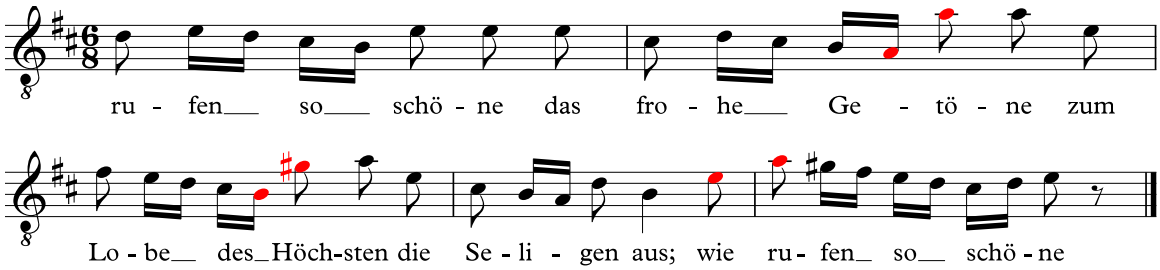
Example 6. "Gott Hilft gewiß," BWV 86/5, mm. 33-35. Register transition from modal voice to above the secondo passaggio is marked in red.



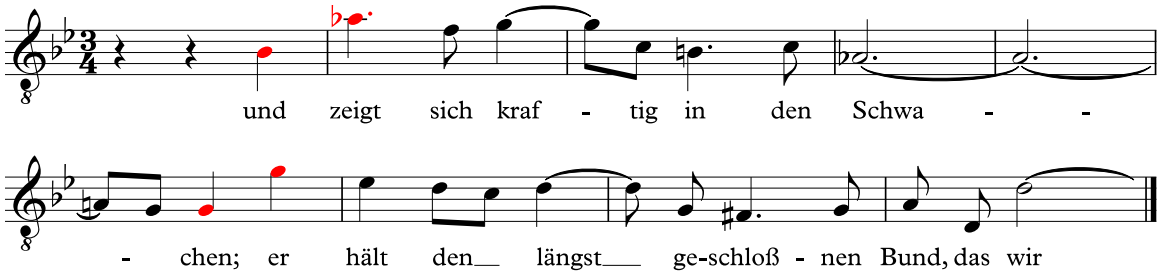
Example 7. "Ach, schlage doch bald, selge Stunde," BWV 95/5, mm. 25-26; 45-47. Register transitions from modal voice to the *zona di passaggio* are marked in red.



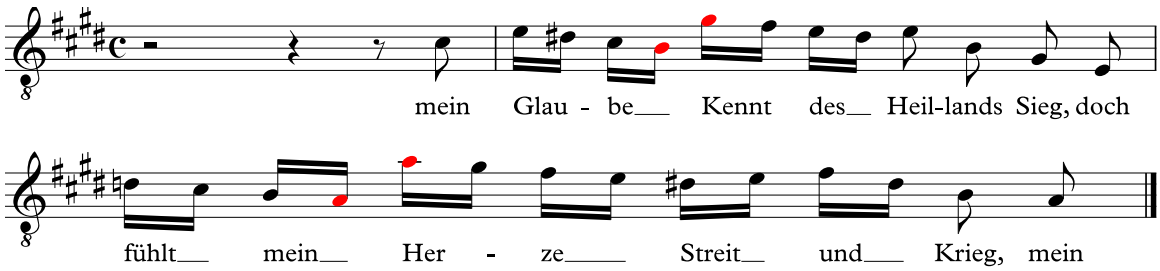
Example 8. "Ich eile, die Lehren," BWV 148/2, mm. 57-59. Register transitions from modal voice to the *zona di passaggio* are marked in red.



Example 9. "Vergibt mir Jesus meine Sünden" BWV 48/6, mm. 69-77. Register transitions from modal voice to the *zona di passaggio* are marked in red.



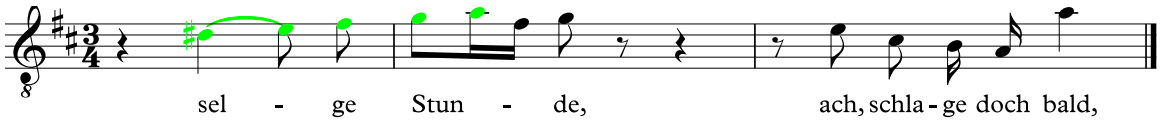
Example 10. "Mein Jesus ist erstanden!" BWV 67/2, mm. 34-36. Register transitions from modal voice to the *zona di passaggio* are marked in red.



The challenge of singing the leaps in the preceding examples is obvious. They are rapid, extend from the lower middle voice through the *zona di passaggio* to the second register transition point, and require an exceedingly skillfull technique to maintain a consistent tone quality and dynamic. Sung in a well-produced falsetto, the upper notes should closely match the tone quality of the lower notes.

The second type of register transition occurs in the context of scalar passages where the notes that can be produced in multiple registers are approached by step rather than by leap. This is the range of pitches that Richard Miller has identified as the *zona di passaggio*, leading to the very upper reaches of the voice in which the voce piena di testa, the full, "legitimate" head voice is used.[152] Miller explains that male voices use the mixed voice to navigate the *zona di passaggio*, while granting that it can also be sung in falsetto or shouted in modal voice.[153] Mixed voice is the same tonal quality referred to by Agricola above in his discussion of register transition in which he notes that some pitches can be sung in either voice and the singer must find an ideal balance to produce the illusion of uniformity. *Voix mixte* is in no way a modern pedagogical innovation, but as we have seen, has been a pedagocial goal since at least the early 18th century. And of course, mixed voice is not a separate voice, but a point (or points) along the modal/falsetto spectrum where subtle muscular and acoustic adjustments are either bringing the vocal process closer to pure falsetto or keeping it more rooted in modal voice. Sources like Agricola and Quantz, in the context of register transition, consistently refer to a move from chest to falsetto as the ideal. In passages such as the ones presented below, a tenor would sing the upper pitches in falsetto by transitioning gradually from modal voice.

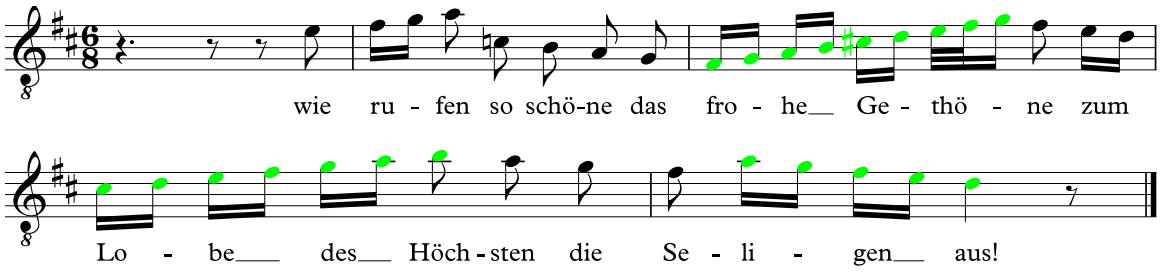
Example 11. "Ach, schlage doch bald, selge Stunde," BWV 95/5, mm. 51-54. Register transition by step from modal voice to the *zona di passaggio* is marked in green.



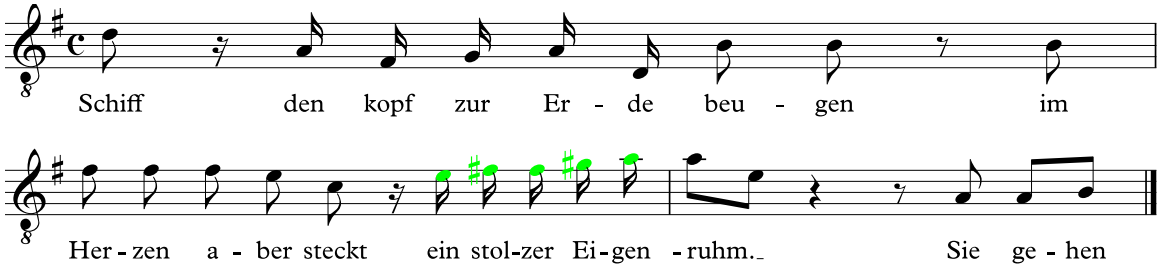
[152] Richard Miller, *The Structure of Singing*, 116.

[153] Ibid., 118.

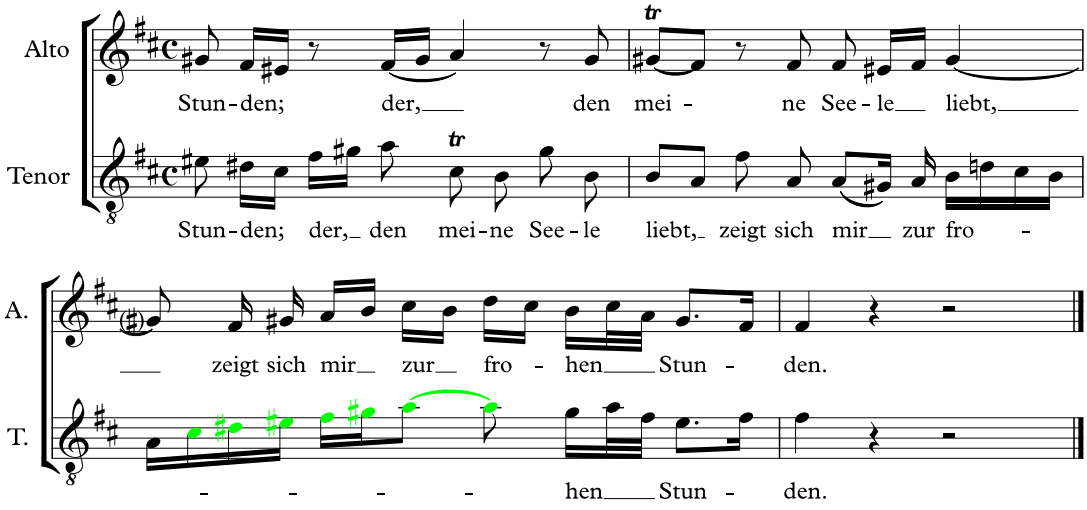
Example 12. "Ich eile, die Lehren," BWV 148/2, mm. 85-87. Register transitions in measure 87 from modal voice to the *zona di passaggio* and in measure 88 from modal voice to above the secondo passaggio are marked in green.



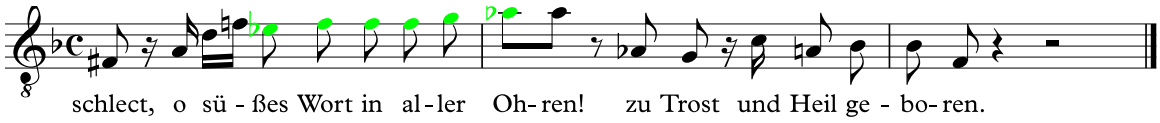
Example 13. "Falscher Heuchler Ebenbild," BWV 179/3, mm. 7-8. Register transition by step from modal voice to the *zona di passaggio* is marked in green.



Example 14. "Wohl mir, Jesus ist gefunden" BWV 154/7, mm. 46-48. Register transition by step from modal voice to the *zona di passaggio* is marked in green.



Example 15. "Das Wort ward Fleisch und wohnet in der Welt" BWV 40/2, mm. 13-15. Register transition by step from modal voice to the *zona di passaggio* is marked in green.



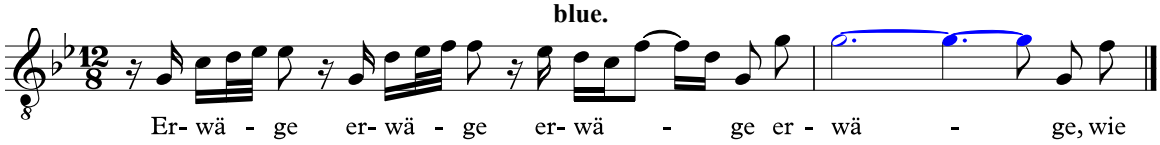
In particular, passages such as example 12 where the pitch extends beyond the seconda passaggio, it is extremely difficult to imagine a tenor singing the notes in Miller's voce piena di testa without having been trained in that technique and having some kind of precedent for using it. The notes can be produced in falsetto and it requires no less skill to transition from modal voice to some kind of lightly reinforced falsetto than it does to transition from modal voice to either *voix mixte* or full head voice. This is the sort of vocal process we are accustomed to hearing from countertenors who make occasional use of modal voice in the lower register and transition gradually as the pitch rises. There is no reason to believe a tenor cannot do the same with equal grace, provided there is no need to penetrate above a large orchestra or sing to the very back row of the third balcony of a cavernous concert hall.

Sustained Tones

In addition to difficult, high coloratura and many rapid, extreme register transtions, Bach also requires great breath control from his singers and the ability to sustain long phrases and long tones in the upper register. Although in theory produced in the same way as high coloratura, high sustained tones, for obvious reasons, place more immediate strain on the voice, in the same way a weight lifter is under far greater duress having to lift and then sustain a heavy burden rather than lifting the weight more often but sustaining each time only briefly. Both methods are tiring, but long held tones immediately expose the quality of a voice in a way that colortura does not. Returning to the three possible scenarios we have discussed before, the implications still seem to

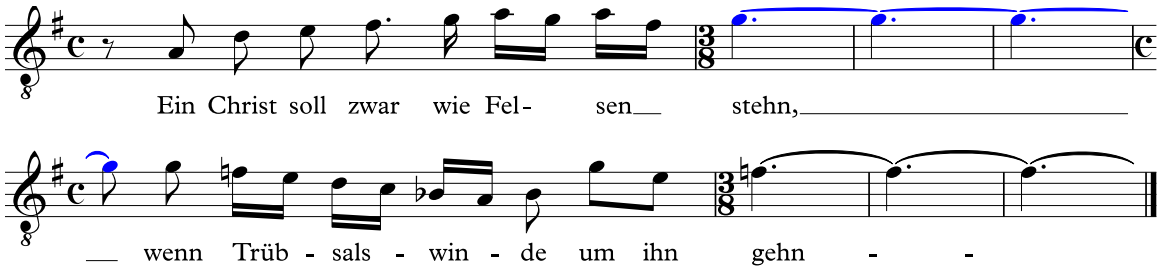
favor falsetto singing. In the first scenario, assuming the tenor does not use the modern covererd voice technique but simply carries the modal voice up until it becomes a quasi shout, it is hard to imagine the resulting tone quality could be sustained with any success or was in any way close to what Bach had in mind. Imagine the opening passage from the lovely "Erwäge" of the Johannes Passion shouted in modal voice:

Example 16. "Erwäge" BWV 245/32, mm.5-6. Sustained tone in the *zona di passaggio* is marked in blue.

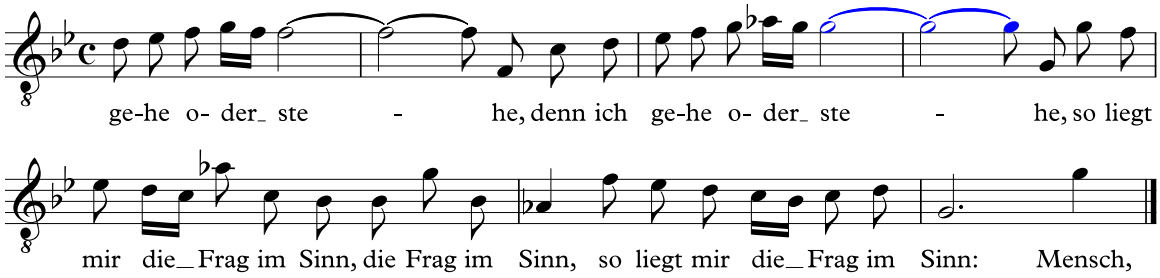


In the second scenario, we assume the tenor to be using modern head voice, or a mixed voice much closer to modal than falsetto, what we have already determined to be an anachronistic technique with no historical foundation. Finally, assuming the tenor singer uses a historical approach with a well-produced falsetto, several advantages are apparent. Because the tones are produced without the strained, unpleasant and typically out of tune quality of pressed phonation, nor with the continuous vibrato and omnipresent ring of covered voice singing, Bach's tenor would be able to apply some of the vocal ornaments expected of a singer at the time, such as messa di voce, or the introduction of vibrato as an ornament rather than an intrinsic quality of the sound. The following examples, similar to the first few phrases of "Erwäge" are evidence that high, sustained tones are by no means confined to one aria and would have been a consistent challenge for Bach's singers.

Example 17. "Die schäumenden Wellen von Belials Bächen" BWV 81/3, mm. 45-52. Sustained tone in the *zona di passaggio* is marked in blue.

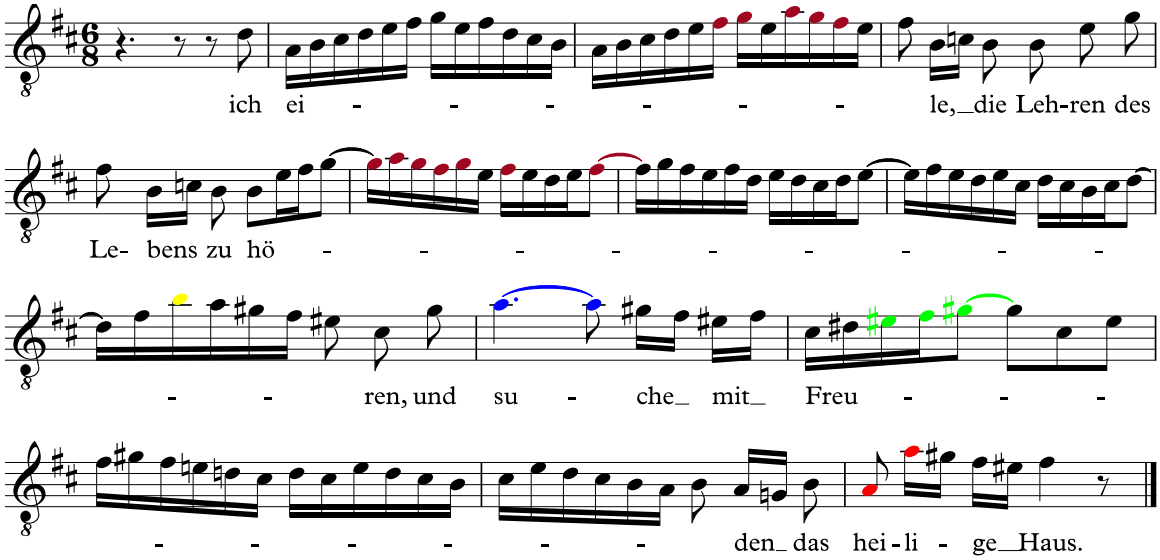


Example 18. "Ich will an den Himmel denken" BWV 166/2, mm. 31-36. Sustained tone in the *zona di passaggio* is marked in blue.



All of the above examples are part of the broader context of an entire recitative or aria and often occur one after the other, thereby increasing the level of difficulty. The following example is a passage that contains all of the variables discussed above: range, tessitura, coloratura, register transition and sustained tones. This passage provides ample proof that Bach's music made considerable demands on his singers to negotiate the upper register and historical evidence suggest the most likely tool to be falsetto, not the modern operatic head voice modern pedagogy supports.

Example 19. "Ich eile, die Lehren" BWV 148/2, mm. 35-48. In measures 37 and 40 coloratura notes extending into the *zona di passaggio* are marked in dark red; in measure 43 the note exceeding the secondo passaggio is marked in yellow; in measure 44 a sustained tone in the *zona di passaggio* is marked in blue; in measure 45 a scalar register transition is marked in green; in measure 48 a register transition from modal voice into the *zona di passaggio* by leap is marked in bright red.



Text Declamation

Intelligibility of the text is a major preoccupation of German writers on music from the time of Conrad to Bach, Hiller and beyond. Conrad remarks that "another crude manner is unclear pronunciation of the vowels, which makes the singing unintelligible to the hearers."[154] His advice is directed primarily at lazy or unskilled clerics, who lack either the will or the requisite skill to enunciate properly. Ornithoparcus takes aim at singers' regional accents as he offers similar advice: "The changing of Vowels is a sign of an unlearned singer. Now (though divers people doe diversely offend in this kind) yet doth not the multitude of offenders take away the fault. Here I would have the Francks to take heed they pronounce not *u* for *o*, as they are wont, saying nuster for noster."[155] Towards the middle of the 16th century Stirpanius, in his *On*

[154] Conrad von Zabern, *De modo bene cantandi*, 14.

[155] Andreas Ornithoparcus, *Micrologus*, 89-90.

Observations in Singing, (a music tutor, written in Latin and directed to students in one of Germany's Lateinschule) includes, as his fifth and sixth rules, directions related to text declamation. Rule five admonishes singers to respect the syntax of a text and to preserve its logic, while rule six returns to the now-familiar advice to not change vowels.[156] This is echoed by Christoph Praetorius in 1574, declaring that in "expressing the vowels correctly, great care must be taken with the vowel sounds i and u, never to pronounce o for u, or e for i, which is where many people err/sin."[157] Calvisius, in his treatise of 1594, *De Canendi Elegantia, observations: cornidis vice adiectae*, provides perhaps the most explicit exhortation yet:

> The words should be pronounced in singing as in speaking: do not interchange vowels or distort them by a beating or barking pronunciation! Since in figural music the text is often torn apart by imitation and cadences, all the more care must be taken to pronounce it clearly, without mistakes, and according to the meaning of the notes and of the words.[158]

To be sure, the authors cited above were writing prior to the great flowering of solo song in the beginning of the 17th century. Singers were not called upon to use the upper part of the voice in such an exposed or technically demanding way as would be the case by the time Bach composed his first Leipzig cantatas. Although calls for intelligible declamation in singing did not diminish as solo singing evolved, accomplishing the feat grew more difficult. Agricola acknowledges as much when he points out that speech-like declamation is difficult to maintain in singing if the voice is to sound good at all times, i.e. throughout the entire range and regardless of volume, etc. As we have previously noted, the issue addressed by Agricola signals one of the great changes in singing technique between the 18th and 19th/20th centuries: the move away from speech-like utterance in singing as musical and extra-musical demands changed the prevailing

---

[156] Betty Wilson, *Choral Pedagogy: Crossroads of Theory and Practice*, 577.

[157] Ibid., 578.

[158] Ibid., 586.

performance aesthetic and made speech-like utterance a less viable alternative. One way to look at the prevailing modern aesthetic in voice pedagogy is as a technique focused on tone. As George Newton remarks, "there are many singers who, with their teachers, have but one objective: to produce the richest and most beautiful sound (as well as the loudest sometimes), no matter what the cost in altered vowel formants or suppressed consonants."[159] In the early 18th century when Bach began composing cantatas for the Thomaskirche and Nikolaikirche in Leipzig there is no evidence to suggest the operative aesthetic was one that valued tone quality at the expense of clarity of diction. Even in 1780 when Hiller's treatise was published, much closer to the coming changes in singing technique and of vocal culture of the 19th century, tone quality and textual intelligibility seem still to be on an equal footing. Hiller writes that

> Of all good intentions a singer might have, none would be fulfilled if his words are not understood. Therefore, if clear and distinct pronunciation in which nothing interferes with good singing be one of the most important obligations of the performer, then the larger and grander the place in which he sings, the more attention he must pay to this duty. It is not by stronger attack and exaggeration that the singer can be heard and understood in such a location; rather, he will achieve this goal sooner with a pure, steady, and firm voice as long as he pronounces distinctly, even if his voice is somewhat weak.[160]

Hiller seems to place equal emphasis on phonation and diction – neither operation should detract from the other. Even in a large space, brute force should not be the way, but rather the traditional values of German vocal pedagogy for the last three hundred years, a pure and steady tone. Hiller devotes an entire chapter (On Good Performance, with Regard to Text and Music) to the matter of diction, text declamation and languages, native and foreign, that delves into the relationship of text and music to a far greater degree than any German treatise of the past century, yet his underlying emphasis is still the delicate balance of vocalization and diction whereby the text

---

[159] George, Newton, *Sonority in Singing*, 7.

[160] Johann Adam Hiller, *Treatise on Vocal Performance and Ornamentation*, 111.

remains intelligible and the affect of the music effectively conveyed. Such a balance was made possible by a flexible technique that modeled the entire range after a modal voice that even at its loudest and most passionate remained "pure, steady and firm" and included normal use of a well-produced falsetto to manage the upper register in which acceptable tone quality and clarity of text were both achievable.

Interestingly, evidence from Leipzig church services also bears witness to the importance of understandable text from the performer. Tanya Kevorkian notes that while listening conditions in Lutheran German church services included many distractions and a level of inattentiveness modern audiences would likely consider appalling, there were still indications that many congregants valued the musical contributions and were keen listeners.[161] The evidence of this devotion began to manifest itself in the sale of librettos to facilitate understanding of unfamiliar recitative and aria texts.[162]

Performing Pitch

If aspects of Bach's vocal writing make it seem plausible that his tenors used falsetto singing in the upper register, what extra-musical elements, the performing conditions of early 18th century Leipzig, might support or contradict this belief? The influence of performing pitch, performing venue, instrumental ensemble and performance aesthetic all plausibly supports the contention that Bach's tenors employed falsetto singing in the upper register.

Performing pitch is the crucial variable as far as vocal stress for singers in early repertoire is concerned. Bruce Haynes points out an observation of Alfred Dürr that "Bach's vocal ranges

[161] Tanya Kevorkian, "The Reception of the Cantata during Leipzig Church Services, 1700-1750," in *Bach's Changing World: Voices in the Community*, ed. Carol K. Baron (Rochester: University of Rochester Press, 2006), 181-182.

[162] Ibid., 182.

are normally close to the possible extremes, so questions of key may be crucial to the vocal parts."[163] Many singers of early music have learned the truth of this observation the hard way by having failed to inquire at what pitch a given work will be performed, only to discover that what was comfortable at one performing pitch is far less so at another, whether it be higher or lower. In the same section as the above quote, where Haynes is dealing with the issue of transposition to accommodate differing pitch standards, he provides evidence from Bach's close contemporaries, Agricola and Mattheson, who both recognize that performing pitch could pose serious problems for singers, not just in the upper register but also the lower extremes of the range.[164] That is to say, a half step variance in either direction could be a deal breaker, particularly if a singer's technique in the upper register was inflexible. Haynes provides further support for this view by mentioning a number of cantatas composed by Bach at Weimar and Cöthen which were subsequently re-used at Leipzig and had to be transposed to accommodate the singers (and woodwinds).[165]

We had best be certain at what pitch his music was performed and how that might affect our argument. As a general claim, the vocal parts of Bach's Leipzig cantatas were performed at a pitch lower than the modern standard in North America. The organs that Bach played were pitched at Chorton (roughly a half tone above our A=440 Hz) and through study of surviving instruments Haynes concludes that Bach conceived his vocal works for two levels of Cammerton performance, Cammerton (around A=415) and tief Cammerton (around A=394).[166] The availability of some lower pitched instruments in Leipzig apparently enabled Bach to take

---

[163] Bruce Haynes, "Pitch Standards in the Baroque and Classical Periods" (PhD diss., Université de Montréal, 1995), 248.

[164] Ibid., 245-247.

[165] Ibid., 288-295.

[166] Bruce Haynes, *Pitch Standards in the Classical and Baroque Periods*, 293-300.

advantage of tief Cammerton but this practice gradually disappeared and was little used after his first year as Cantor.[167] The tief-Cammerton works all have one thing in common: they were not originally composed for use in Leipzig but recycled from Weimar or Cöthen and reworked for a Leipzig performance. The only vocal work under question in our study that might have been performed at tief-Cammerton in Leipzig is the first version of the Magnificat (in Eb), BWV 243a.[168] Knowing then that a high percentage of Bach's vocal music was performed at Cammerton (somewhere in the neighborhood of A=415 Hz), and very rarely at an even lower pitch, the half step variance between modern standards would not have significantly affected the registration choices of Bach's tenors. They would still spend a significant amount of time singing in the *zona di passaggio* and, given their training, this singing would have been accomplished in falsetto.

Instrumental Ensemble

As far as Bach's instrumental ensemble is concerned, study of surviving performance materials has proven quite conclusively that, like the vocal forces, the number of instruments involved on a typical Sunday would have been small in number. Exceptions would include works composed for important festival Sundays, though still nothing approaching the size even of a modern chamber orchestra. Andrew Parrott lays out the evidence in his book *The Essential Bach Choir*. Bach himself foresaw a need for 11 stringed instrument players plus an additional 7 players for obbligato instruments such as oboe, flute, recorder, horns, etc.[169] It seems however, that typical practice did not often involve the 18 players Bach deemed ideal, and a smaller

[167] Ibid., 293-294.

[168] Ibid., 295.

[169] Andrew Parrot, *The Essential Bach Choir* (Woodbridge: The Boydell Press, 2000), 117.

ensemble was normal. [170] Interestingly, even when instrumental forces outnumbered the singers (which seemed to be the norm), or more instruments were deemed necessary for a special occasion, sources rarely called for more singers to balance the instrumental ensemble.[171] This is not to say that balance was never a problem in the performance of Baroque sacred music. In fact, in his discussion of balance between voices and instruments, Parrott cites sources who complained of not being able to hear and/or understand the voices over the instrumental ensemble, but who mainly advocated savvy placement of the voices relative to the instruments and the use of good strong voices to begin with as a solution to the problem.[172] It is not necessary to rehash the available evidence at great length to realize that on any given Sunday Bach's instrumental ensemble would have been much smaller than what modern standards have accustomed us to expect, permitting smaller voices and falsetto production from tenors to be heard.

Performance Aesthetic

The major aesthetic difference between the early and modern approaches to expressive singing has to do with the alteration of vocal tone as an essential element of expressive singing. This expectation Is explicitly advocated by vocal pedagogues of the 19th and 20th centuries and can be summed up by Manuel Garcia in his influential treatise of 1847, *Traité Complet de l'Art du Chant*. Garcia writes that:

> A couple of examples suffice to assure oneself that each passion, however subtle the nuance, affects the vocal organ in its own way and modifies its capabilities, its conformity, its rigidity, in a word, all of the physical conditions. The vocal organ is thus a mold that constantly transforms itself under the influence of the

[170] Ibid., 116.

[171] Ibid., 121-129.

[172] Ibid., 131-134.

> passions, and communicated their impressions through the sounds it lets escape. Thanks to its admirable flexibility, this organ even helps, up to a certain point, in describing external objects, as we can perceive even in simple conversation. If , by example, it aims to represent an object that is hollow, stretched or harsh, the voice, by a mimicking action, produces sounds that are hollow, stretched or harsh. Vocal timbres are so essential a part of speech, they are so truly the condition of sincere expression, that we cannot overlook the choice without indisputably falling into error (my translation).[173]

The philosophy articulated by Garcia in the statement above simply does not appear in sources of the 17th and 18th centuries. Affective singing during Bach's tenure in Leipzig would have depended little on adjusting the quality of one's vocal timbre to suit the affect of a piece. The tool for the singer to convey affective meaning resided principally in intelligent ornamentation. Affective singing is frequently mentioned in conjunction with skillful ornamentation, from Bernhard to Hiller. Any singer can sing the notes, but only those capable of mastering the art of extempore ornamentation will be able to fully convey the affective content of a composition. [174] This is not to say singers of Bach's time did not care about the tone they produced or that it had no place in conveying the affect of a piece, but there seems to be no emphasis on altering timbre to covey affect in the same way as singers are exhorted to adapt their ornamentation to the affect of the music. The modern tenor has different tools at his disposal – not ornaments, but timbres, and timbres, in combination with dynamic nuance and textual inflection, convey meaning, or affect, in the same way as ornaments did for singers of earlier generations.

Over the course of the entire 17th and early 18th centuries affective singing was associated with practices in ornamentation with no mention of a parallel practice involving vocal tone. Much of Praetorius' instructions to the singer have to do with appropriate types of ornamentation but

---

[173] Manuel Garcia, *Traité complet de l'art du chant*, ed. L.J. Rondeleux (1847; repr., Geneva: Minkhoff, 1985), 54.

[174] Michael Praetorius, *Syntagma Musicum III*, 214. Praetorius is quite clear that it takes more than a beautiful voice!

there is almost no instruction on how to use the voice's different colors and timbres to express affect. Praetorius requires a singer to possess a beautiful voice, but beyond that, he says nothing of vocal quality. Like other German sources of the 16th and 17th centuries, when they have anything to say relating to the quality of a singer's voice, they simply do not describe any other tone quality besides the one established in earlier chapters: clear, bright, flexible, sweet, softer in the upper register and louder in the lower and middle voice. Butt cites a number of sources in his survey and the results are invariably almost identical:[175]

Praetorius (1619): "must possess a natural, beautiful voice with a smooth, round neck for fast passages, a steady long breath and finally a voice which fits one of the four vocal ranges, which can be used with a full sound, brightly and without falsetto" (p.73).

Friderici (1618/1624): "should have a natural control of breath, particularly when they sing high, and should not screech and shout" (p.75).

Bernhard (c.1649): "steady voice without the defect of tremolo" (p.69).

Prinz (1678): "a clear and beautiful voice; the singer should not sing too loudly and should cultivate a pleasing sound" (p.78).

Quirsfeld (1675/1688): "a lighter voice for high notes, the mouth to be opened moderately for the greatest beauty of tone, the avoidance of singing through the teeth and nose, correct pronunciation of vowels" (p.81).

The one major change introduced by Praetorius and adopted by many subsequent writers is the notion of graded dynamics on individual notes as an ornamental device, initially in the *exclamatio* and *messa di voce* and later applied more broadly as a standard feature of expressive

[175] Butt, *Music Education and the Art of Performance*, 69-81.

singing. [176]Varied dynamics can justly be considered an alteration of vocal tone, but still fall under the purview of ornamentation practices, much like vibrato, which was inserted judiciously as an ornament but was not viewed as an alternative means of tone production.

The introduction of the Italian style via Praetorius' *Syntagma Musicum* planted the aesthetic seed whereby ornaments were considered to express or elaborate on the affect of a composition. [177] Praetorius borrowed heavily from Italian authors like Caccini and Bovicelli whose aesthetic agenda clearly linked the correct use of ornamentation to affective singing.[178] That aesthetic agenda changed over the course of the 17th century as it was adapted and elaborated on by German authors. Butt observes that there were three broad phases in ornamental development in Germany, beginning in the 17th century with Praetorius, whose theory of ornamentation Butt describes as "purely ornamental" with no reference to the meaning or affect of the text and no use of ornamentation in a rhetorical sense.[179] In the mid-17th century authors like Bernhard began to develop a theory of ornamentation that was explicitly related to the art of rhetoric, with Bernard differentiating between the older, affect-neutral cantar soto and the newer, more progressive, cantar d'affetto. Butt also mentions the cantor at Sorau, Wolgang Caspar Printz, whose treatise of 1678, *Musica modulatoria vocalis* heralds new elements in German vocal pedagogy, placing personal responsibility on the student to progress, the forbear of chapters in later treatises with extensive advice for the singer on matters as diverse as diet and the choice of singing teacher.[180] Butt observes this new responsibility "must also relate to a change in musical approach, namely the need for the performer to recognize the affect and sense of the

[176] Ibid., 73-74,

[177] Butt, *Music Education and the Art of Performance*, 72.

[178] Ibid., 72

[179] Ibid., 126

[180] Ibid., 78

musical setting and to have some view of his role as an orator. The latter responsibility is fulfilled most directly in the singer's addition and control of ornamental figures."[181] Finally, over the course of the first decades of the 18th century, a singer's aesthetic choices were dictated less by a well-defined, corporate pool of knowledge and rules relating to rhetoric and affect than a singer's personal taste.[182] As Butt notes throughout his book, the various practices frequently carried on side-by-side, with older, 17th century perspectives enduring well into the 18th century and finding their way into otherwise more progressive pedagogical works.

The question of which practice (s) were active in 1720's Leipzig is difficult to answer. Anecdotal evidence suggests some of his contemporaries believed Bach wrote out too much embellishment, what would have been the more difficult extempore ornamentation, leaving his singers to deal with the simpler graces.[183] This could be because his singers were not skilled enough to ornament proficiently, due perhaps to poor standards of education in early 18th century Germany.[184] Butt also suggests that by the early 18th century the total authority of the performer to alter a composition by the addition of extempore ornamentation had begun to diminish, with the composer asserting more control over his creation.[185] Or it may be that an older aesthetic still ruled in Leipzig, with plain, affect-neutral performances the norm. Regardless of which aesthetic was operational during 1723-1724 while Bach composed his first cycle of Leipzig cantatas, there

---

[181] Butt, *Music Education and the Art of Performance*, 78.

[182] Ibid., 88.

[183] Johann Adolph Scheibe, "Letter from an Able *Musikant* Abroad," in *The New Bach Reader: A Life of Johann Sebastian Bach in Letters and Documents*, eds. Han T. David and Arthur Mendel, rev. and enlarged by Christoph Wolff (New York: W.W. Norton & Company, 1998), 338.

[184] Ibid., 85

[185] Ibid., 138-143.

is no evidence to suggest that there was a parallel philosophy of expressive singing focused on timbral adjustment.

Chapter 6: Conclusion

This study started with frequently encountered claims that pre-19th century singing techniques for the tenor voice must have relied on falsetto singing in the upper register. If tenors of years past availed themselves of falsetto singing to negotiate the upper register of the voice, why is music of the past rarely performed in such a way by today's tenors? Instrumentalists who align themselves with the historically informed performance movement are encouraged to play on copies of original instruments and use historically appropriate playing techniques. Why should singing be any different? The disparity between what pre-19th century historical sources advocated as a technique of vocal production and what singers trained in today's universities and conservatories actually produce is nowhere more evident than in the music of Johann Sebastian Bach. His idiosyncratic and technically difficult vocal writing exposes the tenor voice across its range, particularly in the upper register. To arrive at the most historically informed performance possible, choosing the appropriate tool in the upper register is absolutely essential.

To begin with, the physiology of the human vocal apparatus has built-in limitations that dictate how it functions across the range. The possibilities grow more limited as pitch rises. There is a correlation between physiological vocal processes and the sound produced. The sound ideal described in German sources from the late 15th century through to Bach's tenure in Leipzig suggest a technique no longer valued or taught (for many reasons) in modern voice studios, and likewise, modern upper register singing techniques are not supported by historical evidence and were not taught during the early 18th century.

Second, falsetto singing for the tenor voice was a geographically widespread phenomenon. Both French and Italian sources clearly mention falsetto singing in the context of the tenor voice, though it is equally clear that while Italian tenors employed falsetto as an accepted and praiseworthy element of their technique, French singers did not, and preferred to

carry the modal voice up as far as possible. The French haute-contre may have used a reedy, nasal, piercing timbre with far less pure falsetto than the Italian tenor, who used a lighter, more mellifluous sound clearly differentiated from the modal voice, while both of these singers, from the perspective of voice source function, might still have been producing what voice science would characterize as some kind of falsetto.

Third, the conditions in which Bach's tenors learned to sing were not ones in which we would expect the covered voice/*voix sombre* technique of the mid-nineteenth century to be either taught or practiced. Bach's musically talented boy singers presumably received most, if not all of their vocal instruction before their voice changed, which both historical sources and modern studies suggest occurred at a much later age than is presently the case. They had neither the opportunity nor the incentive to learn the time-consuming art of accessing the "legitimate" head voice. Performing conditions were acoustically favorable in the churches in which Bach's concerted music was performed and Bach's instrumental ensemble seldom exceeded a handful of players. Sources mention favorable positioning of singers relative to the instrumental ensemble, but evidence shows that additional singers were rarely added to an ensemble, even when the number of instruments increased. Technical vocal instruction in pedagogical literature of the early part of the 18th century was still quite limited and beyond very basic instructions warning singers to not sing through the nose, make strange motions with the body or mispronounce words there is no evidence of an intense focus on tone production similar to what one will encounter in a modern voice studio. In short, there is simply no evidence of pressure or influence from external performing conditions or the musical instruction of the Lateinschülen in 1720's Leipzig to either endorse or expect the modern head voice from the tenor voice.

The historical sources do not usually tell us a great deal about how early singers approached the act of singing, technically, but they are remarkably consistent over the course of a long period regarding the type of sound that was deemed acceptable. Again and again, singers are

exhorted to sing notes in the upper register softly with no evidence of pushing or straining, while overly loud singing in any register is generally denounced. A light, pure, steady and flexible tone is the ideal. During the late 16th and early 17th centuries some authors exhorted singers to choose a range in which they could sing without recourse to falsetto. It can be inferred from this exhortation that when singers did choose a range that fell outside the comfort zone, they used falsetto, else why vocal instructors forbid its use? When vocal ranges began to exceed the primo passaggio, authors explicitly recommended joining the lower register (chest voice) with the falsetto upper register. This advice is found in publications produced by well-known court performers as well as musicians like Doles, employed in the traditional Latin schools. To the best of our knowledge, no pre-19th century German sources advocate anything close to the modern tenor sound, and usually recommend just the opposite. Falsetto is the recommended and expected means of extending the range.

Bach's own music makes a strong case to support the contention that his tenors used falsetto in the upper register to sing his vocal works. The vocal range in Bach's first annual cycle of Leipzig cantatas, while not as high as some operatic repertoire, still has a range sufficient to routinely encompass and occasionally exceed both the primo and secondo passaggi in the tenor voice, even taking into account the lower performing pitch in Leipzig. Bach's angular melodic writing means that notes in the upper register are frequently approached by large leaps from one register to another, while notes in the *zona di passaggio* are also approached in the context of quickly moving notes coming from a lower register, making registration using the modern head voice extremely difficult without a lot of instruction, which we have every reason to believe Bach's tenors did not have as mature adults. Finally, Bach writes extremely fast coloratura and long held notes in the *zona di passaggio*, far easier to sing in falsetto, and again, a skill requiring special instruction and years of practice to sing in the modern mixed voice or head voice, instruction and practice which Bach's tenors would not have received.

If it seems clear from historical sources and the cultural/performing context of pre-19th century Germany that falsetto was the normal means for tenors to manage the upper register of the voice, and modern performers seldom if ever attempt to re-create such a sound in the performance of Bach's vocal works, what factors are restraining today's tenors from the pursuit of greater historical accuracy? The issue is mainly one of ideology, centering on gender, social, national and cultural objections. Falsetto is perceived by many to be a gendered sound whose (sometimes) effeminate quality is not representative of the masculine qualities that have come to be associated with the classically trained singing voice, particularly the heroes of classical and verismo opera, still staples of most opera houses and fan favorites. This perception has carried over into the performance of other repertoires, so that now the expectation exists that a tenor singing any repertoire of the Classical Western canon should possess a sound quality based on the Romantic and post-Romantic paradigm (or what modern audiences/voice teachers understand that paradigm to be). National traditions, as Miller's work on the subject aptly points out, have their own ideologies that may prevent a singer from being willing to experiment with falsetto singing. Finally, Western culture seems to have a very evolutionary perception of the history of singing, whereby earlier singers were forced to make do without recourse to the full potential of the singing voice, which has gradually been unlocked as successive generations of singers have discovered how to use it more effectively and expressively. This belief, more than any other, has framed the serious study of early singing techniques as an enterprise of dubious value.

It should be clear from the preceding pages that, for a variety of reasons, I believe a quality as fundamental as the basic tone of the voice should be a tool available for a singer for historically informed performance. Vocal quality is not just a matter of technique but also an essential element of the complete performance. John Potter articulates the choice faced by singers performing early music very aptly when he writes of the beginnings of the Early Music movement that "there's no question about the validity of historical knowledge: everything is

informed by its past to some extent. For early musicians the question (for those inclined to ask it) was what should be recovered from the past and what left in dignified obscurity."[186] Even if tenor falsetto singing in Bach's music should eventually end up being proven undesirable given current performing conditions, it might still contribute to the transformation of traditional vocal pedagogy so that we no longer have Bach tenors, Mozart tenors, etc. but singers who are equipped with a technique and perspective flexible enough to step beyond the narrow confines of the established aesthetic norms and dare to experiment.

[186] Richard Wistreich and John Potter, "Singing Early Music: a conversation," Early *Music 41* (February 2013): 25-26, doi:10.1093/em/cas155. Accessed January 14, 2014, 24.

Appendix

Selected Sacred Concerted Vocal Works from J.S Bach's First Annual Leipzig Cantata Cycle

The works selected were originally composed for performance in Leipzig and do not include any cantatas composed in Cöthen or Weimar and re-worked for performance in Leipzig.

BWV 76	Die Himmel Erzählen die Ehre Gottes (6/6/1723)
BWV 24	Ein ungefärbt Gemüte (6/20/1723)
BWV 167	Ihr Menschen, rühmet Gottes Liebe (6/24/1723)
BWV 136	Erforsche mich, Gott, und erfahre mein Herz (7/18/1723)
BWV 105	Herr, gehe nicht ins Gericht mit deinem Knecht (7/25/1724)
BWV 179	Siehe zu, dass deine Gottesfurcht nicht Heuchelei sei (8/8/1723)
BWV 69a	Lobe den Herrn, meine Seele (8/15/1723)
BWV 119	Preise, Jerusalem, den Herrn (8/30/1723)
BWV 95	Christus, der ist mein Leben (9/12/1723)
BWV 148	Bringet dem Herrn Ehre seines Namens (9/19/1723)
BWV 48	Ich elender Mensch, wer wird mich erlösen (9/19/1723)
BWV 109	Ich glaube, lieber Herr, hilf meinem Unglauben! (10/17/1723)
BWV 60	O Ewigkeit, du Donnerwort II (11/7/1723)
BWV 90	Es reißet euch ein schrecklich Ende (11/14/1723)
BWV 243	Magnificat in D-Dur (12/25/1723)
BWV 40	Darzu ist erschienen der Sohn Gottes (12/26/1723)
BWV 153	Schau, lieber Gott, wie meine Feind (1/2/1724)
BWV 65	Sie werden aus Saba alle kommen (1/6/1723)
BWV 154	Mein liebster Jesus ist verloren (1/9/1724)
BWV 73	Herr, wie du willt, so schick's mit mir (1/23/1724)
BWV 81	Jesus schläft, was soll ich hoffen? (1/30/1724)
BWV 83	Erfreute Zeit im neuen Bunde (2/2/1724)
BWV181	Leichtgesinnte Flattergeister (2/13/1724)
BWV 245	Johannespassion (4/7/1724)
BWV 67	Halt im Gedächtnis Jesum Christ (4/16/1724)
BWV 104	Du Hirte Israel, höre (4/23/1724)
BWV 166	Wo gehest du hin? (5/7/1724)
BWV 86	Wahrlich, wahrlich, ich sage euch (5/14/1724)
BWV 37	Wer da gläubet und getauft wird (5/18/1724)
BWV 44	Sie werden euch in den Bann tun I (5/21/1724)

Bibliography

Primary Sources

Agricola, Johann Friedrich. *Introduction to the Art of Singing*. Edited and translated by Julianne Baird. Cambridge; New York: Cambridge University Press, 1995.

Bernhard, Christoph. "The Treatises of Christoph Bernhard." Translated by Walter Hilse. *Music Forum 3*, (January 1, 1973): 1-196.

Caccini, Giulio. *Le Nuove Musiche*. Edited and translated by H. Wiley Hitchcock. Recent Researches in the Music of the Baroque Era 9. Middleton: A-R Editions, 2009.

———. *Nuove musiche e nuova maniera di scriverle*. Edited and translated by H. Wiley Hitchcock, Recent Researches in the Music of the Baroque Era 28. Middleton: A-R Editions, 1978).

De Bacilly, Benigne. L'Art de bien chanter. Paris: 1679.

Doles, Johann Friedrich. *Anfangsgründe zum Singen*. Edited by Armin Schneiderheinze. Frankfurt am Main: C.F. Peters, 1989.

Hiller, Johann Adam. *Treatise on Vocal Performance and Ornamentation*. Edited and Translated by Suzanne J. Beicken. Cambridge: Cambridge University Press, 2001.

Maffei, Giovanni Camillo. "Discourse on the Voice and the Method of learning to sing Ornamentation Without a Teacher." In *Late Renaissance Singing*. Edited and translated by Edward V. Foreman. Minneapolis: Pro Musica Press, 2001.

Mattheson, Johann. *Der vollkommene Capellmeister*. Edited and translated by Ernest C. Harris. Ann Arbor: UMI Research Press, 1981.

Ornithoparcus, Andreas. *Andreas Ornithoparcvs his Micrologvs; or Introdvction: containing the art of singing*. Translated by John Dowland. London: T. Adams, 1609.

Praetorius, Michael. *Syntagma Musicum III*. Edited and translated by Jeffrey Kite Powell. New York: Oxford University Press, 2004.

Quantz, Johann Joachim. *On Playing the Flute*. 2nd Edition. Edited and translated by Edward R. Reilly. New York: Schirmer Books, 1985.

Selle, Thomas. *Anleitung zur Singekunst*. Edited and translated by Joanna Carter. Ottawa: The Institute of Medieval Music, 2006.

Tosi, Pier Francesco. *Observations on the Florid Song*. Edited and translated by Mr. Galliard. Bologna: 1723.

Zacconi, Lodovico. "The Practice of Music, Book I, Chapters LVIII-LXXX" In *Late Renaissance Singing*. Edited and translated. Edward V. Foreman. Minneapolis: Pro Musica Press, 2001.

Secondary Sources

Barlow, Christopher and David M. Howard. "Electrolaryngographically Derived Voice Source Changes of Child and Adolescent Singers." *Logopedics Phoniatrics Vocology* 30 (2005), 153.

Baron, Carol K. *Bach's Changing World: Voices in the Community*. Rochester: University of Rochester Press, 2006.

Burrows, Donald. "Thomas Gethin: A Handel tenor." *The Musical Times* 116.1593 (1975):1003- 1006.

Butt, John. *Music Education and the Art of Performance in the German Baroque*. Cambridge: Cambridge University Press, 1994.

Brown, Clive. *Classical & Romantic Performing Practice 1750-1900.* Oxford: Oxford University Press, 1999.

Brown, Oren L. "Registers." *Journal of singing: The official journal of the National Association of Teachers Of Singing* 60.2 (2003): 147-151.

Careri, Enrico. "Le tecniche vocali del canto italiano d'arte tra il XVI e il XVII secolo." *Nuova rivista Musicale italiana* 18.3 (1984):359-75.

Cyr, Mary. *Performing Baroque Music*. Portland: Amadeus Press, 1992.

Dame, Joke. "Unveiled Voices: Sexual Difference and the Castrato." In *Queering the pitch: The New Gay and Lesbian Musicology*. Edited by Philip Brett, Elizabeth Wood and Gary C. Thomas. New York: Routledge, 2006.

David, Hans T., and Arthur Mendel, eds. *The New Bach Reader: A Life of Johann Sebastian Bach in Letters and documents*. Revised and Enlarged by Christoph Wolff. New York: W.W. Norton & Company, 1998.

Dyer, Joseph. "Singing with Proper Refinement." *Early Music* vi (1978): 207-227.

———. "The Voice in the Middle Ages." *Cambridge Companion to Singing*. Edited by John Potter. Cambridge: Cambridge University Press, 2000. 178-191.

Ellis, Alexander J., and Arthur Mendel. *Studies in the History of Musical Pitch*. Amsterdam: Frits Knuf, 1968.

Fallows, David. "Specific Information on the Ensembles for Composed Polyphony, 1400-1474." In *Performance Practice*. New York: 1981, 109-159.

———. "The Performing Ensembles in Josquin's Sacred Music." *TVNM* 35 (1985): 32-64

Galliver, David. "Giulio Caccini – per canto famoso." *Miscellanea musicological: Adelaide studies in Musicology* 10 (1979): 38-46.

Giles, Peter. *The History and Technique of the Counter-tenor: A study of the Male High Voice Family*. Aldershot: Scholar Press, 1994.

Haynes, Bruce. "Pitch Standards in the Baroque and Classical Periods." PhD diss., Université de Montréal, 1995.

Husler, Frederick, and Yvonne Rodd-Marling. *Singing: The Physical Nature of the Vocal Organ*. London: Hutchinson & Co. Ltd, 1976.

Jenkins, Neil. "John Beard: The tenor voice that inspired Handel." *Göttinger Händel Beiträge* 12 (2008): 197-216.

Jerold, Beverly. "Mystery in Paris, the German Connection and More: The Bérard-Blanchet Controversy Revisited." *Eighteenth Century Music* 2, 01 (March 2005): 91-112. Accessed December 19, 2012. http://dx.doi.org/10.1017/S1478570605000266.

MacClintok, Carol, trans. and ed. *Readings in the History of Music in Performance*. Bloomington:Indiana University Press, 1974.

Miller, Donald Gray. *Registers in Singing: Empirical and Systematic Studies in the Theory of the Singing Voice*. Groningen: Rijksuniversiteit Groningen, 2000.

Miller, Richard. *National Schools of Singing: English, French, German and Italian Techniques of Singing Revisited*. Rev. ed. Lanham: Scarecrow Press, 1997.

———. *The Structure of Singing: System and Art in Vocal Technique*. New York: Schirmer Books, 1996.

———. *Training Tenor Voices*. New York: Maxwell Macmillan International, 1993.

Moller, Herbert. "Voice Change in Human Biological Development." T*he Journal of Interdisciplinary History* 16, no. 2 (Autumn 1985): 246-253, accessed January 15, 2014, http://www.jstor.org/stable/204176.

Newton, George. *Sonority in Singing: A Historical Essay by George Newton*. New York: Vantage Press, 1984.

Page, Christopher. *The Christian West and its Singers: The First Two Thousand Years*. New Haven and London: Yale University Press, 2010.

———. *Voices and Instruments of the Middle Ages: Instrumental Practice and Songs in France 1100-1300*. Berkeley: University of California Press, 1986.

Parrott, Andrew. 'Falsetto and the French: "Une toute autre marche".'*Basler Jahrbuch für historische Musikpraxis* 26 (2002): 129-148.

———. “Composer’s intentions, performers’ responsibilities.” *Early Music* 41, no.1 (February 2013): 37-43. Accessed January 14, 2014. http://dx.doi.org/ 10.1093/em/cat007.

Phillips, Peter. “Performance Practice in 16th – Century English Choral Music.” *Early Music* 6, no. 2 (April 1978),195.

Potter, John. “Reconstructing Lost Voices.” In *Companion to Medieval and Renaissance Music*. Eds. David Fallows and Tess Knighton. Berkeley: University of California Press, 1992. Pp.311-316.

———. “The tenor-castrato connection, 1760-1860.” *Early Music* 35.1 (2007): 97-110.

———. “Past Perfect and Future Fictions.” *Basler Jahrbuch für historische Musikpraxis* 26 (2002): 9-16.

———. “Singing.” *A Performer’s Guide to Music of the Baroque Period,* 95-106. London: Associated Board of the Royal Schools of Music, 2002.

———. *Tenor: history of a voice*. New Haven; London: Yale University Press, 1999.

———. *Vocal Authority: Singing Style and Ideology*. Cambridge; New York: Cambridge University Press, 1998.

Ramm, Andrea von. “Style in Early Music Singing.” *Early Music* viii (1980), 17-20.

Regier, Marvin Paul. “The Haute-Contre Voice: Tessitura and Timbre.” PhD diss., University of Oregon, 1996.

Salomão, Gláucia Laís, and Johan Sundberg, “What do Male Singers Mean by Modal and Falsetto Register? An investigation of the Glottal Voice Source.” *Logopedics Phoniatrics Vocology* 34 (February 2009): 73-83. http://dx.doi.org/ 10.1080/14015430902879918.

Schneiderheinze, Armin. "Johann Sebastian Bach, Johann Friedrich Doles und die 'Anfangsgründe zum Singen'." *Beiträge zur Bachforschung* 4 (1985): 47-68.

Scott, Anthony. “Acoustical Peculiarities of Head tone and Falsetto.” *The NATS Bulletin: The official Magazine of the National Association of Teachers of Singing* 30 (1974): 32-35.

Stewart, Rebecca. “Voice Types in Josquin’s Music.” *TVNM* 35 (1985): 97-193.

Sundberg, Johan. *The Science of the Singing Voice*. DeKalb: Northern Illinois University Press, 1987.

Tarasti, Eero. “Voice and Identity.” *Teorie Opery*, (2004): 443-460.

Taruskin, Richard. *Text and Act: Essays on Music and Performance*. New York: Oxford University Press, 1995.

Theill, Gustav. *Beiträge zur Symbolsprache Johann Sebastian Bachs. I: Die Symbolik der Singstimmen*. Bonn: Brockhaus Musikverlg Bonn, 1983.

Titze, Ingo R. *Principles of Voice Production*. Upper Saddle River: Prentice Hall, 1994.

Toft, Robert. *Bel Canto: A Performer's Guide*. New York: Oxford University Press, 2013.

Vennard, William. *Singing: The Mechanism and the Technic*. Ann Arbor: Edwards Brothers, 1950.

Webber, Geoffrey. *North German Church Music in the Age of Buxtehude*. Oxford: Clarendon Press, 1996.

Wilson, Betty Karol Fairchilds. "Choral Pedagogy: Crossroads of Theory and Practice in Sixteenth-Century Germany." PhD diss., Boston University Graduate School, 1995.

Wistreich, Richard. "Practicing and Teaching Historically Informed Singing – Who Cares?" *Basler Jahrbuch für historische Musikpraxis* 26 (2002): 19.

———. "Reconstructing Pre-Romantic Singing Technique." *Cambridge Companion to Singing,* 178-191. Edited by John Potter. Cambridge: Cambridge University Press, 2000.

Wistreich, Richard and John Potter. "Singing Early Music: a conversation." Early *Music 41* (February 2013): 25-26, doi:10.1093/em/cas155. Accessed January 14, 2014.

Musical Sources

Bach, Johann Sebastian. "Bringet dem Herrn Ehre seines Namens, BWV 148." Edited by Helmut Osthoff. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten.* Band23, *Kantaten zum 16. und 17. Sonntag nach Trinitas*, 255-286. Kassel: Bärenreiter, 1982.

———. "Christus, der ist mein Leben, BWV 95." Edited by Helmut Osthoff. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten.* Band 23, *Kantaten zum 16. und 17. Sonntag nach Trinitas*, 67-104. Kassel: Bärenreiter, 1982.

———. "Darzu ist erschienen der Sohn Gottes, BWV 40." Edited by Klaus Hofmann. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten.* Band 3.1, *Kantaten zum 2. und 3. Weihnachtstag*, 3-53. Kassel: Bärenreiter, 2000.

———. "Die Himmel Erzählen die Ehre Gottes, BWV 76." Edited by Robert Moreen. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 16, Kantaten zum 2. Und 3. Sonntag nach Trinitatis, 3-77. Kassel: Bärenreiter, 1981.

———. "Du Hirte Israel, höre, BWV 104." Edited by Reinmar Emans. In *Johann Sebastian Bach:Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 11.1, *Kantaten zu den Sonntagen Quasimodogeniti und Misericordias Domini*, 115-156. Kassel: Bärenreiter, 1988.

———. "Ein ungefärbt Gemüte, BWV 24." Edited by Kirsten Beisswenger. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 17.1, *Kantaten zum 4. Sonntag nach Trinitatis*, 49-72. Kassel: Bärenreiter, 1993.

———. "Erforsche mich, Gott, und erfahre mein Herz, BWV 136." Edited by Alfred Dürr. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 18, *Kantaten zum 7. und 8. Sonntag nach Trinitatis*, 131-158. Kassel: Bärenreiter, 1966.

———. "Erfreute Zeit im neuen Bunde, BWV 83." Edited by Uwe Wolf. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 28.1, *Kantaten zu Marienfesten* 1, 3-30. Kassel: Bärenreiter, 1994.

———. "Es reißet euch ein schrecklich Ende, BWV 90." Edited by Alfred Dürr. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 27, *Kantaten zum 24. bis 27. Sonntag nach Trinitas*, 61-78. Kassel: Bärenreiter, 1968.

———. “Halt im Gedächtnis Jesum Christ, BWV 67.” Edited by Reinmar Emans. In *Johann Sebastian Bach:Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 11.1, *Kantaten zu den Sonntagen Quasimodogeniti und Misericordias Domini*, 3-60. Kassel: Bärenreiter, 1988.

———. “Herr, gehe nicht ins Gericht mit deinem Knecht, BWV 105.” Edited by Robert L. Marshall. In Johann *Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 19, *Kantaten zum 9. Und 10. Sonntag nach Trinitatis*, 3-40.

———. “Herr, wie du willt, so schick's mit mir, BWV 73.” Edited by Peter Wollny. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 6, *Kantaten zum 3. und 4. Sonntag nach Epiphnias*, 3-23. Kassel: Bärenreiter, 1996.

———. “Ich elender Mensch, wer wird mich erlösen, BWV 48.” Edited by Mathhias Wendt. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 24, *Kantaten zum 18. Und 19. Sonntag nach Trinitatis*, 107-132. Kassel: Bärenreiter, 1990.

———. “Ich glaube, lieber Herr, hilf meinem Unglauben!, BWV 109.” Edited by Ulrich Bartels. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 25, *Kantaten zum 20. und 21. Sonntag nach Trinitatis*, 159-200. Kassel: Bärenreiter, 1997.

———. “Ihr Menschen, rühmet Gottes Liebe, BWV 167.” Edited by Frieder Rempp. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 29, *Kantaten zum Johannisfest*, 3-18. Kassel: Bärenreiter, 1982.

———. “Jesus schläft, was soll ich hoffen?, BWV 81.” Edited by Ulrich Leisinger. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 6, *Kantaten zum 3. und 4. Sonntag nach Epiphnias*, 111-136. Kassel: Bärenreiter, 1996.

———. “Johannespassion, BWV 245.” Edited by Arthur Mendel. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie II, *Messen, Passionen, oratorische Werke*. Band 4, *Joahnnes-Passion*, 3-163. Kassel: Bärenreiter, 1973.

———. “Leichtgesinnte Flattergeister, BWV 181.” Edited by Werner Neumann. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 7, *Kantaten zu den Sonntagen Septuagesimae und Sexagesimae*, 135-145. Kassel: Bärenreiter, 1956.

———. “Lobe den Herrn, meine Seele, BWV 69a.” Edited by Klaus Hofmann. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 20, *Kantaten zum 11. und 12. Sonntag nach Trinitatis*, 119-170. Kassel: Bärenreiter, 1986.

———. “Magnificat in Eb, BWV 243a.” Edited by Alfred Dürr. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie II, *Messen, Passionen, oratorische Werke*. Band 3, *Magnificat*, 3-58. Kassel: Bärenreiter, 1955.

———. “Mein liebster Jesus ist verloren, BWV 154.” Edited by Marianne Helms. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 5, Kantaten zum Epiphaniasfest bis zum 2. Sonntag nach Epiphanias, 91-114. Kassel: Bärenreiter, 1975.

———. “O Ewigkeit, du Donnerwort, BWV 60.” Edited by Alfred Dürr. In *Johann Sebastian Bach:Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 27, *Kantaten zum 24. Bis 27. Sonntag nach Trinitas*, 3-28. Kassel: Bärenreiter, 1968.

———. “Preise, Jerusalem, den Herrn, BWV 119.” Edited by Christine Fröde. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 32.1, *Ratswahlkantaten 1*, 131-198. Kassel: Bärenreiter, 1992.

———. “Schau, lieber Gott, wie meine Feind, BWV 153.” Edited by Werner Neumann. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 4, *Kantaten zu Neujahr und zum Sonntag nach Neujahr*, 201-216. Kassel: Bärenreiter, 1965.

———. “Sie werden aus Saba alle kommen, BWV 65.” Edited by Marianne Helms. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 5, *Kantaten zum Epiphaniasfest bis zum 2. Sonntag nach Epiphanias*, 3-46. Kassel: Bärenreiter, 1975.

———. “Sie werden euch in den Bann tun, BWV 44.” Edited by Alfred Dürr. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 12, *Kantaten zum Sonntag Cantate bis zum Sonntag Exaudi*, 167-186. Kassel: Bärenreiter, 1960.

———. “Siehe zu, dass deine Gottesfurcht nicht Heuchelei sei, BWV 179.” Edited by Klaus Hofmann. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 20, *Kantaten zum 11. und 12. Sonntag nach Trinitatis*, 57-78. Kassel: Bärenreiter, 1986.

———. “Wahrlich, wahrlich, ich sage euch, BWV 86.” Edited by Alfred Dürr. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 12, *Kantaten zum Sonntag Cantate bis zum Sonntag Exaudi*, 47-60. Kassel: Bärenreiter, 1960.

———. “Wer da gläubet und getauft wird, BWV 37.” Edited by Alfred Dürr. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 12, *Kantaten zum Sonntag Cantate bis zum Sonntag Exaudi*, 81-100. Kassel: Bärenreiter, 1960.

———. “Wo gehest du hin?, BWV 166.” Edited by Alfred Dürr. In *Johann Sebastian Bach: Neue Ausgabe sämtlicher Werke*. Edited by Johann Sebastian Bach Institut, Göttingen and Bach Archive, Leipzig. Serie I, *Kantaten*. Band 12, *Kantaten zum Sonntag Cantate bis zum Sonntag Exaudi*, 3-16. Kassel: Bärenreiter, 1960.

Schein, Johann Hermann. *Opella Nova II* (1626). Edited by Walter Werbeck. Neue Ausgabe Sämtlicher Werke, Band V. Kassel; Basel; London; New York: Bärenreiter, 1986.

Schütz , Heinrich. *Kleine Geistliche Konzerte: Erster und Zweiter Theil*. Edited by Philipp Spitta, Sämtliche Werke, Band VI. Wiesbaden: Breitkopf & Härtel, 1970.

Recorded Sources

Bach, Johann Sebastian. *The Christmas Oratorio*. The Monteverdi Choir and English Baroque Soloists. Recorded January 1987, London. Streaming audio, Accessed September 28th, 2014, http://purl.dlib.indiana.edu/iudl/variations/sound/AKP2090.

——— *Weihnachts-Oratorium*. The Müncher Bach-Chor and Bach-Orchester, conducted by Karl Richter. Recorded February 6-15, 25-28, March 1-4, and June 8-9, 14-15, 1965, Munich. Streaming audio, accessed September 28th, 2014, http://purl.dlib.indiana.edu/iudl/variations/sound/ACN7184.