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CORNELIUS L. REID:

INTERPRETING THE VOCAL REGISTRATION TRADITION OF BEL CANTO

By

SANDRA LEE GLOVER

A Dissertation submitted in partial fulfillment of the requirements for the degree of

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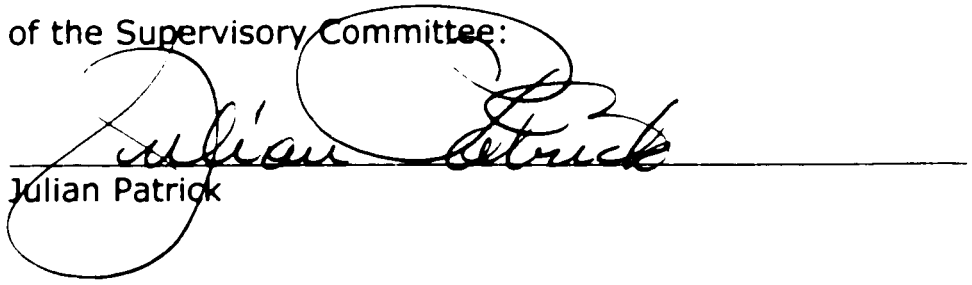

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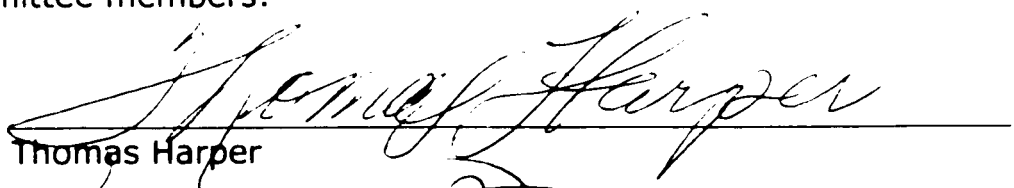

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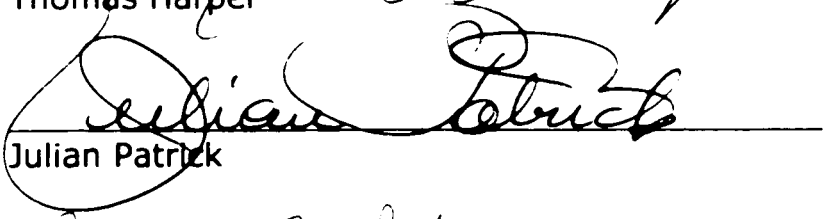

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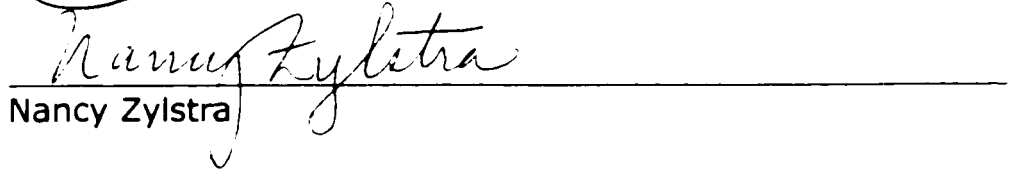

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ABSTRACT

CORNELIUS L. REID:

INTERPRETING THE VOCAL REGISTRATION TRADITION OF BEL CANTO

SANDRA LEE GLOVER

PROFESSOR JULIAN PATRICK
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Cornelius L. Reid is one of the 20th century's most knowledgeable modern vocal pedagogues. What makes Reid's work unique is his interpretation of the Bel Canto tradition and the nature of free singing.

Reid's research explores the old teaching masters' methods of developing the professional voice, based upon the knowledge of physiology and psychology they possessed at that time.

Beginning with his first book, *Bel Canto: Principles and Practices* (1950), Reid presents the *a priori* upon which the rest of his works are founded. Underlying these principles is a two-register theory, which was expounded upon by every major, early pedagogue of the

sixteenth and seventeenth century. The topic of this dissertation is how Cornelius Reid interprets the old recognized principles and conveys the classic method to his pupils.

Nineteenth century philosophies Organicism and Positivism, borrowed from science, made a profound impact on the way pedagogues of voice viewed and taught their art. Today, vocal pedagogues have the benefit of data from clinical research in medicine, speech therapy and technology. Modern pedagogy is the result of the interpretations of this vast data. Concepts of vocal registration have also been affected.

Reid believes the interpretations of clinical data regarding vocal registration differ in important ways from the old masters' ideals. While he is devoted to the ongoing study of both historical and modern evidence, Reid bases his teaching method upon the empirical wisdom of the Bel Canto masters. Doing so involves employing important listening skills, which Reid has coined "functional listening." He is convinced this will duplicate the old masters' success. In more than 62 years of teaching, he has amply demonstrated that he has.

Studio observations made of singers over a series of lessons delineates Reid's methods.

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PREFACE

Cornelius Reid believes that the best teachers of vocal technique were found in the Bel Canto era; no one has yet claimed to have taught as many truly famous singers as Francesco Lamperti, who trained a record 56! According to Reid, teachers like Lamperti relied upon their empirical knowledge of a two-register system and a simple but effective means of guiding the voice to freedom.

I chose the study of Cornelius L. Reid to discover what Mr. Reid believes is the essence of the old masters' success and why he does not endorse modern vocal pedagogy. I wanted to know how he accomplished the task of conveying these ideas in his daily teaching.

I collected and read every book and article written by Mr. Reid; I researched any critique of his work. I trekked to his New York City studio where I observed his teaching for a week. During that period I was fortunate to hear a number of students in various stages of vocal maturity, most of whom had made arrangements for a week's worth of lessons. In this way I could record each student's daily progress, which was much more productive than listening to many students only once.

While I did not set out to defend Mr. Reid's teahing techniques, I must admit I found his method physiologically sound, profoundly simple and his results remarkable. That many of his earliest students are still singing in major opera and concert venues speaks for the success of his method and may be the strongest testament to his claim that he may have re-discovered what the old masters meant by Bel Canto.

ACKNOWLEDGEMENTS

I am grateful to the teachers who have guided me towards vocal freedom and the hunger for life-long learning. Cornelius Reid's life-work has inspired me.

I wish to thank my graduate committee, Julian Patrick, Thomas Harper, Nancy Zylstra and George Dillon, who spent their time reading, revising and guiding me.

Special thanks are owed to Karin Stromberg, Graduate Music Advisor, for her tremendous help.

Special thanks as well are extended to Donna S. Reid, for her gracious hospitality and assistance in arranging for the interview and studio sessions.

I am most thankful for the love and support of my husband, John.

DEDICATION

To Betty Lou Berland, who pressed me to be the best I could be.

To Dr. Maurice Skones, whose beloved memory will always inspire me.

INTRODUCTION

Cornelius L. Reid has upheld traditional ideals of teaching voice developed by the old Italian masters of the Bel Canto period during roughly the seventeenth and eighteenth centuries. *The Harvard Dictionary of Music* (1972) defines Bel Canto as "the Italian vocal technique of the 18th century, with its emphasis on beauty of sound and brilliance of performance rather than dramatic expression or romantic emotion...a highly artistic technique and the only proper one for Italian opera and Mozart."

Since his first book in 1950, *Bel Canto: Principles and Practices*, Mr. Reid has written consistently about the manner in which the greatest old masters taught pupils organic vocal function, their methods being rooted in the understanding of a two-register theory. Historical basis for a two-register theory is the starting point and foundation for the ideal Reid espouses.

Central to this dissertation is Chapter Two where I discuss Reid's interpretation of the Bel Canto two-register theory and its principle in

action. At the crux of Reid's teaching structure is the same knowledge of organic vocal function as the early pedagogues, which Reid believes has been overlooked in modern times. The rest of his pedagogy is developed upon this traditional concept.

At the pivotal point in history when science was affected by the philosophical tenets of Organicism and Positivism, music disciplines, including the teaching of voice, underwent major changes as well. Chapters Three and Four review both this history and subsequent developments in scientific and medical research which have become the basis for modern vocal pedagogy. Concepts relating to registration have undergone major changes as a result of clinical study, some of which differ greatly from the earlier ideas of the Italian masters of Bel Canto. I address Reid's observations of these modern registration concepts in Chapter Five.

Cornelius Reid has used the phrase "functional listening" as the tool used to judge the activity of the two-register system. He defines them in his *Dictionary of Vocal Terminology* (1983), as "aural perception in which the listener evaluates tonal qualities for their intrinsic health and as a reflection of a coordinated muscular process rather than for their

aesthetic value." Intrinsic to Cornelius Reid's teaching method is his use of this refined skill, discussed in Chapter Six.

Finally, Chapter Seven is a record of my observations of Reid's methods at work in actual lessons, and their results. It is hoped this insight may inspire others to inquire about a traditional way of teaching; Cornelius Reid says, "It should be made the new way."

CHAPTER ONE

REGISTER NOMENCLATURE OF THE BEL CANTO PERIOD

Twentieth century vocal pedagogues have done admirable work in comparative analyses of centuries-old writings on vocal pedagogy. Cornelius Reid is among these, but more than a compiler, he has perhaps offered a more sensible explanation of nomenclature, so that readers can better glean from the composite wisdom of past masters. It is evident that Reid respects the old masters' wisdom even though they did not have the benefit of twentieth century technology. Reid maintains, in fact, that the old masters utilized the physiological knowledge they possessed at the time. They developed the art of listening, teaching with few words, and, quoting Lamperti, "without a specific method."[1] The masters employed exact, single words to prompt a physically healthy, kinesthetic response. Since kinesthetic response yielded an untampered sound, it was then easier to hear the sonority of tone in homogenous groups. Any imbalance in this quality was then corrected by setting up a healthy environment of pitch, vowel and intensity. The result was a well-coordinated voice.

From Cornelius Reid's perspective, what stands out spectacularly in the early writings is the consistent labeling of homogenous tones into

groups. Every new pedagogical writer made a case for his own brand of nomenclature and meaning. By the middle of the twentieth century most teachers of singing were using similar terminology once again, but with numerous definitions of that terminology.

Reid writes about register mechanics in all of his works, but expounds on his interpretation of register history in a lengthy article published in the *Journal of Singing,* entitled, "Eighteenth-Century Registrational Concepts." The following is a condensation of that article, the conclusions from his books, and added commentary from the studio conversations this writer had with Mr. Reid.

Registers, by whatever name, have been known for centuries, and written about nearly as long, perhaps as early as Johannes de Garlandia (ca. 1193-1270) who spoke of three characteristics: *vox pectoris, vox guttoris*, and *vox capitis.* While he does not elaborate on these characteristics, it can be assumed he was at least referring to chest, throat and head. It is not known whether Garlandia spoke of voice categories in general, or of an individual's overall pitch range. In any event, the titles were aptly descriptive. Jerome of Moravia (13th century) wrote:

> Different kinds of voices ought not to be mingled in the chant, whether it be chest with head or throat with head... Generally low voices and basses are of the chest, light and high voices of the head, and those of the throat intermediate. They should not be mixed in chant, but chest voice should remain such just as the voice of the throat or the head.[2]

Marchettus de Padua, a writer of about 1300, describes an ornament of singing, which was "to pass from the chest to the falsetto – after the manner of a *jodel*."[3] He described these voices as similar to what we call a yodel, the act of dividing one voice into two distinctive tone qualities, which was more instructive than a general pitch range or category of voice.

By the middle 1300's, singers were thought to have different "voices." Chest voice was known as *vox integra*, while falsetto was known as *vox ficta*.

As Italian vocal music became more popular, more attention was paid to singing technique. Today there is more Italian terminology that tells us what the earliest teachers and singers thought than from any other national group. Later writers from Germany, England and France

largely echoed what their Italian counterparts had previously laid down.

One of the most detailed descriptions of registers is found in Lodovico Zacconi's *Prattica di musica* (1592). As chapel maestro, Zacconi struggled with cultivating a choral unity using untrained and solo voices in the same ensemble. In his writings, he maintains that his views were those of his colleagues as well, not only his own. Zacconi used the terms *voce di petto* (chest voice) and *voce di testa* (head voice). Bearing in mind that Zacconi worked with only boys' and mens' voices, he preferred the sounds of chest voice and did not like at all the falsetto sounds, which he described as "shrill and of a penetrating quality..."

Biagio Rossetti (1529) and Hermann Finck (1556-1580), as well as Giovanni de' Bardi, criticized basses who sang the upper notes in such a way that they sounded like criers or auctioneers.

Caccini, in his *Le Nuove Musiche* in 1601, adopts the terms *voce naturale* and *voce piena* for natural, full voice, and *voci finte* as false voices or falsetti. This was the first time the term *falsetto(i)* was seen in a treatise in its plural form. Reid interprets this as "throat" voice,

i.e., more than one type of sound could be produced from the throat. Monteverdi, in 1627, chose to use the word *petto* or chest for *naturale* and *piena,* but retained the words *gola,* throat, and *testa,* head, to describe tonal characteristics of a person's voice, whether man or woman. In any event, Monteverdi described *gola* synonymously with falsetto.

Italian opera brought about excellent schools and studios of voice. Treatises from these teachers have taught us much about their voice techniques. Comparing these rather comprehensive expositions to one another demonstrates a common practice among them. Pietro Francesco Tosi (1723) wrote a treatise entitled *Opinioni de'contori antichi e moderni, o sieno osservazioni sopra il canto figurato* (Opinions of ancient and modern singers, the observations [the exactness of, neither adding nor diminishing] of figured soprano singing). Even though the writing is focused on soprano singing, it divulges revealing terminology in the segment devoted to "register mechanics," the first time the word "register" had been used. However, Tosi used the word in a negative connotation, since he believed the voice should be of one, seamless sonority. Therefore, a voice with more registers was thought to be still faulty by being fragmented, lacking in beauty. He used the terms "chest voice" and

"falsetto," but didn't call either of them "registers." Rather, he spoke of them as integral parts of the voice needing to be blended into a unified whole; this was his tonal ideal. In interpreting Tosi's work, English translator Johann Ernst Galliard (1680-1749) described well Tosi's definitions:

> *Voce di petto* (chest voice) is a full voice, which comes from the breast by strength, and is the most sonorous and expressive. *Voce di testa* (head voice) comes more from the throat, than from the breast, and is capable of more volubility. *Falsetto* is a feigned voice, which is entirely formed in the throat, has more volubility than any, but of no substance. [4]

Today, of course, modern teachers react to the word "throat" voice as being tension-affected. Monteverdi associated it exclusively with falsetto, while Tosi intermingled the "head" and "falsetto" as "throat." He, in fact, thought of head voice as a *quality* of voice located above chest, and falsetto as an incomplete sound, "another (negative) register" when used by itself. Tosi left a more comprehensive report on the principles of Bel Canto in *Observations on the Florid Song,* also in 1723, where the same register terminology is found.

Giambattista Mancini (1716-1800) gave us much more detail when referring to register nomenclature, so that the meanings of these terms evolved much more definitively. Mancini clearly defined chest voice and falsetto as registers. In his book, *Practical Reflections,* Mancini deals with separate issues of "voice of the chest" and "head" (or "falsetto,") and with the union of the two registers. Notably, Mancini also stated again that these terms referred to both men's and women's voices, separated only by an octave.

Vincenzo Manfredini (1737-1799), quoted in Tosi's *Observations on the Florid Song* (1743), distinctly wrote:

> It is necessary to unite those notes in the head voice and notes in the chest voice in such a way, that the voice seems to be only one register. This is done not by forcing the high notes of the chest, but rather by reinforcing the low notes of the falsetto; or doing the opposite, if the notes of the chest are weak and deficient and those of the falsetto are abundant and strong."[5]

Nicola Antonio Porpora (1686-1767) is famous as the voice teacher of his most famous students, the castrati Farinelli and Caffarelli. There is no first-hand documentable evidence of Porpora's teaching, but two of his students, Domenico Corri (1746-1825) and Isaac Nathan (1790-1864), wrote of "The Porpora Tradition" in the original work, *The*

Singer's Preceptor (1811). In a heading called Rules for the Management of the Voice, Corri offers:

> There are four sorts of voices, Basso, Tenore, Contralto, and Soprano...that part above the Natural (voice) is called the feigned or falsetto voice," and continuing, he adds, "after the scholar has ascertained the compass of the natural voice, his great study should be to contrive to unite the natural to the first note of the falsetto, to blend them with such nicety, that the union may be imperceptible.[6]

Isaac Nathan included the term "feigned voice," meaning a special kind of falsetto, which he somewhat ambiguously described as important to the unification of the registers:

> I am aware that the *falsetto* is considered a feigned voice; and certainly that voice must be feigned which is produced by artificial constraint, and that does not consequently seem to come forth naturally from the chest; but the quality of sound that I allude to is not that which is produced in the throat; and already distinguished under the name *falsetto*; nor is it the *voce di testa*... It is a sweet and soft melodious sound wafted from afar, like unto the magic spell of an echo. [7]

Clearly, it is evident that these early masters, upon whose shoulders rest the foundation of the history of vocal pedagogy, were attempting to describe a vocal activity by the nature of its sound, since they could neither see nor assist in the physiological function. While the meaning of the above terminology is in question, it is understood when taken in context with all other writings before it: two distinct vocal sounds and physical sensations were consistently experienced. The work of the teacher lay in strengthening the two, then blending and balancing them into a seamless fabric of beautiful tone. Of this important step there is virtually no writing at all, since it was believed that there can be no one method for all. It was the teacher's duty to take each voice and, given its idiosyncrasies, discover the direction it needed to develop, to become better coordinated.

It should be noted before moving into nineteenth and twentieth century nomenclature, that there were a few writers on the subject of vocalism who advocated more than two registers. These exceptions were Bernardo Mengozzi (1758-1809), an Italian singer who taught and resided in Paris; Johann Paul Schwarzendorf (1741-1816), a German who lived in France; and Johann Friedrich Agricola (1720-1774), who translated Tosi's treatise into German. Mengozzi recognized two registers in male voices, chest and head, which he

claimed to be mistakenly called "falsetto," and three for females, called "chest," "medium," and "head." Schwarzendorf gave three registers to all voice types: *voix de poitrine*, or chest voice, *voix du gosier*, or throat voice, and *voix de tete*, or head voice; he did not state whether his definition of head voice was synonymous with falsetto or different tone quality. Agricola arranged three registers by positioning falsetto both above and below the head voice. He did clearly state, "The chest voices as well as the head voices also have falsetto tones."[8]

The pivotal point in the evolution of vocal pedagogy is universally recognized in Manuel Garcia II, because, as a product of his time, he espoused the positivistic and organicist philosophies prevalent in science and literature. He began to search for sources besides aural perception to verify the existence of registers and their natural divisions. Garcia had been trained by his famous opera-singing father, and lived near his famous singing family, sisters Maria Malibran and Pauline Garcia-Viardot. With the invention of the laryngoscope in 1854, a tangible manner of seeing the mechanism sent the art of teaching voice in a new direction. Probably Garcia's largest contribution to voice culture was his definition of vocal registers, found in both his *Memoire* of 1840 and *Traite'* of 1847, which is still used as the standard today:

> By the word register we mean a series of consecutive and homogeneous tones going from low to high, produced by the development of the same mechanical principle, and whose nature differs essentially from another series of tones equally consecutive and homogeneous produced by anther mechanical principle. All tones belonging to the same register are consequently of the same nature, whatever may be the modifications of timbre or of force to which one subjects them.

While this definition laid down specific principles to explain what a register was, it added confusion because it was not clear what Garcia meant by the words "mechanical principles" and "falsetto." Clearly, Garcia called chest voice the *register de poitrine,* but the falsetto/head he called *registre de fausset-tete:* one register in two parts. The lower he called "falsetto" or "medium;" the higher, "head voice." In other words, he considered the head register to be an upward extension of the falsetto register, but with certain differences that justified a separate name.

At the time, Garcia was accused by colleagues – even his biographer, Hermann Klein - of propagating misunderstanding because he referred

to a female's middle range as "falsetto." More confusing was Garcia's description of the same range, from A4 to C#4, as constituting the male falsetto. Sensitive to this, Garcia later capitulated and adopted a three-register model that abandoned the term "falsetto" for the middle portion of the voice and was thus more easily accepted. In *Hints on Singing,* he wrote, "Every voice is formed of three distinct portions or registers, namely, 'chest,' 'medium' and 'head.' The chest holds the lowest place, the medium the middle, the head the highest. These names are incorrect, but accepted."

In addition, Garcia explored the possiblity of what he termed "auxiliary registers," called *registre de contre-bass* (contra-bass register), *voix inspiratoire (*inspiratory voice), and what he termed "overtone singing." He also made it clear he did not understand the mechanisms involved. It does demonstrate his awareness and fascination with extended vocal techniques.

Operatic tradition was well established by this time, and this tradition, particularly with the tenor voice, had been disseminated from singers-turned-teacher to pupil. Paramount in the minds of all good teachers was how to explain and set up the joining of the registers imperceptibly, since this was not written about in earlier treatises. New

nomenclature found its way into the lexicon of pedagogues. Terms such as *voix mixte* (mixed voice) and *voce di mezzo petto* (half-chest voice) were found in the writings of French and some Italian teachers.[9]

Preeminent in operatic training were the famous Lampertis, father Francesco and son Giovanni Battista. Francesco subscribed to a three-register model in females (chest, mixed, and head), but a two-register for males (chest and mixed), preferring the term "mixed" for both female and male voices to Garcia's "falsetto." Giovanni also treated registers as part of a whole, naming the three-register theory for women, and a fourth register for males, the "mixed voice," which he said was wrongly called "falsetto."[10]

Positivism and Organicism were nineteenth century philosophies preeminent in science and literature. Their precepts of investigation and analysis were later borrowed and adopted by musicology, music theory and pedagogy. Foremost among the directives of Positivism was the demand that absolutes be established by observation and codification. Positivism and Organicism found their strongest support from vocal pedagogues in German academia.

Julius Stockhausen, in 1844, followed Garia's concept of registers when recognizing two "modes" of vocal fold vibration which were associated with chest voice and falsetto, but still advocated three registers for women.

Emma Seiler, a student of Friedrich Wieck and a science student of Hermann Helmholz, wrote her observations in *The Voice in Singing* (1868). In it, she lavishly praised Garcia as "the most eminent singing master now living." Acknowledging like Garcia, that the laryngoscope was imperfect for observation, Seiler nevertheless departed from Garcia's registration theory. She proposed her own five-register theory of the vocal organs, calling them "first series of tones of the chest register," "second series of the chest register," "first series of the falsetto register," "second series of falsetto register," and finally, "head register," all based upon limited observation of the vocal organ.

Lennox Browne and Emil Behnke, influenced by Seiler, set out their own laryngoscopic findings, renaming Seiler's registers the "lower thick," "upper thick," "lower thin," "upper thin," "small."[11]

A Garcia detractor, Sir Morrell Mackenzie, presented in 1890 his own findings by calling the lower register "the long reed," the upper

register "the short reed," and believes only part of the fold is used during upper registration events. He called raising of pitch "stop closure" or "damping." He stated that uniting registers was achieved by "dovetailing the one into the other as if 'planing' the surface until the voice was smooth and without break."

The end of the nineteenth century was awash in register ideas; the earlier pedagogues' nomenclature had been set aside as too general. Positivist philosophy of the nineteenth century was now firmly rooted in vocal pedagogy. As technology advanced into the twentieth century, it became possible to view the muscular movements of the vocal mechanism in a number of new ways.

Twentieth century inquiries into vocal mechanics yielded myriad descriptive terms, based upon what is seen by X-ray, high speed motion picture, tomographs, CAT scans, ultra-sound, as well as a host of sound recording and analyzing devises.

Janwillem van den Berg's article of 1960 proposed "a new and simple concept of the origins of the main registers."[12] His best contribution was a very clear description in medical terms of the process by which the two main registers function. Using the actual muscle names found

in the larynx, van den Berg noted the position and various movements of the crico-thyroid cartilage, arytenoid cartilages, vocalis muscle, etc., and used terms such as super-and supra-glottal pressure variations.

Corroborating van den Berg's evidence was the report of Henry Rubin and Charles Hirt,[13] also in 1960, who used high-speed motion pictures to record the vocal fold behavior in the two primary registers and in the break between them. The verbiage used to describe the falsetto was "tonic contraction sufficient to withstand the air-stream yet not enough to bring them together or at best only lightly in the midline."

Various speech therapists and phoneticians have developed their own terminology for registers: "vocal fry," "modal" and "loft." In addition, Minoru Hirano subdivides the modal voice into head voice, mid-voice and chest voice. [14]

Because medical and technological advances have done much to clarify the physiological function of the vocal tract (and affirm many of the methods of the old Italians), and because some findings have helped dispel incorrect technique, it was natural for teachers to begin to depend upon science as an absolute answer for pedagogical issues.

Speech therapists, phoneticians and others were used as sources of information, as their fields of expertise yielded mounds of data from testing and experimentation. Their findings became the basis of modern pedagogy.

Academia has since taken responsibility for disseminating the modern nomenclature. Students in university vocal performance programs can now learn the physiology of the voice and accepted clinical terms, along with the history of pedagogy, as part of their training.

Cornelius Reid does not use medical terminology for teaching because he believes it is useless as a functional direction for singing. He claims the new nomenclature ignores kinesthetic response. While the old masters would probably have appreciated knowing exactly what was happening in the vocal tract, Reid is sure they would certainly have come to the same conclusion as Manuel Garcia II who, after years of medical research and inventions to build a more exact pedagogy for teaching voice, declared in the London *Musical Herald*, August 1894, that he rescinded much of his earlier work and regretted not having stayed with the tried and true ideals of his father and early masters.

Having studied physiology and history of pedagogy, current teachers' terminology must still guide the individual voice to freedom using both sight and ears to judge results. The prompts used to convey abstract concepts to the singer must be functional in nature, causing a spontaneous response. From Reid's experience, any other so-called registers are qualitative sounds of pitch range, products of the two main registers, which we know exist due to medical findings. While "chest," "head" and "falsetto" are general and refer to the sensations felt when singing in a certain range, they still allow the individual to explore the idea in his own voice's *emotional* range. It is this personal identification and association of sound, sensation and attached emotional context that Reid seeks to give the singer. He guides students toward free expression without conscious interference by technical direction. The terms he uses, though general, were used in the earliest treatises of Bel Canto, and are still accepted by many voice teachers today.

NOTES TO CHAPTER ONE

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CHAPTER TWO

CORNELIUS REID'S INTERPRETATION OF THE BEL CANTO TWO-REGISTER THEORY

"The whole secret of fine singing is found in the knowledge of the interrelationship between vocal registers. It is the lost secret of Bel Canto."

Cornelius Reid's declaration, based on a quote by Sir Morell Mackenzie in *The Hygiene of the Vocal Organs* (1888), expresses the essence of his belief: developing the muscular balance between register events is what sets the voice on the course to vocal freedom. All other concerns, be they posture, breathing, resonance or diction, are secondary to and founded upon register balance. As important as these concerns are, Reid has witnessed in his experimentation that their functions normalize and coordinate once register balance prompts release of extraneous tensions.

Douglas Stanley revived interest in registration at the beginning of the 20th century in the United States. Although some of his later teaching practices have since been noted as unfavorable for vocal health,

Stanley's orignal research included an accurate description of the vocal mechanism. He stated, in his book, *The Science of the Voice* (1929):

> There are two groups of muscles: the arytenoid and the cricothyroid, which act as tensors of the vocal cords. The preponderance of effect of one group over the other determines a register. There are consequently two and only two registers in the human voice.

Lucie Manèn, in *The Art of Bel Canto,* cited studies from Emile Berard's work on excised larynges as early as 1774, which began to demonstrate the function of the larynx and the voice mechanism. The clinical research of today has further verified that muscular action. All research points to two distinct muscular functions which work antagonistically and coordinately with one another: the "heavy mechanism," associated with chest voice, uses six sets of muscles in the larynx, while the "light mechanism," or head voice, uses only two, located in the naso-pharynx and soft palate.[1] This valuable information confirms what the old masters knew by listening to the voice's spontaneous response with their aural skills and empirical knowledge. Manuel Garcia II's definition of vocal registers (1840) is still most widely recognized and accepted, and is quoted by modern pedagogues such as Richard Miller, Ingo Titze, William Vennard, James Stark and

others. Cornelius Reid also acknowledges Garcia's definition of registers as a standard and starting point for his exhaustive research on the two-register theory:

> A register is a series of homogeneous sounds produced by one mechanism. These sounds differ essentially from another series of sounds equally homogeneous produced by another mechanism, whatever modifications of *timbre* and of strength they may offer. Each of the three registers has its own extent and sonority, which varies according to the sex of the individual, and the nature of the organ.
>
> Every voice is formed of three distinct portions, or registers, namely, *chest, medium*, and *head*. The chest holds the lowest place, the medium the middle, the head the highest. These names are incorrect, but accepted. [2]

The "incorrect, but accepted" names of registers refers to the use of the word "medium," which Garcia's findings did not support, as he had distinctly reported on two muscular functions of the larynx. Only under pressure by his other scientist colleagues did he concede to using those terms. Moreover, Garcia knew that all sounds originated in the larynx, and that the words "chest," "medium" and "head" were references to the sensations of tone, or their corresponding resonances.

Cornelius Reid notes that Garcia's "mechanisms" are the same systems defined by Stanley. Reid states, therefore, that a register is a special kind of tone quality, produced by a special adjustment of the vocal folds, and caused by a "preponderance of effect" of one muscle system over its natural antagonist. Reid links together the meanings of "activity of muscles," "voice," "the vocal mechanism," and the "vocal register." The preponderance of one muscle system over another produces characteristically different tone qualities, called "chest" and "falsetto", a concept dating back to the fourteenth century, when they were called *vox integra* and *vox ficta* (voice true and voice false).

Chapter One related the historical background of Bel Canto register concepts through the singing masters of more than two centuries. Most of this data is well documented in Reid's lengthy article, "Eighteenth-Century Registrational Concepts," found in the National Association of Teachers of Singing periodical, *Journal of Singing,* Volume 56, No. 4, pp. 31-38. Reid also devotes a lengthy chapter on "The Vocal Registers" in *Bel Canto: Principles and Practices* (1950). In *Essays on the Nature of Singing* (1992), Reid devotes Chapters Two through Six on issues of registration. He has continued to update and refine his views as a life-long project, because his students had neither

the time, patience or experience to seek out the answers, some of which were found in almost inaccessible places in the 1950's. Many in the latter half of the twentieth century have been located and translated.

One of the most important questions Reid has asked and investigated is, "What is the Bel Canto ideal and how does register action attain this ideal?"

First, Reid reflects on the full significance of the term Bel Canto itself, well beyond the transliteration, "beautiful singing." In Chapter Three of *Bel Canto: Principles and Practices* (1950), Reid writes:

> ...all qualities of tone will be found to be firmly rooted in the tangible rather than the intangible; and that tone quality always reflects the degree of efficiency with which the vocal mechanism is responding at a given time.
>
> When a tone is truly beautiful it signifies that the vocal mechanism is functioning correctly, and that a complete harmony exists between aesthetic principles and those laws of Nature by which the operation of the vocal mechanism is governed. Bel Canto singing is impossible without vocal freedom, and true vocal freedom finds its expression in vitally resonant tones covering a wide pitch range, in a complete control over extremes in

dynamics, and in ease and flexibility of execution.

Second, vocal freedom is a requisite for artistic expression by Bel Canto standards. Reid further writes:

> When it is apparent that difficulties are overcome with ease and sureness, the voice is not only being well produced but, *because it is well produced,* the quality must be relatively pure. Perfect tone qualities find their equivalent expression in complete vocal freedom... A truly beautiful tone has few limitations and, because operation of the vocal organs is in strict conformity with Nature, genuine feelings are aroused which are admirably adaptable to the purposes of artistic expression. Therefore, a beautiful tone must be considered a factual condition, and not a matter of personal opinion...In the final analysis, vocal freedom, or that condition of the vocal organs which alone reveals the natural *timbre* of the voice, is simply a feeling of being able to sing higher and lower, louder and softer, with ease and comfort...This condition shows an absence of resistance, or muscular interference, and is true vocal freedom.

Third, Reid bases his definition of the Bel Canto ideal on treatises of the old masters, including how registration helps achieve that ideal. He compiled lists of their descriptions of tone quality and watched for similar remarks among them on the use of vowels, dynamics and

ranges. He read detailed descriptions of singers' abilities and performances in histories of music and music criticism. The following examples are notable excerpts from those readings.

Reid found an article published in the *Mercure de France,* where an unnamed writer in the last years of the seventeenth century wrote of a new art form, and of the singing at the time. He commented that "the voices are clear, pure, solid and bold, without pinching and constraint." Giambattista Mancini, in his *Practical Reflections on the Figurative Art of Singing* (1776), commenting on a performance of Farinelli, records:

> His voice was thought a marvel because it was so perfect, so powerful, so sonorous and so rich in its extent, both in the high and in the low parts of the register, that its equal has never been heard in our time. The qualities in which he excelled were in the evenness of his voice, the union of the registers, the art of swelling its sound, the portamento, a surprising agility, a graceful and pathetic style, and a shake as admirable as it was rare.

Reid also relates the story passed down by oral tradition, about Farinelli's contest with a trumpeter. Most important to this study is the description of Farinelli's capabilities. Not only did Farinelli actually surpass the trumpet in the art of swelling and diminishing the tone,

but showed that his voice was the more flexible instrument by excelling in coloratura passages and bravura effects. He equaled the trumpet in power, clarity and brilliance.

Giovanni Mancini, author of *Practical Reflections on the Figurative Art of Singing,* (1776) quotes J.J. Quantz, an eminent historian of music and court musician to Frederick the Great. Quantz wrote extravagant praise of Carestini, who, he claims, "sang after the manner of Farinelli."

Dr. Charles Burney, author of *A General History of Music* (1776-89), notes that Senesino, another fabulous vocal technician of this era, had "a clear, penetrating, equal and flexible voice. His intonation was pure and his trill perfect." Burney also writes of a singer from the Bel Canto school, "Manzolli's voice was the most powerful and voluminous that had ever been heard on the English stage since the time of Farinelli. His manner of singing was grand and full of dignity."

Richard Mackenzie Bacon, in *Elements of Vocal Science* (1824), comments concerning the singing style of this period, "The very essence of Italian singing I take it to be, that it is *dramatic.*" Again, he specifies:

> Their conceptions are directed to objects of the most intense and vivid expression and hence it also follows that the means they use are of the boldest and most striking character. They not only endeavor to raise the strongest emotions in the auditor and spectator, but they aim *to be* (as nearly as possible) the person they are supposed to be singing, and to identify themselves with all the passions by which that individual is represented as being influenced. To this grand end they are incited by a naturally ardent temperament.

Dr. Burney is also noteworthy because of his commentary on more contemporary famous singers singing after the Bel Canto style. They are said to have sounded the same as their predecessors. Jenny Lind was "a soprano of great compass and power, not less remarkable for its sweetness and perfect purity of tone." Rubini's voice was praised as "strong, just and clear," Lablache's as "pure, powerful and flexible." Alboni possessed the technique that enabled her to sing tones which "poured out sonorously without the slightest effort, with sparkling facility."

Grove's Dictionary of Music and Musicians (1940) states that Adelina Patti was able to take on roles of the greatest diversity, including Ophelia in *Hamlet, Lakmé* and *Lucia di Lamermoor, Carmen* and *Aida.*

Hermann Klein was a prominent music critic and former assistant to Manual Garcia. In a letter to a friend, Percy Betts quotes Klein's description of the debut of Enrico Caruso in 1902:

> He had a delightful *mezza voce,* and he had neither the nasal quality nor the "bleat" which are the bane of so many of our compatriots. His voice is of that soft, velvety quality, which old opera-goers will associate with Fancelli, and still older men with Giulini. It is, in fact, a pure tenor voice of the old Italian type.

Based upon the aforementioned evidence, Cornelius Reid finds that these phrases accurately define the Bel Canto ideal:

- Compelling power and vibrancy;
- Big, resonant voices of wide range and exceptional flexibility;
- Voices capable of power when needed, or of intimately soft, velvety, texture;
- Flexibility and an extensive range;
- Conditions of resonance within a balanced registration.

The most famous Bel Canto era singers were such because of their prodigious feats of agility and electrifying coloratura. These feats must

have been the result of efficient coordination of the vocal organs. Cornelius Reid has designed his teaching method based on this evidence.

Given the two-register theory as the *a priori* for his teaching, Reid chooses to describe the middle register (as used by other prominent pedagogues) as "coordinated" and not "middle" or "mixed", so that he does not confuse the issue by introducing other terms which have no basis in physiological fact. Reid believes, like Garcia, that this idea is misunderstood by the singer, and is the cause of weakness in the coordinated range.

Reid makes his students familiar with the natural, unique sound and sensation of the isolated muscle groups he calls "chest" and "falsetto" registers. By listening to each register separately, he also becomes familiar with its idiosyncrasies.

First, Reid asks for a "falsetto-only" sound, beginning at B_5 down to B_4, just below (middle) C_4, using an 'U' (closed) vowel and *p* intensity. Reid eventually asks for more intensity, to strengthen the falsetto's ability to carry more air through the throat without activating chest voice into the sound. He is, however, careful not to over-exercise

either part of the voice since overuse will weaken instead of strengthen the parts, defeating the original purpose.

Second, Reid typically exercises chest voice sound to its fullest resonance and focus from about G_3 to D_4 in both tenors' and women's voices (basses begin on G_2) on vowel 'Ah,' at *mf* intensity.

Reid states that the Bel Canto ideal successfully coordinates the two registers at the "break" juncture by matching the intensity of each. This is the only way to successfully control the tone quality in this area, and qualify the voice as lyric, once the two registers overlap and coordinate. At this break point, located from E-flat$_4$ to as high as F#$_4$, the muscles must make adjustment to allow one mechanism to take predominance over another while still maintaining the antagonistic balance so transition of energy can be made from one to another. Reid believes that every voice has this break at the same place regardless of gender.

Reid recognizes that the area where this transition occurs is referred to by the Italians as *mezzo falso,* and is clarified in its definition by Sir Morell Mackenzie in the *National Encyclopedia* (1886):

> The former is termed in the Italian school the *voce di petto*, or chest register, and the latter the *voce di testa*, or head voice. To these the Italians add another which joins the two registers and which partakes of the character of both; it is named the *mezzo falso*, or middle falsetto.

This middle falsetto is identical with the *voce di finte*, or feigned voice, spoken of by early pedagogues, including Caccini, Tosi and Mancini. It is not the function, but coordination, which unites the two registers by its action. It would have been used in the music schools which prepared boy sopranos and altos, and later as well for every male voice, as a means to achieve effective tone production. Because many of these teachers were castrati, they would have had first-hand professional understanding of the use of falsetto as a means for developing the voice.

Many find misleading the idea that falsetto is indicative of the higher of the two registers, or only the remains of the boy's voice and of no significant value. In fact, the *voce di finte* was always understood by Italian masters to have a separate and distinct function in the singing process. Joining it to the fundamental quality of chest voice was (and is today) the ultimate challenge for the teacher. Farinelli, considered to

be one of the finest (castrato) examples of Bel Canto singing was said by Mancini to have "evenness of voice and complete union of the registers."[3] "One of the wonders of (Rubini's) art is revealed in the transition from the chest to the head (falsetto) voice, and vice versa. When he reaches the limit of the chest register, E, for instance, the change in entering the head voice (falsetto) is effected so marvelously that it is impossible to seize the moment of transition."[4]

Third, Reid asks the student to sing "complete" voice to see and hear what the singer thinks "complete" is, and how he responds. The complete voice will balance the use of chest and falsetto mechanisms reflexively, to produce the freest, most efficient tone. The student sings a downward arpeggio on a *mf* 'Ah' in the upper middle range. Reid listens to how each mechanism is responding in that coordinated (complete voice) environment:

Is the sound easily produced with rhythmic spontaneity throughout the entire vocalise?

Is there an indication of instant, even vibrato?

Is there a complete coloration, or *chiaroscura* of tone?

Is the vowel pure and does it produce a true ring in the sound?

In other words, Reid is listening functionally; thinking in terms of a two-register system helps him determine what to do to strengthen the balance of the two mechanisms. He then designs the next exercise to reflect the voice's need. If the chest voice is weak, the sound manifests as unfocused and diffused with breathy quality. Reid goes back and reinforces chest voice sound as in the beginning of the lesson or asks for more intensity to see if it will encourage more chest voice presence in the tone. If the head voice is weak, chest voice manifests as a brassy, edgy, dull, sometimes shrill sound. Reid returns to the original falsetto exercise to reinforce its action, but at *pp* intensity.

From this point, Reid traverses the student's entire range, looking for weaknesses and adjusting the register balance, using varying intensity level, vowel and pitch combinations. He identifies register balance as free, in tune, vibrant and ringing tone at every note in the range.

Reid is careful *not* to respond to the aesthetic beauty of the tone he hears in a lesson, but of its free release. He maintains that a healthy tone is better than a pretty one, since muscles self-correct toward their eventual optimum efficiency, once they are guided in the right direction. Beauty of tone is therefore the result of healthy vocalism, and should always change toward its own betterment. In fact,

regardless of its beauty, all singing reflects the efficiency of the register action. Every correctly used voice is optimally even, clear, and smoothly produced throughout its range. Any departure from this pattern indicates a faulty technique and must be presented to the singer as such by the teacher whose duty it is to rectify the condition.[5]

Lastly, once the break has been obscured, the singer may pass easily from one register to another. The quality of this tone is such that some of each register overlaps the other. To the basic chest tone a sweetness and flexibility is added, while the falsetto is fuller and solid, no longer sounding "false." This versatile quality is what most today call "head register." The general health of the voice is one of flexibility, to move easily note to note regardless of distance, and from loud to soft, to loud again, without interfering tensions. Vocal flexibility and wide range can now occur because an efficient coordination of vocal mechanisms has been achieved.

In conclusion, correct register management produces full and unobstructed resonance, flexibility, large range and dynamic control in all parts of the vocal range. The meaning of Bel Canto is revealed when it is realized that this style of singing was not a method, but a

term applied to the result of putting into practice basic principles achieved by adherence to natural laws.

NOTES TO CHAPTER TWO

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3 Reid, Cornelius. *Bel Canto: Principles and Practices.* 1950. New York: Joseph Patelson, Ltd. Pg. 66.

4 Ibid., pg. 66.

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CHAPTER THREE

POSITIVIST AND ORGANICIST PHILOSOPHIES

THEIR EFFECT ON MUSICAL THOUGHT AND VOCAL PEDAGOGY

Positivism and Organicism were the predominant philosophies of nineteenth century humanists, which caused vocal pedagogy to turn from the methods and terminology successfully used for several previous centuries. It was inevitable that these philosophies, which affected the way music was analyzed and interpreted, would affect as well the way teachers of singing changed their approach to pedagogy.

Positivism in scholarship was originally a nineteenth century movement, later applied to music and even called music hermeneutics after the biblical discipline of interpretation of Scriptures. Introduced by Auguste Comte in the early part of that century, the philosophy of positivism based its premises solely on observable, scientific facts and their relations to each other. It rejected speculation about or search for ultimate origins.[1] Applied to music study, positivistic philosophy then rejected aesthetic considerations because of their intangible nature and variable responses. Beginning with music theory, musicology and history, and finally performance pedagogies, positivism made its mark on the way musicians interpreted their art.

Theorists began to become preoccupied with musical form in the early 1800's, notable in J.N. Forkel's biography of *J.S.Bach and His Works* (1802), in which he catalogued the evolution of Bach's compositional forms. Using his own coined term "musical logic," Forkel presented Bach's music as an autonomous structure of sound, rather than an adjunct to dance or liturgy.[2] Musical logic was later understood in the nineteenth century to mean both harmonic and motivic logic, as a counterpart to linguistic considerations such as emotionally charged speech put to melody, an ideal firmly rooted in the Baroque era. Hence, Forkel separated from their speech roots the melodic and harmonic bases of Bach's works.

Works of music then began to be seen simply as parts contributing to a whole; composers and their works were grouped by compositional style and period; the term "organicism" was borrowed from science by music theorists. Theory merged with analysis' technical operations, descriptions, reductions, and demonstrations to show how they work. (This is how theory and analysis became a nearly single entity in conservatories' and universities' curricula.) Theorists began developing their own musical language as they dissected and described these

structures. Since it was a language not used by all musical performers or critics, it remained cultivated only in academia.

Positivism affected musicology profoundly in the nineteenth century. It provided this discipline a structure for analysis and presentation, making it into a strong and important entity in the process known as music history. It helped firmly establish the canon of *acceptable* works known by all musicians. Works which could be dissected and analyzed were more generally accepted, while those works less inclined to be understood from a positivistic or organicistic view, were tacitly set aside as less important or even inferior. This has since been corrected to some extent with a more inclusive attitude.

The aesthetic of musical art was not recognized from a positivistic standpoint. Theorists and analysts adapted their methods to their term "absolute music," which was largely instrumental, and lent itself better to scrutiny and codification. (This was one reason solo vocal music was considered inferior by some nineteenth century theorists: it defied easy codification due to the subjective, emotional nature of text.) The "Grundgestalt" or general idea of a piece was set up for development in a general form-analysis, i.e., exposition/ development/ recapitulation. Heinrich Schenker championed this formal idea and

developed his own language and personal brand of reduction analysis, which musicians study today. This non-verbal style has been kept alive in the greenhouse of the academy, where it continues to evolve.

While musicologists used the same traditional canon as analysts and theorists, their focus was different. Musicologists strove to view music within its full historical context. They considered historical performance and its complexities, intellectual and psychological forces, references by composers of one another's works and so on.

The differences in focus produced a dichotomy: on the one hand, musicologists argued that theorists could only see a work's inner cohesiveness, while theorists and analysts said that musicologists viewed a work too superficially. Musicologists indeed fell prey to a positivistic attitude toward music by compiling mounds of data for codification all around the music, sidestepping, in effect, the music itself. Musicologists, in short, were superficial; analysts, myopic.[3]

What became of good music criticism as a viable influence in the process of music history was quite obvious. The ascendancy of positivism set aside any value judgment, subjective opinion or

evaluation, and attempted to replace it with "authenticity."[4] This disguise did not work, and today the listeners' value judgment is known as the Art of Reception. The "historical" or "authentic" performance has less significant bearing on today's reception.

Positivism and Organicism profoundly permeated vocal pedagogy. Manuel Garcia's treatises on singing reflect how these philosophies affected the way pedagogues started to look at the vocal mechanism, particularly vocal registers. Cornelius Reid believes that pedagogies developed subsequent to the invention of the laryngoscope used more external methods and structures of teaching.

Early voice scientists, beginning with Emma Seiler, used labels such as "high thin, thin, high thick, low thick," to describe vocal ligament conditions when observing their movement with the laryngoscope. There is nothing intrinsically wrong with this observation when the intent is to learn about the function of the organ. Upon this observation, however, vocal pedagogues have built a concept of vocal registration that cannot be acted upon by the singer, since these descriptions are meaningless as mental prompts toward free vocalism. Reid explains that the modern pedagogy based on Positivism has yielded a more academic, not a pragmatic or practical approach,

replete with its own inner circle language. This is somewhat the same dichotomy suffered by other musical disciplines, as described earlier, although perhaps not as blatant.

At this point, a look at Organicism and its singular effect on pedagogy is warranted. Organicism is a philosophy that codifies a unit or object, and organizes it into a position within a larger, autonomous system. At first glance, this seems not only acceptable but favorable for vocalism. However, the main problem is one of confinement by codifying: the organicist's pedagogy would indicate the ideal, would codify and structure the voice's growth according to that ideal, and would only use exercises designed with a specific outcome in mind. From this perspective, the voice will only be as good as the method which exercises it. There is no way to find out by this philosophical view what the limitations of the individual voice are.

Cornelius Reid believes the reason pedagogues lost the art of teaching Bel Canto is that they wanted to teach voice by mechanically controlling the external function of singing. This can be attributed to the effects of positivist and organicist thought on voice teachers from Garcia onward.

NOTES TO CHAPTER THREE

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2 Dahlhaus, Carl. *Foundations of Music History*. Berkley: University of California Press,. , 1982, 1983 (Translated).

3 Kerman, Joseph. *Contemplating Music: Challenges to Musicology*, 1985.

4 Kerman, Joseph, "How We Got Into Analysis and How To Get Out," *Musicology Journal* 313, Essay #4. 1989.

CHAPTER FOUR

CONTRIBUTIONS OF MEDICAL RESEARCH AND THEIR AFFIRMATION OF BEL CANTO REGISTRATION THEORY

Vocal pedagogy has evolved towards a more scientific approach, particularly over the last 150 years, to reflect the growing amount of data on vocal function. An "international" technique, modeled after a more accurate scientific perspective, has grown out of this use of data on vocal function. Vocalises for correcting vocal faults reflect the clinical research of speech pathologists, linguisticians, phonaticians and others.

This chapter reviews some of the more important medical contributions that helped forge today's voice pedagogy. The research also underscores and supports many empirical methods taught by the old masters of Bel Canto. This is valuable for its ability to unite two seemingly different approaches of teaching voice. It remains for pedagogues to settle on the vocabulary of vocal function.

It should be mentioned that Cornelius Reid has stayed abreast of research related to voice function and voice culture. He fluently uses

medical terminology found in voice physiology textbooks when referring to the organic function of the voice, but can just as easily speak the vernacular when a student asks a question about how his voice works. Most of Reid's books are written using traditional vocal language. In this manner, Reid hopes to connect the new and more complicated terminology with the traditional ways of communicating vocal concepts. (Note however, that in lessons, Mr. Reid hardly speaks a word of explanation of any kind, unless asked.)

Reid is not surprised that most of the important clinical studies done on voice function affirm what the old masters of Bel Canto taught regarding voice function. Because he feels certain that the old teachers had found the way to retain natural and spontaneous singing ability for a lifetime, it only remained for clinical research to verify this and explain how the voice functions and coordinates at its most basic, organic level.

From study of cadavers by Emile Berard in 1744, and the invention of the laryngoscope in 1854 by Manuel Garcia the Younger, the quest for a scientific approach to vocal pedagogy began. Organicism and Positivism, borrowed from philosophy and science, had gained prevalence in all disciplines, including vocal pedagogy: only those

ideas observable by *external means* were considered real, provable, acceptable. Only observations able to be codified or labeled were accepted into the body of clinical knowledge. Thus, the teaching of singing based on this new knowledge added a new dynamic to the aural art. For many years Garcia tried to develop a pedagogy using entirely new medical findings, recorded in his *Traité Complet de l'Art du Chant, Part I* and *Part II* of 1841 and 1847, respectively. When defining vocal registers, Garcia conceded to using the terminology of his colleagues, (using three words*: chest, middle, head*) adding that they were "incorrect, but accepted." The disclaimer was due to having seen the vocal folds thin out and thicken. Having dissected excised larynxes, he identified the muscle groups that corresponded to a two-register theory. He knew from experience and research that two muscular groups operated in antagonism to one another during the singing process.

An aesthetic ideal or standard was needed to establish a base line for study of the voice by use of machinery. One of Garcia's most famous pupils, Mathilde Marchesi, was known as a fine singer and pedagogue in her own right. Because she is known to have taught a number of singers who became famous in what is now referred to as The Golden Era of Singing, a "Marchesi model"[1] was established by researchers in

the mid 1950's, in order to establish a standard of generally accepted aesthetic of vocal tone quality. The formants of tone were recorded on electronic equipment available then. They were used for comparative studies of other singing styles, and judged for their health and quality.

Nationalistic pedagogical styles have been compared against the present knowledge of muscle function in the vocal mechanism. In light of this research, some methods have been thankfully discarded, while others have been affirmed. One of the most well known and read books on this topic is Richard Miller's *English, French, German and Italian Techniques of Singing: A Study in National Tonal Preferences and How They Relate to Functional Efficiency* (1977).

As X-ray machinery was developed, still photos of sub-glottal and muscular functions from many angles taught the doctor and scientist much about glottal function. X-ray tomograms, which allowed observation by eliminating overlays of tissue, revealed isolated muscle groups working in *coordination* with one another, thus substantiating the two-register theory of the Bel Canto era.

French scientist Lucie Manèn used cinephotography and cine X-ray to view motion of the tissues in the vocal mechanism in order to further

understand respiration and airflow. This study titled, *The Art of Singing: A Manual of Bel Canto* (1974), further confirmed that two mechanisms or muscle groups were used in vocal production.

In 1961, the results of research on an important aerodynamic discovery were made with high-speed cinematography. Robert Taylor, in the study, "Acoustics for the Singer," explained the lifting force in aviation, called the 'Bernoulli Effect' as it applies to singing. This lifting force creates suction in atomizers as well, and is a major factor in the vibratory effects in wind instruments, including the voice. William Vennard further expounds on the effect in his publication, "The Bernoulli Effect in Singing:"

> Breath begins to flow. When vocal muscles are nearly enough together, the Bernoulli Effect sucks the vocal folds into vibration before the cartilages have fully closed. After cartilages are approximated, the sequence of aerodynamics is as follows: first, the flow of breath sucks the glottis shut; this stops flow momentarily, whereupon breath pressure blows glottis open again. Airflow recommences and the cycle repeats.[2]

The difference between an earlier belief and this discovery is one of muscle tension resisting breath pressure. It had previously been thought that the folds hold tight until breath pressure from underneath forced the folds open. There was no way to know about the vacuum action. The voice is now considered a myoelastic and aerodynamic function operating autonomically according to natural laws. The teaching technique based on this fact should emphasize breath energy and not muscularity. Further evidence of the Bernoulli Effect is found in the lower air pressure found in the subsequent space of the Pillars of the Fauces and soft palate, where the "tone beam" is drawn up and through the mouth.[3] One of the old masters, Mancini, wrote about this phenomenon when he described the "the drawing out of the sound,"[4] but without knowing what caused it.

In a study entitled "Acoustics for the Singer" (1958), by Robert M.Taylor, cinematography on subglottal pressure was applied to the vibration of vocal folds. This showed function or dysfunction when vibration occurs *without* airflow. This experiment proved that air pressure affects only intensity, not pitch, of the voice. From these studies, parameters were drawn describing the "well-limited"[5] voice, that is, how much air pressure should be used to create tone in certain musical circumstances. The study also helped identify, conversely, the

fact that the crico-thyroid muscles alone control pitch variation. They are only adversely affected by variable air pressure.

By using a stroboscope, Henry J. Rubin and Charles C. Hirt recorded sub-glottic pressure and vibrations on the vocal folds recorded on film with an interrupted light pattern to separate their periodic actions. They recorded their findings in an article entitled, "The Falsetto: A High Speed Cinematographic Study" (1970).

Numerous findings are recorded in *An Interdisciplinary Index of Studies in Physics, Medicine and Music Related to the Human Voice,* edited by Wallace Heaton (1968), which has recorded experiments performed since the early 60's, one of which showed that the larynx has a compensatory mechanism which maintains fundamental frequency at varying sub-glottal pressures. Tone quality is compromised to maintain that frequency when sub-glottal pressure drops or increases too much. This experiment underscored the need for the singer to maintain consistent breath flow if tone quality was to be maintained.

Robert T.Sataloff's career studies have dealt with related vocal issues since the 1970's, recorded in over 150 articles and ten books,

including *Professional Voice: The Science and Art of Clinical Care.* With the onset of electronic technology in the 1970's, new instruments for experimentation were developed. The analog simulator was designed to mimic the waveforms of the human voice. Using an unidentified source model, formants registering different tonal intensities on a single pitch led voice researchers to design an ideal for *each* singer, not based upon previous models. However, these ideals assume that the model has a fine, complete and unflawed voice to begin with. It compares and judges the experiment subject with its ideal, which results in imitative, not unique, qualities. Still, it finds usefulness in allowing the singer subject to identify basic qualities of tone for comparative learning purposes.

Sonographs measure tone quality on live models. Each note sung consists of a fundamental frequency and a row of harmonics, occuring in a regular pattern. Since the harmonics stand in a simple mathematical relationship to the fundamental frequency, intensity and quality adjustments to the voice can be made to perfect the tone's balance. By modifying the shape of the vowel, the harmonics come into mathematical balance and the vowel is heard as "pure." (Reid insists that the old masters never asked the pupil to modify the vowel shape. They balanced the registers at each pitch until they heard the

desired purity of vowel, identifiable by the "ring" in the voice, which we now know are formants or overtones in balance with each other.)

Graphed frequencies of emotive sounds were recorded by Ivan Fonagy in his book, *Emotions, Voice and Music* (1977). Using unrelated languages in many examples, he isolated the emotion from the word. The purpose of the experiment was to identify and mimic the sounds in affective, or emotionally colored, singing for more accurate communication. Examples interpreted were "coquettish," "happy," "sad," "longing," "angry." Other sounds were noted by quick pitch movements, simultaneous amplitude drop and sudden register switches. Interestingly enough, this skill was one of the most important for the Bel Canto singer of the sixteenth and seventeenth centuries.[6] Reid has stated that affectivity from vowel coloration was, until recently, considered "lost."

Gerald Bennett wrote in his book, *Singing Synthesis in Electronic Music,* about making "clones" of the human voice with synthesizers in the early 1980's. Then, comparing these examples to the human voice, he asked, "What makes the human voice different from the sample?" He discovered an inner structure of a voice, something which colors a sound aesthetically and does not sound "dry." This

linkage of sound to aesthetics led to further study in physiology, physics and psychology, uniting the emotional quality of the voice to the purely functional vocal organ. With this research, voice scientists may have matched the wisdom of the old masters, who at all times considered the entire instrument, with its physiological and psychological idiosyncrasies.

Research in voice pedagogy has matured towards a more scientific approach. Areas of medical research related to voice pedagogy range from treatments of laryngitis and vocal nodules to the effects of hormones on the voice, They may also include psychology, as in treatment of stress-related malfunctions, linguistic dysfunction, and psychiatric factors.

Reid is grateful for technological advancements which have substantiated healthy, physiological function of the voice. His only contention with 150 years of research is that it may not have yielded a better vocal pedagogy.

NOTES TO CHAPTER FOUR

1 Large, John and Murray, Thomas, editors, "Studies of the Marchesi Model for Female Registration", *Contributions of Voice Research To Singing.* Houston: College-Hill Press, 1980. 185-201.

2 Taylor Robert M., "Acoustics for the Singer." *Emporia State Research Studies*, Kansas State Teachers College, Vol. 6, No. 4, June 1958.

3 Vennard William, "The Bernoulli Effect in Singing," *Contributions of Voice Research to Singing.* John Large, Ph.D., editor. Houston: College-Hill Press, 1980. Pp. 48-57.

4 Brown, William Earl. *Vocal Wisdom, the Maxims of Giovanni Battista Lamperti.* New York: Taplinger Publishing Co., Inc. 1931.

5 ibid., No.3.

6 ibid., No. 4. Page 26.

CHAPTER FIVE

REID'S OBSERVATIONS OF MODERN PEDAGOGICAL CONCEPTS OF REGISTRATION

Contributions from voice science have clarified and explained much of the physiological function of singing. Some modern pedagogues, however, use the body of new research on voice physiology as proof that the construct of teaching voice derived from it is superior to the empirical methods perfected by the old masters of Bel Canto. Attention has focused on the muscular contractions involved in stretching the vocal folds, the effect of exhaling upon the vocal fold action, the necessity of raising the soft palate for all higher tones, and toward accounting for the way in which the adjustable cavities of the throat take position when used as selective resonators for a vowel.

This chapter examines Cornelius Reid's objections to such a claim. He demonstrates throughout his works the advantages of the traditional approach to teaching voice over all later systems. His is a holistic pedagogy based upon Gestalt philosophy, a doctrine which states that the whole is greater than the sum of its parts, but is also possibly a unique and separate entity unifying seemingly unrelated events or functions. Reid feels Gestalt philosophy not only lends itself well to the

art of teaching, but is more closely related to the manner in which the old masters of Bel Canto taught.

Reid contends that techniques used by some pedagogues today are nothing more than superficial devices, and address neither organic function nor cause of vocal flaws.

Reid takes exception to the three-or-more register theory for several reasons. First, all old masters spoke of only two "voices," which needed to be strengthened, then coordinated into a seamless quality. Once the laryngoscope was invented and scientists began to see the *thick,* the *thin*, et.al., pedagogues in the early twentieth century labeled each of these positions as a register without considering whether or not this information would assist the singer toward better singing. More recent medical studies have again concluded that only two main muscle groups involve themselves in register action, and additional vocal qualities are extensions of the original two. Reid maintains today, as he has since his first book was published in 1950, that "the fundamental principle of a two-register theory, along with pure vowel quality, must be restored to contemporary singing." He believes that modern pedagogues have discarded the wealth of knowledge gathered by the early masters. The new knowledge has

succeeded only in clouding the clear goal of strengthening and coordinating the vocal organ.

A three-register theory identifies the middle range as "mixed." Reid states that this word implies that the tone quality is more consciously controlled, so several problems emerge. The tone in this area becomes effortful because the singer believes he must control the balance of sound. This theory hurts voices because it causes conflicting muscular actions which only raise tensions in the throat. The result is loud and mechanistic singing, a sameness to the tone, instead of the infinite flexibility and coloration possibilities, sensitive to emotional and rhythmic response.

Did the old masters teach a specific skill called breath support? Many Bel Cantists in summary, including the elder Garcia, claim, "He who knows how to breathe, knows how to sing." Vincenzo Cirillo, surprised by the question from a student on how to breathe, answered, "My God, if God has not taught you how to breathe, it is time you were buried." "Take a breath at the beginning and end of each phrase,"[1] declared Pietro Francesco Tosi. It was Garcia's invention of the laryngoscope which instigated positivistic investigation of breath and its effect on the vocal apparatus. From Reid's holistic standpoint,

viewing the vocal folds to study their behavior and acoustic properties led to the beginning of the disintegration of Bel Canto ideals. Seeing how breathing was enacted and managed resulted in more confusion, not less, because pedagogues of the late nineteenth and early twentieth centuries didn't know how to interpret clinical researchers' observations. Some teachers advised allowing the breath to lift up the rib cage; some said to distend the abdominals; others even instructed deliberately holding the abdominals in and up. Ironically, in Manuel Garcia II's last writing in *The London Herald* (1898), he spoke of breathing again, stating, "Do not complicate it with theories, but take an inspiration and notice Nature's laws."

Even though modern technology has clarified the nature of breathing, pedagogues still make breath management the basis for development of vocal skill. In fact, science has demonstrated that "function regulates breath expenditure, not vice versa."[2] Cornelius Reid postulates that there are singers who breathe well but who do not sing well; there are some whose breathing technique is questionable, but who sing beautifully.

In Essay 8 of his *Essays on the Nature of Singing,* Reid elaborates on the natural function of respiration and its application to phonation. He

demonstrates how the vocal mechanism is governed by the same physical laws that regulate the transformation of energy from one form to another.

Since the respiratory action is almost completely involuntary, the real issue lies with the teacher's ability to guide without interfering with the natural process of physics. Overt physical activity in order to make one breathe uses more oxygen; a well-coordinated voice is breath-efficient. No additional muscular tension is present to inhibit the natural response to respiration. The result of encouraging natural means for breath and phonation is described in *The Porpora Tradition*, quoting a student, "I do not sing. My voice sings me."

Modifying vowel shapes by overshaping the throat, tongue or lips, strengthening muscles used in consonant-forming, while perhaps interesting, are largely a waste of time since they entirely ignore the essential, autonomic function of those muscle groups. Modifying vowel shapes as pitch and intensity rise is a poor substitute for balancing the chest and head registers, which make the spatial and resonance adjustments themselves. When tension is absent from the singing mechanism, nothing hinders the lips and tongue from easily articulating the language. The coordination of the vocal organ at its

root function sets the rest of the mechanism free to act as Nature intended.

Intentionally holding the larynx down is not only unnecessary, but potentially harmful. Reid quotes the mature Garcia from the London *Musical Herald* in August, 1890, when he states, "'Notice Nature's laws and the larynx, palate and the rest will take care of themselves.' This is sound and constructive advice."

Modern pedagogues will argue that if the voice functions by itself, what is the need for instruction? E. Herbert Caesari was also misunderstood when he wrote in his book, *Some Things I Teach* (1969), that the singing voice responds naturally to stimulus and must not be manipulated. At a time when medical discoveries directed the course of pedagogy, Caesari's voice was easily drowned.

Perhaps the most aggravating and pervasive flaw in modern pedagogical thought is the insistence that the singer can have volitional control over the direction his vocal sound travels. Sound travels outward, spherically, moving best where there is no resistance. The prepared vocal tract provides the most efficient directional device for proper resonance management. Reid feels that the singer can only

introduce inhibiting tensions when attempting to "place" the sound "forward", "into the facial mask", "up, over and out." The later, more devastating effects of this incorrect idea manifest themselves in the form of a tense tongue that resists the sound's full outpouring. The quality of tone is bright, then brassy, followed by shrill and sharp intonation. The top range becomes cut off from free phonation. The throat, in reaction to built-up super-glottal pressure, tightens to brace itself. These problems notwithstanding, the singer grows comfortable with the mistaken thought of controlling the sound, associates this tension with control, and will no longer risk change.

Reid says, far from assisting enunciation, "'forward placement' destroys diction because it jams vowels towards the front of the mouth, failing to resonate them in the oro-pharynx."

No singer or teacher wants to sing or hear tone that is dull, dark, or unfocused. The manner in which the *chiaroscura* (Italian term: the "light-bright/dark-rich" qualities of tone) is achieved, however, makes the difference between a voice that grows fuller and freer with use and age, and one that gradually tightens, diminishes and weakens.

As the voice matures, the sensation of masque tone will change as well. If one is trained to trust only the sensation of placing or putting the tone towards some point, the singer will memorize that feeling, and will, in the future, adjust the mechanism to only allow that. Hence, the growing voice remains trapped in the confinement of a smaller vocal concept.

Vocal teachers today may read treatises by the old masters on vocal pedagogy, and, looking at some of the terminology used, may misconstrue the original meaning because they base it upon their present understanding of terms. Lamperti's description of tonal placement is one such example. Lamperti may have been referring to an older Italian concept he called *imposto,* a kind of prephonatory, or preparatory tuning in the brain and throat which resulted in a reflexive action. Reid postulates that Garcia's *coup de glotte* had to have meant a reflexive preparation moment as the folds approximated, and not a hard, slapping motion.

Most university students educated for teaching, study the learning styles developed by child psychologists: *visual, aural, kinesthetic,* and *analytical* modes. When it is said that a student is a *visual* learner, it means he/she learns best by reading or seeing; the student can have

what is called a "photographic" memory, and later read from memory what was seen on the page. Other students visualize an idea into picture form in the "mind's eye," describing a concept or abstract by that picture.

In the last 100 years, *visual* mode has become more widespread in voice teaching because it attempts to identify intangible concepts by abstract, a parallel to the pedagogical concepts developed by observation. William D. Leyerle's book, *Vocal Development Through Organic Imagery (1986),* goes to great length to illustrate many of his teaching ideas by using imagery. He supports his ideas by tracing them to historic writings, but they are mostly small references used to reinforce his own idea, and are not used as the primary source or explanation of a vocal concept.

Since complex organic movements do not lend themselves to verbalization, the use of imagery is an attempt to prompt the brain to respond naturally. However, attempting to use any form of description opens the veritable Pandora's Box: it assumes the image is an accurate stimulus, and that the student learns best in that manner. In any case, the student still processes the information consciously in an attempt to manipulate the voice to the desired preconceived direction.

Imagery has developed many absurdities in its approach to teaching vocal concepts. These absurdities substantiate Reid's contention that Bel Canto ideals have disintegrated. Leyerle illustrates what he labels "Nefertiti's Hat," (14^{th} C. Egyptian queen depicted in many illustrations of Egyptian royalty) to describe the place the soprano senses the highest notes in her range, reaching to a point above and back of the head. Another teacher fond of imagery said, "You must suspend an ostrich egg in your throat and don't let it break!" Yet another, "When you breathe, take in the perfume." "When you sing, let it float like a ping-pong ball over a fountain." At one contest, an adjudicator advised the student after singing, "Think like a tree." These images can be interpreted numerous ways, not all of them lending themselves to the better understanding of vocal function.

Reid rejects all imagery. He refers to the teaching practices of the Bel Canto style, distinctly different from any attempt to gain a direct management over the muscles involved in phonation.

Besides rejecting the aforementioned concepts, Reid also concludes that pedagogy based on voice science is wrong on several other points. Well-meaning pedagogues have used organicism as a basis to

organize a structure of teaching ostensibly designed to streamline the process of singing. In doing so, they have confined the voice to the parameters of that structure. The voice will therefore only be as good as the structure.

By dissecting the vocal process into several manipulative actions, modern pedagogues have diluted the Bel Canto ideal. They have failed to understand the importance of using register action as the start of functional freedom after which all the remaining issues are solved.

Reid finds a strong advocate in holistic, organic vocal functioning in the noted neurologist, Dr. Barry Wyke. Reid quotes Wyke's article published in *Transcripts of the Eighth Symposium, Care of the Professional Voice,* The Voice Foundation, 1979:

> This approach is further dictated by the widely disparate professional interests of the participants in this assembly, to whom I wish to emphasize the fundamentally holistic nature of the holistic processes involved in the various behavioral aspects of phonation. Although, for investigative and analytical purposes, one may have to dissect out individual components from the totality of phonatory

> behavior, in the end they have to be integrated together to provide a meaningful view of this activity: for while in everyday life people know what they are speaking (or singing) and of what they speak (or sing), they know not how they do it- all they know is the nature of the audible end-product that they are generating.

Phonation is a complex component of the vocal fold mechanism. How one teaches another to use it is of critical importance. Again, Reid calls upon Wyke to speak from a neurological standpoint:

> ...when singing teachers or teachers of dramatic actors are teaching their pupils to do what they do, they are not teaching them to control their respiratory muscles, they are not teaching them to control the adductor muscles of their vocal folds, they are not teaching them to adjust the position of the tongue in the mouth or the palate or the pharynx - instead, they are teaching (or rather, they should be teaching) their pupil's brain to integrate all of this kaleidoscopic array of neuromuscular control systems into an efficiently functioning form of precisely coordinated behavior, out of which will emerge (hopefully) an intellectually meaningful and satisfying product.

One must conclude, therefore, that Wyke (as does Reid) rejects all types of mechanistic methods called "support," "breath control," "tongue positioning," "lowering larynx," "raising soft palate," "placement," as useful control systems. To do so disrupts the proper functioning of the entire mechanism.

Giovanni Battista Lamperti said it best and in easier terms:

> There is no 'attack,' no 'mouth position,' no 'fixed chest,' no 'tongue control,' no relaxing this or that muscle, no stiffening of any part of the body; in fact, nothing that would not spring from instinctual utterance. 3

This insight may consternate the twentieth century pedagogue, because it goes against the very nature of positivistic thinking found in modern teaching. It means the teacher must know how to cause the student to develop greater autonomic coordination and reflexive speed among the muscle systems in the whole of the mechanism from a stimulus prompting an involuntary response. In other words, Reid states that all vocal developmental procedure is wrapped up in

"prephonatory tuning" of the vocal registers, not in the external exercises of only parts of the mechanism.

How are these systems properly stimulated? How did the old masters of Bel Canto achieve such success? Obviously, they depended as well upon the reflexogenic systems referred to by Wyke, which were found to "contain the whole secret of fine singing."[4]

Cornelius Reid emphasizes that because the voice is an organic system, it must be treated as such if one expects it to respond normally. To expect the voice to grow, one must provide the correct environment which serves its growth needs. To this end, arrangements of pitch, vowel and intensity patterns prompt the registers to respond accordingly. This is the only way vocal faults can be corrected toward efficiency and artistry. The teacher listens and observes as a natural scientist for cause-and-effect relationships and the spontaneous interaction among the given stimuli. The logical outcome, therefore, should be natural and not mechanistic.

NOTES TO CHAPTER FIVE

1 Reid, Cornelius. *Essays on the Nature of Singing.* New York: Joseph Patelson, Ltd. 1975. Pg. 159.

2 Ibid., pg.160.

3 Lamperti, Giovanni Battista. *Vocal Wisdom. Maxims of Giovanni Battista Lamperti.* Transcribed by William Earl Brown. New York: Taplinger Publishing Co. 1931.Pg. 139.

4 Mackenzie, Sir Morrell. *The Hygiene of the Vocal Organs.* London, 1888, and Belmar, N.J.: E.S. Werner & Co. 1928. Pg. 65.

CHAPTER SIX

FUNCTIONAL LISTENING FOR REGISTRATION EVENTS

Cornelius Reid has brought the abstract idea called "functional listening" into focus for use in the art of teaching. Treatises in centuries past have made mention of the need for both teacher and pupil to possess a keen ear capable of discerning exact intonation, timbre and tone quality. They also speak of hearing the differences in beauty of tone. It is safe to say that the ability to discern sound quality was (and is) implicit.

Reid is clear about what he means by functional listening. He first defines the concept in *Voice: Psyche and Soma* (1975), in a segment entitled "Functional Listening:"

> Learning to hear functionally means that one judges and evaluates tone qualities for their intrinsic health, and as a reflection of a coordinative process, rather than for any aesthetic value.1

In a later article discussing eighteenth century concepts the definition is even further detailed:

> Functional listening is an ability to identify register mechanics with the operative principle of making distinction between the tonal product, its name, and the probable mechanical processes that result in the appearance of technical development. It is superior to aesthetic listening because it minimizes individual tastes and preferences and seeks to coordinate what is heard with the physiological events taking place at the sound source.[2]

It naturally follows that listening functionally requires experimentation to discover and compare the result of one mechanical process with another, to choose the better, and proceed. Knowing how to advance from one stage of technical development to another is the skill which identifies the functional listener as teacher. Willingness to experiment and take risk toward new experiences is at the heart of functional listening for the singer. The teacher must be prepared to deal with the psychological resistance to risk in order to be allowed to hear the voice in its truly natural state. For singers, this may be a completely foreign concept as they take lessons to learn how to control their voices, i.e., locally manipulate their voices.

Cornelius Reid challenges his students to trust the vocal instrument and what emerges from it without modifying its natural condition. Both teacher and singer experiment with ways to find functional freedom. The object of his instruction is to guide the voice to its healthiest, most flexible and beautiful state. Only then, Reid states, will the singer have the privilege of enjoying the exhilaration and pleasure of the art of song.

On the surface, it appears this approach does not foster artistry, for in fact, aesthetics and sensation in singing are not emphasized. Why then, did so many artists in the Golden Era of Singing possess such unique qualities of tone, presence and artistic expression, when according to Lamperti, they were taught reflexive response with almost no verbal stimuli? The answer lies in how precisely the vocal concepts were presented to the student, and how the student responded autonomically or reflexively, not consciously, as if to take control over the voice's function.

The functional listener, whether teacher or singer, trusts the construction of the mechanism to respond as prompted. Its physical properties self-correct toward efficiency when guided, and in quite a

predictable manner. The difference is, the consciousness of the singer is not distracted with self-directing instruction, which can only add extrinsic laryngeal tensions to the singing. Since the vocal mechanism is ultimately prompted into action involuntarily, the mind is free to concentrate on emotion of text, which rides upon the autonomically-induced vehicle we call voice, coloring and electrifying it with energy as inspired by word meaning.

The teacher who doesn't listen properly fails to coordinate the registers of the voice; he/she has not learned to discern healthy from unhealthy tone, nor the more subtle differences between chest voice and head (falsetto) voice qualities. Reid states that the omission of strengthening both the chest voice and falsetto separately, before coordinating them, is the reason some singers fail. The inability to sing smoothly through the registers is perhaps the main departure from Bel Canto.

When the registers are joined before each register has been fully developed separately, the functional listener can hear a host of problems. First, the tone in the "mixed" area (to use the modern term), will have uneven dynamic, be thin or overly thick in quality and

will eventually become wobbly. A wobbly tone (different from vibrato), as defined by Reid, is a "slow, wide pitch change which is caused by 'driving' and forcing the voice. Basses and contraltos frequently bring to their singing those qualities of tone production causing a wobble, heard as the thick-textured, clumsy, heavy sound, in every respect forced, unnatural, and 'put on.'"[3] The wobbly characteristic is due to the registers being pushed beyond their natural boundaries.

The range of the voice will be curtailed because of this instability as well. To attempt to correct this, some teachers will errantly press for more energy or support from the student, which only activates more chest voice quality into the mix, heard as heavier, thicker sound in the lower, middle range, with less "sweet" clarity; intonation tends to be slightly flat, due to fewer overtones; head voice is less strong and vibrato weakens and becomes irregular. It becomes amply evident to the functional listener that imbalanced registers are the cause of the problem and must be addressed accordingly. Any other so-called remedy only acts as a "band-aid," and the initial problem continues to fester.

In sopranos this is especially evident. They typically develop big, loud, somewhat pleasing upper middle and head tones of C#5 to C#6 ; the middle, from E4 to C5, is less loud and slightly less focused, as heard in thicker diction. Chest voice is weak and disappears by B4 or C4; too much intensity causes it to become too present in the middle range. By contrast, chest voice is still weak in what should be its normal range of E-flat3 to D4. Eventually, the higher tones lose "completeness;" the round and warm quality is replaced by a shrill and slightly sharp intonation. Sometimes a brittle stridency is heard in the tone as well.

In tenors, the passaggio between E-flat4 and F#4 becomes harder and harder to negotiate. If chest voice is pushed too high, the obvious problem is that the tenor cannot transit easily into a headier tone without breaking into a falsetto-only sound. He cannot hold onto the blended qualities of each from G5 upward. Were the voice better coordinated at the passaggio, the tenor could begin sooner to apply head voice to align the throat to accommodate the higher oncoming pitches and intensities. Chest voice is also typically weak where it ought to be resonant and focused, from as low as A-flat2 to D4.

Contraltos and basses are not exempt either: woofy tones manifest lack of focus and have no brilliance. These voices seem less capable of flexibility perhaps because it is assumed that theirs are tones of dark warmth only, or mostly chest voice sounds.

Aesthetic listening relies too heavily on personal taste, involving musicality, or a preference of certain types of tone qualities. Moreover, not all tone qualities acknowledged to be aesthetically acceptable are functionally healthy. If the teacher has not experimented with improving the tone quality from one state of health to another, there is no way to know if it can be improved. The challenge confronting the teacher is in recognizing the difference.

When any mechanism is efficient, friction is minimal. In vocal terms this condition is recognized as a growing tonal range, accurate intonation, increased flexibility, economy of breath, pure vowel sounds (defined as recognizable to the language being sung, and with a characteristic ring of overtones), freedom from facial distortions, and a relative absence of fatigue. At the highest point of development, there is an ability to execute the *messa di voce* on all pitches throughout the tonal range, particularly in the area of the register break. This

technical feat has for centuries been recognized as the supreme accomplishment of the singer's art.

The trained listening necessary to develop and integrate the registers was a skill developed through centuries of empirical observation when the ear was tuned to recognize a host of register balances. Reid is convinced that teachers today rely too heavily on systems and structures and not enough on obtaining a discriminating ear. It is an old way of listening that Reid says, "should be made the new way."

NOTES TO CHAPTER SIX

1 Reid, Cornelius. Voice: *Psyche and Soma.* 1975. New York: Joseph Patelson, Ltd. Pg. 16.

2 Reid, Cornelius. "Eighteenth-Century Registrational Concepts," *The Journal of Singing*, Volume 56, No. 4. Pg. 37.

3 Reid, Cornelius. *Bel Canto: Principles and Practices.* 1950. New York: Joseph Patelson Music House. Pg. 142.

4 Ibid., No. 2., Page 37.

CHAPTER SEVEN

CORNELIUS REID'S STUDIO TECHNIQUES

In 62 years of teaching, Cornelius Reid has accumulated a wealth of wisdom about the singing voice, especially techniques that have developed the most successful singers. Mr. Reid does not assume to know the answers to all vocal issues he addresses. By remaining inquisitive and observing as a natural scientist, he continues to learn. His search for the Bel Canto ideal in every voice keeps him fine-tuning his teaching technique. It also allows him freedom and keeps him alert to tailor each lesson to the student.

Mr. Reid feels responsible to learn the most current knowledge about the singing voice: he reads every available vocal pedagogy book, journal and study by the most prestigious medical researchers and teachers. He compares their insight with his own to challenge himself to excellence.

For one week this writer sat daily in the studio behind Mr. Reid, observing lessons. Most students seen that week had come from Europe to have thirty-minute daily lessons in technique. They were

also expected to arrive early and stay later than their lesson times in order to observe others.

Several of the same students also sang in a master class during evening hours. By observing the different studio manner Mr. Reid used in each setting, the writer was able to understand the vocal needs of each student, to assess the improvements made over the course of the week, and judge the success of the concepts of Bel Canto that Reid espouses.

Students who had never studied with Mr. Reid were disarmed by not being given many verbal instructions. They had been accustomed to having more structured direction and asked Mr. Reid several times if what they had sung was right. While Reid had a definite plan for the lesson, he determined the direction of that plan by the responses he got from the voice; therefore, he told the students, "There is no 'right,' just better or worse. Let's just see how the voice wants to respond to this environment." The new students needed to overcome the fear of failure or displeasing the teacher. It took several minutes of warming up the voice with no correction for the student to realize that it was the voice that would tell both student and teacher the direction it

needed to grow. Mr. Reid was listening very carefully for the function of the registers, to find the healthiest direction to proceed.

Reid started by asking each student to sing his own interpretation of "falsetto," a flutey, sometimes hooty and slightly breathy tone quality. He was careful to make sure all chest sound was absent when singing this "falsetto." Reid did this so that the student could experience what exactly the isolated "falsetto" sounded and felt like. The muscles also had opportunity to strengthen themselves with no interfering tension. Beginning at B_5 for women and tenors, or B_4 for baritones and basses, the 'U' vowel on one tone at a time was sung, usually *p* (softly). This was repeated down the scale one octave.

He then directed the student to make a strictly chest voice sound, without regard to its beauty. Asking the student for the vowel 'Ah' on B_4, usually, the student sang down a five-note diatonic scale (usually three notes down for women), *mezzo-forte* (*mf)* intensity. Reid uses the word "intensity" and avoids using the familiar word "volume," to help prevent pushing air through the folds indiscriminately. He believes the breath and its support system work instinctively, without conscious prompting. This continued upward to no higher than D_4 in

any voice. This way the student learned how chest voice alone sounded, and Reid could hear if any part of chest voice was weak or overly brash.

It is important to note that Mr. Reid at no time instructed the student how to make these sounds. The student might hear "raw, buzzy, unfinished" or "flutey, hooty, foggy" as sound suggestions, if the new student were unfamiliar with the two parts of the voice. Reid did not oversing the student in these separated stages since the two muscle systems are designed to work in coordination with one another.

Next, Reid directed the student to sing in his complete voice without telling him how that ought to sound. Using 'Ah' at C or C#4 or 5 , in a *mf* intensity, the student sang a descending arpeggio. Reid wanted to know how the student interpreted "complete," by listening for consistency of tone quality in each note, freedom of energy release, and balance of *chiaroscura*, the coordination of chest and head voice together, a shading of bright, clear brilliance with warm, full color. If there was too much chest involvement, he decreased intensity to encourage more falsetto/head space warmth. Reid encouraged more intensity to stabilize weak or unfocused chest voice. Reid states that

properly used chest voice supports the voice, because it opens the throat and clarifies tone. Overpresent head voice tends to constrict the throat, but properly balanced, adds enough space in the throat to create the "ring" in the voice.

An important change occurred in every student: the student relaxed his guardedness because he no longer feared being wrong. He began to risk that the voice could respond well without attempting conscious motor control over it. In most cases, the vocal product was far superior when the voice was allowed to respond autonomically. When the new student's sound was exposed as weak or unstable, Reid gently redirected the environment of pitch, vowel and intensity until a better product ensued.

Reid instructed, "Think only. Don't physicalize, just energize."
The student stopped asking how to shape the vowel, whether there was enough volume or support, or if the tone was pretty enough. Mr. Reid would reinforce the student with feedback as to the health of the response, not by his subjective idea of beautiful sound. The student began to listen to himself more objectively, hearing functionally,

sensing freedom of release of energy and of coordinated quality of tone.

As confidence increased in subsequent lessons, the body spontaneously stretched upward. (Even Lamperti referred to this phenomenon in Brown's *Vocal Wisdom: The Maxims of Giovanni Battista Lamperti,* when he intoned, "The desire to sing should straighten you up like a soldier.") The lungs filled quietly and fully, the throat responded by preparing for the pitch, vowel and intensity (which Reid identifies as *prephonatory tuning*). The student's natural talent and coordination led the voice to its ultimate efficiency. Reid observed the student's outward manifestations: taller posture, full, low breath, passive throat and tongue preparation, then energy release and maintenance, tone quality and ring, efficiency of breath, vibrato, and relaxation of jaw tension. If one of these factors was not responsive, he set up another environment that prompted that weakness toward better reaction. Reid demonstrated his pedagogical position: that experimenting with register coordination will begin to solve all external vocal problems because the talented student will begin to coordinate reflexively.

Reid listened, watched and instructed from an organic, functional standpoint in true scientific fashion, not an aesthetic one. He maintained that it was not enough to hear a pretty tone, because that tone cannot tell the teacher the potential of the voice to improve to greater stability and health. Reid chose vowels as tools to stimulate register function: the 'Ah' because it allowed more chest voice, the 'U' because it encouraged more head voice. He used 'E' to check for balance of the two registers, focus and ring of the voice. Finding too much tension, he used the 'short' 'A' or 'Ay' to flatten the tongue, releasing it.

In addition, Reid listened for what he termed the natural, rhythmic response to the environment of pitch, vowel and intensity. This rhythmic response always communicates an emotive quality, and may suggest the vocal temperament of the singer. He will set up an arpeggio exercise and give the student license to interpret it the way he/she wishes. The student will usually choose to sing it in a manner that shows off the voice's special quality. A coloratura soprano or tenor inevitably used the arpeggio to quickly move to the top note, where he/she would settle and crescendo. A mezzo-soprano, by contrast, more carefully negotiated each note and gave time to color the sound

fully before moving on. A baritone or bass took the time to resonate each note on a descending scale for the fullest effect of its low pitch. The most intuitive singers used this rhythmic response together with the tone quality to experiment with that tone's artistic possibilities. Reid waited and listened intently, without adding a word, allowing the student to experiment.

With this general overview in mind, the writer evaluated selected students' progress during the course of a week's lessons. The following condensed observations were made after the students were typically warmed up with the aforementioned exercises.

At this point, Reid is looking for flaws and imbalances. (These events are written in present tense to re-create the studio ambience and enhance understanding.)

STUDENT ONE: LYRIC SOPRANO

DAY ONE. This soprano sings very loudly near the second passaggio. The tone has lost its warm color and sweetness. The vowels are wide and harsh. The soprano has increasing difficulty singing above G_5 on any vowel.

The remedy: Sing legato 'Ah' to 'U' on pitches F#5 to A#5 , maintain 'U' back to F#5, *mf* to *pp.*

Singing *mf* on 'Ah' stabilizes the throat and its quality; 'U' then narrows and lengthens the throat and prevents singing too loudly, thus maintaining the color quality. Bringing the 'U' back down to F#5 readjusts the shape of the throat to a more normal width, and allows the singer to sing more sweetly with head voice, without constricting. The singer has started to regain the ability to sing with dynamic motion. Reid continues this exercise, but at F5 to A5, E5 to G#5, until he stops at C5 to E5.

DAY TWO. Reid again hears the second passaggio notes as too loud, but comments that they have less harshness. He repeats the previous day's exercise and learns that the voice is more responsive than the first day. Since he interprets the faster rhythmic response as meaning that there is more freedom in the muscle movement, Reid checks the head voice above the second passaggio to explore the range and flexibility. On 'Ah' at G5, *mf* dynamic, Reid discovers that the tone quality has clarified, has rather consistent ring and is not harsh. He then asks the singer to begin at G5 on 'Ah,' *mf,* then decrescendo as

comfortable. She is able to do this to some extent, up to B-flat 5, without constricting the throat or widening the 'Ah.'

Reid lets that area of the voice rest, and now explores the stability of mid-range, and to see if the soprano can coordinate the chest and head voice balance. On 'Ah,' B5 to G5, back to B5, then D5, he checks for flexibility in the sweeter, head voice predominant tone, as he asks for a *messa di voce,* then ending the triad *pp.*

DAY THREE: Believing he hears a marked improvement in natural, rhythmic response to the exercises above, Reid now asks the soprano to sing an entire octave arpeggio starting in complete chest voice at A4 with 'Ah,' at *f* dynamic, to A5 and back down the arpeggio. He wants to find out if the register mechanism will make its own adjustments as the soprano moves from an all-chest sound to a coordinated one at A5, then maintain it throughout the rest of the exercise. Reid jumps to a beginning note C4, repeating the exercise. He moves respectively to D, E-flat, E, F, and F#4 , so that the corresponding octave note is pitched in the second passaggio. The vocal organ is coordinating more smoothly now. As the vowel stays normal, the ring in the voice increases without having to add intensity and there is obvious

flexibility and ease in traversing the exercise. Reid moves this exercise upward into the head voice, and the change is nearly imperceptible because the vowel still sounds pure, the ring is consistent, and the ear is no longer bombarded with harshness. Reid stops at B_6.

STUDENT TWO: LYRIC TENOR

DAY ONE. This tenor exhibits a young but virile, colorful sound, and is flexible in mid-range on 'Ah' during warm-up, but unfocused in chest register. Later, approaching the second passaggio, the voice suddenly becomes thin and singularly-toned, not unlike the sound of a soprano recorder. Mr. Reid asks the man if he had had to blend his voice severely in a choral setting or if he had sung as a boy soprano. The man replies that he sang in his college choir for four years and had been asked to pare down his naturally rich sound the last two of those years. To do so he began to sing almost entirely falsetto, and even explored singing countertenor, that is, he sang what he termed head voice to extreme intensity levels until the voice could no longer sustain a complete sound above F_4. The man complains that his voice tires quickly and that the extrinsic laryngeal muscles ache.

The remedy: Mr. Reid asks the tenor to sing 'Ah,' beginning at G_3, *mf*, crescendo-ing to *f,* as long as it is comfortable. He moves down

the scale on each pitch until the tenor reaches the last note that he can phonate with focus. Reid repeats this upward to D_4, reminding the tenor to stay in focus with an all-chest sound.

Next, Reid asks for 'Ah' at C_4, *mf,* but this time in a quick, rhythmic, upward direction by a major third, to E_4, with a slightly stronger accent on the top note. The tenor does so, and is able to maintain the upper pitch, which now has more chest coordination, before returning to the original note. This exercise continues upward until F_4 to A_4, when the tenor asks to stop. He has not felt such big resonance before, and while it doesn't hurt, it is new and unfamiliar. Reid immediately obliges.

DAY TWO: After warm up, which on this day had virtually no falsetto exercise, but more chest-only exercise, Reid again takes the remedy from the day before, and today, the voice accepts the *appogio*, or additional intensity much more easily, up to B_4. After a moment's rest, Reid starts on the same B_4, 'U,' *mp,* then asks the tenor to gradually move to an 'Ah' as he crescendos, finishing by taking that full tone down an octave arpeggio to B_3. The tone has improved, because the chest voice quality is allowed to coordinate and stabilize. This tone now consistently traverses down the passaggio to middle range,

seemingly without effort. The tenor asks how that happened. Mr. Reid replies he doesn't exactly know, except in general medical terms, and that the singer should trust the mechanism's ability to respond to natural laws working in the coordinated voice.

DAY THREE: Today Mr. Reid announces that for this tenor, to sing loudly is good, but to sing freely is better; he is referencing the previous day's release of throat tension. To this end, he asks the tenor to start with the 'Ah' vowel on G_3, *mf,* sing immediately to the octave G_4, crescendo and decrescendo, then return down the arpeggio *mp,* but without losing the core, or clarity and stability of the tone. At first try, the voice tries to break, but on the second try, with a bit more intensity, the voice stabilizes and is able to crescendo slightly, then decrescendo, before moving down. This is good progress in three days since falsetto has been overly strong at G_4 for quite some time.

STUDENT THREE: MEZZO-SOPRANO

DAY ONE: This singer sounds technically sophisticated for her approximate mid-twenties. The voice is relatively flexible with a colorful, focused, and warm quality. Traversing up the range, Mr. Reid discovers that the 'E' vowel is piercing and becomes sharp with subsequent pitches above E_5. The voice has ceased overtone

production and vibrato has discontinued. It struggles above G5 and the jaw has become tense and protruded. Mr. Reid asks the mezzo why, when the other vowels seem balanced with one another, the 'E' vowel is troublesome. The mezzo replies that she was previously taught that the 'E' vowel placed the tone, and that when the notes got higher, she need only concentrate more on "placing." When Mr. Reid asks her where that place is, the mezzo is not sure, but points between her eyes at the nose bridge.

The remedy: Mr. Reid asks the mezzo to begin with 'Ah' on B4, *mf,* jump to the octave note above, B5, and simultaneously change the vowel to 'E,' then finish by descending an arpeggio. This exercise is repeated upward by half-steps, and when the upper pitch is E5, Reid asks the singer to alternate the vowels 'Ah' and 'E' several times before finishing the exercise.

At F5, Mr. Reid asks the mezzo to sing 'U,' *mp,* in falsetto-only for the next four half-steps upward. He then resumes the previous exercise through that same area.

DAY TWO: Mr. Reid repeats the exercises of the previous day, but adds a new action. He asks the mezzo to begin on 'Ah,' *mf,* at C4, jump the octave to C5, and quickly, rhythmically, move to the major third above to E5, alternating the 'Ah' and 'E' rapidly, before finishing the

descending arpeggio. Today, the jaw is not participating in the action, but remains loose. (Reid said nothing about this.) The exercise is repeated until the mezzo sings a ringing B-flat6, and the descent, while strong, has a noticeably pure tone and texture.

DAY THREE: Today, Mr. Reid looks for a tone that can be sustained on any vowel at any pitch, evenly sung, and asks for a *messa di voce* at both the lower and upper passaggio pitches. The mezzo can accomplish this to some extent and improves with each onset.

Reid mentions that he has observed the breathing become better prepared as the week progressed.

STUDENT FOUR: BASS-BARITONE

DAY ONE: Reid discovers that this voice, though mature, still has unfocused tone from F3 down to D3. The top notes from C4 to F4 sound woofy and vocally strained.

The remedy: Reid starts by solidifying the chest voice action using 'Ah' on single pitches, *mf,* until each pitch in the weak part of the range noted above, has stabilized and sounds strong and buzzy. The student comments that he can feel the resonance throughout his entire chest, cranium and even in the back of his head. Reid reinforces that comment by explaining how sound travels spherically from its source,

so it is important not to restrict where the sound should go, as if one could control its direction.

DAY TWO: Today, Mr. Reid finds the chest activity solid during warm-up, so proceeds to the first note in the bass' second passaggio, C_4, where Reid earlier found the woofy quality. He asks for the vowel 'U,' *mp,* then directs the singer to crescendo as he moves to the vowel 'Ah' full voice. Reid then directs the singer down an octave arpeggio, encouraging him to remain consistent in intensity. The vocal function sounds stronger and the tone holds its position. Reid then checks all the vowels in combinations beginning in the chest voice, moving an octave or more upward to measure the voice's flexibility, finishing in a downward arpeggio. He explores the upper reaches of the bass' voice, and finds it consistently functional and balanced.

Reid continued throughout the week to look for faults to correct, and did not allow a weakness to go unattended. He allowed the more talented to explore the sound by themselves. He showed empathy as the problems presented themselves, but did not appear overtly passionate about fixing the problem (as adamant as he is about seeking out and repairing flaws). Reid was wise to allow the student's kinesthetic energy to lead them note by note and not overwhelm the

student with physicalizing singing. By week's end all voices were stronger in many ways. Each voice took its own course but found its balance by strengthening each register's muscle group, then putting them together. Reid explained that "when the voice is acoustically fit and physiologically correct, beauty will ensue."

Reid believes that separating out external weaknesses such as diction, unfocused tone and tense jaw in the technique lesson is exactly the cause of external tensions in singing. In his experience, when students consciously focus on a flaw and attempt to correct it with that conscious control, the natural, organic function cannot begin to coordinate itself as designed. The conscious mind is overwhelmed with standing tall, lowering the larynx, getting a good breath, making the vowel, adding the consonants, placing the tone and keeping it there, holding the jaw still and managing the phrase. Reid predicts that the juggling act soon falls down or becomes set and inflexible. The singer is so preoccupied with technical issues he cannot ultimately control, that he cannot concentrate on the reason for singing: artistically communicating a text and character.

Reid focuses entirely on the balancing of registers to help solve these dilemmas. However, in the master class, Reid points out how that, when the singer is concentrating on text, it is then appropriate to mention energizing the emotive quality of the words to encourage clearer diction and correct the external issues of singing.

EVENING MASTER CLASS

The same students participated in an evening master class, singing from their current repertoire. Because they had taken several lessons from Mr. Reid in close sequence, their technical approaches now differed from their original study of the pieces and needed adjustment.

Mr. Reid, in a complete about-face, said not a word about registration issues. He wanted to observe how much organic function had taken hold from the technique lessons without having to prompt it himself. Instead, it was in this setting that Mr. Reid made comments about language and diction concerns at a time when the singer's mind was concentrating on communicating emotional content.

Reid connected the natural, rhythmic response he had prompted in the technique lesson to the emotive quality of the melody and words. He reminded the singers to use rhythmically energized breath as a connector of voice to the emotive body. He encouraged the singers to sing with both the mind and the body.

It would be a legitimate argument to point out that the master class setting also deals with technical issues. For Reid , the technical lesson focuses on function from a more autonomic, registrational standpoint; the master class focuses on emotive content of text and melody using the conscious mind.

Reid emphasizes that "artists must return to the point where song and singer are one and the same, and not be content with being just a technician singing a song." In that sense, some singers today are not unlike the theorists and musicologists affected by positivist philosophy, preoccupied with either the myopic, technical operation of the vocal organs themselves or the minutiae of external, superficial details before mastering the basic function of singing. Neither approaches artistry.

Mr. Reid cites opera and artistic directors in general, who state that they enjoy hearing consistent technique and vocal pyrotechnics in new singers, but lament that it is hard to find artists. Reid contends that the singers' sounds are not mentally associated with emotive qualities, because the mind is focused on technique, not communication. The sound remains internalized because the breath is not free enough to allow the voice to interpret the emotive quality of song. "The body, sounds and words must match, and when they do not, the hearer is left unsatisfied. Artistry, not virtuosity, is what audiences are starving to hear," Reid emphasizes.

In conclusion, Cornelius Reid believes his simplified teaching methods may be helping to unlock the so-called secrets of Bel Canto. The earliest writers spoke of two parts of a voice which after strengthening separately, coordinated smoothly into a seamless range of nearly infinite flexibility and tonal color. Mancini, Tosi, Manfredini, Porpora, both Garcias and both Lampertis all spoke of the "great, slow scale" on each vowel to develop consistency of tone. They all regarded the *messa di voce* as the ultimate test of vocal freedom.

The larger question is not how to sing, but why one sings. Reid declares that pedagogues should more earnestly return to joining body, mind, soul and spirit into a bigger, holistic approach. Until we refuse to accept technicians who just sing a song, Cornelius Reid believes we will wander about looking for the lost art of Bel Canto.

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VITA

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