

# An Innovative Approach to Voice Education and Voice Therapy:

*The Eclectic Therapy Method*



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By

Hugo Lycke

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## FOREWORD

Being a retired Belgian speech and voice therapist/vocal coach, the independent academic publisher, **Cambridge Scholars Publishing**, invited me to write 2 books on my 60 years of experience in the world of opera, musical theatre, and music conservatories.

The first published book **“Voice Classification by Phonetography. A Manual for Voice Testing, Education, Therapy and Research”** (2022) provides an essential guideline for phoniatricians, ENT- specialists, speech and voice therapists, vocal coaches, singing teachers, choir conductors, actors and singers, and everyone who is involved in the phenomenon of voice.

As the text shows, over the years, phonetographic analysis of the speaking and singing voice has been proven to be of great help for students and teachers of drama and singing education.

The book presents an age-related and gender-specific pattern card of the human voice, based on a step-by-step analysis of a database of more than 1000 phonetograms. This pattern card enables a basic voice classification of any subject, providing a guideline with useful information for voice education and voice therapy, as demonstrated by a selection of 152 figures and 72 tables, including some exceptional longitudinal phonetograms of actors and singers across a wide age range, next to 1639 references.

The analysis of a selection of longitudinal phonetograms also demonstrates that the evolution of the singing voice in a considerable lapse of time is greatly depending on a lot of complex factors.

While writing this first manual, I became intrigued by the great diversity of the individual evolution of the professional singing voice. So, I decided to have a closer look at the more than 1000 phonetograms (Voice Range Profiles) I had taken during my professional life, hoping to find some evidence and explanation for this variable, but inevitable human phenomenon of vocal aging.



The second book: “**Age-Related Evolution of the Professional Singing Voice. A Manual for Prevention, Voice Testing, and Voice Therapy**” (2023) features 124 Figures and 40 Tables and provides specific examples of the vocal evolution of young student singers and mature professionals of both genders, aged from 8 to 88 years. Much attention is given to prophylaxis and treatment for professional voice disorders.

I have never given singing lessons during my long professional life, but, as a voice therapist, I was continuously confronted with the many occurring voice problems of singing students, and professional actors and singers. So, my presence at many conferences, workshops, and master classes on the singing voice in different European countries and in the U.S.A., convinced me of the fact that there was not so much need for just another (‘better’) singing method, but for an objectively based methodology enabling to control the results of whatever kind of voice instruction. This new methodology has been called: ‘**The Eclectic Therapy Method**’.

In this third book ‘**The Eclectic Therapy Method: An Objective Aid for Voice Education and Voice Therapy**’, the 148 featured **Figures and Tables** for different age-groups of both genders, as deduced from a recently enlarged database of more than 1.000 case studies, provide the possibility to evaluate, in an objective way, the different parameters of each tone of the vocal range of a given voice, and this *in real time*.

In addition, and as a *curiosum*, a survey is given of *the extreme obtained results for maximum intensity and maximal singing formant for each tone of the whole vocal range in both genders for ages 8 up to 88 years*.

During phonetographic analysis changes of the vocal tract configuration can directly be observed on the display of the PC screen. This can be of great help in singing instruction, as it is essential to experiment with a lot of different vocal tract configurations.

According to the **Eclectic Therapy Method**, the objectively obtained results can easily be compared with the statistically featured maximum, average, and minimum data of the provided Tables, based on more than 1000 phonetograms, and completed with some recently established exceptional data, thus *indicating what reasonably can be obtained by singing education or therapy for a given voice*.

In a recent article (2019): ‘**Trends in Singing Voice Research: An Innovative Approach**’.<sup>17</sup> the authors searched to identify *scientific papers on the growing interest in singing*. The paper primarily aimed to trace the

history of research in the singing voice. It set out *to compare the amount of published research over decades*. Voice research and focal themes of interest have evolved. The demands of professional voice use currently play an important role in clinical research—and singing is no exception.

An evolution of studied topics is described. Up to 2010, the main theme was professional singers, especially classical and opera interpreters. Since then, *voice quality and the effects of training gathered more attention*. The authors concluded: *'Although it is a relatively new topic in scientific research, the field of singing voice has evolved rapidly. The number of papers published annually has increased steadily, as well as the clinical relevance of singing'*.<sup>17</sup>

According to Research Gate, Academia.edu, and other modern professional networks for scientists and researchers, my recent publications on the singing voice have reached many thousands of reads and citations, which proves *the growing interest from the scientific world for the singing voice!*

In this regard, the author hopes that his unique lifelong professional experience will inspire the readers of this book, and everyone involved in voice phenomena, providing them with new ideas for their own practice.

—Dr. Hugo LYCKE, Ph.D., M.Sc., M.A.  
Doctor in Biomedical Sciences  
Vocal Coach, Speech and Voice Therapist

# INTRODUCTION

The human voice is an amazing phenomenon, comprising many psychological, sociological, artistic, and biological aspects. Vocal possibilities and limits are based on individual biological properties. Individual vocal qualities can give rise to optimal and even high-class artistic vocal performances, while vocal restraints can cause functional and organic voice disorders.

Professional voice users, e.g., singers and actors, using their voice as a primary tool, are especially prone to voice problems. Vocal nodules – “Sängerknötchen” (i.e., *singer's nodules* in German), most often based on an *overload of the voice*, e.g., *due to an incorrect voice classification*, are well-known in clinical practice.

*Therefore, it is important in voice and singing education to know the physiological limits of the voice and to carefully watch them.*

Today's life is immersed in music: willing or not, in almost every situation, day or night, music is in the air. Especially young people have a leaning to listen to contemporary music, songs based on all kinds of regularly changing hit lists and promoted by the market and mass media. Successful voices of the moment - good or bad ones - are imitated by young people, often without concern of the quality of the sound produced by their idols or by themselves.

The influence of voice training on vocal capabilities is well known from clinical experience and the relationship between the singing teacher and the singing student is particularly interesting in this regard.

The singing student often chooses a singing teacher with a particular voice type, which he or she likes and wants to imitate, while the singing teacher in turn may be inclined to reinforce that attitude. Moreover, frequently changing from one singing teacher to another during one's singing education and one's professional singing career is common practice. This means that the singer is flooded with different advice over the years, including many comments on his “real” voice type. At the same time, during the singing education, the singer becomes aware of the changing features of his or her own voice, for the better or worse.

Tarneaud<sup>1</sup> already explained, many years ago, that pitch and timbre not only depend on constitutional and physiological factors but also on *educational mimesis*, acquired in various surroundings, family, school, and profession.

Each singer has not only one characteristic timbre, but a set of timbres, or a timbre transformation. Voice quality depends highly on vocal techniques, thus on *voice education*.

*Many singers have developed a functional adaptation of their vocal organs, which is not always in correspondence with their anatomical and physiological abilities.*

During my professional life I could witness that many actors, singers, and dancers regularly rely on a lot of remedies of all kinds, trying to master stage fright, symptoms of vocal fatigue, beginning or continuing vocal problems, effects of colds and sleep deprivation, memory problems, different addictions (smoking, alcohol, drugs...), menstruation and menopause problems, and all kinds of hoarseness symptoms...

Inhalations and throat sprays are popular temporary remedies; there is even a special 'bird seed for singers' on the market. Moreover, nowadays many artists try out one or more of the many popularized '*relaxation responses*' and '*daily aids*' like profound respiration techniques, sophrology, naturopathy, Qi Gong, taï chi, yoga, acupuncture, shiatsu, plantar reflexology massage, reiki, hypnosis, different meditation techniques, Mindfulness, PNL, kinesiology, tantra...

*Chirurgical interventions* on famous and less famous professional singers, with good or bad results, sometimes with definitive voice alterations after the intervention, sometimes resulting in juridic procedures, are widely reported in the popular media. However, the often-recurring problem is that, even after a successful chirurgical intervention, the actor/singer continues to phonate like before, and, inevitably, the negative cycle starts again...

*In my experience, to avoid this vicious circle, an objective voice classification is necessary, before any vocal education starts, and the results of the personally adapted exercises must regularly be controlled by follow-up phonetograms.* Besides, during the period of voice education, followed by an often-strenuous professional life, the regular taking of a phonetogram (Voice Range Profile) is of utmost importance to establish the actual data of the different parameters of a voice at a given time, with the aim of preventing, or restoring voice disorders.

*The **Eclectic Therapy Method**, conceived by the author of this book, aims at exploring the capacities of a given voice, tone by tone, in real time, based on phonetographic analysis, and expanding them to their maximum individual potentialities, considering the general rules of vocal hygiene.*

# CHAPTER 1

## THE INFLUENCE OF SINGING EDUCATION ON VOICE CHARACTERISTICS

Nowadays a lot of singing students are often in turmoil: by choosing a kind of education programme - be it classic or commercial - they enter a protected environment in which they are directed for many years in a particular direction: choosing a repertoire or taking singing lessons which direct them to make restraint choices in connection with their assumed voice type.

As the singing teacher is not sure about the exact voice classification at the beginning of the study, sometimes a cautious repertoire is chosen. Singing teachers then claim that the voice of the young singer is supposed to ripen, to mature and so on. However, singing exercises try to expand the singing range in one or another direction and this also influences the singing teacher and the singing students in their perception of their vocal evolution. If the singing teacher is not sure about the right voice type of his/her pupil, there is a great chance that the voice of the young singer is forced in a direction which can damage his/her future career. Many examples of this phenomenon are given in my former publications. (See References)

In a prospective cross-sectional study, Siupsinskiene and Lycke<sup>95</sup> examined the *effects of voice training on vocal capabilities in vocally healthy age and gender differentiated groups measured by voice range profile (VRP) and speech range profile (SRP)*. Frequency and intensity measurements of the VRP and SRP using standard singing and speaking voice protocols were derived from 349 male and female subjects :161 trained choir singers (21 males, 59 females, and 81 prepubescent children) and from 188 non-singers (38 males, 89 females, and 61 children).

**Results:** When compared with non-singers, both genders of trained adult and child singers exhibited increased mean pitch range, highest frequency, and VRP area in high frequencies ( $P < 0.05$ ). Female singers and child singers also showed significantly increased mean maximum voice intensity, intensity range, and total VRP area. The logistic regression analysis showed that VRP pitch range, highest frequency, maximum voice intensity,

maximum-minimum intensity range, and SRP slope of speaking curve were the key predictors of voice training. Age, gender, and voice training differentiated norms of VRP and SRP parameters are presented.

**Conclusions:** *Significant positive effect of voice training on vocal capabilities, mostly of the singing voice, was confirmed. The presented norms for trained singers, with key parameters differentiated by gender and age, are suggested for clinical practice of otolaryngologists and speech-language pathologists.*

Lycke and Siupsinskiene<sup>2</sup> made another study on the *effects of training duration and institution on basic Voice Range Profile parameters*. VRP recordings were made of 229 female subjects :162 females, taking individual singing lessons *during 5 consecutive years (1st - 5th level)* in Belgian, Dutch, English, and French public or private training facilities. Sixty-seven non-singing female students served as controls.

## Results

- Vocal capabilities of singing students measured by Voice Range Profile are significantly extended in both frequency and intensity parameters in comparison to non-singing students.
- Training years have a significant effect: conservatory singing students in more advanced singing classes demonstrated a significantly greater frequency range, particularly at high frequencies, than did first-year students.
- Musical theatre training has more positive effects on both frequency and intensity related parameters than does classical training.
- Private and musical theatre training have more positive effects on voice characteristics than do public or classical training.
- Private training has more positive effects on voice dynamics than does public training.
- When compared to non-singers, all singing student subgroups showed significant increases in all basic VRP parameters.
- However, *the register transition parameter was not influenced by training duration*. This important observation is analysed in many of my publications.<sup>2,10-11,18-27,95,120</sup>

We concluded that **VRP recording provides both qualitative and quantitative information about vocal capabilities and could serve as a useful tool for voice and singing teachers, offering a safe and objective way to assess vocal training and training progress.**

## CHAPTER 2

# CONTEMPORARY SINGING EDUCATION AND VOICE CLASSIFICATION

*Classification is one of the major objectives of scientific endeavour.*

Brewer (1994)<sup>3</sup>, already remarked in the panel discussing “The Integration of Voice Science, Voice Pathology, Medicine, Public Speaking, Acting, and Singing”, “research teams should look at acoustic phenomena and their possible detectable correlates. *Further studies on e.g., voice categories (accurate descriptions) are necessary*”. In this regard can be referred to some of my earlier publications.<sup>2,10-11,18-27,95,120</sup>

At present, music education and performance can be divided into two broad categories: Classical Music and Commercial Music.

**Classical Music** represents various genres such as Opera, Lied, and Oratorio.

Traditionally, in Classical Music voices are classified into three principal categories: for the female voice: alto, mezzo, and soprano, and for the male voice: bass, baritone, and tenor. There are, however, many subtypes, according to different roles and based on the characteristics of the voice, such as loudness, timbre, mobility, vibrato, temperament, expression, and personality.

In classical singing education great emphasis is put upon *voice classification*, but little is known how the relatively new music institutions and individual singing teachers deal with voice classification.<sup>10-11</sup>

**Commercial Music** represents genres including Pop, Rock, Jazz, Country, Rhythm and Blues, Hip-Hop, Rap, Gospel, Musical Theatre, and so on.

As mentioned in Chapter 1, the conclusions expressed in the studies of Lycke and Siupsinskiene<sup>2,95</sup> clearly demonstrate the many differing effects of individual singing lessons on the voice of singing students, *depending on the type of singing education and institute*.



In their study on Commercial Music, Radionoff et al.<sup>4</sup> concluded that “along with nomenclature disparity, a tremendous lack of consistency exists among curriculums of commercial music degrees.” Many singing students are taking private singing lessons which are not curriculum bound. Contemporary commercial music singers often complain that their singing teachers do not understand the vocal styles and demands of a Contemporary Commercial Music singer.

*Moreover, studies showed the great prevalence of voice disorders among singing students, singers and singing teachers.*<sup>5</sup>

*Classifying a voice means, in the first place, to determine the frequency and intensity voice range in which a subject can work without harming or fatiguing his voice and to which repertoire he should be assigned.*<sup>1, 6-8</sup>

Coleman et al.<sup>9</sup> stated the consensus that singing and speaking outside a given physiological pitch or intensity range is a potential hazard.

The biographies of famous and less famous singers frequently mention examples of the pernicious outcomes for their voice and for their career caused by incorrect voice classification.

*Correct classification of the singer's voice is indispensable to achieve optimum performance.*

## CHAPTER 3

### VOICE CLASSIFICATION IN PRACTICE: CRITERIA IN CONTEMPORARY SINGING EDUCATION

Using 3 questionnaires, I explored the criteria for voice classification in contemporary singing education.<sup>10-11</sup>

With the intention to explore how contemporary singing teachers deal with voice classification and which criteria they use a **first questionnaire** was sent to 200 private singing teachers. These private singing teachers recommended themselves on the Internet for *a total of 134 specialties and styles of singing*.

Many of them had a classical singing education, but each of them proclaimed to master a great variety of singing styles like Belting, Blues, Classic, Close Harmony, Country, Disco, Easy Listening, Evergreens, Funk, Fusion, Gypsy, Hard Rock, Jazz, Latin, Opera, Pop, Rhythm and Blues, Salsa, Soft Rock, and World Music.

*The private singing teachers were asked if voice classification was important to them and why. They were also asked which criteria for voice classification they applied.*

A **second questionnaire** was distributed among singing teachers in 3 officially subsidized national music conservatories, submitted to the inspection by the Government: one Belgian classical conservatory specialized in Opera, Lied, and Oratorio, and one Dutch and one British conservatory specialized in Musical Theatre.

The 22 singing teachers from the three conservatories who cooperated in this study classified a total of 165 singing students: 81 singing students (58 females and 23 males) at a Belgian classical conservatory, 63 singing students (55 females and 8 males) at a Dutch conservatory (Musical Theatre), and 21 singing students (9 females and 12 males) at a British

conservatory (Musical Theatre). The singing students were aged between 18 and 28 years, the average age being 21 years.

*The singing teachers were asked to classify their own singing students and to indicate on which criteria their voice classification was based.*

**A third questionnaire** was distributed among 238 young students: 165 singing students of all levels of the above indicated three conservatories (122 female students and 43 male students, aged between 18 and 28 years, the average age being 21 years) filled in the questionnaire about their voice classification and 73 female first year students in the Masters' degree program in speech-language pathology at a Belgian university (aged between 18 and 20 years, the average age being 18 years) were used as a control group.

*The students were asked if they knew their voice classification, who had determined their voice classification and how, and if they thought their voice classification was correct.*

During this investigation, spread over one year, 75.3% of the classical singing students and 88.3% of the Musical Theatre students were classified by their singing teacher. The students who cooperated in this study got enough time to read and to sign an informed consent. The students filled in the questionnaire and handed it over to the investigator. There was also an opportunity to ask more information about the aim of the study.

Descriptive statistics were performed by SPSS 16.00.

## Results

Although most of the Internet singing teachers had a classical singing training, each of them recommended him/herself for many specialties and musical styles (up to 24 in one teacher).

Most popular styles were Musical Theatre (66.7%), Classic (50.0%), Pop and Jazz (each 43.8%), Dutch Pop (19.0%), A Capella (17.0%), Close Harmony (16.0%), Lied (15.0%) and Opera (13.0%).

Most respondents mentioned their own voice classification, while 10,50% of the singing teachers didn't seem to know their own voice type. Almost one quarter of the respondents (24,3%) mentioned to belong to 2 voice types (e.g., baritone, tenor), while 7,3% of the singing teachers even claimed to possess 3 voice types (e.g., alto, mezzo, soprano)!

Subtypes (for instance, dramatic, lyrical, coloratura...) were mentioned by 21,9% of the respondents.

Forty-four singing teachers (61.1%) found voice classification important for at least one reason, while twenty-eight singing teachers (38.9%) stated that voice classification was not an important issue for their teaching.

Most singing teachers (n= 66, 91.7%) provided information about their criteria for voice classification, despite their controversial ideas about the importance of voice classification. These criteria for voice classification can be sorted into physical features, acoustical features, specific methods, miscellaneous, and "other factors". Six respondents (8.3%) did not mention any criteria for voice classification.

Most frequently used acoustical parameters for voice classification were *frequency range/tessitura* (56%), *voice quality/timbre* (56%), and *register transition* (9%).

Some singing teachers (13,6%) proposed a careful testing over time or starting in the midrange (6,9%). Others (13,6%) preferred a specific methodology (e.g.: Estill Voice Training, Lichtenberger, Sadolin).

Anatomical (12%) or psychological (6%) characteristics were less appreciated. One singing teacher evoked a purely commercial approach: voice classification on demand.

Arguments pro voice classification were: prevention of voice problems (37.2%), need for the choice of repertoire (37.2%), usefulness for choirs (32.6%), importance for classical music, opera, and Musical Theatre (23.2%), knowledge of one's vocal capacities (18.6%), and need for a well-adapted singing education (18.6%).

Arguments against voice classification were: too restrictive (44.9%), not important for commercial music (34.7%), voice classification is no priority (32.7%), voice classification can change (28,6%), voice classification is not significant (12.2%), each voice is unique (12.2%) and voice classification is too broad/too vague (8.2%).

Studies on different genres of singing styles are still scarce. Older studies only focused on classical singing, emphasizing the importance of voice classification.

I couldn't compare the results of my study to those of other authors because of lack of studies on this subject.

*The results show the tremendous change in attitude towards voice classification by many singing teachers today.* Voice classification, at least for classical singing, has always been forwarded as a basic principle in singing education. Today, however, lots of singing teachers do not care any longer about a correct voice classification, intended to avoid possible voice problems. Anatomical characteristics are no longer considered as important. Even *register location*, traditionally considered as an important parameter of voice classification, is used by only 9% of the respondents.

Even if the singing teacher him/herself had a classical singing education, based on voice classification, less or no attention is given to this, formerly very important, aspect of voice education.

Almost 40% singing teachers of the Internet study stated that voice classification was no important issue for their teaching.

Of course, one can argue that a lot of singing teachers try to attract as many singing students as possible by an extensive offer of singing genres. But how can be explained that in this enquiry 91.7% of the respondents still gave information about their criteria for voice classification, while 38.9% of them didn't find voice classification an important issue for their teaching?

The fact that almost one quarter of the respondents (24.3%) mention to belong to 2 voice types (e.g., baritone, tenor), and 7.3% of the singing teachers even claim to possess 3 voice types (e.g., alto, mezzo, soprano), while 10.50% of the singing teachers don't even seem to know their own voice type, sounds very odd to me.

*These findings indicate a worrisome trend of altered attitude towards voice classification by many private singing teachers today.*

While in classical and in Musical Theatre conservatories, voices are still classified according to well-known traditional criteria. This is much less the case in private singing education: frequency range/tessitura (100.0% vs. 56.0%), quality/timbre (100.0% vs. 56.0%), register transition (57.1% vs. 9.0%), and volume (52.4% vs. 12.1%).

Private singing teachers also prefer a more careful testing over time (13.6%) and specific methodologies (12.0%). It is also quite possible that private

singing teachers do not feel the need to classify, nor do their singing students feel the need to be classified.

Obviously, in this internet study *there is no consensus about the criteria for voice classification.*

*Musical Theatre students were most frequently classified in the middle and lower voice categories. Quite the opposite was seen in the classical singing conservatory, where the highest categories dominated.*

An explanation may be that middle voices are more preferred in Musical Theatre, while higher voices are most favoured in classical conservatories, each attracting in a way its own clientele of singing students. There is also the possibility that each type of conservatory tries to train its own preferred vocal types by specifically adapted singing techniques and less thought is given to a correct voice classification.

The results of this study showed that of all voice classification criteria, which were mentioned by singing teachers, *frequency range constituted the only parameter that could be measured objectively.* However, although *frequency range* was considered as the most important parameter for voice classification, *only few singing teachers mentioned the exact dimensions of the frequency range/tessitura of their students.*

In an exploratory study, Lycke<sup>10-11</sup> compared the results of voice classification by singing teachers with the results of *voice classification based on an algorithm deduced from the limits of frequency range/tessitura as found in the literature.* The algorithm was elaborated, based on the limits of the female frequency range, according to 38 authors with different backgrounds. *The voice classification by the singing teachers did not fit at all in the algorithm. Frequency range alone proved to be not suitable as a parameter for voice classification.*

Singing teachers tended to classify their students in the highest (sopranos) and middle (mezzos) voice categories (75.6%) while, according to the algorithm, 82.6% of the same students were classified in the middle and lower voice categories (mezzos and altos).

Singing teachers had 14.0% doubts about voice classification of their students versus 4.7% according to the algorithm.

Singing teachers classified 29.0% of their singing students as sopranos vs 12.8% according to the algorithm. They classified 46.5% as mezzos vs.

67.4% according to the algorithm, and 10.5% altos vs 15.1% according to the algorithm.

None of the sopranos assigned by the algorithm were classified as sopranos by the singing teachers. Only 27 of the 58 mezzos and only three of the 13 altos according to the algorithm were classified as such by the singing teachers.

*There was even no consensus about extreme voice types: sopranos according to the algorithm were classified as altos by the singing teachers and vice versa.*

This huge discrepancy between classification by singing teachers and classification according to the algorithm could be explained by the fact that in this study *every singing teacher used his/her own criteria for frequency range, even depending on each individual singing student.*

Between the two methods of voice classification there was *most disagreement concerning the labels sopranos and mezzos.*

According to McKinney<sup>12</sup>, misclassification can be a major cause of dysfunction in the young adult voice. As “every aspiring young singer knows that the larger incomes are in the high notes, so regardless of statistical evidence that most of them are baritones and mezzos, they push for the higher voice classifications quite early.”<sup>12</sup>

These observations are corroborated by a study on mechanical stress in phonation by Titze<sup>13</sup>, who found that the largest mechanical stresses in vocal fold vibration are the tensile stresses required for pitch increase.

Klingholz<sup>14</sup> states that male singers have less problems with their singing voice than female singers because female vocal folds vibrate two times more than male vocal folds. Moreover, he stated that female voices very often are classified as a voice type which is too high.

In a study on “vocal attrition” (vocal pathology and reduced vocal functions associated with behavioural, biogenic, and psychological factors)<sup>5</sup>, 62 of the 74 university female voice students (84%) said to be sopranos, 11 (15.0%) said to be mezzos and only 1 student declared to be a contralto. Only 10 (13%) of these singing students proved to be free of symptoms, 19 (25%) had few and 45 (61%) had multiple symptoms.<sup>5</sup>

Miller<sup>28</sup> testified: “young singers press for louder and louder and higher and higher sounds, no matter what their bodies can do comfortably and efficiently”, and Sataloff<sup>16</sup> stated: “singers are habitually unhappy with the limitations of their voices. In many situations, voice teachers are to blame. Both singer and teacher must resist the impulse to show off the voice in works that are either too difficult for the singer’s level of training or simply not suited to the singer’s voice”.

The results of my own studies confirm these statements.<sup>2,10-11,18-27,95,120</sup>

Although voice classification based on frequency range is still very popular among contemporary singing teachers, the results of these studies demonstrate that *frequency range proved not to be suitable as a voice classification parameter, if used as a single parameter.*

*While frequency range is an objective parameter, the combination with other, but subjective criteria, makes voice classification an even more hazardous subjective issue.*

The percentage of singing students who could not be classified according to the six basic voice categories (alto-mezzo and soprano for female voices and bass-baritone-tenor for male voices) is remarkably high: 12.0% female and 26.0% male students in the classical conservatory and 26.6% female and 30.0% male students in the Musical Theatre conservatories.

*The singing students answered to be subjectively classified by their singing teacher or choir conductor by doing some exercises (e.g., vocalises) during lessons or rehearsals.*

This indicates that *there is no generally accepted protocol for voice classification.* Furthermore, *many singing students expressed their doubts about their voice classification:* 17.6% of the singing students did not know their voice category, 9.7% had doubts and 14.5% found that their voice classification was wrong.

These high percentages demand serious consideration because voice specialists always stressed the importance of an exact voice classification before any voice education starts. *Incorrect voice classification may induce functional and eventually, organic voice disorders.*

*Most of the first-year students in speech-language pathology did not know their voice category.* This could indicate that young people in general are not aware of their own voice classification. Voices seem to be classified



only when there is a need to (for instance, when presenting as a member of a choir or in preparation for a (classical) singing career).

## CHAPTER 4

### VOICE CLASSIFICATION IN VOICE RESEARCH

One must consider that voice classification has known many variations according to the period and the musical styles. In the 13th century, for instance, neither the high nor the low region of the human voice were exploited. In France, at the end of the 16th to the end of the 18th century, voices were divided in soprano, mezzo, contralto, tenor, baritone, first bass, second bass, each voice utterly within the limit of one octave and a quarter.<sup>28-30</sup>

Writings<sup>31-36</sup> – even from a psychoanalytical viewpoint<sup>29,34</sup> – describe the many different roles in religious and profane performances attributed to specific voice types in different cultural settings.

During many centuries professional singing was usually restraint to church music and opera. And so was the singing education. Singing students were mostly educated in a very private environment. Before conservatories showed up, singing students lived for many years in the closed family setting of the singing teacher. They not only got their daily singing lessons but were also involved in the daily life of the singing teacher and his family.

*On the opera scene, female and male voices are divided in six principal types: bass, baritone, tenor, contralto, mezzo, and soprano.* There are, however, many subdivisions (voice types), according to different roles, and based on the structure of the voice, i.e., the loudness, timbre, mobility, vibrato, temper, expression, personality, and so on. For instance: Soprano leggero, Soprano Lirico, Soprano lirico spinto, Soprano drammatico, Soubrette, Jugendlich dramatische Sopran, Dramatic coloratura soprano, Mezzo, Dramatic Alt, Spielalt, Tenore Lirico, Tenore lirico spinto, Tenore drammatico, Tenore buffo, Jugendliche Heldentenor, Lyric baritone, Dramatic baritone, Character baritone, Heldenbariton, Bass-baritone, Basso noble, Basso buffo, Character bass, etc.

There also exist intermediate voices, like the light lyric soprano (“dugazon”), the baritone-Martin and so on for corresponding roles.

*Secondary classifications* are made according to:

- The maximal voice intensity, distinguishing e.g., the lyric opera tenor, the tenor of the comic opera (“demi-caractère”) and the operetta tenor, or the tenor lirico spinto and so on.
- The used vocal techniques.
- The age of the artist: young lyric sopranos are often used as “soubrettes” in specific Mozart operas, and operettas, while young dramatic sopranos are called “jugendlich dramatisch”. At the end of her career, a mezzo becomes “desclausas”.
- The vocal possibilities; in cases of reduced possibilities adjectives are added: “second”, “third”, or, worse, “coryphe”, “comprimaria” or “comprimario”.
- The artistic possibilities to play a certain role: a second tenor for instance, could be brilliant as “tenor buffo” (which asks for a penetrating timbre) or as a “trial”.
- In the concert hall a concise classification is used: sopranos, altos, tenors, and basses, on the understanding that the sopranos are most of the time light or lyric sopranos, the altos are mezzos, the tenors are very light, and the basses are baritones. In the lyric theatre they often would be attributed to second roles or less. Concert performances frequently appeal to male falsetto voices.<sup>36-38</sup>

Specific songs suitable to specific voice types were scrupulously elaborated by opera composers. In some cases, composers even adapted (and still adapt) the musical score to the vocal possibilities and limitations of the singer. This could explain why some singing teachers of commercial music don't bother about voice classification: *songs are adapted or even rewritten to suit the assumed possibilities of the chosen singer or singing student.*

Thus, one could easily argue so many singers, so many voices. Voice categories are seen as artificial creations, bound to the historical development of the schools and the singing theatre, to the evolution of the aesthetic taste and to the particularities of the writing of some composers (Verdi for instance).

Voice specialists, however, always stressed the importance of a correct voice classification before voice education starts.<sup>1,7,39-44</sup> Incorrect voice classification can enhance functional and organic voice disorders.<sup>1,12,35,39,45-47</sup> The biographies of famous and less famous singers frequently mention examples of the pernicious outcomes for their voice and for their career caused by incorrect voice classification.<sup>48-51</sup>

In my logopaedic thesis (1963) I already strongly advised that the methodology I used should be refined in future voice investigations, “*by measuring the voice intensity of each tone and each half tone of the whole voice range and of all vowels, to obtain a typical curve for each voice type, thus largely facilitating the troublesome “voice classification.”*”<sup>18</sup>

In 1980, Gross<sup>41</sup> called phonetography a more objective method for Voice Diagnostics.

Strangely, almost 20 years passed since I carried out my first ‘phonetograms’ in 1963, before the first important publication appeared of the **Recommendation by the Union of European Phoniaticians (UEP) for Standardizing Voice Area Measurement/Phonetography** (1982), providing a lot of technical instructions regarding the registration of the “laryngeal possibilities with respect to fundamental frequency and sound intensity”.

Typical applications are:

- The assessment of the normal voice.
- Testing singing voice potentialities.
- Diagnostic aid in cases of vocal disturbances.
- The assessment of the results of therapeutic treatment.

I tried to introduce this objective method of voice classification during all my professional life. However, one can, without any doubt, conclude that *subject classification remains a weak point in voice research*. A review of a great variety of studies show that the same difficulties arise when trying to classify not only the *subject*, but also the *vocal instrument* and the *voice*.

An extensive list of the most used descriptions of the subjects’ *voice* condition (364 items) which I found in the scientific literature, has been published in the Appendix of my doctoral thesis.<sup>10</sup> The most common descriptions are general ones: ‘*healthy voices*’ or ‘*normal voices*’, and ‘*patients*’ or ‘*pathological voices*’.

While acknowledging classification to be one of the major objectives of scientific endeavour, it was established in the preceding chapters, that *subject classification* and *voice classification* remain hotly debated items in voice education and voice research.

Especially regarding *voice classification*, even voice scientists often exhibit an ambiguous attitude: on the one hand, a subject’s voice category is

uncritically accepted without any control, and on the other hand, voice classification is regarded as an indispensable tool for assuring a person's vocal health. *Voice classification*, then, is said to be very complicated, requiring a whole battery of complex tests and instruments.

In my opinion and experience, however, F°-SPL measurement provides a very simple, but invaluable tool for voice classification.

Classifying a voice means, in the first place, *to determine the voice range in which a subject can work without the risk of fatiguing his larynx and to which repertoire he should be assigned by the singing teacher.*

Garde<sup>6</sup>, a French phoniatician wrote, many years ago: “*Voice classification is as important as the determination of the blood group and can be seen as a biological constant*”.

Strangely enough, in some voice research, *voice classification* - if ever mentioned- is uncritically accepted by all investigators as an uncontested fact. But *who* devised voice classification, and *how*, remains unclear, except from some studies, referring to self-identification<sup>52-53</sup> or to singers, “representing a variety of voice types, according to the report of the choir director”.<sup>55</sup>

According to Welch et al.<sup>54</sup> voice classification is an integral feature of our singing culture and individuals are seen and see themselves as belonging to a particular voice category, according to the conventional nomenclature for that category.

Some authors give a subjective appraisal of voice range in connection with voice type: “individuals with a restricted/wider range”<sup>56</sup> and “high voice register strongly pulled down, counteracting the evolution of a midvoice”<sup>57</sup>, while other studies make mention of “singers of all voice categories”<sup>58</sup>, or “singers of the four major voice categories”<sup>59</sup> or “higher/lower voice positions”<sup>44</sup> or even “good voices of lower tessitura” (contralto and baritone).<sup>60</sup>

The uncertainty about the *exact* voice category is also expressed in terms like bass-baritones<sup>54,58,61</sup>, older/younger bass-baritones<sup>58</sup>, tenor-baritones<sup>62</sup>, mezzo-alto<sup>63</sup> or ‘singing students in the alto field’.<sup>44</sup>

Considering the many subtle differentiations, traditionally made in opera and concert, it is amazing that I could find only one voice study dealing with

a “Spinto-tenor”<sup>64</sup>, and another with a “lyric and dramatic soprano”<sup>65</sup>. Other studies refer to countertenors.<sup>54,57</sup>

An extensive list of terms used in voice research can be found in the Appendix of my doctoral thesis.<sup>10</sup>

Tarneaud<sup>1</sup> states that the *tessitura* - the number of tones that is best suited to a voice - varies not only according to the *voice category*, but also according to each individual person. However, different authors have assigned different limits to the tessiture of every voice type.

According to Garde<sup>6</sup> one even should classify not the voice, but the individual. This brings us back to the preceding chapter on *subject classification*.

According to Welch et al.,<sup>54</sup> however, the physiological and acoustic base for subcategories of broader classes is unclear.

As explained above, female, and male voices are commonly divided into six principal types: bass, baritone, tenor, contralto, mezzo, soprano. *But how can voices be classified?*

Although voice classification is of utmost importance for the career of the (student) singer, in assigning a specific singing role or in choosing the appropriate songs, most manuals on singing techniques remain silent on how to classify a voice.

Of course, it is recognized that basses and altos should be able to produce the lowest pitches, and tenors and sopranos the highest pitches, and, consequently, baritones and mezzos, something in between. Sometimes approximate voice ranges are proposed, but cautiously pointing to the many possible exceptions.

Moreover, according to some authors<sup>37</sup>, *timbre* could determine the voice category: a dark mezzo could sing higher than a real soprano.<sup>66</sup> Other authors<sup>67</sup> agree that criteria such as timbre and tessitura can be deceptive.

It is remarkable that in a report by Cleveland<sup>89</sup>, intended to give “a Clearer View of Singing Voice Production: 25 Years of Progress”, only a few lines are devoted to “voice classification”. Vocal tract resonance patterns are considered as being different for various voice categories (basses, tenors, altos, and sopranos).<sup>89</sup> This means that the statistically most frequently occurring voice categories (baritones and mezzos) are ignored!