

Manuel Garcia jr, a clear-sighted observer of human voice production*.

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Abstract – Before Garcia, only a few notions of vocal production can be found in earlier singing treatises. In those days the authors wrote mainly upon the art of ornamentation and the rules of good language utterance. In the beginning of the 19th century, a radical change occurred with the development of scientific experiments. Several Doctors or Physicists drew up theories on human voice production, which were similar to those of sound production in woodwind instruments: flute, reed, or membranous lips. Yet, as experiments on living human beings were impossible, the true nature of the vocal source remained under discussion. In addition, specific questions arose in regard to singing: Are the different registers produced by different vibrating sources or are they due to modifications of a single vibrating system ? What are the reasons for a variation in loudness and in pitch, and how are the variations of voice timbre produced ?

Facing the contradictory opinions of the most famous scientists, Manuel Garcia jr showed an astonishing insight as early as 1840, when he wrote his first « Mémoire sur la voix humaine » presented to the Académie des Sciences de Paris. Being altogether an anatomist, a singer, and a great pedagogue, he could accurately observe the physiological phenomena of human voice in the right way. As the first user of the laryngoscope, he wrote a second paper presented at the Royal Society of London, in 1855, in which he confirmed his previous views.

All along the different issues of his well-known singing method, we may see the lucidity and the improvements of Garcia's ideas. The only concession he made to the singers is related to the famous « Fausset-tête » register, an unfortunate word that was bound to induce confusion later.

Introduction

Manuel Garcia Junior was the first to describe the realisation of sound in the two "registers" of the human voice on an objective anatomo-physiological basis. He clearly separated on the one hand that which depends on the pitch of the sound along with its loudness, and on the other hand, that which depends on sound timbre. Since that was the case, why did he encounter so much resistance, and why does he remain poorly understood today?

We mostly know Manuel Garcia Jr. from his singing method, several times re-edited. Apart from numerous exercises whose purpose was to develop the voice in both range and agility, the first part of this method constitutes a veritable treatise on phonation the extent and development of which may surprise the reader. The text is remarkably complete and clear. Its author bases his descriptions on numerous observations and a wide knowledge of the different types of voice. Except for the terms used to designate the registers, and in particular the embarrassing "*fausset-tête* voice" which is the origin of this research, the exposé appears 150 years later as more up to date and clear than many singing methods that have come out recently.

The object of our work is precisely to examine the conception of the registers in the human voice, a question that periodically divides singers and "researchers" (physicians and acousticians). Although the views of the former are legitimate in the light of their undeniable mastery of the vocal apparatus, those of the latter are equally acceptable since they are based on objective observation. But it could be that singers and physicians are not really discussing the same subject.

To understand the remarkable place of Garcia and his life's work, the criticism he underwent, the incomprehension to which certain passages of his text can give rise and the difficulties which still subsist today in the dialogue between singers and researchers, we have on the one hand briefly to remind ourselves of the principle of voice production and on the other, to closely examine the development of this knowledge in the 19th Century.

The double task of the human voice.

The human vocal tract is a complex and flexible "instrument" that allows the production of varied sounds — breathy sounds, plosive sounds, or harmonic sounds of variable pitch — that all go to make up the spoken and the singing voice. It was possible to simulate the mechanism of speech from the 18th Century¹ onwards, but the subtleties of the singing voice, and in particular the realisation of the different registers and their timbres were and still are, an object of discussion.

¹ Von Kempelen's Talking Machine dates from 1791.

What is the present state of this knowledge?

Adjustment of **fundamental frequency** takes place at larynx level in a subtle balance between sub-glottal pressure, the degree of glottal adduction and vocal fold stretching. Four configurations or vibratory “mechanisms” are described which allow us to cover the range of sounds from the lowest to the highest (M0 to M3) [16]. Two mechanisms, M1 and M2 form the basis of Western vocal technique². Their vibratory characteristics can be objectively defined.

The **timbre** of sounds emitted in part depends on the mechanism used and more importantly, on the acoustical characteristics of the cavities traversed by the sound wave. But to complicate matters, the loudness — and thus the perceived timbre — changes according to whether we find ourselves in the lower or upper frequency zone of a given mechanism. The characterisation of resonance proper to the cavities when singing remains difficult to access even today.

What was the position in in 1840?

We read in a work entitled “*Études élémentaires de la Musique*” [8],

p. 8 “(...) For each individual there are two types of voice : the chest voice or natural voice, and the head voice called in the case of a man falsetto, by which he imitates women’s voices.”³

p. 256, in the section *Du chant comme Art*

Q. What are voice registers?

A. Each section of notes that in the same individual has a very special sound quality.

....Some voices have three registers, others have but two, still others only have one. The voice can be taken from the chest (which is the first register) or from the medium (the second register), or lastly from the head (the third and last register).”⁴

This may be interpreted in the following way — *for any individual there are two voices, but in the singing voice we distinguish three registers*. Let us note in passing that the “medium” from which we obtain the second register has not been defined. All the same, by using two distinct terms, “voice” and “register”, the authors suggest that it concerns two different points of view.

We saw above that the “registration” of the human voice is double — pitch registration and timbre registration. According to whether we bring our attention to the one or the other of these as-

² We have intentionally left aside mechanism 3, the nature of which is still problematic

³ "Tout individu a deux espèces de voix : la voix de poitrine ou voix naturelle, et la voix de tête, appelée chez l'homme fausset, par laquelle il imite la voix des femmes"

⁴ Q. "Qu'est-ce que le registre des voix?"

R. Chaque section de notes qui, dans la voix du même individu, a une qualité de son bien particulière.

....Il y a des voix qui ont trois registres, d'autres qui n'en possèdent que deux, d'autres enfin qui n'en ont qu'un seul. La voix se tire, soit de la poitrine (c'est là le premier registre), soit du medium (c'est le second registre) soit enfin de la tête (c'est le troisième et dernier registre)."

pects, i.e. the production or sounds of different pitch or timbre, the description of the phenomena, the “break-up” into zones of vocal range and the defined categories do not obey the same criteria.

Physicians and singers — two points of view, two descriptions

The vocal apparatus is “hidden” which means that in this period at the beginning of the 19th Century, its workings give rise to all manner of interpretations.

The physicians' point of departure was anatomy and the physiology of the larynx. They performed experiments on human corpses, blowing into excised larynges [20], also upon living animals such as cats and dogs. Their quest consisted of explaining sound production, changes in fundamental pitch, intensity, and change in vocal range. In particular they tried to explain sound production emitted in the two known “voices”, chest voice and falsetto (or head voice). Were these due to different mechanisms if so, what were they?

The singers starting point was their own personal experience and observations developed in the course of teaching. They endeavoured to explain aspects of the voice that concerned them in the practice of their art. They described proprioceptive sensations (larynx position, vibratory sensations) which are at the origin of the terms “chest” voice and “falsetto” voice employed to designate the two main voice “types”, and this the physicians refuted pointing out that no voice is produced in the chest! Singers also paid great attention to perceived qualities in the sounds, which is what led them to distinguish the “registers” as portions of vocal range corresponding to sensory distinctions combining different aspects of vocal technique. As we saw above, the number of registers taken into account varied from one singer to another.

In sum, physicians endeavoured to identify the anatomical structures at the origin of vocal sound, whilst singers described the different registers. There was every reason to think that their points of view could never converge in the absence of objective means — it was not possible to see the larynx at work and sound recording did not exist as yet.

The “voix sombrée” (“darkened voice”) of G. Duprez

In 1837, one event set off a current of passion for the singing voice. The tenor Gabriel Duprez, who performed at the Opéra de Paris⁵, developed the upper notes in the chest voice up to “*contre-ut*” with surprising ease and volume, and a new “dark” vocal timbre. His performance roused public enthusiasm. Various received in the professional milieu they all the same excited the curiosity of

⁵ In Rossini's William Tell opera.

physicians and singers — articles and commentaries began to multiply. The *Institut de France* set a question in its competition⁶.

Doctors Diday and Pétrequin [11] presented a memoir at the *Académie* in 1840 on a “New type of Singing Voice”, the *sombrée* voice as a “*fundamental revolution*”⁷. This memoir provoked various reactions particularly that of Garcia.

In 1840, Manuel Garcia was 35 years old. He had already acquired a considerable knowledge of singing practice and repertoire in the course of tours in Europe and America alongside his father and sisters, P. Viardot and Malibran, soprano and mezzo-soprano. He himself was a baritone, but it was not long before he abandoned the stage (1829) in order to devote himself to the sciences. Enlisted as an army doctor in 1830, he studied the anatomy and physiology of the larynx and acquired a passion for teaching singing. When Diday and Petrequin’s memoir came out he was on the point of publishing a singing method.

A “scientific” singing method

Under the title of “Ecole de Garcia”, *Traité Complet de l’Art du Chant*”, there appeared what later became the first part of the method. In the introduction, Manuel Garcia asserts his father’s teaching.

“(…) His method was the one I wished to reproduce, except that I have tried to render it in a more theoretical form and attach results to causes.”⁸

He goes on to say —

“(…) As all effects in singing are in the last analysis, the product of the vocal organs, I have submitted them to study with physiological considerations. This procedure has allowed me to recognise the precise number of registers and the true range of each of them; I was able to determine the fundamental timbres of the voice, their mechanism and distinctive characters, the divers modes of executing the passagi, the nature and mechanism of the trill, etc.”⁹

The project is clearly set out: Garcia claims to found vocal technique on enlightened knowledge of the workings of the vocal tract. The first chapter in the method is preceded by an abridged de-

⁶ “(…) Determine by means of anatomical research, acoustical and physiological experiments the mechanism for voice production in mankind and mammalian animals” [10] p1.

⁷ (…). “In the same way as varieties known as chest and head voices, that of which we are about to tell the story has a distinct mechanism, special limits and a particular timbre”.

⁸ « (...) C'est sa méthode que j'ai voulu reproduire, en essayant seulement de la ramener à une forme plus théorique, et de rattacher les résultats aux causes.”

⁹ « (...) Comme tous les effets du chant sont, en dernière analyse, le produit de l'organe vocal, j'en ai soumis l'étude à des considérations physiologiques. Ce procédé m'a permis de reconnaître le nombre précis des registres et la véritable étendue de chacun d'eux; j'ai pu déterminer les timbres fondamentaux de la voix, leurs mécanismes et leurs caractères distinctifs, les divers modes d'exécuter les traits, la nature et le mécanisme du trille, etc.”

scription of the vocal apparatus and large extracts from the “*Mémoire sur la Voix Humaine*” that he had submitted in parallel to the *Académie des Sciences*.

Garcia’s proposition contrasts sharply in its tone and content with the works of his time and deliberately stands out when seen against “*Exercices sur la voix*” published by his father in 1835. Up to the beginning of the 19th Century, books dealing with the art of singing were mainly musical methods, developing the art of ornamentation and word pronunciation when singing. Little attention was given to the voice as such about which little was known in any case and which was employed mainly in the expression of the passions. The singer was expected to serve the text in an intelligible way and to produce sounds, now “*violent, interrupted, majestic, hushed*”, now “*light sounds tender and mannered*”¹⁰ each of these characters being the object of a specific study [4]. From Bérard to Garcia great transformations came about, as much in the writing of music as in the conditions in which it was executed. The new qualities appreciated were power and homogeneity in sound. We have only to see the great changes that came about in instrument making, as in the case of the flute and piano; as far as the voice is concerned, things were more complicated. When Duprez “Who had left for Italy with a thread of a voice, came back with a powerful one” he had a “sombre” tone¹¹.

It must be remembered that in 1840 neither singers nor physicians really knew how the phonatory apparatus worked to produce the “registers” nor what timbre really is.

Theories on human voice production.

The Memoir on the Human Voice was quite well received by the scientific milieu but they reproached him for not explaining phonation. A few authors had proffered somewhat fanciful explanations: the glottis was supposed to vibrate after the fashion of a bird call [25]; or like the strings of a harpsicord [4]. Some [11] admitted that the shortening of the laryngeal tube contributes to the fundamental pitch¹² although Müller [20] whose treatise had just been translated, gives an account of numerous experiments that attest to the role of the “lower ligaments”. But it is the explanation of the second register (head voice or falsetto) that gave rise to the most questions. Convinced that a different voice was involved the authors sought a phonatory mechanism elsewhere other than the glottis. Are the hyoid bone muscles or the tongue involved [3], the vibration of “upper” vocal folds [27, 21] or again quite simply a system analogous to the flute [22].

¹⁰ “sons violents, entrecoupés, majestueux, étouffés”, “sons légers, tendres et maniérés”,

¹¹ This term was used by opposition to the habitual “clear” or “white” voice.

¹² This is what gave rise to the Memoir of Diday and Pétrequin who thought they had discovered a new “mechanism” after observing the larynx which remained fixed in a low position during the emission of the “*voix sombrée*”.

As long as it was not possible to see the glottis in action whilst singing, Garcia remained quite happy with vague hypotheses on its physiology. On the other hand his exposé is without ambiguity as far as concerns changes in pitch or in timbre. The importance of the memoir lies in its clear presentation of the registers and their characterisation independently of timbre. During a public presentation on April the 12th, 1841, a singer makes the experiment of holding a note at the same intensity and the same breath in the chest voice and in falsetto. The Academy observed that the duration of the sound was not the same and concluded that the amount of air expended was greater when in the second register (falsetto).

From 1840 to 1855 Garcia considerably improved the draft of the “theoretical” part of his method; his text gains in clarity. He read Müller and in 1847 published the text of the *Mémoire* augmented with “new observations” [14]. When he left to settle in London in 1848, all his ideas were in place, but the understanding of the function of the vocal apparatus and thus the definition of the registers remain subject to experimental verification of sound production.

Confirmation by laryngoscopic observation : the memoir of 1855

Garcia the musician, and teacher was the first to make use of a dentist’s mirror in order to “describe the observations made of the interior of the larynx during the act of singing” [15].



FIG. 1. — Le miroir à main dirige le rayon solaire contre le petit miroir guttural et reçoit de celui-ci l'image de la glotte.

With infinite patience he succeeded in finding good lighting conditions and in himself observing his own glottis in chest voice and falsetto. In this way he was able to prove that “*the upper ligaments fulfilled no role as a generator in the formation of the voice.*” [15] p27 and he formulated his point of view on sound production:

“(…) . In this way then, in the regime of chest register, the vocal ligaments are under tension in the whole depth of the front apophysis of the arythenoid, whereas in the falsetto regime, it is only the edges of these ligaments that stretch and touch”¹³ .

¹³ "Ainsi donc, sous l'empire du registre de poitrine, les ligaments vocaux sont tendus et entrent en contact dans toute la profondeur de l'apophyse antérieure de l'aryténoïde; tandis que sous l'influence du registre de fausset, ce sont les bords seuls de ces ligaments qui se tendent et se touchent"

which was very close to that of Müller¹⁴. The London memoir was published in France in 1861 with in the first part, a note by P. Richard on “*l'invention du laryngoscope ou miroirs du larynx* ». [23].

What Garcia contributed to the knowledge of his time

Garcia's contributions were many.

1/ The “human phonatory” registers were defined on a functional basis that could be objectivised independently of variations in intensity and timbre. We are therefore dealing with laryngeal mechanisms in the modern sense of the word. The study took on board the voices of children, women, men and all types of emission — the inspiratory voice, the double-bass voice, “the two-part voice of the Bashkirs”¹⁵

2/ The two main vibratory mechanisms in singing — chest voice and falsetto-head voice were studied and described with “keys” that allowed one to identify them :

- the sound series within a given mechanism is continuous; proof that “falsetto-head is one and the same mechanism and that the distinction made between the two registers is one of timbre
- the two mechanisms possess a series of sounds in common that are the same for men and for women . Within this common zone “chest” and “falsetto” notes coexist.
- also within this common zone, passage from one mechanism to the other produces discontinuity in the sound (a “hoquet”).
- for a given note, the amount of air flowing increases when passing from chest to falsetto.

3/ Timbre was clearly defined and studied separately.

“ The timbre is the intrinsic and infinitely variable characteristic that each “register”, each note can take on leaving aside loudness. Thus **the darkened voice is not a new type of voice but a basic timbre found in the two registers**^{16, 17}.

The problem of the Falsetto-head register.

What made Manuel Garcia, whose views were otherwise valid, propose terminology as ambiguous as “falsetto-head register”?

In his 1840 memoir, he affirmed

¹⁴ (...).“The essential difference between the two registers is that only the edges of the vocal folds vibrate in falsetto, whereas in chest voice, the entire folds execute vigorous and wide excursions.” [20] TII, p. 94.

¹⁵ This refers to “diphonic” singing ,described in the “additions” of the 1847 edition. [14].

¹⁶ [14] p. 34

¹⁷ “Le timbre est le caractère propre et variable à l’infini que peut prendre chaque “registre”, chaque son, abstraction faite de l’intensité. Ainsi **la voix sombrée n'est pas une nouvelle espèce de voix, mais un timbre fondamental**”

“(…) that there are only two registers, each of them consisting of a “series of homogenous consecutive sounds from low to high produced by the development of **the same mechanical principle** (...) whatever other modifications in timbre and force they are made to undergo”¹⁸ [14] p4.

In a footnote he goes into greater detail :

“(…) The range designated under the name of falsetto-head as belonging to one register, is considered by musicians to be made up of two continuous registers; the lower one takes the name of *falsetto* or *medium* and the higher the name of *head*. In order to be more easily understood, we will make temporary use of this division, but we reserve the right to prove its inconsistency at a later date.”¹⁹

Could this double nomenclature have been a compromise in order not to put off singers? When one thinks of it, this terminology answers to a certain logic. For a male voice, only concerned by sounds in the second register that fall within the common zone, the male term has to be “*falsetto*”. For the upper part of this same register that in practice only concerns women, he adopts the term “*head voice*”.

If we juxtapose the phonetogram of the totality of the sounds possible and the range practised in male singing (in blue squares) and female singing (in red circles) [24], we can easily see that the zone common to the two registers should be consider apart. Within it, wide variations in intensity and thus in timbre are possible : it is in this zone that singers work the “*mixed timbre*” either in mechanism 1 or 2 [5].

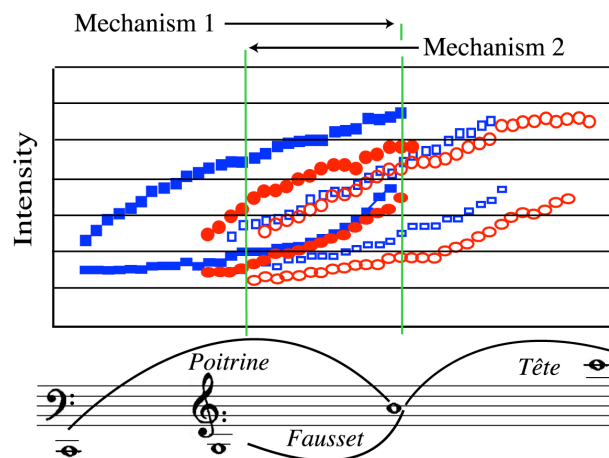


Figure 2 – Mean phonetogram of men’s voice (blue) and women’s voice (red) showing the area where Mechanism 1 (full points) and Mechanism 2 (empty points) overlap. [24]. On the staff, corresponding extent of the Garcia’s registers : « *poitrine* » and « *fausset-tête* ».

¹⁸ .“une série de sons consécutifs et homogènes allant du grave à l’aigu, produits par le développement du **même principe mécanique**.....quelles que soient d’ailleurs les modifications de timbre et de force qu’on leur fasse subir.”

¹⁹ “L’étendue désignée sous le nom de fausset-tête, comme appartenant à un seul registre, est considérée par les musiciens comme formée par deux registres contigus, dont le plus grave prend le nom de *fausset* ou de *médium*, et le plus élevé le nom de *tête*. Pour être plus facilement compris, nous nous servirons provisoirement de cette division, nous réservant d’en démontrer plus tard l’inconsistance.”

Within the common zone, a man can develop vocal intensity exceeding by an average of 10dB that of a woman, whereas in Mechanism 2, the upper intensity limit is the same for both types of voice. The “step” is visible in fig. 2 and could explain what Garcia made of it when adopting the two terms of falsetto and head.

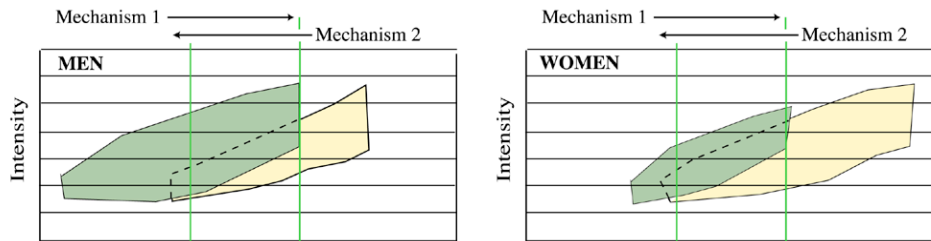


Figure 3. In the common zone, the voice dynamical range of each mechanism is different for men and for women.

The fact that Garcia enumerates “five registers”²⁰ in the human voice from 1856 onwards, has been interpreted as a retraction compared with the memoir of 1840²¹. But in 1860, in a letter addressed to P. Richard and reproduced in the publication of 1861 [23] p20, the same Manuel Garcia explains the vibration of the vocal ligaments and mentions the phenomena corresponding to the “chest register” and the “falsetto-head” register.

Finally, among the noteworthy modifications in the first part of his Method in 1856, we should note the smaller place given to the falsetto voice for the male singer. The paragraph of 1840, “falsetto in men is of the same nature and placed on the same chords as that in women” [13] pXII, showing a range of an octave plus a third has disappeared. We should perhaps see in this a change in musical taste²². Use of falsetto was more differentiated for men and women.

How should we interpret the falsetto-head register today?

The term “register” is polysemic. The author was thus turn and turn about the physician examining physiological “registers” and the singer analysing the technical working of the vocal “registers”. Manuel Garcia could adopt these two points of view with complete lucidity, but given his authority, he could have imposed an unambiguous vocabulary by proposing different terms according to whether he was taking into consideration the physiology of laryngeal mechanisms or the artistic work of vocal technique. At various times different authors have proposed abandoning the terms

²⁰ Including the “double bass voice” and inspiratory voice [13]

²¹ We read in Mackinlay’s book, “ (...) At this time (1840) he stated that there were two registers; but in later years with the invention of the laryngoscope and the examination of the vocal cords which resulted from it, he altered the original division from two to three. – chest, medium, and head-voice- and this is accepted by all as scientifically correct according to the definition of “register” laid down by him”. [18] p132. The term “scientifically correct” obviously reflects the author’s own opinion

²² Stephen de la Madelaine wrote in 1851, « (...)They were all calling for the high C in chest voice (...) for a tenor was no longer permitted to emit a single note in clear timbre or in falsetto.”[7] p.277

“chest voice” and “head voice” in favour of 1st and 2nd “laryngeal” register [10 p43, 20, 21]. We know that such a change in singing descriptors (and consequently method) would have produced a break in musical usage, which Garcia no doubt wished to avoid.

In spite of all, “falsetto-head” did a lot of damage to Garcia. Two of his pupils, Charles Bataille and Mathilde Marchesi [18], contested this expression, whilst affirming in the first case, that there are two registers²³, and in the second case that there are three²⁴! Discussion as to the number of “registers” (without defining if we are speaking of the laryngeal mechanism or timbre) is nowhere near petering out, each exploiting the ambiguity of the term to his own advantage! [17]

Manuel Garcia’s clear-sightedness in a period of great confusion in this field of knowledge most likely comes from the fact that he had a double culture, that of a singing teacher and that of a research physician. It is as such that he was the butt of criticism, particularly on the part of singers who fustigated the “scientific” aspect of the method that was in their eyes, useless, even damaging to artistic teaching. Duprez in 1845 makes the ironical comment: “*Just as a poet has no need to know about the physiology of the brain in order to compose verses, so it is unnecessary to know about the vocal organs in order to sing*”²⁵ [12].

As an inheritor of a great lyrical singing tradition, Manuel Garcia appears today as an accomplished pedagogue, who built up the work on vocal “*registers*” on enlightened knowledge of the “*laryngeal mechanisms*”.

²³ “(...) The voice has two manifestations, long since designated under the name of “chest register and falsetto register”. Anatomy and physiology also reject the denomination “head register”, applied quite incorrectly to the falsetto register.” Bataille [2] p. 31

²⁴ “(...) What I wish first of all to loudly proclaim is that women possess *three* and not *two* registers (...) I call *Medium* and not *falsetto*, as certain singing teachers have called it, the register which can be found placed between the two others.” Marchesi [19] p.V

²⁵ De même qu'un poète n'a pas besoin de connaître la physiologie du cerveau pour faire des vers, de même il est inutile de savoir l'anatomie des organes vocaux pour chanter

Garcia's method editions

Date	TITLE, EDITION, CONTENT
1840	Ecole de Garcia ; Traité complet de l'Art du Chant 1 ^{ère} éd. <u>1^{ère} partie</u> , 67 p. Paris, chez l'Auteur. <i>Reproduction de d'importants extraits du Mémoire sur la voix humaine.</i>
1847	Ecole de Garcia , Traité complet de l'Art du Chant en deux parties <u>1^{ère} partie</u> , (2 ^{ème} éd.), <u>2^{ème} partie</u> , (1 ^{ère} éd.), 188 p.(83 + 105); chez l'Auteur <i>Intégralité du Mémoire dans la 1^{ère} partie; Nouvelle 2^{ème} partie</i>
1851	Ecole de Garcia, Traité complet de l'Art du chant en deux parties 3 ^{ème} éd. <u>1^{ère} partie seule</u> , 67 p. (?); Paris, chez Brandus. <i>1^{ère} partie publiée en 1847</i>
1856	Nouveau Traité sommaire de l'art du chant, 4 ^{ème} éd.(?) <u>2 parties</u> , 100 p.Paris, Richard <i>Texte de la 1^{ère} partie refondu</i>
1863	Cinquième édition, Nouveau traité de l'art du chant par Manuel Garcia, 5 ^{ème} éd., <u>2 parties</u> , 100 p. Paris Heugel <i>Préface avec les dessins du laryngoscope. Pour le reste, id à l'éd. 1856</i>
1872	Ecole de Garcia, Traité complet de l'Art du Chant en deux parties, par Manuel Garcia. 6 ^{ème} éd. 100p.Paris, Heugel
1878	7 ^{ème} éd. 100 p.Paris, Heugel, id.
1884	8 ^{ème} éd. 100 p.Paris, Heugel, id.

Under the title of "Traité complet de l'art du chant par M. Garcia fils", the first edition includes the essentials of the text contained in the memoir, accompanied by the Academy report and a first version of the exercises in vocalisation. The whole (XVI p + 67) constitutes what later became the first part.

In 1847, Garcia reproduced the integrality of the Memoir of 1840 adding the first version of the second part — the art of phrasing.

The 3rd edition of 1851, deposited at the Bibliothèque Nationale contains only the first part already published in 1847.

In 1856 there appeared the method in two parts (100 pages) with the curious title of "Nouveau Traité Sommaire de l'Art du Chant"; this was republished several times [1863, 1872, 1878, 1884].

Acknowledgments

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