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Si cantas, male cantas: si legis, cantas*
First soundings towards a reflection on vocal education

*Augustus Caesar,
expression attributed to him
by MARCUS FABIVS QVINTILIANVS,
Institutio Oratoria, I/VIII, 2

The aim of this contribution is to examine some aspects of the attention to voice and voice education which were an integral part of the vision of teaching and the practice of the education of small children and the adolescents. In particular it aims to give special emphasis to all the elements relating to the singing voice and its training through health care and the maintenance of the health of the voice as the principal instrument of communication. Given the size of the subject of enquiry, the results can only, at this stage, be partial and incomplete, and we apologise in advance for any omissions. Even so, it seems to me that there is enough to begin an initial critical reflection on how today, in comparison with what can be deduced from the Roman rhetoricians and the earliest Graeco-Roman physiologists, an approach to the practice of the vocal education of children and adolescents can in fact be made

Introduction: the vocal organ and communication in the Middle Ages

In the apse of the Church of S. Apollinare in Classe in Ravenna (Fig. 1) a very evocative image can be seen: in the epistodome there is a synthetic representation of the episode of the transfiguration of Christ on Mount Tabor. On the side stand the figures of Moses and Elijah, and further down are three sheep, the symbols of Saints Peter, James and John, who witnessed the event. In the lower part of the picture stands S. Apollinare in the midst of a green field, interspersed with cypresses, olives, multicoloured flowers birds, bushes and rocks; twelve sheep (representing the apostles) are turned towards him. In the frame which surrounds this scene, in the strip around the edge of the vault, between the Saviour and the hand of God, in a space between the converging of festoons of branches on which some birds are singing, we can see a heart, with its cavity surmounted by a sort of cornucopia, above which again is a bird, singing. (Fig. 2). This is perhaps the first representation of the vocal organ according to the knowledge of human physiology of that era. The heart and its left ventricle containing air, like the tracheal artery, is the fulcrum of the voice. The vocal organ thus follows the

impulse of the heart, which is the principle of life, as the voice is its manifestation. Guglielmo Bilancioni explains the significance of this representation, within the framework of the huge mosaic: “God holds the heart of man in His power; He possesses his soul, and thus represents the will, which rules despotically over our senses, the faculty of the soul and every member of our body. Thus the gesture of the hand of the Almighty which emerges from the clouds the of heaven in the the great basilica would be mute if it were not supplemented by the schematised design which shows the motion of the hand as following the Divine voice/word, indicating the sublime Son to the faithful”.¹ Later on, Dante, in the *Divine Comedy*, was to describe only one category of the damned as absolutely mute: the diviners and sorcerers, condemned to climb a hill, twisted round 180°, so that not only can they not see before them, but they are also barred from speech. On this subject, Bilancioni again specifies that if we assume a twist of 180°, the laryngo-tracheal tube would suffer from strong stenosis. This would thus produce a restricted passage of air which would make breathing difficult. This not only results in the need for these ‘damned souls’ to proceed slowly, but is also the cause of the functional impotence of the voice, mainly because of the lack of air pressure: “the physio-pathological phenomenon has its equivalent in the moral field: anyone who utters prophetic words and takes to himself the prerogative of foreseeing and predicting, will be punished in sight and speech”.²

Certainly in the age of Dante, the knowledge of the anatomy and physiology of the voice and its organs was not much advanced over that handed down by Galen’s studies. We should not forget that studies of autopsy results was very difficult; the doctor Mondino de’ Liuzzi, a contemporary of Dante and teacher in the Bolognese *studium*, mentions the autopsy of a pig (1305) and two women. (1315).³ However, the subtle attention that Dante too dedicated to the sound phenomenon of vocal sound and the respiration which accompanies it was considerable.

Cicero and Quintilian: voice - emotion - communication

The roots of this interest in the voice as an instrument of communication, and in its education, are to be found in the oratorical tradition handed down to us

¹ GUGLIELMO BILANCIONI, *A buon cantor buon citarista*, Roma, Formiggini, 1932, pp. 282-284; ID., “L’organo della voce in uno dei mosaici di S. Apollinare in Classe”, *Il Valsalva*, VI, 1928, pp. 85-90.

² BILANCIONI, *A buon cantor*, pp. 294-295.

³ Ibid., pp. 295-303.

mainly through the writings of Cicero (106-43 B.C.) and Quintilian (c. 35-96 A.D.).

“We must first of all congratulate ourselves on having” the voice “and then take care of it, whatever it may be like”:⁴ with this determined statement, Cicero reasserts, if we ever had any doubt on the matter, the importance of the voice and the determining role which it plays in the act of communication. One element of this process is close relationship existing between word and emotion – through the characteristics of the fluency of eloquence and of the small variations of timbre with which the word is uttered – and through respiration and reading, or the “emission” of the word. These traits of verbal expression acquired meaning in the handling of the semantic content of the text, further emphasised by the use of gesture. On the other hand, both Cicero and Quintilian stress the pedagogical and technical aspects linked to the voice, above all separation of the activity of the orator from that of the theatrical artist, whether actor or musician.

Respiration, vocal speech and gesture, technical study of speech and of law are the instruments of the rhetorician: they also constitute stages in his preparation.

Nature has assigned an expression to every emotion; a tone of voice and a specific gesture: the entire human body, every expression of the face and every tone of voice are in tune, like the strings of a lyre, with every emotion which strikes them. The tones of the voice are in fact tuned like the strings of an instrument, so as to produce at every touch sharp and flat sounds, rapid and slow ones, strong and weak ones; among these extremes there is also, for each genre, an intermediary tone. Numerous other tones derive from these – such as the bitter, the astute, and the extended; the sustained and the staccato, the broken and the strident, the diminishing or the swelling, obtained by the modulation of the volume of the voice. There is no voice which is not regulated by the halter of the art [...] Wrath will assume one tone of voice, sharp, rousing, with frequent interruptions [...] Compassion and sorrow will have a different one – flexible, full, broken and plaintive, [...]

LVIII. Different again will be the tone of fear – low, hesitant, submissive [...] Violence will require yet another – intense, energetic, urgent and at the same time impetuously solemn [...] Pleasure will demand another tone – free, tender, joyous and calm [...] while the tone of humility will be dif-

⁴ I have used: MARCO TULLIO CICERONE, *L'oratore. Con un saggio introduttivo di Emanuele Narducci*, Milano, BUR, 1999⁵, in the translation edited by Mario Martina, Marina Ogrin, Ilaria Torzi e Giovanna Cettuzzi; CICERONE, *De Oratore*, III, 224: “[...] quae primum est optanda nobis; deinde, quaecumque erit, ea tuenda”.

ferent – low but without appealing for compassion, and uniform in the articulation of its sounds [...].

LIX. All these emotions must be accompanied by gesture, but not the theatrical gesture which gives expression to every word; rather a gesture which throws light on the situation and the thinking in general; not with mime, but with simple indications; and this comportment of the vigorous and manly figure is to be taken not from the stage and the actors but from those who exercise with arms and in the gymnasium.

The movements of the hands must be less expressive, with the fingers accompanying the words, not substituting for them; the arm, almost as it were the weapon of the speech, must be projected well forward; in the moments of greatest tension, at the beginning or the end, the feet may be stamped.⁵

Quintilian seems to make a better distinction between the two factors present in verbal communication: the one being sonority, the emission of sound as a physical reality and the other the word, the product of the emission of the sounds produced. This aspect was, however, to remain confused until the studies made by the medical scientist, Claudius Galenus (Galen) (129-199 A.D.).

[...] and the sound of the voice is conditioned by the way in which its chords are plucked; but just as the emotions are real in some cases and fake in others, and the product of imitation, the real ones like sorrow and anger and indignation arise spontaneously, but are devoid of art,

⁵ CICERO: *De Oratore*, III, 216-217, 218, 219, 220-221: “[...] omnis enim motus animi suum quendam a natura habet voltum et sonum et gestum; corpusque totum hominis et eius omnis voltus onmesque voces, ut nervi in fidibus, ita sonant, ut motu animi quoque sunt pulsae. nam voces ut chordae sunt intentae, quae ad quemque tactum respondeant, acuta, gravis, cita, tarda, magna, parva; quas tamen inter omnis est suo quaeque in genere mediocris. atque etiam illa sunt ab his delapsa plura genera leve, asperum, contractum, diffusum, continenti spiritu, intermisso, fractum, scissum flexo sono extenuatum, inflatum. nullum est enim horum generum, quod non arte ac moderatione tractetur. hi sunt actori, ut pictori, expositi ad variandum colores. aliud enim vocis genus iracundia sibi sumat, acutum, incitatum, [...] LVIII. aliud miseratio ac maeror, flexibile, plenum, interruptum, flebili voce [...] aliud metus, demissum et haesitans et abiectum [...] aliud vis, contentum, vehemens, imminens quadam incitatione gravitatis [...] aliud voluntas effusum et tenerum, hilaratum ac remissum [...] aliud molestia, sine commiseratione grave quoddam et uno pressu ac sono abductum [...]. LVIII. Omnis autem hos motus subsequi debet gestus, non hic verba exprimens scaenicus, sed universam rem et sententiam non demonstratione sed significatione declarans, laterum inflexione hac forti ac virili, non ab scaena et histrionibus, sed ab armis aut etiam a palestra. Manus autem minus arguta, digitis subsequens verba, non exprimens; brachium procerius proiectum quasi quoddam telum orationis; suppletio pedis in contentionibus aut incipiendis aut finiendis”.

and for this reason must be shaped by teaching and method. On the other hand those produced by imitation do possess art, but they are devoid of naturalness, and thus in such cases it is essential to test them intensely, to conceive the images of reality to be struck as though they were real. Thus the voice as an intermediary will communicate the emotion received from our own soul to the soul of the judges, for it is the revealer of the mind and shows as many changes as the mind does. Thus in lightweight subjects it runs full, simple and in a sense, easefully; on the other hand in verbal contests it struggles with all its force and, as it were, strains every nerve. In wrath it is terrible, bitter, harsh and disquieting, because the breathing cannot be long when it is emitted without measure. In answering hostility it must be a little slower, because it is almost exclusively the inferior who will have recourse to this; in flattery, on the other hand, in confession, in seeking forgiveness, in asking for something, it is sweet and submissive. The voice of one who persuades, warns, promises, or comforts is serious; in fright and shame it is contained; it is strong in exhortation, even in dispute, modulated, sorrowful and intentionally a little subdued in commiseration: on the other hand in digression it is diffused, sonorous and even; in exposition and in conversation it presents a uniform tone, and an intermediary level between high and deep. It is raised, again, when the emotions are intense; lowered when they are calm, more or less according to their degree.⁶

Verbal expression is thus linked with gesture, “which too must accord with

⁶ From the works of Quintilian I have used the edition: MARCO FABIO QUINTILIANO, *Institutio oratoria*, Italian trans., *La formazione dell'oratore*, Milano, Rizzoli, 1997 (Classici della BUR): trans. Books I-IV by Michael Winterbottom, notes by Stefano Corsi, trans. and notes of Books IX-XI by Cesare Marco Calcante. QUINTILIANO, *Institutio oratoria*, XI, III, 61-65: “[...] sonatque vox ut feritur; sed cum sint alii veri adfectus, alii ficti et imitati; veri naturaliter erumpunt, ut dolentium, irascentium, indignantium, sed carent arte ideoque sunt disciplina et ratione formandi. Contra qui effinguntur imitatione, arte habent; sed hi carent natura, ideoque in iis primum est bene adfici et concipere imagines rerum et tamquam veris moveri. Sic velut media vox, quem habitum a nostris acceperit, hunc iudicum animis dabit: est enim mentis index ac totidem quot illa mutationes habet. Itaque laetis in rebus plena et simplex et ipsa quodam modo hilaris et velut omnibus nervis intenditur. Atrox in ira aspera ac densa et respirazione crebra: neque enim potest esse longus spiritus cum immoderate effunditur. Paulum <in> invidia facienda lentior, quia non fere ad hanc nisi inferiores confugiunt; at in blandiendo, fatendo, satisfaciendo, rogando lenis et summissa. Suadentium et monentium et pollicentium et consolantium grauis; in metu et uerecondia contracta, ad hortationibus fortis, disputationibus teres, miseratione flexa et flebilis et consulto quasi obscurior; at in egressionibus fusa et securae claritatis; in expositione ac sermonibus recta et inter acutum sonum et grauem media. Attollitur autem concitati adfectibus, compositis descendit, pro utriusque rei modo altius uel inferius”.

the voice and obey the sentiments together with it".⁷

Turning to the quality of the voice, the observations and thoughts of Vitruvius are both interesting and unusual. He was an architect of the age of Julius Caesar and Augustus, and he related the different types of voice to the various zones of the earth which, characterised by different climates, were in his view also a cause of the modifications of speech. In his *De architectura*⁸ Vitruvius shows considerable interest in music, though most people know him for having dealt with the characteristics of the architecture of the theatre, and of harmony (ch. 4), or the characteristics of sounds, and the types of melody and song. In Book VI, "Di diverse qualità de paesi et varij aspetti del cielo; secondo i quali si deono disporre gli edifici" (ch. I), when he discusses the various types and arrangements of the buildings in relation to the different climates, as well as the differing stature of peoples who go with those climates, he associates this latter bodily characteristic with the respective tones of voice. He thus keeps closely to medical theories which indicate the relation between humidity and dryness as a cause of the phenomena that control physiological activities and the modifications within the human body. The varying distances from the sun of the various points of the earth ("according are linked to which the Heavens to the inclination of the earth") controls the impact of its action, which makes the bodies more or less humid. Vitruvius observes, then, that in the lands in the south of the earth, nearer to the Equator, as a result of the heat, human beings are shorter and have, as well as other special bodily characteristics, more subtle and sharp voices. In contrast, among those who inhabit the north of the world, i.e. the zones further from the heat and the rays of the sun, as a result of the greater humidity which accompanies the lesser heat, everything swells, and the bodies being greater (i.e. taller) have a deeper voice. On the other hand the peoples who inhabit the median zones (such as Greeks and Romans) have as a result a median tone of voice.⁹ The strangeness of these observations, incorporated in a treatise about architecture (which is not lacking, moreover, in comments about

⁷ QUINTILIAN: *Institutio oratoria*, XI, III, 65: "[...] ut de gestu prius dicam, qui et ipse uoci consentit et animo cum ea simul patet".

⁸ MARCUS VITRUVIUS POLLIO, *De Architettura*, in *I dieci libri dell'architettura di M. Vitruvio, Tradotti et commentati da Mons. Daniel Barbaro eletto Patriarca d'Aquileia, da lui riveduti et ampliati; et hora in più commoda forma ridotti*, In Venetia, Appresso Francesco de' Franceschi Senese, et Giovanni Chrieger Allemanno Compagni, 1567, Libro V, chs. III-V. Edition consulted: VITRUVIUS, *I dieci libri dell'architettura tradotti e commentati da Daniele Barbaro 1567, con un saggio di Manfredo Tafuri e uno studio di Manuela Morresi*, Milano, Polifilo, 1987.

⁹ See in BILANCIONI, *A buon cantor*, pp. 296-297; VITRUVIO, *I dieci libri dell'architettura*, pp. 227-247 and 274-277; *Il 'Vitruvio Magliabechiano' di Francesco di Giorgio Martini*, edited by Giustina Scaglia, Firenze, Gonnelli, 1985, pp. 162-164.

the theory and practice of music), even in their naivety give us further reason for attention to this important instrument of communication which belongs to us and is a constituent element and special prerogative of the human race.

From the descriptions by Cicero and Quintilian on the communicative functions of the voice come some reflections concerning the properties of mimicry and imitation in the artistic use of the voice, its nature in relation to breathing, and the function of gesture not only in emphasising the key moments of expression, but also in increasing the quality of communication or compensating for certain emotional tensions which particular states and situations may cause. These are always observations which reflect direct experience and mirror the normal physiological behaviour in non-pathological conditions of human verbal communication in relation to different emotional states. As far as the voice is concerned, today studies of different expressive vocal patterns have taken not only the modifications in sound due to the activation of the facial mimic muscles, and of the sound-producing organs and articulation and resonance, but also the relation between the central nervous system and the response coming from the autonomous nervous system (such as salivation). ‘Positive’ emotions thus generally involve a stretching of the mouth muscles, provoking a smile and a dilation of the larynx, with the synergical result of an increase in the extension of the vocal tone, similar to when we pass from a forced emission to a smooth one. This situation of muscular relaxation and stretching of the mouth muscles produces the typical relaxed, warm timbre of voice. In contrast, ‘negative’ emotions generally involve mimical modifications affecting the oral cavity, which are translated into a tense and sharp voice.¹⁰ Emotion, in terms of verbal communication, can express itself in various modes: on the phonematic plane, it produces less precision in articulation, and on the semantic plane, the omission or momentary forgetting of words, and through intonation, the increasing or lowering of frequency or of the pitch. Moreover the “respiratory group” (a chain of sounds produced in a release of breath) can be excessively prolonged or broken up.¹¹ Pio Enrico Ricci Bitti¹² has classified vocal expression of the individual emotions in relation to acoustic parameters in summary form, around three different characteristics of the voice and its emotional content: a) hedonic valency, or the degree of pleasing/unpleasing

¹⁰ An example of the change in utterance caused by stress can be observed in children of pre-school age, who react with total or partial muteness. In this case there is an important reduction in the amplitude of the sound.

¹¹ AMLETO BASSI, “I disturbi della voce in età evolutiva”, *Rivista di psicologia*, LVII, 1973, pp. 3-12:5.

¹² PIO ENRICO RICCI BITTI, “Le emozioni e la loro esteriorizzazione”, in *Regolazione delle emozioni e arti-terapie*, ed. by Pio Enrico Ricci Bitti, Roma, Carrocci, 1998, pp. 15-28: 21.

character of the emotion through the different extension of the voice (broad for positive emotions, restricted for negative ones) and b) activation, which reveals the degree of relaxation/tension through the more or less tense timbre; c) potency, which indicates the fullness of vocal expression through variations of breadth (impetuosity in wrath, “fine thread of a voice” in fear).

As the rhetoricians had already perceived in not separating the gesture from the verbal content and the facial mime in the *actio*, this aspect – together with the various postures of the body – is a means of signalling the emotions, and plays a part in the communication of the emotional state. There are gestures which are not produced with the aim of communicating but of regulating the emotive state of the speaker: these are the gestures of adaptation. Posture, while it cannot express an emotion on its own, plays a part by associating itself with the other indices, and along the dimension of tension/relaxation, it shows the intensity of the degree of emotional activation.¹³

The aim of these observations on the part of the rhetoricians was to indicate to the student the different ways of communication, referring them in technical matters to the example of masters who are able to reproduce such expressions *ad arte*. The aim is to attain an effective exposition (*actio*) which manifests the emotions, because these “are equal for all, and recognise one another on the basis of the same signs by which they are manifested in each of us”.¹⁴

Among the aspects linked to the education of the voice today, we recognise an important distinction between voice and word, or between the physical-sonorous phenomenon and that generated by the possibility of articulating the sound produced by the larynx to achieve structures which possess significance. But this distinction was not consciously made until the studies of Galen appeared. He undertook the first important anatomical and physio-pathological studies on the phenomenon of the voice, with ‘live’ experiments, through which he discovered not only the nerves which permit the various movements of the larynx, among them the ‘recurrent laryngeal nerve’, but also their passage from the brain.

¹³ PIO ENRICO RICCI BITTI - MICHAEL ARGYLE - DINO GIOVANNINI, JEAN GRAHAM, “La comunicazione di due dimensioni delle emozioni attraverso indici facciali corporei”, *Giornale italiano di psicologia*, VI, 1979, pp. 341-350. Cfr. also EMANUELA MAGNO CALDOGNETTO, “La gestualità coverbale in soggetti normali e afasici”, in ISABELLA POGGI - EMANUELA MAGNO CALDOGNETTO, *Mani che parlano. Gesti e psicologia della comunicazione*, Padova, Unipress, 1997, pp. 107-120.

¹⁴ CICERO: *De Oratore*, III, 223: “Actio, quae prae se motum animi fert, omnis movet; isdem enim omnium animi motibus concitantur et eos isdem notis et in aliis agnoscunt et in se ipsi indicant”.

The use of the mask (*persona*)¹⁵ by the actors in Greek tragedy requires a separate analysis. On this matter, Cicero warns that our “ancestors had already understood that in communication the expression of the face was fundamental, since “they did not applaud even Roscius if he was wearing a mask over his face”.¹⁶ With regard to this, it is possible to show that if this element, in covering the face of the actor, on the one hand takes away strength from the expression through the facial mime – and this is what the criticism is about – on the other hand it is an instrument of modification of the vocal sound in the aspect of the timbre and the projection of the sound. The mask is a resonator, and as such it has an acoustic function.

The education of the voice, including physical exercise and vocal technique.

However, these aspects of the education of the voice that we have noted so far are not exhaustive, nor are they limited to the relationship to the different attitudes which make it possible to emphasise the expression of the emotions. Indeed these are the starting point in representing the degree of primary interest in the development of vocal ability.

The aim of vocal education of the young in the Graeco-Roman world, in terms of acquisition of language and comprehension of phrases, could not be separated from the oral exercise of recitation of texts, and eloquence was a necessary part of political success and hence also of social advancement. In this way, the work on one’s voice was part of the school programme of training, and of the exercise of the rhetorician, *domestica exercitatio* which made it possible to experiment with the charm of the voice on the hearers,¹⁷ since nothing “is more pleasing to our ears and more suited to render the *actio* acceptable than the alternation, variation and changing of the tone”.¹⁸

Among the studies relating to the subject dealt with here, we owe some interesting insights to Aline Rousselle who has investigated the aspects inherent in the art of oratory¹⁹ and to Emiel Eyben to whom we

¹⁵ The etymology of the word (*per-sonare*) already throws light on its function of emitting sounds through it!

¹⁶ CICERO: *De Oratore*, III, 221: “[...] quo melius nostri illi senes, qui personatum ne Roscium quidem magno opere laudabant”.

¹⁷ CICERO: *De Oratore*, I, 157: “Educenda deinde dictio est ex hac domestica exercitatione et umbratili medio in agmen, in pulverem, in clamorem, in castra atque in aciem forensem, subendus visus omnium et periclitandae vires ingenii, et illa commentatio inclusa in veritatis lucem proferenda est”.

¹⁸ CICERO: *De Oratore*, III, 225: “Quid, ad aures nostras et actionis suavitatem quid est vicissitudine et varietate et commutatione aptius?”.

¹⁹ ALINE ROUSSELLE, “Parole et inspiration: le travail de la voix dans le monde romain”, *History and Philosophy of the Life Sciences*, 5/2, 1983, pp. 129-157.

owe a contribution relating to the vision of puberty in antiquity.²⁰ In the gymnasium, the young Greek boy accompanies his exercises with the voice, and with the emission of sounds. The physical aspects of the vocal emissions were noted, from the closure of the glottis to accumulate greater strength and retention of air, to the extremes of vocal expression: the shout or the loud song, sung with vigour, and also the role of this system in facilitating all the biological aspects linked to expulsion. For this reason, the act of emitting sounds, or of not emitting them, since it is voluntary, remains strictly linked to physical strength, and as such was cultivated. Among the qualities of an orator, but more generally those of professional voice-users, the Roman masters indicate specifically the possession of good lungs and physical vigour. As Ivan Illich mentions,²¹ throughout antiquity even reading, being a vocal activity carried out aloud, was considered a vigorous physical exercise, so that the doctors of the Hellenistic era prescribed it as an alternative to walking and gymnastic exercise.²² Moreover, in the mediaeval era, in the monasteries for the same reason, the weak and infirm were exempted from reading “with their own tongue”. One reason for this is care for the person and vocal health, since anyone who was to speak in the open air for any length of time must possess not only gifts and good vocal qualities but also technique: “an agile tongue, timbre of the voice, good lungs, physical vigour”, while “technique may be for some an instrument of reaching perfection”;²³ “ ‘the complete orator’ must have the voice of a tragedian, and the gestures almost of the most consummate actor”.²⁴

Despite this:

[...] the same attention is not given to orators as to singing masters; however they have many characteristics in common: a robust physique which helps them to avoid their voices becoming feeble like those of eunuchs, women and the sick [...]. Moreover the throat must be in good condition, i.e. soft and smooth, because when there is some

²⁰ EMIEL EYBEN, “Antiquity’s View of Puberty”, in *Actes du colloque international sur la cartographie archéologique et historique* (Paris, Institut Pédagogique National, 24-16 January 1970), *Latomus*, XXXI, 1972, pp. 678-697.

²¹ IVAN ILLICH, *In the Vineyard of the Text. A commentary of Hugh’s Didascalion*, Chicago, The University of Chicago Press, 1993.

²² In relation to this an interesting discussion might be opened on singing as a therapeutic practice.

²³ CICERO, *De Oratore*, I, 114-115: “linguae solutio, vocis sonus, latera, vires [...] neque haec ita dico ut ars aliquos limare non possit”.

²⁴ CICERO, *De Oratore*, I, 128: “[...] vox tragoedorum, gestus paene summorum actorum est requirendus”.

imperfection the voice cracks, becomes muffled or raucous and croaky.²⁵

Quintilian goes on to make the further point that for an orator:

the voice must be, in the first place, so to speak, healthy – i.e. not affected by any of those problems which I have already mentioned (or by local accents, etc.); secondly it should not be dull, confused, exaggeratedly potent, hard rigid, raucous, too great or too refined, lacking consistency, strident, weak, soft or effeminate, if the breathing is not short, nor long-lasting nor difficult to recover.²⁶

This is because:

Declamation which is assisted by a natural voice, powerful, rich, well-modulated steady, sweet, lasting, sonorous, limpid, which crosses the air and penetrates deeply into the ears, is elegant [This is a type of voice adapted to listening not because of its volume but because of its specific quality] Moreover it has to be manageable, so to speak, above all, equipped with all the inflections and tensions demanded; provided, as we are used to saying, with the whole range of sounds, assisted by the robust condition of the lungs, and gives breathing which no longer continues for a long time, but which does not succumb easily to fatigue.²⁷

However, it should be clear that:

[...] in oratory neither the flattest nor the sharpest musical sounds are suit-

²⁵ QUINTILIAN, *Institutio oratoria*, XI, III, 19-20: “Sed cura non eadem oratoribus quae phonascis convenit; tamen multa sunt utrisque communia, firmitas corporis, ne ad spadonum et mulierum et aegrorum exilitatem vox nostra tenuetur [...] praeterea ut sint fauces integrae, id est molles ac leves, quarum vitio et frangitur et obscuratur et axasperatur et scinditur vox”. About the musical school cf. GIAMPIERO TINTORI, *La musica di Roma antica*, Lucca, Akademos, 1996, pp. 33-43.

²⁶ QUINTILIAN: *Institutio oratoria*, XI, III, 32: “Itemque si ipsa vox primum fuerit, ut sic dicam, sana, id est nullum eorum de quibus modo retuli patietur incommodum, deinde non subsurda, rudis, immanis, dura, rigida, rava, praepinguis, aut tenuis, inanis, acerba, pusilla, mollis, effeminata, spiritus nec brevis, nec parum durabilis, nec in receptu difficilis”.

²⁷ QUINTILIANO, *Institutio oratoria*, XI, III, 40: “Ornata est pronuntiatio, cui suffragatur vox facilis, magna, beata, flexibilis, firma, dulcis, durabilis, clara, pura, secans aëra et auribus sedens (est enim quaedam ad auditum accomodata non magnitudine, sed proprietate), ad hoc velut tractabilis, utique habens omnes in se qui desiderantur sinus intentionesque et toto, ut aiunt, organo instructa; cui aderit lateris firmitas, spiritus cum spatio pertinax, tum labori non facile cessurus”.

able. In fact the former are less clear and too sonorous, and are not capable of conveying any emotion, while the latter are too thin and excessively clear, and are not only unnatural but cannot receive modulations of tone, nor can they maintain tension for any length of time. In fact the voice, like the chords, is deeper and fuller when it is least tense, and more feeble the more tense it is. Thus the lowest voice is devoid of strength and the highest risks cracking. So it is necessary to use the intermediary sounds, and they must be sometimes raised by an increase of tension, and sometimes modulated by lowering it.²⁸

Cicero speaking through Crassus, and after having admitted that an orator should have all the abilities of an actor, provides us with the first information of a technical kind about the vocal training of tragic actors, but perhaps we may assume that this same discipline was also followed by singers and in general by all who used the voice as their craft:

[...] no aspiring orator will receive from me the advice to take care of his voice in the way that the Greeks and the tragic actors are wont to do, for they practice exercises of declamation for years, both standing and every day before speaking in public, they lie down and raise the voice little by little, and after having pronounced their speech, they sit down and raise it from the lower tone to a higher one, and in some way, so to speak, make it return into themselves.²⁹

In the first of these last three quotations, Quintilian calls our attention to that vocal quality which allows it to “cross” the air, and penetrate “deeply” into our ears. In other words, to the extension of the singing voice which includes those deeper and higher sounds that the orator will exclude because they are at the limits of extension: “the former because they are not very clear and too sonorous, and the latter because, on the contrary, they are too clear but lack sonority”. Significantly, these statements are centred on the qualitative char-

²⁸ QUINTILIAN: *Institutio oratoria*, XI, III, 41-42: “Neque gravissimus autem in musica sonus nec acutissimus orationibus convenit. Nam et hic parum clarus nimiumque plenus nullum adferre animis motum potest, et ille praetenuis et inmodicae claritatis cum est ultra verum, tum neque pronuntiatione flecti neque diutius ferre intentionem potest. Nam vox, ut nervi, quo remissior hoc gravior et plenior, quo tensior hoc tenuis et acuta magis est. Sic ima vim non habet, summa rumpi periclitatur. Mediis ergo utendum sonis, hique tum augenda intentione excitandi, tum summitenda sunt temperandi”.

²⁹ CICERO: *De Oratore*, I, 251: “Tamen me auctore nemo dicendi studiosus Graecorum more et traegedorum voci serviet, qui et annos compluris sedentes declamitant et cotidie, ante quam pronuntient, vocem cubantes sensim excitant eandemque, cum egerunt, sedentes ab acutissimo sono usque ad gravissimum sonum recipiunt et quasi quondam modo colligunt”.

acteristics of the voice: noted categories of which we all have direct experience, but which despite this, even today still prove difficult to grasp, and are ambiguous in their character because of the complexity and dynamism of the elements which make them up. In particular, quantifying, and thus measuring, them remains a problem. The language used both by Cicero and Quintilian is already equivocal in itself. The existence of a voice capable of crossing the air perceptively refers to, and is characterised by, two classes of intrinsic constituents: one of a quantitative type such as the pitch, duration and power, and volume of the voice, and the other qualitative, or the characteristics of the timbre and its modifications. To this must be added the detail of the space within which the vocal act is performed in contributing to rendering the voice more or less penetrating. All these prerequisites intervene in facilitating the process which determines the “voice of projection”, which then obeys four preconditions: intention (proper to all acts of communication), direction of the gaze; vertical position of the body, and abdominal respiration.³⁰ Nor should the correlations between ‘projection’ of sound and articulation “to convey the phono-articulatory emission, in which lies the meaning of the text and with which the emotions are transmitted to the furthest point of the auditorium”³¹ be forgotten. The timbre of the voice, product of the *formanti* – or the frequency bands which are created in the resonator of the vocal tract when they are excited by the glottal source – is of no less value in giving the maximum energy to the vocal sound, thus boosting the voice in case another source of sound creates masking phenomena.³² The function of the *formante* (or *formanti*) of the singer is also known to be to give energy and intensity to the singing with a corresponding increase in the volume of the voice and modification of the timbre.

Turning to the vertical positioning of the body, it is Quintilian himself who suggests the correct posture:

[...] the neck must be erect, not rigid or leaning back. Shortening or lengthening the neck are opposite attitudes, it is true, but both equally ugly; but

³⁰ FRANÇOIS LE HUCHE - ANDRÉ ALLALI, *La voce*, vol. 1, Paris, Masson, 1993, cf. EGLE ROSSETTO, “Il ruolo del logopedista nell’educazione e nella rieducazione della voce parlata nel cantante”, in *Atti della giornata di studio sulla voce cantata* (Este, 30 aprile 1996), edited by Roberto Bovo, Limena, Imprimenda, 1996, pp. 107-120:109. For aspects of posture linked to the vertical position and the sound of projection, see also YVA BARTHÉLÉMY, *La voix libérée. Une nouvelle technique pour l’art lyrique et la rééducation vocale*, Paris, Laffont, 1984, pp. 185-191.

³¹ MARIO DE SANTIS - FRANCO FUSSI, *La parola e il canto. Tecniche, problemi, rimedi nei professionisti della voce*, Padova, Piccin, 1993, pp. 121-122.

³² JOHN R. PIERCE, *The Science of Musical Sound*, New York, Scientific American Books, 1983 (Ital. trans. *La scienza del suono*, Bologna, Zanichelli, 1987, pp. 132-139: 138).

when it is stretched there is effort and the voice is weakened and tires; the chin declined towards the chest makes the voice less clear and so to speak, more open because of the compression of the throat.³³

It should also be ensured that the face of the person speaking is erect, that the lips are not contorted, that excessive opening doesn't stretch the mouth too wide, that the gaze doesn't look (directly) at the other, that the eyes are not cast downwards, and that the neck does not lean to left or to right.³⁴

The second statement, in which Quintilian points out how musical sounds used in song embrace a broader range in contrast to the speaking voice where the orator excludes all the high sounds of the head register as well as the deeper sounds of the chest register, leads us to presume that he did not know the technique of passing from one register to another, i.e. of the problem of the 'passage notes' and the consequent need to standardise the various vocal registers; or perhaps the non-necessity of the use of this technique in the context of the voice in oratorical practice. Moreover some doubt arises whether this could also mean a use of the singing voice within a medium extension to be placed in the central register. Again, the warning that the highest sounds risk cracking the voice would seem to confirm the doubt, or at least to suggest, that the vocal technique required of orators favours the chest and 'medium' registers, as these have to avoid both the "musical sounds" and "sing-singing", in other words mixing the two modes of expression.

The phenomenon of the 'cracking of the voice' takes place, as Mario de Santis and Franco Fussi have shown, when the speaker does not yet possess a perfect technique for the 'passage', above all from the middle tones to the high ones of the "head register". When this condition arises, or in the moment of the passage from the middle register to the head register, if the muscular mechanism for compensating the tensions is imperfect, there will be real vocal sudden accompanied by brisk changes of timbre. This occurs when the activity of the crico-thyroid muscles suddenly intervenes to substitute the action of the thyro-arthroidic muscles. On the other hand, an aesthetic observation by Cicero tells us of the use of the falsetto register in singing, and thus of the high (male) voices:

³³ QUINTILIAN: *Institutio oratoria*, XI, III, 82: "Cervicem rectam oportet esse, non rigidam aut supinam. Collum diversa quidem, sed pari deformitate et contrahitur et tenditur, sed tenso subest et labor tenuaturque vox ac fatigatur; adfixum pectori mentum minus claram et quasi latiore presso gutture facit".

³⁴ QUINTILIAN: *Institutio oratoria*, I, XI, 9: "Observandum erit etiam ut recta sit facies dicentis, ne labra detorqueantur, ne inmodicus hiatus rictum distendat, ne supinus vultus, ne deiectioni in terram oculi, ne inclinata utrolibet cervix".

How much more delicate and voluptuous, in singing, are the trills and the falsetto voices in contrast to the precise and deeper notes! And yet, if they are repeated with excessive frequency not only those of sober tastes protest, but also the public at large!³⁵

In order to point to the difference in the use of the voice between the singer and the orator, he stresses that: “the singing masters sweeten all the sounds, even the sharpest ones, by singing”.³⁶

We are thus able to divine that the singing masters were aware not only of the existence of vocal registers or the different zones of the vocal texture in which the sound if naturally emitted is characterised by a different quality of the timbre, with areas of dissimilarity in the passage from one to the other, but they were equally aware of the problems which they created by passing from the chest voice to the falsetto. We ought to point out, however, that it is not possible to understand the present day range by these terms, as we only possess very rare musical documentation. Quintilian’s use of the verb *lenire* remains surprising, especially when it is coupled with *altissimos sonos*: modes of vocal emission adopted by the singing masters? Another source of doubt in this matter is whether it is not Quintilian himself who is ignorant of the technical vocal problem. What meaning, if so, should we give to the expression “sweeten even the sharpest sounds”? The terminology adopted today to describe the technique of the passage from one register to another – the subject is still delicate, and discussed in many different contexts – makes use of expressions such as ‘open sound’ and ‘covered sound’. By ‘open sound’ is understood the sound of the excessively clear timbre (to the point of stridency) which derives from the non-use of the correct mechanism of production in the various registers. This is a “passage” – as has already been mentioned – a mechanism of the larynx related to the various activities of the crico-thyroid and thyro-arytenoid muscles.³⁷

In connection with this Antonio Juarra³⁸ clearly shows the impossibility of singing open vowels after the passage – and also how poorly adapted aspiring voice students are to learn such technique if they are not supervised by their teachers, and the emphasis that is unconsciously given to the need for “uniformity of emission and the melodic legato” to avoid the ‘break’. The

³⁵ CICERO: *De Oratore*, III, 98: “[...] quanto molliores sunt et deliciores in cantu flexiones et falsae vocalae quam certae et severae! Quibus tamen non modo austeri, sed, si saepius fiunt, multitudo ipsa reclamat”.

³⁶ QUINTILIAN: *Institutio oratoria*, XI, III, 23: “[...] illi [phonascis] omnes etiam altissimos sonos leniant cantu oris [...]”.

³⁷ Cfr. DE SANTIS - FUSSI, *La parola e il canto*, pp. 119-121.

³⁸ ANTONIO JUARRA, *Il canto e le sue tecniche, trattato*, Milano, Ricordi, 1987, pp. 45-46.

student is thus advised that to “make the voice ‘lighter’ in proximity to the critical area of an ascending scale is a necessary condition, but unfortunately not unique”.³⁹ Thus it seems possible to understand *leniat* as the listening interpretation of the quality of voice consequent upon the use of a technique aimed at creating standardisation of timbre in the whole vocal range.

In the 13th century, the theorist Johannes de Garlandia was to describe the three registers: chest voice, throat voice and head voice, and their use in emission, but without giving further indications relating to emission when singing.⁴⁰

But it is again Quintilian who gives some emphasis to the argument, though without dealing with the problem of what it is, and on what the voice depends:

It is not essential for the task which we have set ourselves to review the reasons why all this happens: whether the difference depends on the organs in which the air breathed is received or on those sorts of tubes through which it passes; whether it has its own intrinsic nature or varies according to the impulse received; whether it is assisted more by the robust character of the lungs or of the thorax or even of the head. In fact, there is a need for all these organs [...].⁴¹

He also mentions that:

The mode of using the voice varies. In fact, apart from the well-known tripartite division into sharp, deep and modulated, there is a need for a tone which is sometimes intense and sometimes attenuated; sometimes high and sometimes low, and also for tempi that are more or less rapid. But

³⁹ JUVARRA, *Il canto*, p. 46.

⁴⁰ MAGISTRUM DE GARLANDIA, *Introductio musice*, in *Scriptorum de musica medii aevi nova series a Gerbertina altera*, 4 vols., ed. Edmond de Coussemaker, Paris, Durand, 1864-76; reprint by Hildesheim, Olms, 1963, 1, pp.157-175: “Sciendum est quod omnis vox humana se habet in triplici differentia: aut est pectoris, aut gutturis, aut capitis. Si sit pectoris, tunc se habet in gravibus; in fundamento cantus debet ordinari. Si sit gutturis, mediocriter se habet ad utrasque, scilicet ad graves et ad acutas. Et sicut vox pectoris tantummodo se habet in gravibus, ita vox capitis tantummodo se habet in superacutis; et sicut modi cantus, voces pectoris debent ordinari cum suo proprio, scilicet in fundamento, et voces gutturis semper in acutis medium locum debent obtinere”.

⁴¹ QUINTILIAN, *Institutio oratoria*, XI, III, 16: “Nec causas cur quidque eorum accidat persequi proposito operi necessarium est: eorumne sit differentia in quibus aura illa concipitur, an eorum per quae velut organa meat: [an] ipsi propria natura, an prout movetur; laterisque firmitas an capitis etiam plus adiuvet. Nam opus est omnibus [...]”. Note how in this explanation we find a return to the image of the Ravenna mosaic described at the beginning.

there are many intermediary levels, and just as the face, though made up of very few traits, possesses an infinite possibility of differentiation, so too the voice, even though it includes few species which possess a verbal designation, is peculiar to each person and it is recognised by the ears to no less a degree than the face is recognised by the eyes.⁴²

In this passage the statement about the lack of any nomenclature, or terminology to describe all the possible differentiations of the voice, is worthy of note. “Few species which possess a verbal designation”; in other words, Quintilian shows his awareness by confessing that he does not possess an abstract term usable to verbalise all vocal capacities. In this regard a parallel comes to mind, which arises from the studies relating to technical musical linguistic competence, carried out in an ethno-musical context by Simha Arom among an African population whose culture, including music, had an oral transmission, and in which the same problem arose, even consciously, on the part of medical experts.⁴³

With regard to the practice of vocalisation in the whole extension of the voice, Cicero had already informed us that it is cultivated particularly as a discipline to render the voice flexible, but above all to keep alive the abilities and motor automatisms activated so as to ensure that the voice always has the right inflexion at different heights. For this issue, the expression “et quasi quodam modo colligunt” is of some importance; by this he indicates the sensation of reunifying the voice in the fullness of emission. The exercise of using the voice seated and lying down – which Cicero describes and says is in use in the schools, and practised by the Greek orators and tragic actors⁴⁴ – has the primary aim of freeing the muscles from the fatigue of standing erect, and is still practised today as an exercise in ‘dorsal decubitus’ in vocal training, since it facilitates the projection of sound. Thus it is one of the methods followed both in certain schools of singing and, for different purposes, in the re-educative treat-

⁴² QUINTILIAN, *Institutio oratoria*, XI, III, 17-18: “Utendi voce multiplex ratio. Nam praeter illam differentiam, quae est tripartita, acutae, gravis, flexae, tum intentis, tum remissis, tum elatis, tum inferioribus modis opus est, spatiis quoque lentioribus aut citatioribus. Sed his ipsis media interiacent multa, et ut facies, quamquam ex paucissimis constat, infinitam habet differentiam, ita vox, etsi paucas quae nominari possint continet species, propria cuique est, et non haec minus auribus quam oculis illa dinoscitur”.

⁴³ This refers to a study on the ways by which the Aka pygmies acquire a technical musical terminology through a deductive procedure, in particular when errors or omissions are revealed.: SIMHA AROM, “Intelligence in traditional music”, in *What is intelligence?*, ed. by Jean Khalfa, Cambridge, Cambridge University Press, 1994, pp. 137-160.

⁴⁴ See note 29.

ment of pathologies of the voice.⁴⁵ By encouraging his listeners not to practise this discipline Cicero indirectly confirms the widespread popularity which it must have enjoyed, as it was favoured by those who used their voices in the context of the theatre. On the other hand, he has to justify for so radical a statement, which may appear contradictory for someone who is sustaining the importance of caring for the voice and the word. The time available is always too limited and if it is not possible to perfect even the voice, “which, above all, gives the maximum prestige and support to eloquence”, it is already something if we “succeed in obtaining those few results which time leaves us in the daily battle of our commitments; even less time will it be possible to reserve for learning civil law”.⁴⁶

But Cicero, even though he would seem to be unfavourable to the exercises of vocalisation, nevertheless advises us to adopt them, by beginning from the medium tone – which is the norm for everyone – over the whole vocal range, in a direction which is first gradually rising, and then descending. This exercise represents a practice of vocal health useful for maintaining the voice in good condition, and safeguarding it from dangerous stress.

In every voice there is a middle tone, but each voice has its own: gradually raising the voice from the middle tone is useful and pleasurable (beginning to speak with a shout in fact has something crude about it), and it is also beneficial to confer strength on the voice itself. There is an extreme point of forcing the voice, which however is found lower down than the sharper notes, to which the bagpipe⁴⁷ will not allow you to rise, calling you back, rather. On the contrary, there is similarly a point of lowest depth, which is reached by descending, so to speak, a scale of tones. This variety

⁴⁵ ROUSSELLE, “Parole et inspiration”, says that it is used by the troupes of the Roy Hart Theatre which in fact organises stages to teach it, rediscovering the voice through a general awareness of the self. As a technique it is also employed in reeducation, quoted in the above-mentioned PHILIPPE DEJONCKERE, *Précis de pathologie et de thérapeutique de la voix*, Paris, éd. J.-P. Delarge, 1980, pp. 192-194; DE SANTIS - FUSSI, *La parola e il canto*, pp. 164-165, 169-173.

⁴⁶ CICERO, *De Oratore*, I, 252-253: “[...] quod si in gestu, qui multum oratorem adiuvat, et in voce, quae una maxime eloquentiam vel commendat vel sustinet, elaborare nobis non licet ac tantum in utroque adsequi possumus, quantum in hac acie cotidiani muneris spatii nobis datur, quanto minus est ad iuris civilis perdiscendi occupationem descendendum? Quod et summam percipi sine doctrina potest et hanc habet ab illis rebus dissimilitudinem, quod vox et gestus subito sumi et alimuno arripit non potest, iuris utilitas ad quamque repente vel a peritis vel de libris depromi potest”.

⁴⁷ This is how the word *fistula*, has been translated; probably it was not a bagpipe but a sort of flute.

and these passages of the voice through all the tones will safeguard the voice and will add fascination to the *actio*. Thus you will leave the flautist behind, and bring with you to the forum the sensitivity acquired by this exercise.⁴⁸

As can be seen, here we have described the technique of dealing with vocalisation, beginning from the context of the voice's own texture, the medium tone, in which it is not possible to exercise the voice without effort, even in potency. With regard to the notion that a medium tone is present in everyone,⁴⁹ in terms of teaching and rehabilitation it finds a complement and meaning in the recent assertion relating to the stabilisation of the 'tonic', understood as the actual ordinating central tone, with the aim of modelling and self-organisation of one's own tonal field.⁵⁰

The practice of using a wind-instrument to assist the orator to maintain his sound level seems to have been widely used, as the following quotes from Cicero and Quintilian show, and further clarification is to be found in the fact that such expedients would have served above all to stabilise the tone of the oration; was it still difficult for most people to maintain constant control of the intonation and rhythm that they were seeking? Even a famous actor such as Roscius confirms that not only did he entrust himself for the regulation of rhythm and intonation to an instrument which followed him around, but also that he indicated in advance to the instrumentalist what variations were necessary to adapt the execution to his own changed capacities.

[...] when he gave a speech, Gracchus was accustomed to keep with him, hidden behind him, an expert assistant who, with a small bagpipe (again, probably a flute in fact) of ivory, rapidly played a note to cause him to

⁴⁸ CICERO, *De Oratore*, III, 227: "[...] est quid medium sed suum cuique voci. Hic gradatim ascendere vocem utile et suave est – nam a principio clamare agreste quiddam est – et idem illud ad firmandam est vocem salutare. Deinde est quiddam contentionis extremum, quod tamen interius est quam acutissimus clamor, quo te fistula progredi non sinet, et tamen ab ipsa contentione revocabit. Est item contra quiddam in remissione gravissimum quoque tamquam sonorum gradibus descenditur. Haec varietas et hic per omnes sonos vocis cursus et se tuebitur et actioni adferet suavitatem”.

⁴⁹ An observation which had already been made, though in another context, by Cicero: see note 5.

⁵⁰ For a summary study of the problems relating to intonation and to the didactic bibliography on the subject, see in FRANCESCO FACCHIN, “La voce e il canto”, pp. 59-79:72-74 and LUCIANO BORIN, “Creare/ri-creare: 3. Interagire”, pp. 188-233:201-209, in LUCIANO BORIN - ROSSELLA BOTTACIN - PATRIZIA DALLA VECCHIA - FRANCESCO FACCHIN, *Musica perché. Quaderno delle esperienze del corso ministeriale di educazione al suono e alla musica*, Padova, CLEUP, 1998.

raise the tone of his voice when it dropped too low, and to cause him to lower it when it was too high.⁵¹

[...] for now, let us just take into account the single example of Gaius Gracchus,⁵² a leading orator of his times; when he spoke in an assembly a musician would stand behind him with a reed instrument (flute) called the tonarion, who gave him the tones for which he should strive with his voice.⁵³

Roscius [...] likes to repeat that the older he gets the more he will slow down the flautist's accompaniment and make the songs with a more moderated speed. And if he, conditioned as he is by a strict law of rhythm and metre, is still thinking even now of something that will give him a bit of rest in his old age, how much more so will it be possible for us not only to slow down the pace but also to change it completely?⁵⁴

It is not clear whether Cicero is referring to the spoken or the singing voice, even though “indicating the highest notes” seems not to leave any doubt: however, the reference in several passages to the height of the voice in relation to the instrument, or to an intonation near to the sung note, presupposes that the singing voice was taken as a useful reference to make it possible to ‘give distinction to’ the heights with greater precision, thus distinguishing the single sounds so as to refer them to the intonation of the spoken voice.

Breathing, voice and the technique as vocal health

It seems then that for Cicero vocal exercise had the aim of maintaining vocal agility and flexibility, and assuring intonation, rendering itself independent of the *tonarion*. Another, no less important aim is to augment the breathing

⁵¹ CICERO: *De Oratore*, III, 225: “[...] itaque et idem Gracchus [...] cum eburneola solitus est habere fistula, qui staret occulte post ipsum, cum contionaretur, peritum hominem, qui inflaret celeriter eum sonum, quo illum aut remissum excitaret aut a contentione revocaret?”.

⁵² Second half of the 2nd century B.C., brother of Tiberius Gracchus.

⁵³ QUINTILIAN: *Institutio oratoria*, I, X, 27 [*De musica*]: “[...] uno interim contenti simus exemplo C. Gracchi, praecipui suorum temporum oratoris, cui contionanti consistens post eum musicus fistula, quam tonarion vocant, modos, quibus deberet intendi, ministrabat [...]”.

⁵⁴ CICERO: *De Oratore*, I, 254-255: “solem idem dicere se [...] eo tardiore tibicinis modos et cantus remissiores esse facturum. Quod si ille, adstrictus certa quadam numerorum moderatione et pedum, tamen aliquid ad requiem senectutis excogitat, quanto facilius nos non laxare modos, sed totos mutare possumus?”.

capacity with the intention of obtaining sufficient breath for long utterances. In any case, rather than indicating a theoretical and technical study, he is pointing to a long-term effort, without fearing exposure to more dangerous situations which any actor or singer would undoubtedly avoid.

And let us turn to the voice, to breathing, to gestures and the tongue itself: to move and exercise them, there is not so much a need for a theory as for assiduous effort; and with regard to this, the models to imitate, the models which we wish to assimilate, much be chosen with care. We must look not only to the orators, but also to the actors, to avoid imperfections or defects as a result mistaken habits.⁵⁵

So it is necessary to bring the word forth from the quiet refuge of these domestic exercises, into the midst of the crowd, into the dust and racket, into the camp and the battlefield of the forum; we must face up to the gaze of all, and put to the proof our own intellectual capacities, and the preparation made must, in the end, come face to face with the light of reality.⁵⁶

But good vocal technique is not everything; for the profession of orator advice is given as to what exercises are best for speaking correctly what is written down, because:

the majority[...] only exercise the voice, (and that not even with expertise), and the lungs; they increase the speed of speech and brag about their rich vocabulary. And in this they deceive themselves, because they have heard say that, in speaking, one usually learns to speak. But on the contrary, it is truly said that, as a result of speaking in an incorrect way, one easily becomes a poor orator.⁵⁷

So Cicero deals with the problem of technique solely as a strict necessity, referring it partly to the exercising practice of actors and singers, and indeed, almost fearing that an excess of technical concern of the voice and word may

⁵⁵ CICERO, *De Oratore*, I, 156: “[...] iam vocis et spiritus et totius corporis et ipsius linguae motus et exercitationes non tam artis indigent quam laboris; quibus in rebus habenda est ratio diligenter, quos imitemur, quorum similes velimus esse. Intuendi nobis sunt non solum oratores, sed etiam actores, ne mala consuetudine ad aliquam deformatitem pravitatemque veniamus”.

⁵⁶ CICERO, *De Oratore*, I, 157: cfr. note 17.

⁵⁷ CICERO, *De Oratore*, I, 149-150: “Sed plerique in hoc vocem modo, neque eam scienter, et vires exercent suas et linguae celeritatem incitant verborumque frequentia delectatur. In quo fallit eos quo audierunt, dicendo homines ut dicant efficere solvere. Vere enim etiam illud dicitur, perverse dicere homines perverse dicendo facillime consequi”.

obstruct the fluid proceeding of one's own thought and of the content within the rhetorical form. He advocates instead that one should perform exercises in righting rather than in word than in improvisation or vocal technique, so that no-one will be able to protest if the orator be raucous in voice, or poor in tone. He is concerned, however, that the breathing should be correct, and he makes breathing one of the subjects which should take a leading place in the technical study of the voice, together with the gestures and the tongue, for the purpose of obtaining a ready, correct and flexible articulation.

Quintilian, in turn, examines the technical study of the voice in the education of the young orator, and in outlining the components of the *actio*, voice and gesture, he gives a first important indication of the parameters to be taken into account in evaluating the quality of a voice:

The nature of the voice is assessed on the basis of its volume and timbre. The problem of the volume is simpler: in general terms the voice is strong or weak; but between these extreme levels there are intermediary species and between what occupies the lowest levels and what occupies the highest, and vice-versa, there are many degrees. The timbre is more varied: the voice is limpid, raucous, full or feeble, sweet or bitter, contained or diffused, rigid or capable of modulation, sonorous or flat.⁵⁸

Here we have criteria which are still considered valid even now, not even negated by the present-day possibilities which offer us the tools for physical analysis of sound, with which it is possible to measure, within the whole vocal range, the context within which the maximum outcome, or the difference of intensity, can be obtained, and the quality of the timbre can be kept constant. In any case, the statements on the value of exercise and the rules to be followed for an appropriate use and control of the voice remain true and legitimate:

The qualities of the voice, too, like those of anything else, are strengthened if attention is dedicated to them, and are weakened if they are neglected or handled with incompetence.⁵⁹

⁵⁸ QUINTILIAN, *Institutio oratoria*, XI, III, 14-15: "Natura vocis spectatur quantitate et qualitate. Quantitas simplicior: in summam enim grandis aut exigua est; sed inter has extremitates mediae sunt species et ab ima ad summam ac retro sunt multi gradus. Qualitas magis varia: nam est et candida et fusca, et plena et exilis, et levis et aspera, et contracta et fusa, et dura et flexibilis, et clara et optusa".

⁵⁹ QUINTILIAN, *Institutio oratoria*, XI, III, 19: "Augenter autem sicut omnium, ita vocis quoque bona cura, [et] neglegentia vel inscitia minuuntur".

[...] then the voice must not be forced beyond its own possibilities, because it often proves to be suffocated : it is less clear as a result of being forced too hard, and in turn, if it is uttered with violence, it will burst out in that sound to which the Greeks have given a name which is derived from the early call of the cockerel: [klogmós or kokkysmós].⁶⁰

It is equally clear that attention was also to be given to avoiding those incorrect and even damaging forms of vocal behaviour which alter the tone of the voice, rendering it no longer close to the text, such as happens when the unpleasant tone of voice characteristic of reaching the extreme limit of the vocal range, is used:

There is a tone of voice (called by the Greeks 'sourness') differing from these (the other tones mentioned) which goes almost beyond the vocal range; the harshness of which almost exceeds the natural limits of the human voice.⁶¹

So, some suggestions are made about other vocal behaviour and capacities, still recommended today, suited to maintaining the continuity of sound, intelligibility of the text, and fullness and richness of tone "It is necessary to prolong all the sounds, then hold the vowels and open wide the throat".⁶²

In the expression "open wide the throat" we find one of the many "manners of speaking" which the singing teachers and choirmasters use to encourage their students and singers to free themselves from the tensions which are normally localised in the zone of the pharynx, especially when singing in the high register. In this way, without those tensions, it becomes possible to stabilise the position of the larynx in the lower register in such a way as to throw the dimension of the voice into greater relief.⁶³ The movement of the tongue, too, is involved in aiding this quest. In fact, the muscles which provide for the changing position of the tongue contribute as much to the 'closing of the throat' as to the 'opening of the throat'. The position of the 'open throat', moreover, "is impeded by every

⁶⁰ QUINTILIAN: *Institutio oratoria*, XI, III, 51: "Vox autem ultra vires urgenda non est; nam et soffocata saepe et maiore nisu minus clara est et interim elisa in illum sonum erumpit cui Greci nomen a gallorum immaturo cantu dederunt".

⁶¹ QUINTILIAN: *Institutio oratoria*, XI, III, 169: "Est his diversa vox et paene extra organum, cui Greci nomen amaritudinis dederunt, super modum ac paene naturam vocis humanae acerba [...]".

⁶² QUINTILIAN: *Institutio oratoria*, XI, III, 167: "Producenda omnia trahendeque tum vocales aperiendaeque sunt fauces".

⁶³ JUVARRA, *Il canto*, p. 35.

tension applied to the muscles of the neck, and by every tendency to drag the base of the tongue back”.⁶⁴

The difference and the distance which separate the act of speech from the act of singing always remain clear, even though the two activities, as we have often stated, have many aspects in common and are often mixed and confused with each other, producing results which, for both Cicero and Quintilian, are to be rejected. The reading must be ‘virile’ and of a ‘sweet gravity’, and should not resemble the reading of ordinary prose:

[...] since this is a matter of singing, and the poets claim to sing; the sing-song tone must not be completely eliminated, nor should it be rendered effeminate by trilling,⁶⁵ as is fashionable today.⁶⁶

Quintilian returns again to the need to avoid sing-songing, considering the practice inappropriate, and indeed a defect to be avoided:

[...] it is inappropriate not only to adopt a sing-song tone (a widespread defect) or an undisciplined style, but also to introduce a subject without mingling the emotions with it [...];⁶⁷

thus it is a defect:

[...] with which we are particularly afflicted today in all the processes, and in the schools: that of speaking in a sing-song tone. And I do not know whether this is more useless or more ugly. What, indeed, is less suited to an orator than a theatrical intonation, which at times resembles the gabbling of one who is drunk or over-indulging? [...] And if we need to accept this practice at all, then there is no reason not to reinforce that vocal inflection with cithers, flutes [...] even cymbals.⁶⁸

⁶⁴ Ibid., p. 27.

⁶⁵ See JUVENAL, *The satires*, 1, 17 ecc.

⁶⁶ QUINTILIAN: *Institutio oratoria*, I, VIII, 2: “[...] quia et carmen est et se poetae canere testantur; non tamen in canticum dissoluta, nec plasmate, ut nunc a plerisque fit, effeminata”.

⁶⁷ QUINTILIAN: *Institutio oratoria*, XI, I, 56: “in quibus non solum cantare, quod vitium pervasit, aut lascivire [...] adfectibus decet”.

⁶⁸ QUINTILIAN: *Institutio oratoria*, XI, III, 57-59: “Sed quodcumque ex his vitium magis tulerim quam, quo nunc maxime laboratur in causis scholisque, cantandi. Quod inutilius sit an foedius nescio. Quid enim minus oratori convenit quam modulatio scaenica et nonnumquam ebriorum aut comisantium licentiae similis? [...] Quod si omnino recipiendum est, nihil causae est cur non illam vocis modulationem fidibus ac tibiis, immo mehercule, quod est huic deformitati propius, cymbalis adiuvemus”.

Among the qualities which make a good orator, the possession of his voice is thus one of the principal gifts, even though:

[...] not even the voice, if it is not devoid of defects, can ensure the best actio; in fact a good, powerful voice can be used as one wishes, while a bad or weak voice does not permit one to obtain many effects, such as intensification and the cry, and it forces us to adopt certain devices, such as interrupting oneself, lowering the tone of the voice, and resting the irritated throat and the tired lungs with an unpleasant singsong tone.⁶⁹

Even though it is not the task of the orator to review the motives and reasons for the characteristics of the voice, it is even so important that the voice should have a “sweet tone, not that of a rebuke”, and since the modes of modulating voices are so varied, its qualities should be strengthened if one devotes attention to it. The attention paid to the voice from the point of view of health, or in other words as rules for maintaining its state of health, is very interesting. The vocal apparatus, “the throat” is compared to an instrument, the flute, and to its imperfect functioning whenever its maintenance is neglected. It goes without saying that by placing the flute alongside the voice, Quintilian means to refer to the articulation and resonance: the localisation of which in the proprioceptive sensations is referred mainly to the throat, where certain modifications in the vocal tract are also to be found (these were referred to in connection with the expression *a gola bene aperta*:

Just as the flute, although it has received the same amount of air, produces a different sound according to whether the holes are open or closed, or it has not been cleaned sufficiently, or there are cracks present, so the throat, when it is swollen strangles the voice; when it is weak, renders it fuzzy, when it is irritated, renders it raucous, when it is spasmodically contracted, produces a sound like a broken reed. The expired air is also interrupted by an obstacle, like a streamlet by a stone: even if its wave is then reunited further on, this nevertheless leaves a gap after the obstacle. Saliva, too, when there is too much of it, is an obstacle to the voice, when it is exhausted it deprives it of its support. In fact, as in the case of the body, fatigue strikes not only at

⁶⁹ QUINTILIANO, *Institutio oratoria*, XI, III, 13: “Sed ne vox quidem [nisi] libera vitiis actionem habere optimam potest. Bona enim firmaque, ut volumus, uti licet; mala vel inbecilla et inhibet multa, ut insurgere et clamare, et aliqua cogit, ut intermittere et deflectere et rasas fauces ac latus fatigatum deformi cantico reficere”.

the moment itself, but subsequently as well.⁷⁰

So then, while the exercise by which everything is strengthened is equally useful to both music teachers and orators⁷¹ the attention and the health, behavioural and food rules which the two professionals of the voice must follow in the characteristic modes and intended uses of their own instruments, are different.⁷²

It is not possible to fix a time for taking a walk for someone who is engaged in numerous public affairs, and he cannot prepare his voice to intone all sounds, from the deepest to the highest, nor can he always keep it free from forcing, because he often has to speak in several processes. And the rules relating to food are different, because there is not so much a need for a sweet and delicate voice as one that is powerful and durable.⁷³

In this context I would like to stress briefly this different attention to the activities connected with health and the food supply, and also to sexual behaviour, between orators and singers, which throws light not only on what their role was, but also on the question of what type of activity the vocal act was associated with. Professional vocal activity was in fact considered on a par with the training which the athlete gave his own physique, with the aim of maintaining and improving his performance. But I do not wish to go further into this; it is another interesting chapter for investigation, on how the concept of voice and vocal activity was undergoing transformation and hence also the technical approach to it.⁷⁴

Here, then are some objectives for the training of the young. After insist-

⁷⁰ QUINTILIAN, *Institutio oratoria*, XI, III, 20-21: “Nam ut tibiae eodem spiritu accepto alium clusis, alium paertis foraminibus, alium non satis purgatae, alium quassae sonum reddunt, item fauces tumentes strangulant vocem, optusae obscurant, rasae exasperant, convulsae fractis sunt organis similes. Finditur etiam spiritus obiectu aliquo, sicut lapillo tenues aquae, quarum fluctus etiam si ultra paulum coit, aliquid tamen cavi relinquit post id ipsum quod offenderat. Umor quoque vocem ut nimius impedit, ita consumptus destituit. Nam fatigatio, ut corpora, non ad praesens modo tempus, sed etiam in futurum adficit”.

⁷¹ See note 59.

⁷² Cf. notes 24 and 25.

⁷³ QUINTILIAN, *Institutio oratoria*, XI, III, 22-23: “Sed ut communiter et phonascis et oratoribus necessaria est exercitatio, quo omnia conualescunt, ita cura non idem genus est. Nam neque certa tempora ad spatiandum dari possunt tot civilibus officiis occupato, nec praeparare ab imis sonis vocem ad summos, nec semper a contentione condere licet cum pluribus iudiciis saepe dicendum sit. [...] Ne ciborum quidem est eadem observatio; non enim tam molli tenetque voce quam forti ac durabili opus est”.

⁷⁴ Cf. above, 92.

ing on the responsibility of the teacher to correct defects of pronunciation, Quintilian goes on:

I do not wish that the voice of the boy whom we are teaching should be weakened for this purpose, should become frail like that of a girl, or tremble like that of an old man. [...] What then is the task of this teacher? In the first place, if there are defects of pronunciation, they should be corrected, so that the words come out clear, and an appropriate sound is emitted for each letter. [...],⁷⁵

he also stresses the need to eliminate the defects of manner and emission, as, he says, it is:

intolerable that words should be heard pronounced deep down in the throat, or made to resound in the cavity of the mouth, or that the natural sound of the voice should be altered by an effect of greater fullness – an absolutely unsuitable artifice for a pure declamation, which the Greeks call *kataplasmenon* (this is how the sound of the flute is defined when the holes which make the notes clear are closed, and the breath, passing exclusively from the direct exit, produces a deeper timbre). The actor will also take care [...] that every time that it is necessary to raise the voice the effort shall come from the lungs and not from the head [...].⁷⁶

Aline Rousselle⁷⁷ sees in this last statement – in which it is recommended that the vocal effort be referred to the lungs and not the head – a link with a form of childhood vocal education aimed at the use of the chest register. On the contrary, it seems to me more probable that it should be understood as a reference to the realisation of the so-called *appoggio sul fiato*. This interpretation would also seem to be supported by the warnings which immediately precede it, against collapsing the last syllable, “so that the discourse shall be kept uniform”.⁷⁸

⁷⁵ QUINTILIAN, *Institutio oratoria, De prima pronuntiationis et gestus institutione*, I, XI, 1,4: “Non enim puerum, quem in hoc instituimus, aut femineae vocis exilitate frangi volo aut seniliter tremere. [...] Quod est igitur huius doctoris officium? In primis vitia si qua sunt oris emendet, ut expressa sint verba, ut suis quaeque litterae sonis enuntientur [...]”.

⁷⁶ QUINTILIAN, *Institutio oratoria*, I, XI, 6-9: “[...] nec verba in faucibus patietur audiri, nec oris inanitate resonare, nec, quod minime sermoni puro conveniat, simplicem vocis naturam pleniore quondam sono circumliniri, quod Graece *kataplasmenon* dicunt (sic appellatur cantus tibiaram quae, praecclusis quibus clarescunt foraminibus, recto modo exitu graviorem spiritum reddunt). Curabit etiam [...] ut parsibi sermo sit, ut quotiens exclamandum erit, lateris conatus sit ille, non capitis [...]”.

⁷⁷ ROUSSELLE, “Parole et inspiration”, pp. 133-134.

⁷⁸ QUINTILIAN, *Institutio oratoria*, I, XI, 8: “Curabit etiam ne extremae syllabae intercidant, ut par sibi sermo sit [...]”. See also in note 40 concerning the need of the voice for health and correct functioning of the lungs, thorax and head.

The sustain mechanism in fact refers to a series of sensations located in the chest and in the epigastric zone; for this reason in the jargon of singers, expressions like *affondare gli acuti* are used, in the sense of sustaining them, etc.⁷⁹

On several occasions both Cicero and Quintilian have laid great stress on the extreme individuality of the voice, which distinguishes people from one another. With these rules, Quintilian further specifies the factors which alter vocal emission and could affect the mechanism adversely. The main task of the singing master will be to correct emissions with the voice *in gola*, or altered in timbre to cause more serious, *katapaplasmena*. The causes of such defects lie in certain incorrect activities on the part of the organs of articulation and resonance; in particular an exaggerated drawing back of the back of the tongue, hyper-contraction of the pharynx and excessive *appoggio* in the pharyngo-larynx area, as has already been seen in the case of expressions such as *aprire bene la gola*, or pushing the lips out excessively at the front, as if it were a tube, resonance in the mouth, with the production of a gloomy and obscure voice, generally indicated by the adjective 'intubata'. Such at least seems to be the meaning provided by the analogy with the sound produced by the flute with all the holes closed. This makes it possible to surmise that technically, the technique of costal-diaphragmatic respiration was known, by which in the stage of emission, it is possible to control the sub-glottal pressure better, or to achieve the so-called *appoggio* or *sostegno del fiato*.⁸⁰

With regard to the other indications relating to the posture, these are still widely shared even today, inasmuch as different stance may help to cause inhibition of correct breathing and the correct position of the sound-producing organs by introducing muscular tensions which alter the whole pneumo-phono-articular mechanism.⁸¹

Quintilian's positions about early education and the responsibility which adults have in this phase are quite contemporary; especially concerning those who are concerned with this first important pre-school stage:

[...] in children, the hope of very many potentialities shines out; if this is dampened during their growth, it is clear that it is not nature which is

⁷⁹ On this, see JUVARRA, "La realizzazione dell'appoggio nel canto e il ruolo del fiato nell'emissione e l'evoluzione dell'appoggio", in *Il canto*, pp. 31-35: 35 e 36-42: 39.

⁸⁰ Compare the treatment of breathing, and its relative defects QUINTILIAN, *Institutio oratoria*, XI, III, 53-56. For the physiological aspects see DE SANCTIS - FUSSI, *La parola e il canto*, pp.125-126, 131-139.

⁸¹ The relation between posture, position of the articulatory organs and correct emission of the voice is clearly present in the school of singing: see, in this context, BARTHÉLÉMY, *La voix libérée*, note 29.

lacking but the attention of the adult world. [...] there is not anyone who has not obtained anything through serious study.⁸²

and to the objection that intelligence is found in different degrees in different people he replies that:

[...] why disdain the results obtainable up to seven years old,⁸³ however modest they may be? [...] We must not, then, throw away at once the earliest years, even more so because education is initially based on memory alone, and in children, not only does memory already exist, but it is also more than ever capable of retention.⁸⁴

In this same context, an appropriate example is needed. Thus the insistence on the first *maestri*, or those to whom the child was entrusted; on the need for them to have the widest possible culture, and on the example which they, with their language, would be able to offer. Naturally too stress was laid on the need for a correct example on the part of the nurses, because “they will be the first people whom the child will listen to”.⁸⁵ Moreover, if the nurse and the parents (both father and mother) must be of the best possible education themselves,⁸⁶ even more so must the pedagogues be, being aware in every case of their lack of erudition”.⁸⁷ Thus study must be “like a game: the child receives questions and praise, and will always be contented to be occupied”.⁸⁸

But it is in the grammar school that they must learn the liberal arts, because:

⁸² QUINTILIANO, *Institutio oratoria*, I, I, 2-3: “[...] in pueris elucet spes plurimorum: quae cum emoritur aetate, manifestum est non naturam defecisse, sed curam. [...] sed plus efficiet aut minus: nemo reperitur, qui sit studio nihil consecutus”.

⁸³ At around 7 years old, boys and girls began to attend elementary school, where they learned reading, writing and simple arithmetic; first, between 4 and 7 years, they were entrusted to the pedagogues, usually slaves who dealt with their moral and intellectual training. The grammar school, which represented the secondary level of education, was attended between 9-10 and 14-15 years of age.

⁸⁴ QUINTILIAN: *Institutio oratoria*, I, I, 18,19: “[...] Aut cur hoc quantumquaque est usque ad septem annos lucrum fastidiamus? [...] Non ergo perdamus primum statim tempus, arque eo minus quod initia litterarum sola memoria constant, quae non modo iam est in parvis, sed tum etiam tenacissima est”.

⁸⁵ QUINTILIAN: *Institutio oratoria*, I, I, 4,5: “[...] Ante omnia, ne sit vitiosus sermo nutricibus [...] Has primum audiet puer, harum verba effingere imitando conabitur, et natura tenacissimi sumus eorum quae rudis animis percepimus [...]”.

⁸⁶ QUINTILIAN: *Institutio oratoria*, I, I, 6: “In parentibus vero quam plurimum esse eruditionis optaverim. Nec de patribus tantum loquor: nam Gracchorum eloquentiae multum contulisse accepimus Corneliam matrem [...]”.

⁸⁷ QUINTILIAN: *Institutio oratoria*, I, I, 8: “De paedagogis hoc amplius, ut aut sint eruditi plane, quam primam esse curam velim, aut se non esse eruditos sciat”.

⁸⁸ QUINTILIAN: *Institutio oratoria*, I, I, 20: “Lusus hic [studium] sit, et rogetur et laudetur et numquam non fecisse se gaudeat [...]”.

Grammar, furthermore, since it must deal with metre and rhythm, cannot be complete, if it sets aside notions of music.⁸⁹

It is in the age of transition from childhood to adolescence that the greatest care must be taken of the voice:

Very rightly all have recommended saving the voice in a special way in the period of transition from childhood to adolescence, because it is naturally impeded [...] everything, so to speak, is a seedling at this stage, and thus more delicate and exposed to damage.⁹⁰

It should be stressed in this context that both Greeks and Romans compared the phenomenon of the breaking of the voice,⁹¹ typical of puberty, to the sound produced by goats. Aristotle describes at some length the phenomenon during which the childish voice gradually lowers in tone, developing the characteristics of the adult male voice. But this change is accompanied by roughness, and is characterised by great irregularity: it is no longer so sharp and high, but not yet genuinely deep. Also, it is not yet completely stable and recalls the sound of chords that are not perfectly tensed, and are out of tune. On this score, Aristotle had specified that the phenomenon was more evident in those who had begun some kind of sexual activity, while in those who abstained, such as singers and

⁸⁹ QUINTILIAN: *Institutio oratoria*. I, IV, 4: “Tum neque citra musicen grammaticae potest esse perfecta, cum ei de metris rhythmisque dicendum sit [...]”.

⁹⁰ QUINTILIAN: *Institutio oratoria*. XI, III, 28-29: “Illud non sine causa est ab omnibus praeceptum, ut parcatur maxime voci in illo a pueritia in adulescentiam transitu, quia naturaliter impeditur, non, ut arbor, propter calorem, quod quidam putaverunt (nam est maior alias) sed propter umorem potius: nam hoc aetas illa turgescit. Itaque nares etiam ac pectus eo tempore tument, atque omnia velut germinant eoque sunt tenera et iniuriae obnoxia”. For a comment relating to the problem of the change of voice see ROUSSELLE, “Parole et inspiration”, p. 136; and aslo Eyben, “Antiquity”, pp. 680-682, 686-687, in particular, pp. 688-691 for a description accordino to the historical and literary sources of alterations in the vocal timbre during the change of voice.

⁹¹ ARISTOTLE: *De animalium generatione*, V, VII, 787b, 32-788a, 1-2; ARISTOTLE, *Generation of animals*, English transl. By Arthur Leslie Peck, Cambridge, Massachusetts, London, England, Harvard University press-William Heinemann Ltd, 19532, pp. 550-551: “And as these changes come about (in sexual development) so the voice also behaves, more so in the males, but the same thing also occurs in the females, but in a less obvious way. It happens that the voice- as some describe it – ‘is breaking’ during the stage in which it is uneven. After this, at the due age, it stabilises at a deep or a high pitch”.

choristers, the change came more slowly.⁹²

In the care and education of the voice the breathing has a major role, in that it is closely linked to rhythm, and indeed this combines with and determines the latter. Cicero recalls that the Greeks sought that pauses in speeches:

[...] should be made not in moments when the orator is tired, but in those in which he needs to take breath; they should be indicated not by punctuation marks made by the copyists, but by the rhythm of words and thoughts.⁹³

This is a natural consequence of need:

[...] shortness of breath and the need to breathe have made pauses between one sentence and another and intervals between words, necessary. But this invention is so pleasing that, even if someone were gifted with inexhaustible breath, we would not wish him to pronounce his words without pausing: in fact it is pleasing to our ears not only to listen to what the lungs can sustain, but also what they can undertake with ease. Consequently, while the longest sentence may be the one pronounced with a single emission of breath, this is the rule of nature, different from that of art.⁹⁴

⁹² ARISTOTLE, *Historia animalium*, IX (VII), I, 581a, 18-28; in ARISTOTLE, *History of animals*, 3voll., ed. and Engl. transl. by David M. Balme, Cambridge, Massachusetts, London, England, Harvard University press, 1991, pp. 415-416: "Around this age [the age of fourteen years], the voice begins to become more raucous and uneven, no longer high-pitched, but not yet deep and not yet completely uniform, which reminds us of strings of an instrument which are poorly tensed and out of tune: something which is termed 'goat-voice'. All this is more evident in those who undertake sexual activity: in fact in those who devote themselves to it with energy, the voice changes quickly into the virile register; the opposite occurs in the case of those who abstain. When they control it with exercises, as do those who devote themselves to choral singing, the voice remains the same for longer, and undergoes a more subtle change". This is also the opinion of QUINTILIAN: *Institutio oratoria*: XI, III, 19-20.

⁹³ CICERO: *De Oratore*, III, 173: "[...] interspirationis enim, non defetigationis nostrae neque librariorum notis sed verborum et sententiarum modo interpunctas clausulas in orationibus esse voluerunt [...]"]

⁹⁴ CICERO: *De Oratore*, III, 181-182: "[...] clausulas enim atque interpuncta verborum animae interclusio atque angustiae spiritus attulerunt. id inventum ita est suave ut si cui sit infinitus spiritus datus, tameneum perpetuare verba nolimus. Id enim auribus nostris gratum est inventum, quod hominum lateribus non tolerabile solum, sed etiam facile esse possit. Longissima est igitur complexio verborum, quae volvi uno spiritu potest. Sed hic naturae modus est, artis alius".

Thus, already in dealing with reading exercise, Quintilian insists, as Cicero had done, on the need for practical example, and points the attention to the use of the breath, so that:

[...] the boy can learn when to hold his breath, at what point he should make a pause within the verse, where he should conclude and where to begin a passage or a thought when to raise and when to lower the voice, what to say with the various inflections, what to say more slowly and what more quickly, what with greater excitement and what with greater calm [...] the child must understand what he is reading.⁹⁵

Furthermore the phrase must not be broken up by frequent taking of breaths, nor should it be protracted until no breath remains. The sound of breathing which is nearly exhausted is unpleasant; the breathing is like that of a man who has been immersed in the water for a long time, the intake too lengthy and inappropriate, because it does not take place when we wish, but is forced. Thus, when we are about to utter a particularly long sentence, we need to gather the breath, but in such a way that this takes place rapidly and without noise, and is absolutely not obvious; in other cases the best point for re-taking the breath will be in correspondence with the joining points in the speech.⁹⁶

So the aspects which are considered both by Cicero and Quintilian in the functional use of musical skills in the art of the orator concern the voice – and directly linked to it, the breathing – and those aspects that are connected with rhythm.

To give greater clarity to the role and importance of the breathing for anyone who uses the voice, Quintilian describes certain defective respiratory actions, such as uneven breathing, which causes a tremolo, the whistling sound of those who suck in their breath between the teeth, or those who breathe anxiously or make their breath resound noisily internally, as is the case with some who:

⁹⁵ QUINTILIAN: *Institutio oratoria.*, I, VIII,1-2: “Superest lectio: in qua puer ut sciat ubi suspendere spiritum debeat, quo loco versum distinguere, ubi concludatur sensus, unde incipiat, quando attollenda vel summittenda sit vox, quid quoque flexu, quid lentius, celerius, concitatius, lenius dicendum, demonstrari nisi in opere ipso non potest. [...] ut omnia ista facere possit, intelligat”.

⁹⁶ QUINTILIAN: *Institutio oratoria*, XI, III, 53: “Spiritus quoque nec crebroreceptus concidat sententiam, nec eo usque trahatur donec deficiat. Nam et deformis est consumpti illius sonus et respiratio sub aqua diu pressi similis et receptus longior et non oportunus, ut qui fiat non ubi volumus, sed ubi necesse est. Quare longiorem dicturis perihodon colligendus est spiritus, ita tamen ut id neque diu neque cum sonofaciamus, neque omnino ut manifestum sit: reliquis partibus optime inter iuncturas sermonis revocabitur”.

[...] actually affect this practice, to give the impression of being overwhelmed by the abundance of the ideas they have conceived [...].

Thus it is also a wrong respiratory practice to cough to the extent of “emitting the best part of the breath through the nostrils while speaking”.

All these practices, while not constituting genuine voice-defects, are nevertheless to be considered the results of the *actio* of the voice.⁹⁷ Thus if what changes from one poetic genre to another or from one type of oration to another, is the rhythm, it means that it is the breathing itself which must be modified.

Voice and sound

While both Cicero and Quintilian describe the events and the gestures of the voice, neither of them makes a basic distinction between voice, the physical reality of the vocal sound, and word – the semantic element produced by the articulation of the laryngeal sound. Galen, following his anatomical and physiological observations, was to distinguish in the vocal product between the physical characteristics: intensity (great and small voice), pitch (deep and high) roughness and dryness, and also its capacity for modulation: broken sound, plaintive and so on, and the distinction between fast and slow. Galen thus traces the reality of the voice as a sonorific element back to its productive instrument, the larynx, with the muscles that move it and all the nerves which carry the commands from the brain to the muscles, and the driving force of the lungs acting as bellows. The word, on the other hand, is the articulatory reality, which depends on the organs designed to modify the flow of air and sound, the principal of which is the tongue, but also the action of the nose (the nasal cavity) lips and teeth.

Galen’s studies in this context led to important discoveries such as that of the recurrent nerve (which innervates, and thus controls, the muscles of the larynx) and of the intercostal muscles in the breathing action of inspiration and respiration.⁹⁸ Hence the constant movement between two poles: phonation

⁹⁷ See QUINTILIAN: *Institutio oratoria*, XI, III, 55-56: “[...] etiam si non utique vocis sunt vitia, quia tamen propter vocem accidunt potissimum huic loco subiciantur”.

⁹⁸ CLAUDIUS GALEN: *De usu partium corporis humani*, in *Claudii Galeni Opera omnia*, hrsg. v. C.G. Kühn, Hildesheim, Georg Olms Verlagsbuchhandlung, 20 voll., 1964-1965: voll. III-IV, 1964; Lib.V: xv, e VII: v e VII: xi-xiii, Italian trans. *Opere scelte di Galeno*, edited by Ivan Garofalo e Mario Vegetti, Torino, UTET, 1978 (Classici della scienza, collezione diretta da Ludovico Geymonat), Lib. V: xv, 399-343 pag. 432, Lib. VII: v, 525-526, p. 492; VII: xi, 554-555, pp. 506-507; VII: xii, 557-560, p. 508; VII: xiii, 560-563, pp. 509-510.

and respiration.

In examining how the increase in the tempi of vocal emission after an inspiration does not depend simply on calm respiration but on deep respiration, typical of the winebag blowers or flute or trumpet players,⁹⁹ Galen also anticipated the observations on the respiratory mechanism of singers, whose intake of breath tends to be deep and rapid. But in order not to be devoid of strength it is advantageous that one should be capable of using the efficiency of the diaphragm and of the external intercostal muscles to the maximum, thus rendering the use of other muscles minimal. This is done through appropriate respiratory exercises, to be practised in a vertical position, but also in a horizontal position, lying supine or on one side.¹⁰⁰ The discovery that traumas of various kinds to the lungs harm the respiratory system – with consequent diminution of the respiratory volume and the voice, causing a lessening of the intensity of phonation – reminds us once again of two important concerns: the social role of the voice and the voice as symptom of essential, vital activity.¹⁰¹ The sound which human beings articulate into language is intimately linked with life: the voice is not an additional asset given to man but a fundamental element of the structure of living beings.

Among the exercises for the health of the voice, it is advised that one should not emit air strongly (“as the athletes do”) because this causes cooling and drying of the parts; thus the deepest possible notes are to be emitted or sung. One should definitely refrain from emitting high notes, but the exercise always consists in rising little by little from the deeper notes, and slowly reinforcing the voice on the higher notes. It is the deeper notes which thus constitute the principal and most important source of the well-uttered voice: as much air as possible must be conveyed within by inspiration. It is through the deep and soft notes that it is possible to obtain greater dispersion of humidity. So this “healthy exercise” for the voice acts as the gymnastics of the intellectual and the politician; it is part of school and post-school education, and is intended to introduce air into the body and emit humidity.

⁹⁹ GALEN, “Sui movimenti dei muscoli”, in *Opere scelte*, II, ix.

¹⁰⁰ DE SANCTIS - FUSSI, *La parola e il canto*, pp. 135-135ff.

¹⁰¹ Cfr. ROUSSELLE, “Parole et inspiration”, pp. 144-45.

For this medicine, the capacity to emit deep sounds is a guarantee of a good ventilation, and hence of a developed intellect. Thus children, women and eunuchs are obviously lacking in it.¹⁰²

Vocal exercise is carried out as a muscular and respiratory exercise; an element in the integration of the voice in the general conception of the body which is due to school education itself. Thus, reading aloud and the love of poetry are still the things which provide the solid foundation of this knowledge of the body, which perfects the voice and its possibilities so thoroughly. Antyllos also gives an opinion on the exercises which prepare the voice:

[...] In order to declaim better, one should recite from memory, accompanied by the lyre. In declaiming, one holds on to the lower notes, causing the voice to descend as low as possible, and then subsequently one raises it, ascending towards the higher notes. Once these high notes are reached, they should not be held too long, but one should return then to the point of departure, making the voice descend little by little until the deep notes with which we began are reached. The duration of the declamation should be determined by the strength, the pleasure we find in it, and by habit.¹⁰³

Concluding observations

Once again the continuity of a culture of care for the voice is being renewed; today, despite the many suggestions made, it seems to have been lost in favour of a practice which is sometimes over-strenuous and at other times over intellectualised. Vocal activity is above all a psycho-motor practice in which the action of several systems (the nervous, respiratory, phonatory, articulatory and auditory-perceptive) must be “concerted” or must take place according to a quite delicate synchrony. The organised work of the muscles which govern posture, respiration, phonation and articulation, etc., has as its ultimate aim the integration of the voice itself with the general notion of the body. Even simple unison intonation requires a set of operations in which not only the productive mechanism, but also the perceptive and proprioceptive mechanisms are involved directly; in other words the mechanisms of observation and memorisation of all the internal, tactile and muscular sensations which allow the gradual construction of the “corporeal-vocal scheme”. They can be summed up, as Per-Gunnar Alldahl, notes, in attention, interior listen-

¹⁰² Ibid., p. 153.

¹⁰³ Ibid.

ing and active concentration; attention to one's own voice, and also in relation to others', and towards the mechanisms of control of the intonation, which is influenced by the vocal register, the chosen dynamics, and the timbre.¹⁰⁴ Thus this is a question of abilities which can be used not simply within the musical context (even if this does exploit them and in didactic terms care is taken of their greater development), but also in extra-musical contexts, by improving and (when occasion permits) providing better maintenance of our perceptive capacities on the one hand, and communicative abilities on the other.

One often has the feeling today that in musical teaching attention is mainly given to the material used, to overall musical activities to be undertaken, and naturally to the question of whether they are more or less demanding or 'motivating'. On the other hand, the interest of those involved with vocal training seems to underestimate childhood vocal education, in order to devote greater attention to the already formed, adult voice. The impression that one gets is that it is still taken for granted that singing together, in chorus, is motivating in itself, and represents a sufficient vocal practice, setting aside the value of an adequate vocal education from the earliest years, primary as health education, and indeed education for the "voice as a model of health".¹⁰⁵

In the end, what does it serve mute men to have that divine spirit in them?
For this reason, if we have received no greater gift from the gods than the gift of words,
What should we esteem as equally worthy of care and effort,
or in what should we wish to excel among men
more than in what men themselves excel amid all the other animals?¹⁰⁶

(Engl. trans. Brian Williams)

¹⁰⁴ PER-GUNNAR ALLDAHL, "L'intonazione del coro. Manuale teorico-pratico per direttori di coro, coristi, cantanti", edited by Fabio Lombardo and Silvio Segantini, Firenze, Centro di Ricerca e Sperimentazione per la Didattica Musicale, 2000, p. 18.

¹⁰⁵ I am grateful to my friend Dr. Mario Rossi, phoniatrician at the *Centro di foniatría e audiologia* of the University of Padova who, in pointing out this equivalence, called my attention to rethinking my own way of understanding *vocalità*, its principles and aims, above all in the context of pedagogy and education and infancy.

¹⁰⁶ QUINTILIAN: *Institutio oratoria*, II, XVI, 17: "Denique homines quibus negata vox est quantum adiuvat animus ille caelestis? Quare si nihil a dis oratione melius accepimus, quid tam dignum cultu ac labore ducamus aut in quo malimus praestare hominibus quam quo ipsi homines ceteris animalibus praestant?". See also CICERO: *De Oratore*, I, 32-33.