

Training a Chorus in Ancient Greece

Luis Calero
Universidad Internacional de La Rioja
luis.calero@unir.net

In this paper, I shall analyse the information we can extract from ancient Greek texts about the training of those citizens chosen to become members of a chorus during the Athenian festivals, as well as the importance to become such. I shall offer a revision of the role of the *chorodidaskalos*, the person in charge of their instruction, considered, in a certain way, a *maestro di canto* in the ancient world, in order to determine if we can delimit the professional grounds with which they used to work, from a technical point of view, especially when, in many cases, they had to deal with members not professionally educated for their chorus lines. This panorama will show the importance that the practice of singing within a chorus, principally on an Athenian theatre, implied for those citizens who partook their experience at each festival, and how things were dealt with from the Classical period until we find the *phonaskos*, a professional trainer of voice that appears in the Greek world from the Roman period onwards.

1. Preliminaries.

The second book of Plato's *Leges* (653d.5-654a.7)¹ sets it quite clearly: joining in festivals to honour the gods nourishes the soul of the citizens, for he sustains that every young creature is incapable of keeping still with either his voice or his body in that perception of order and disorder that suits the philosopher so well for his ideal State. This quality serves the human capacity to perceive rhythm and *harmonia*, so that people can enjoy them and share songs and dance². Thus, Plato claims, *choruses* were given this name as a derivation from the joy (*χαρά*) that is natural to them in this combination of song and dance (*χορός*) as basic statements of *mousiké* in its wider sense. This etymology is completely imaginative in Plato's text, for it is based upon the similarity of both words, but it suits perfectly to the idea presented in this paper, because one of the greatest services to the City and,

therefore, to the divinities Apollo, Dionysus or the Muses, was being part of a chorus in any of the big or minor festivals and competitions of the *polis*³.

Texts like this one are quite abundant in ancient Greek literature. Music is understood as the combination of *rhythmos* (in the sense of "song") and *schema* ("dance") that conforms the basics for *harmonia*. It is also a crucial factor for the good education of a citizen and abounds throughout ancient Greek literature. However, it is extremely difficult to trace the vocal practice in the context of the dramatic chorus prior to the Classical Athens from a technical point of view. Nonetheless, once the studies in Aristotle's Lyceum started to thrive, a great interest arose on music theory, as well as on instrumental and vocal practice. Fortunately, we still conserve a discrete number of treatises from Aristoxenus onwards. This theoretician changed



the perspective on which theory of music was based since the Pythagoreans' interest in music as a science of numbers, concentrating his activity not only in music as a theoretical science but also as a personal experience. It is important to highlight that, even though the iconography shows many examples of teachers and pupils in reciting or singing situations, there is no written notice about the way in which children, adult soloists or choruses were trained in the Classical period. We must wait until later dates to find the figure of the *phonaskos* (φωνασκός), as a trainer of the voice, though not necessarily of the sung voice, for, as we shall see later, they were hired to preserve politicians and orators' voices in good conditions. Therefore, this lack of information about technical training for singers in previous phases shows that Aristoxenus and his followers' idea of the practical experience in music is far from ours, for he values this kind of knowledge to the extent that it improves the theoretical vision of this science.

However, is there any way to trace information on what we are analysing in this paper? In ancient Greek literature, we usually find the citharist (κιθαριστής) or the *aulos* player (αὐλητής) as synonyms for "music teacher". Different passages illustrate this concept, like, for instance, Xenophon's *Mem.* 1.2.27.2, in which he wonders «what auletes, what citharist, what other teacher (using the general term διδάσκαλος), that has prepared their pupils, are to be blamed if they seem not to be so good?». Plato (*Euthd.* 276a.4-7) expresses a similar opinion when he makes the main character of the dialogue ask his interlocutor if teachers (διδάσκαλοι) aren't teachers themselves of those who learn. Again, in *Leges* (812b.2-812e.1), he speaks about the citharists, claiming that «they must master the rhythms and harmonic compositions» (περὶ τε τοὺς ῥυθμοὺς καὶ τὰς τῶν ἀρμονιῶν συστάσεις), so that a good citizen may have the skills to choose between good and pernicious music in order to enable him to acquire virtue. The philosopher insists on the same matter in *Men.* 90d.6-e.8.

We also have a vivid scene of children going to their music teacher's house in Aristophanes' *Nubes* (961-969), when the char-

acter impersonating the Right Reasoning explains what education was like in ancient times: it was absolutely obligatory not to hear a single child's voice; they had to form a line in the streets until they arrived to the citharist's house, all together, with no clothes on, under the snow if necessary; there, they would learn songs like «Pallas, the terrible cities razer» or «Song that takes us far away», executed in the proper *nomoi*⁴.

In this context, it is important to remind that a person with no musical training was considered a Greek of no education. In Aristophanes' *Vespae* (958-959), Bdelykleon arranges a court session for his father, Philokleon, against his own dog, that is declared a complete ignorant as it is not capable of playing the *kithara* (κιθαρίζειν). Plato (*Lg.* 654a.9-654b.7) is a bit blunter about the matter. He loathes the person without choral experience, whereas the educated one will be able to sing and dance properly (οὐκοῦν ὁ μὲν ἀπαιδευτος ἀχόρευτος ἡμῖν ἔσται, τὸν δὲ πεπαιδευμένον ἱκανῶς κεχορευκότα θετέον;). This same idea will continue in the Roman world, as we can read in Cicero's *Tusculanae* (1.3.11-13), who declares that those well-educated among the Greeks «can play the *tibia* and sing in *symposia*».

Along with the *kithara* and *aulos* players, we frequently find voice teachers depicted in iconography, in which it is frequent to see a pupil who, sitting or standing, offers a (sung or spoken) lesson to be corrected by the expert in front of him. The iconography patterns show the importance acquired by these professionals in the education of the future citizens, for we can observe the quasi-religiously respectful attitude held by pupils towards their trainers.

Therefore, we propose that one of the most sensible ways to approach the practice developed by this type of teachers must be through the analysis of their participation in the education of singers for the dramatic choruses of the festivals, as texts evidence. The performance of a dramatic play by soloists or chorus members implied three basic elements: word articulation, body-language and movement (or its absence). Therefore, the fifth-century theatrical production involved a complex and difficult task not only

regarding the economic conditions needed to put a festival on, but also the vocal and scenic practice that was demanded from the citizens that, in a great proportion, hadn't been professionally prepared and performed side by side with trained actors. While tragedy has a propensity to be much more conservative, choruses in comedy apparently tend to disappear in late periods, most probably because of the increasing professionalization of theatre and due to the development of new tendencies in acting, music and dancing, for choruses kept on being formed by amateur citizens until the *choregia* was abolished (CSAPO & SLATER 1995, pp. 350-351).

2. Training a chorus in ancient Greece.

Aristophanes (*Eq.* 512-544) affirms that there is nothing so difficult as to put a comedy on, using for it the term *komododidaskalia* (κωμωδοδιδασκαλία), a word that implies scenography, composition, choreography, and acting and singing rehearsals. His affirmation implies the idea of trainers for choruses, the *chorodidaskaloi* (χοροδιδάσκαλοι, or, as we saw previously, simply *didaskaloi*) as an absolutely necessary piece. They must have been, presumably, quite abundant in Classical Greece, even though it is quite difficult to find out about their training techniques. This task could be taken by the poets and composers themselves, who could also play the protagonist role of their own creations, instruct the chorus, or even participate as one of its members.

In any case, the chorus trainer had to be a citizen, although, after the fifth century, professionals could be hired for different plays (MATHIESEN 1999, pp. 95-125; PICKARD-CAMBRIDGE 1968, pp. 9-92). These functions were frequently delegated in the *choregos*⁵, in the tribe administrators or in the *archon eponimos*. We can also imagine that certain *chorodidaskaloi* must have been famous for their abilities in a variety of styles and techniques, adapted to the necessities of the rehearsed plays. Nevertheless, the main responsibility for organising and putting on the dramatic festivals of the Great Dionysia in Athens remained in charge of citizens and, in some cases, as we shall see later, of metics⁶,

designed by the archons as *choregoi*. They were in charge of equipping and training the members of the tragic, comic and dithyrambic choruses, and they selected a poet among the candidates in the archon's list, as well as an *aulos* player that assisted him throughout the whole training process and during the performances. It is quite likely that these members received food and accommodation for that period, but researchers are not sure if they were also paid, even though Xenophon affirms it (*Ath.* 1.13.1-10).

The daily work of a *chorodidaskalos*⁷ could have been based in the use of the equivalent to our scores, but they used to teach orally, the same way the instrumental lessons for lyre or *aulos* took place with no necessary musical written part, being their proper hearing their most powerful working tool (BÉLIS 1984, p. 108). There existed a type of *solfège* that is explained in Aristides Quintilianus (2.13.1-2.14.1) and the *Beller-mann Anonymous* (§ 77), but, in any case, the success of a dramatic performance depended to a great extent on their expertise⁸. So, we must support the idea that their training technique must have had a long oral tradition that passed from generation to generation. Pseudo-Plutarch⁹ (*De musica* 1132.A.8-11) believed in a quasi-mythical origin. According to him, Philamon organised a chorus around the Temple of Delphi¹⁰. However, the origins of the chorus instructors must be traced before the moment in which musical and rhythmical changes start what will become the *New Music* of the fifth century. Greek tradition used to consider Arion of Lesbos the “inventor” of the dithyrambic genre in Periander's court (seventh or sixth century BCE). Herodotus (1.23.1-24.8) describes him as the best *citharist* of his time, first composer of a dithyramb and that who named the genre, while he taught it in Corinth (πρώτων ἀνθρώπων τῶν ἡμεῖς ποιήσαντά τε καὶ ὀνομάσαντα καὶ διδάξαντα ἐν Κορίνθῳ). Of course, we must understand he reinvented or adapted the genre, as he is called its «discoverer» (εὐρέτης). In any case, those three verbal participles (ποιήσαντά τε καὶ ὀνομάσαντα καὶ διδάξαντα) imply that Arion was successful in introducing those compositions into the general repertoire. Additionally, we must understand that the use



of *didaksanta* (διδάξαντα, «who taught») is proof of his role as an educator that trained the chorus in new dramatic techniques that revalued the dithyramb as a style, and that were transmitted from generation to generation¹¹.

After him, Lasus of Hermione strengthened the practice of dithyrambs in the Athenian cultural life. This famous *chorodidakalos* was brought to the city by Hipparchus and his activity credited him as founder of the genre and as researcher for new singing techniques, as we can understand from the fact that he composed at least two pieces in which he tried to avoid the /s/ sound, one of the commonest in Greek, for being «harsh and inappropriate for the *aulos*»¹². According to Pseudo-Plutarch (1141.C.1-5), Lasus transformed the existing music when he adapted the rhythms to the dithyrambic movements and the *polyphonia* (whatever this word may mean in this period) of the *auloi*, using a greater number of notes for a larger diastematic range. This innovation was quickly accepted by his contemporary avant-garde colleagues, who saw in it the expressive tools needed for their new artistic expression, far from the conservative practice. This moment coincides with the breaking of the circular choruses (BARKER 1989). Pseudo-Plutarch (*De musica* 1141.F.4) uses the word *strobilon* (στροβίλον) trying to illustrate some kind of turn introduced by Phrynīs, the fifth-century Lesbian poet, in his works. Apparently, it made the musical and choreographic traditions unrecognisable for the audience. This term is interpreted by BORTHWICK (1968, p. 68) in two possible ways: first, it can be understood as an innovation in the dithyrambic agogic, either rhythmic-melodic or choreographic¹³, that broke the circular chorus (κύκλιος χορός) with a violent turn, like a whirlwind, conferring the whole passage an erotic sense, but, secondly, it can be also taken as a stick that laid underneath the strings, whose turn could change their tuning. Whatever it may mean, KOWALZIG & WILSON (2013, pp. 203-205) think that the *aulos* player should be situated in the central *omphalos* of the orchestra, just by Dionysus' altar, so that the chorus could be placed around him in one or several concentric circles in order to hear him more precisely. If this is Lasus' in-

novation, we must deduce that the *choreutai*, or at least most of them, had a good control on vocal, rhythmic and choreographic coordination, derived from the technical preparation they obtained from their chorus trainers¹⁴.

It is quite probable that there was a certain disposition of the chorus in the offerings to the gods, as it can be understood in E. *IA*. 676, when Iphigenia asks his father to gather a chorus around the altar to assist her condition of victim. Apparently, the origin of this type of chorus is related to the term *tyrbasia* (τυρβασία, from *tyrbe*, τύρβη, 'disorder, confusion, tumult'), as Pollux (4.105.1-2) claims that this word refers to the «dithyrambic dance, mimetic, used to imitate those who were caught in the robbery of rotten meat»¹⁵. McDONALD & WALTON (2007, pp. 230-231) claim that, most probably, the hymns in honour of Dionysus that lie beneath the origin of the dithyramb were sung in the procession of the god to the festival, but, in some moment, they were transformed into a song, performed in a fixed circular position of the singers. From this assumption, we must accept again that, due to the big number of members in choruses (up to fifty, according to WEST 1994) and their disposition in a precise and perfect organisation, the chorus trainers must have been extremely skilled, so that he could coordinate not only the movement of the participants, but also the sound and volume of their voices.

The formation of the chorus is therefore another technical difficulty with which the *chorodidakaloi* had to deal. The drama chorus differentiates from the dithyrambic one in the fact that its structure is exclusively rectangular, as can be read in late testimonies that reference their positions on stage (PICKARD-CAMBRIDGE 1968, CALERO 2018). This can be observed in *sch. in Lyc.* intro. 43-44 («it is common for tragic, satyric and comic poets to have the chorus arranged in a rectangular disposition»)¹⁶, *sch. Ar. Nu.* 333a.β.1 («because the tragic ones were set in a rectangular way, but the dithyrambic one in a circular way»)¹⁷, *EM.* 764.4 («tragedy: its choruses had a rectangular shape»)¹⁸ and Poll. 4.108.5-109.6, who offers the most complete description of the technique developed by the member of the chorus during their performances:



Gilgameš

02 › 19

«the parts of the chorus are column and row. The tragic chorus had five rows of three persons and three columns of five, for fifteen were the chorus. If the *parodos* was made in rows, they entered three by three, but if in columns, they entered five by five. Some other times they performed the *parodos* one by one. However, the comic chorus was made up with twenty-four *choreutai*, six rows, each row of four people, and four columns of six men each»¹⁹.

This text shows quite accurately the disposition preferred by the trainer of a chorus during its entrance for a dramatic play. He looked for the best quality of their singers' voices. He arranged them in five rows (ζυγά, *zyga*) and three columns (στοίχοι, *stoichoi*) for tragedy, whereas comedy preferred a six-row and four-column disposition. As they moved during play, they should do it keeping the order in rows (κατὰ ζυγά), maintaining three of their members right in

front, or less frequently in columns (κατὰ στοίχους), with five individuals in front of the public (Poll. 4.109.2), although certain plays present a different *parodos*, justified by the dramatic action, being held in a single queue (cf. Pollux's last example) or, even, without any order at all, as it seems to happen in comedy sometimes. For instance, in Aristophanes' *Aves* (295-296), Euepides describes the entrance of the chorus in a complete mess:

Ὦναξ Ἄπολλον, τοῦ νέφους. Ἰοῦ ἰού,
οὐδ' ἰδεῖν ἔτ' ἔσθ' ὑπ' αὐτῶν πετομένων τὴν εἴσοδον.

What a cloud, oh Apollo sovereign, iu, iu!

because of them you cannot even see the entrance any more.

Or again in *Nubes* (324-326), when Socrates shows the clouds to Strepsiades, co-

ming down from Mount Parnassus in a group:

χωροῦσ' αὐται πάνυ πολλὰ
διὰ τῶν κοίλων καὶ τῶν δάσεων, αὐται πλάγῃαι [...]
παρὰ τὴν εἴσοδον.

There they advance in a horde
through valleys and bushes, there, sideways [...]
next to the entrance.

Besides, their exit could be preceded by an *aulos* player or even, as in *Vespae* or *Ecclesiazousai*, by a vigorous dance, that could have made singing even more difficult. The use of an *aulos* for the *parabasis* in comedy seems to be proved in *sch. Ar. Au.* 682-684²⁰.

It seems that the usual way to enter for a rectangular chorus was through the right-hand side of the stage, at least in Athens,

keeping the audience to their left-hand side and observing the strict hierarchy of the *hoplitai* battle line (CSAPO & SLATER 1995, CALERO 2018). It is hard to know for certain if the texts are to be understood from the actor or the public's point of view. Common sense makes us imagine that texts refer to it from the perspective of those who watch the show, as it seems to be proved, with certain am-



biguity, in Tzetzes (*Prol.Com.* 1.125-126): «if the chorus advanced to the theatre as if they were coming from the city, it entered through the left arch, whereas if they came from the fields, it did it through the right one». The *scholion* to Aelius Aristides (*Tett.* 161.12.4-6) seems to be a bit more specific in this matter, as it states that «when the chorus entered, they sang advancing obliquely (πλαγίως), leaving the spectators to their left-hand side and the first ones of the chorus kept their left».

According to PICKARD-CAMBRIDGE (1968), the first line of *choreutai*, the *aristerostatai* (ἀριστεροστάται), those closer to the public, was entrusted by the trainers to the best singers, so that the best vocal quality reached the audience straight away, whereas the central column of the group was formed by the less efficient ones, the *laurostatai* (λαυροστάται) or *deuterostatai* (δευτεροστάται)²¹. With this technical approach, the *chorodidaskaloi* made sure that these singers were surrounded by those more experienced and more decisive in vocal interpretation and theatrical resolution. The *choreutai* of an intermediate quality were usually called *τριτοστάται* («those in the third row»), *ἔσχατοι* («those at the back») or *δεξιοστάται* («those on the right row»)²², placed far from the public.

The coryphaeus, the main member of the chorus, had a prominent place, being placed in the middle column, right in front of the public, and was called *τρίτος ἀριστεροῦ*, «the third from the left-hand side», or *πρωτοστάτης*, «that who stands first», in the sense of ‘leader’ of the group. The technical term for the two *choreutai* standing by his side was, literally, *parastatai* (παραστάται). We must assume that they were the three best singers of them all. The coryphaeus started the choral singing with the tuning of the first note, being helped by the *aulos* player and keeping the rhythm with the *kroupeza*²³, a type of shoe that had a small piece of metal attached below so that the beating of time would be clear and strong (Michaelides 1978, *s.v.*). In that way, he led the beginning of the singing for the group in what is called the *endosimon*. Athenaeus (1.170.13-14) provides the information that the coryphaeus stood in the central position

of a circular chorus. Obviously, it was the best way to coordinate the whole group of singers.

As we have already said, in the fifth-century BCE drama, the chorus was led by an *auletes*, paid by the *choregos*, that accompanied its singing and dancing, as it was done in the dithyramb performance. However, this *aulos* player is never mentioned in the contemporary inscriptions, neither on his own nor as an instrumental assistant. Nevertheless, the increasing technical difficulty in the interpretation of music implied his being, firstly, positioned after the *chorodidaskalos* and, later, in front of him (KEMP 1966, pp. 216-217). Aristotle (*Pol.* 1341a 33-4) proves the existence of a *choregos* in Lacedaemonia that played the *aulos* himself to accompany his own chorus.

The most difficult solo parts were usually performed by professionals, as it can be read in *Arist. Pr.* 918b.13-30, where we are told that the *nomoi* were appropriate for experts (οἱ μὲν νόμοι ἀγωνιστῶν ἦσαν), among other reasons, because they could «accomplish long and complex singing» (ὄν ἤδη μμεῖσθαι δυναμένων καὶ διατείνεσθαι ἢ ᾠδὴ ἐγίνετο μακρὰ καὶ πολυειδῆς), in what we must understand as «singing in tune» (CALERO 2016, 2017). Free men that took part in choruses were not obliged to stand out by their dramatic singing, so that they usually had to perform simpler melodies in the same harmony (ὥστε ἐναρμόνια μέλη ἐνήδον), without modulations²⁴.

We must in any case guess that these chorus singers needed have a certain quasi-professional technical quality, because Plato (*R.* 373b.1-9) mentions their professional significance along with poets and their assistants (τούτων ὑπηρέται), rhapsodes, actors, contractors (ἐργολάβοι) and inventors of all kind of devices as components of his ideal State. We can also add that this professional consideration clearly varied between the *choreutai* and the coryphaeus, as it can be understood from Aristotle (*Pol.* 1277a.10-13) who claims that «the virtue of all citizens is not necessarily unique, as it is not that of the coryphaeus and of the simple *choreutes*», being crucial for us to understand that they considered the virtue of the coryphaeus greater than that of the other singers, due to



his technical, vocal and stage responsibility in the play.

Socially speaking, both coryphaeus and *choreutai* had to be citizens that belonged to the same tribe and, whereas in some Athenian festivals only citizens were allowed to perform, in some others, like the Lenaea, metics could participate as well, as proved by *sch. Ar. Plu.* 953.2-4²⁵. Plutarch (*Phoc.* 30.3) explains that, once, this law was overstepped by a rich man called Demades, who hired a chorus of one hundred members, all of them foreigners, even though there was a fine of one thousand drachmae for doing so.

The tragic chorus, that had been the core of the performance before Thespis introduced an actor on stage in what the ancient Greeks considered the beginnings of tragedy as a genre (*Plu. Sol.* 29.6.1), started to lose its dramatic weight as spoken scenes were prevailing before the lyric or musical interventions. In Aeschylus, the chorus in *The Suppliants* and *Agamemnon* is more important than in *Prometheus Bound*. In this play, its role is closer to what can be observed in Sophocles and Euripides, whose choral interventions seldom exceed a fourth part of the whole play.

For Aeschylus' plays, twelve members were enough to make up a chorus, but that number increased up to fifteen in Sophocles and Euripides' time²⁶. Apart from other considerations, what serves our purpose here is to consider it as a vocal technical advance for the pursuing of a new timber and volume effects on stage, for, as we said before, it coincides with the technical development of the members of choruses in the dramatic festivals. Following PICKARD-CAMBRIDGE (1968, pp. 234-236), some scholars think that in the Danaid trilogy, in which *The Suppliants* is included, Aeschylus uses choruses with fifty members, being an erroneous appreciation derived from the number of members that conformed the dithyramb choruses, that are the same number as Danaus' daughters. Pollux (4.110.3-6) narrates an anecdote in which fifty *choreutai* burst onto stage, frightening so much the Athenian audience, that they were obliged to be reduced in number. Most scholars accept nowadays that in *Persae* and *Septem contra Thebas* the chorus had twelve members, but some others

think that Aeschylus might have increased the number to fifteen, following Sophocles' innovation, according to the information we get from *sch. Ar. Eq.* 589.5-9²⁷ and *sch. A. Eu.* 585.1²⁸.

Its interventions in the plays started to fade out with Agathon (*Arist. Po.* 1456a.25-32), who wrote *embolima*, a kind of interchangeable interludes between plays that wound up being a common practice in the fourth century BCE. Aristotle doesn't approve of it, demanding the chorus had to be treated like one of the actors, entangled in the action (καὶ μόριον εἶναι τοῦ ὄλου καὶ συναγωνίζεσθαι). Thus, the philosopher delimits the function of the members of the chorus: their sung parts must not be more related to the argument than to any other tragedy (τὰ ἀδόμενα οὐδὲν μᾶλλον τοῦ μύθου ἢ ἄλλης τραγωδίας ἐστίν). This affirmation coincides with Horatius' point of view, for he confirms that the chorus should not sing anything between the acts that may not serve to the plot of the play (*Ars poetica* 194-5). Suddenly, the chorus members have become an «inactive vigilant» (κηδευτῆς ἄπρακτος). Aristotle's pupils think that the chorus members should only show benevolence to the events they witness (*Arist. Pr.* 922b.26-7). In conclusion, we must understand that their previous vocal preparation turned out to be much less needed than it used to.

In comedy, their participation was still very important at the end of the fifth century BCE, when they started to take part just in the interludes between scenes, sometimes even only dancing, having disappeared generally the *parabaseis* and the epirrhematic structures, as can be observed in *Ecclesiazousae* and *Plutus*. However, the plays kept on using choruses during the Middle and the New Comedy. As a matter of fact, a small number of *choreutai* are mentioned as members of dramatic companies until the beginning of the Roman period.

Mixed choruses never happened neither in tragedy nor in comedy, but, in the latter, we find occasions in which the chorus could be subdivided in semichoruses of men and women, as observed in *Lysistrata* and in *Aves*, in which the birds that sing the chorus part belong to diverse species of animals,



being either male or female ones, although this division doesn't have the same dramatic purpose as in *Lysistrata* (*sch. Ar. Eq.* 589b.2-7). We can infer from a confusing note of Hephaestio (*Poëm.* 72.14) that both semi-choruses might have been facing each other in ancient comedy. It might also be possible that during the reciting of the epirrhematic parts of the *parabasis*, each semichorus looked at the public alternately. If this is right, it might have required a developed technique of their members, for the precision in this kind of scenes demands rehearse, confident singing and a good projection of the voice (CALERO 2016).

3. Φωνασκός: the professional trainer of late times.

As we have already said, it attracts powerfully the attention that, despite so many circumstances in which the *chorodidaskaloi* and the *choreutai* were involved, there is no evidence of the existence of trainers for professional vocal soloists until late dates. It will be in the late Hellenism and in Roman times when we start to find the word φωνασκός (lat. *phonascus*) to refer to them (BÉLIS 1999; MELIDIS 2011, 2012; CALERO 2017). The Latin term appears just in six occasions (Quint. *Or.* 2.8.15.3, 11.3.19.3, 11.3.22.2; Suet. *Aug.* 84.2.7, *Nero.* 25.3.5; Tac. 14.15.16). There must be no doubt that it is referring to a professional trainer of voice in the last three examples and not to someone training his own voice (*dabatque assidue phonasco operam, nisi astante phonasco and adsistentibus phonascis*, respectively). In Greek, however, φωνασκός and its compounds are much more frequently found, even from the Classical period, although never referred to those professionals, but to those that exercise their own voices. We know of the existence of a book mentioned by Diogenes Laërtius (2.103.13-14) as τὸ φωνασκικὸν βιβλίον πάγκαλον, «an excellent little book about voice training», that must have been written by certain Theodorus. Suetonius speaks of a rhetoric master in *Tib.* 57, named Theodorus of Gadara, but we don't know if it is the same person. The only sure thing one can extract of it is that, if it was called «excellent» (πάγκαλον),

it must be because it had become a famous work in late dates (BARKER 2008).

BÉLIS (1999) insists in the idea that the discipline called *phonaskia* (φωνασκία) for singers was absolutely separated from their specific musical training and that the *phonaskos* didn't need to have a recognition as musician. His only mission was to strengthen and maintain the vocal apparatus of the performer in good conditions. BARKER (2008) suggests that φωνασκός and *phonascus* not always mean *vocal trainer*, as sometimes the term describes people as *phonaskikoi* (φωνασκικοί) or *phonaskountes* (φωνασκούντες) in the sense of «those who carry a vocal discipline», like singers, orators or any other individual, coinciding in this respect with the position supported by MELIDIS (2011). That is how it is found in Galen (*De compositione medicamentorum* 13.6.15), Ptolemy (*Harm.* 3.10.22), Phrynicus (*PS.* 86.9), whereas Porphyrius (*in Harm.* 26.13-15) shows the only example in which *phonaskikoi* appears in opposition to *organikoi* (ὄργανικοί), in the sense of «voice professionals» against «instrument or harmony theory professionals». References to *phonaskia* increase from the Roman period, but, surprisingly, not in musical contexts.

One of the most interesting testimonies of late vocal training is described by Suetonius, who in *Nero.* 20-22 explains several of the exercises accomplished by the emperor to strengthen his vocal capacities²⁹. Nero practised them, in order to try to improve his weak and harsh voice (*exiguae vocis et fuscae*), with Terpnus, who was the most celebrated *citharodius* of his time³⁰. They both sat together after dinner and did their exercises, and after an initial phase, they began the training itself as professionals used to do in order to preserve the voice and increase its volume (*neque eorum quicquam omittere, quae generis eius artifices uel conseruandae uocis causa uel augendae factitarent*). Suetonius also explains that the emperor Augustus (*Aug.* 84.1.1-2.9) trained his voice with a professional *phonascus* (*dabatque assidue phonasco operam*), in order to sweeten his voice (*pronuntiabat dulci et proprio quodam oris sono*), and had no problem to find a substitute any time he felt hoarse in the throat and wasn't able to speak in public (*nonumquam infirmatis faucibus praeconis uoce ad populum contionatus est*).



The only vocal practice about which we have an accurate idea is the *anaphonesis* (ἀναφώνησις), the warming up actors/singers used to make to keep their voices flexible and powerful (CALERO 2017). Phrynichus (105.25-106.2) explains the routine followed by those «who train their mouth or voice previously, like those who exercise their voice and those who attend voice competitions». Oribasius (6.9.1.1-6.2) details more precisely how this warming up takes place. He explains that one needs to massage lightly throat and face (κοιλίας – «the empty conducts» – ἀποδεδοκυίας τριψάμενον ἡσυχῆ), while humming soft sounds. Only after this, one can start the *anaphonesis* itself: first, from the lowest notes, so that one can exercise the low range of it, and, only then, one can sing up to the highest range of each one's voice, to go back to the beginning where the vocalization commenced. Oribasius recommends that each singer follows this exercise in relation to his/her enthusiasm and experience. It doesn't differ too much from what is done nowadays.

We can imagine Nero and Augustus following a similar training during their vocal practices. However, Suetonius also refers how Nero used to lie on his back with a sheet of lead on his chest (*plumbeam chartam supinus pectore sustinere*), have enemas and emetics done (*clystere uomituque purgari*) and refrain himself from fruits and food not advisable for singing (*et abstinere pomis cibusque officientibus*). The writer agrees that the emperor felt very happy, although history stresses the total inefficiency of the training and his failure as a singer. Modern research has proved that the use of extra weight on the respiratory system for a better breathing accuracy is not advisable at all, because adding an extra force on body musculature will just lead the singer to the necessity of incorporating gradual extra pressure to achieve the same muscle response, with the consequent exhaustion of the natural resources of our singing nature³¹. Nero is a clear example of how useless those exercises were for his voice, even though he practiced conscientiously and with extreme care his master's recommendations³².

Nero's sheet of lead has an interesting parallel in Galen (*De sanitate tuenda* 6.358.9-

359.9). In this text, a group of doctors try several solutions to help a boy who presents a much less developed chest in comparison with the rest of his body. It is an obscure passage, but we can infer that the treatment they use consisted in constraining the lower part of his chest and abdomen with a belt of regular width (ζώνη συμμετρως πλατεία) while he was asked to execute exercises with his arms while training his voice in a series of vocalizations (ἀναφωνήσεις). In the meanwhile, the group of doctors put pressure to his chest, preventing his expelling air normally and forcing its inner withholding (τὴν δ' ἔκπνοὴν κατεχόντων, ὡς ἐπέχεσθαι πᾶν ἔνδον τὸ πνεῦμα τὸ διὰ τῆς εἰσπνοῆς φθάνον εἰλκύσθαι). This series of exercises should be repeated, widening the patient's vocal range towards the high *tessitura* in *forte* (ἰσχυρῶς) in order to acquire the wished effects on the boy's breathing development. We don't know if they succeeded or not (CALERO 2017).

4. To conclude.

This last exercitation of the voice may not necessarily show a picture of how voice training was carried out for the Athenian members of the Classical festivals chorus, but gives us an accurate image of what the original *chorodidaskaloi* might have sought in relation to the sound they considered fitter for the plays that they were hired to prepare. We don't even have any reference to *anaphonesis* as being performed with the chorus singers to warm up their voices during their training or before a play, but there is no reason why we shouldn't think that they accomplished exercises for their voices according to the routine Phrynichus and Oribasius explain, with the aid of the *auletes*. Whatever the case may be, Classical Athens citizens felt excited and honoured to take part in the plays composed for the stage at their festivals and tried to be as well prepared as they could, putting their voices and enthusiasm on the hands of those who were experts (*technites*) in the matter, so that they could serve the gods in the best possible way.



Notes

- 1 Works are referenced following the editions used at the *Thesaurus Linguae Graecae* (http://stephanus.tlg.uci.edu/lsgj/01-authors_and_works.html). Authors are cited according to the online *Liddel-Scott-Jones Greek-English Lexikon* (http://stephanus.tlg.uci.edu/lsgj/01-authors_and_works.html). All translations are my own.
- 2 For the origin of song and dance in our species, see SACHS 1962, 1963, and MITHEN 2005.
- 3 The etymology of χορός is uncertain. CHANTRAINE (1968, *s.v.*) claims that that is because its first meaning is unclear too. As far as it may be connected in some way to χῶρος and χόρτος, in the sense of ‘empty space’, he supports the idea of its origin from **gher-* ‘contain’, for the dancers used to hold each other’s hand. BEEKES (2010, *s.v.*) suggests it could have been, in its origin, the name of a type of choral dance, for the term has been connected with Skt. *hárati*, ‘grasp, seize’ and Lith. *žâras*, ‘row, twig’. As it has also been related to Gr. χαίρω, ‘rejoice’, he proposes **gher-* as a reasonable option for its etymology, so that it can finally be connected to Plato’s *χαρά*.
- 4 The first example, Παλλάδα προσέπολιν δεινάν, belongs to the beginning of a song by Lamprokles or by Stesichorus, while the second, τηλέπορόν τι βόαμα, is of unknown author. In Greek theory of music, *nomos*, literally ‘law, custom’, was the most important type of music composition and performance, similar to what nowadays we call ‘musical form’ (MICHAELIDES 1978, WEST 1994, CALERO 2016).
- 5 Alcman presents in the seventh century BCE the term *choragos* for the first time in Greek literature, referred to the person in charge of the instruction of the chorus during its performance (1.1.44 and 4.6.2). In his poetry, the *choragos* is a *prima inter pares*, as singing and chorus are indissoluble concepts in the archaic *parthenion* (CALDERÓN 2003, p. 36).
- 6 Etymologically speaking, the term ‘metic’ (μέτιοιζος) means «that who has changed residence». Metics were foreigners that resided in the City and were obliged to pay taxes, even though they could not own neither house nor land.
- 7 We can also read *hypodidaskalos* (ὑποδιδάσκαλος) in Poll. 4.106.6, Hsch. v.609.1, EM. 782.20 and Phot. v.627.10. PÉREZ (2006) explains the preverb *hypo-* of this word as referring to an assistant of the main *chorodidaskalos*, essentially from Photius’ example, in which we can read that the «*hypodidaskalos* is that who trains diction with the chorus, whereas *didaskalos* is the poet himself» (ὑποδιδάσκαλος· ὁ τοῖ χοροῦ καταλέγων· διδάσκαλος γὰρ αὐτὸς ὁ ποιητής, ὡς Ἀριστοφάνης). PICKARD-CAMBRIDGE (1968, p. 91) follows Photius’ explanation basing his argumentation in Pl. *Io*. 536a and *Euthd.* 276b.
- 8 That they must have had a very difficult and delicate task can be extracted from Antipho’s speech (*De choreuta* 11.1-14.9) in defence of a *choregos* accused of murdering one of the children he was training for a dithyrambic chorus, as he died allegedly poisoned when he was given some substance to improve his voice.
- 9 There is no agreement to attribute Plutarch the authorship of the last section of his *Moralia*, usually known as *De musica* (1131.B-1147.A). That is the reason why any time we need to refer to that book, we shall do it as belonging to Pseudo-Plutarch, whereas, if abbreviated, will be shown as Plu., according to the *Thesaurus Linguae Graecae*.
- 10 Philamon of Delphi is a completely mythical character who, following Pausanias (9.36.2.7), won at the Pythian Games and was father to Thamyras, who had the most beautiful and melodious voice (εὐφωνότερον καὶ ἔμμελестερον, Plu. 1132.B.1), being that the reason why the Muses crippled him and took his singing from him when he challenged them (Hom. *Il.* II 594-600).
- 11 Dydymus proves this tradition when he says that there is a certain type of musicians, in which he includes the voice trainers (*phonaskikoi*), that rely in what they have been doing by routine and practice (Porph. *in Harm.* 26.13-15).
- 12 Athenaeus 10.69.20-26 and 11.30.30 (Aristox. *fr.* 87). On the difficulty of supressing the –s sound off the Greek language in Lasus of Hermione and Pindar, see PORTER 2007.
- 13 Pherecr. 145.14 and Pl.Com. 254.1 seem to be expressing its musical sense, whereas Ar. *Pax.* 864, sch. Ar. *Pac.* 864b.2 and Ath. 14.27.34 can be understood as the physical turn itself. Whatever sense we may prefer, it has a strong connection with singing and dance as a whole.
- 14 CALERO 2016, 2018.
- 15 That this word had an unclear meaning for ancient Greeks is proved by the fact that it appears just once more in all Greek literature (Hsch. τ.1668.1 <τυρβασία> χορῶν ἀγωγή τις διθυραμβικῶν). CHANTRAINE (1968, *s.v.* τυρβη) says that this is an obscure family of words and that its radical, τυρβ-, doesn’t look Indo-European due to its vocalism and to its final *b*. BEEKES (2010, *s.v.*) adds that its connection with Lat. *turba* (‘confusion, crowd’) and *turma* (‘troop, squadron’) is difficult, and that they may be



Gilgameš

02 > 25

- loanwords from the Greek term, which presents an alternative σύρβη (Hsch. σ.2765.1, Eust. *Commentarii ad Homeri Odysseam* 1.338.24, Sud. σ.1660.1).
- 16 τραγικῶν δὲ καὶ σατυρικῶν καὶ κωμικῶν ποιητῶν κοινὸν μὲν τὸ τετραγώνως ἔχειν ἰσάμενον τὸν χορὸν.
- 17 ὅτι οἱ μὲν τραγικοὶ τετραγώνως ἴσταντο, οἱ δὲ διθυραμβοποιοὶ κυκλικῶς.
- 18 τραγῳδία: τετραγώνων εἶχον οἱ χοροὶ σχῆμα.
- 19 μέρη δὲ χοροῦ στοιχὸς καὶ ζυγόν. καὶ τραγικοῦ μὲν χοροῦ ζυγὰ πέντε ἐκ τριῶν καὶ στοιχοὶ τρεῖς ἐκ πέντε· πεντεκαίδεκα γὰρ ἦσαν ὁ χορὸς. καὶ κατὰ τρεῖς μὲν εἰσήεσαν εἰ κατὰ ζυγὰ γίνοντο ἢ πάροδος, εἰ δὲ κατὰ στοιχοῦς, ἀνά πέντε εἰσήεσαν. ἔσθ' ὅτε δὲ καὶ καθ' ἓνα ἐπιούοντο τὴν πάροδον. ὁ δὲ κωμικὸς χορὸς τέτταρες καὶ εἴκοσιν ἦσαν χορευταί, ζυγὰ ἕξ, ἕκαστον δὲ ζυγὸν ἐκ τετάρων, στοιχοὶ δὲ τέτταρες, ἕξ ἄνδρας ἔχων ἕκαστος στοιχὸς.
- 20 πολλάκις πρὸς αὐλὸν λέγουσι τὰς παραβάσεις.
- 21 Photius (λ.210-211) calls them *fauloteroi* (φαυλότεροι), literally, «the worst ones».
- 22 This can be traced in *sch. in Aristid.* 139.8.16 (ὅτε γὰρ εἰσήεσαν οἱ χοροὶ πλαγίως βαδίζοντες ἐπιούοντο τοὺς ὕμνους καὶ εἶχον τοὺς ἐν ἀριστερᾷ αὐτῶν καὶ οἱ πρῶτοι τοῦ χοροῦ ἀριστερόν ἐπέιχον ... ἐπειδὴ ἐν μὲν χοροῖς τὸ εὐώνυμον τιμώτερον, ἐν δὲ πολέμοις τὸ δεξιόν), in *sch. in Aristid.* 161.13.11 (τοὺς οὖν καλοὺς τῶν χορευτῶν ἔττατον εἰσιόντες ἐν τοῖς ἑαυτῶν ἀριστεροῖς, ἵνα εὐρεθῶσι πρὸς τὸν δῆμον ὀρώντες), in *Poll.* 2.161.1-2 (τάχα δὲ καὶ ὁ ἀριστεροστάτης ἐν χορῷ προσήκοι ἂν τῇ ἀριστερᾷ, ὡς ὁ δεξιοστάτης τῇ δεξιᾷ), *Poll.* 4.106.7 (δεξιοστάτης, ἀριστεροστάτης, δευτεροστάτης, τριτοστάτης), and several *lemmae* in Hesychius: α.7241.1 <ἀριστεροστάτης> ὁ πρωτοστάτης τοῦ χοροῦ, λ.425.1-3 <λαυροστάται> οἱ ἐν τοῖς μέσοις ζυγοὶ ὄντες ἐν τισὶ στενωποῖς μὴ θεωρούμενοι· οἱ δὲ χειρὸς μέσοι ἴστανται· οἱ δὲ ἐπιτεταγμένοι (meaning those that have to accomplish the task assigned to the chorus) πρῶτοι καὶ ἔσχατοι (i.e., third ones) and, lastly, υ.658.1 <ὑποκόλπιον τοῦ χοροῦ> τῆς στάσεως χῶραι αἱ ἄτιμοι.
- 23 On the *kroupeza* we find information in *Arist. Mu.* 399a.14-21 (καθάπερ δὲ ἐν χορῷ κορυφαῖον κατάρξαντος συνεπηχεῖ πάς ὁ χορὸς ... οὗτος ἔχει καὶ ἐπὶ τοῦ τὸ σύμπαν διέποντος θεοῦ· κατὰ γὰρ τὸ ἄνωθεν ἐνδόσιμον ὑπὸ τοῦ φερωνύμου ἂν κορυφαίου προσαγορευθέντος κινεῖται μὲν τὰ ἄστρα ἀεὶ καὶ ὁ σύμπας οὐρανός), *Ael. NA.* 15.5.29 (δίδωσιν ὡσπεροῦν ... χορολέκτης τὸ ἐνδόσιμον), *Poll.* 7.87.9 (ἢ δὲ κρούπεζα ξύλινον ὑπόδημα, πεποιημένον εἰς ἐνδόσιμον χοροῦ) and *Phot.* κ.180.22 (κρούπεζα: ... οἱ δὲ κρούταλον ὁ ἐπιφοφούσιν οἱ αὐληταί [= *Paus.Gr.* κ.48.2]).
- 24 The modulation (μεταβολή) was the change a melody could have as for its genus, mode, tone, and so on (*Michalides* 1978 s.v.).
- 25 οὐκ ἐξήν δὲ ξένον χορευεῖν ἐν τῷ ἀστικῷ χορῷ· παρὰ τοῦτο πέπαιχεν· ἐν δὲ τῷ Ληναίῳ ἐξήν· ἐπεὶ καὶ μέτοικοι ἔχορήγουν.
- 26 *Vit. Soph.* 22-23: τοὺς δὲ χορευτὰς ποιήσας ἀντὶ ἰβ' ἰε' and *sch. Ar. Au.* 297.3-4: ὁ δὲ τραγικὸς ἰε' πρόσωπα ἔχει.
- 27 <ἢ χορικῶν ἐστὶν ἑταίρα> [...] ἐν δὲ τοῖς τοιοῦτοις χοροῖς, εἰ μὲν ἐξ ἀνδρῶν εἴη καὶ γυναικῶν ὁ χορὸς, ἐπλεονέκει τὸ τῶν ἀνδρῶν μέρος καὶ ἦσαν ἰγ', αἱ δὲ γυναῖκες ἰα'· εἰ δὲ παίδων εἴη καὶ γυναικῶν, αἱ μὲν γυναῖκες ἰγ' ἦσαν, οἱ δὲ παῖδες ἰα'· εἰ δὲ πρεσβυτῶν καὶ νέων, τοὺς πρεσβύτας πλεονεκτεῖν φασι δεῖν.
- 28 <πολλαῖ> τοῦτο οὐ πρὸς τὰς τρεῖς, ἀλλὰ πρὸς τὸν χορὸν· ἰε' γὰρ ἦσαν.
- 29 For a different point of view of Nero as an artist, analysing his personality from new perspectives, see FERNÁNDEZ 1991, pp. 199-222.
- 30 We can also read about him in *D.C.* 63.8, *Suet. Vesp.* 19 and *Philostr. VA.* 5.7.
- 31 HUSLER 1983; HARRISON 2006, 2014; SUNDBERG 1977, 1987, 1990, 1991, 2003; CALERO 2016.
- 32 *Ac post haec tantum afuit a remittendo laxandoque studio, ut conseruandae uocis gratia neque milites umquam, nisi absens aut alio uerba pronuntiante, appellarer neque quicquam serio iocoue egerit, nisi astante phonasco, qui moneret "parceret arteriis ac sudarium ad os applicaret"; multisque uel amicitiam suam optulerit uel simultatem indixerit, prout quisque se magis parciusue laudasset* (*Suet. Nero.* 25).



Bibliography

SBARKER 1989

A. Barker, *Greek Musical Writings: I. The Musician and his Art*, Cambridge, Cambridge University Press, 1989.

BARKER 2008

A. Barker, *Phonaskia for Singers and Orators: the Care and Training of the Voice in the Roman Empire. Testimonianza teoriche e scoperte archeologiche*, in E. Rocconi (a cura di), *La musica nell'Impero Romano. Testimonianze teoriche e scoperte archeologiche. Atti del secondo convegno annuale di MOISA*, Pavia, Pavia University Press, 2008, pp. 11-20.

BEEKES 2010

R. Beekes, *Etymological Dictionary of Greek (2 vols.)*, Leiden-Boston, Brill, 2010.

BÉLIS 1984

A. Bélis, *Un nouveau document musical*, «BCH» 108, (1984), pp. 99-109.

BÉLIS 1999

A. Bélis, *Les Musiciens dans l'Antiquité*, Paris, Hachette, 1999.

BORTHWICK 1968

E.K. Borthwick, *Notes on the Plutarch De Música and the Cheiron of Pherecrates*, «Hermes» 96, 1968, pp. 60-73.

CALDERÓN 2003

E. Calderón Dorda, *Alcán y la μουσική τέχνη*, in J. M^a Nieto Ibáñez (a cura di) *Lógos Hellenikós: Homenaje al Profesor Gaspar Morochó*, León, Universidad de León, 2003, pp. 233-241.

CALERO 2016

L. Calero Rodríguez, *La voz y el canto en la antigua Grecia* (doctoral dissertation), Madrid, Universidad Autónoma de Madrid, 2016.

CALERO 2017

L. Calero Rodríguez, *Actores y cantantes en la antigua Grecia: algunas consideraciones técnicas*, «EClás.», 151, 2017, pp. 53-77.

CALERO 2018

L. Calero Rodríguez, *El coro dramático y la falange de los hoplitas*, in L. Conti, E. Crespo, M^a E. Rodríguez Blanco, M^a E. Torrego and J. de la Villa (a cura di) *Philos Hetairos. Homenaje al Profesor Luis M. Macía*, Madrid, Universidad Autónoma de Madrid, 2018.

CHANTRAINE 1968

P. Chantraine, *Dictionnaire étymologique de la langue grecque. Histoire des mots* (2 vols), Paris, Klincksieck 1968.

CSAPO & SLATER 1995

E. Csapo & W.J. Slater, *The Context of Ancient Drama*, Ann Arbor, University of Michigan Press, 1995.

FERNÁNDEZ 1991

P. Fernández Uriel, *Nerón y neronismo. Ideología y mito*, «Espacio, Tiempo y Forma. Serie II. H^a Antigua (tomo IV)», 1991, pp. 199-222.

HARRISON 2006

P.T. Harrison, *The Human Nature of the Singing Voice. Exploring a Holistic Basis for Sound Teaching and Learning*, Edinburgh, Dunedin Academic Press, 2006.

HARRISON 2014

P.T. Harrison, *Singing. Personal and Performance Values in Training*, Edinburgh, Dunedin Academic Press, 2014.

HUSLER 1993

F. Husler & Y. Rodd-Marling, *Singing: The Physical Nature of the Vocal Organ*, London, Hutchinson & Co., 1983.

KEMP 1966

J.A. Kemp, *Professional Musicians in Antient Greece*, «Greece & Rome, Second Series», 13 (2), 1966, pp. 213-222.

KOWALZIG & WILSON 2013

B. Kowalzig & P. Wilson, *Dithyramb in Context*, Oxford, Oxford University Press, 2013.

MATHIESEN 1999

T.J. Mathiesen, *Apollo's Lyre: Greek Music and Music Theory in Antiquity and the Middle Ages* (2 vols.), Lincoln-London, University of Nebraska Press, 1999.

MCDONALD & WALTON 2007

M. McDonald & M. Walton (eds.), *The Cambridge Companion to Greek and Roman Theatre*, Cambridge, Cambridge University Press, 2007.

MELIDIS 2011

K. Melidis, *The Profession of φωνασικός as Revealed in Ancient Inscriptions and Medical Texts*, in D. Castaldo, F.G. Giannachi, A. Manieri (a cura di), *Poesia, musica e agoni nella Grecia antica*, Atti del IV convegno internazionale di MOISA, Galatina, Congedo, 2010-2011, pp. 767-783.

MELIDIS 2012

K. Melidis, *Recherches sur les professionnels de la voix dans l'antiquité grecque et romaine. L'exercice de la voix: φωνασικοί et φωνασικά* (doctoral dissertation), Université de Paris, 2012.

MICHAELIDES 1978

S. Michaelides, *The Music of Ancient Greece. An Encyclopaedia*, London, Faber and Faber, 1978.

MITHEN 2005

S. Mithen, *The Singing Neanderthals. The Origins of Music, Language,*



Gilgameš

02, 27

Mind and Body, London, Phoenix, 2005.

PÉREZ 2006

F.J. PérezCartagena, *Khorodidaskalía: la dirección del coro en el drama ático*, in M. Valverde Sánchez, E.A. Calderón Dorda, A. Morales Ortiz (a cura di), *Koinòs Lógos: homenaje al profesor José García López*, Murcia, Universidad de Murcia, 2006, pp. 785-794.

PICKARD-CAMBRIDGE 1968

Sir. A.W. Pickard-Cambridge, *The Dramatic Festivals of Athens*, Oxford, Oxford University Press, 1968.

PORTER 2007

J.I. Porter, *Lasus of Hermione, Pindar and the Riddle of S*, «The Classical

Quarterly» 57(1), 2007, pp. 1-21.

SACHS 1962

C. Sachs, *The Wellsprings of Music*, The Hague, Da Capo Paperback, 1962.

SACHS 1963

C. Sachs, *World History of Dance*, New York, The Norton Library, 1963.

SUNDBERG 1977

J. Sundberg, *The Acoustics of the Singing Voice*, Scientific American, 1977.

SUNDBERG 1987

J. Sundberg, *The Science of the Singing Voice*, Northern Illinois University Press, 1987.

SUNDBERG 1990

J. Sundberg, *The Science of Singing Voice* «Journal of the Acoustical Society of America» 87(1), 1990, pp. 462-463.

SUNDBERG 1991

J. Sundberg, *Comparisons of Pharynx, Source, Formant and Pressure Characteristics in o*, «STL-QPSR» 32(2-3), 1991, pp. 51-62.

SUNDBERG 2003

J. Sundberg, *Research on the Singing Voice in Retrospecto*, «TMH-QPSR» 45(1), 2003, pp. 11-22.

WEST 1994

M.L. West, *Ancient Greek Music*, Oxford, Oxford University Press, 1994.

