Warming up

Voice played a crucial role in Ancient Greece, where it was seen as an integral part of communication and self-expression. From the early epic poetry of Homer to the philosophical dialogues of Plato, from the expansion of Alexander the Great to the sermons and exegesis of the Greek Patristic writers, the power and beauty of the spoken word were celebrated and revered. This book will explore the various ways in which voice was used in Ancient Greece, from public speeches and performances to everyday conversation and private expression.

The purpose of this study is based on the personal interest that I have in the singing voice, to which I have dedicated much of my life as a student, first at the Royal Conservatory of Music of Madrid (1995, Bachelor of Arts-Singing) and later, for several years, in London with Peter Harrison, to whom I owe all I know about technique and use of the instrument, as well as, of course, during many years of professional dedication. To this is added my education in Classical Philology (1989, Universidad Autónoma de Madrid), which has allowed me to approach the revision of the literary *corpus* in which vocal practice and technique is treated in the ancient Greek sources, in an attempt to reinterpret its aesthetic importance and its technical foundations from the direct or indirect references that ancient writers make to this anatomical and aesthetic phenomenon.

A first attempt to put my ideas in order and all the material that I began to gather took shape in my doctoral thesis, *La voz y el canto en la antigua Grecia* (*Voice and Song in Ancient Greece*), for which I obtained Graduate with Honours (*Sobresaliente cum laude*) and my PhD degree in *Studies of the Ancient World* at the Universidad Autónoma de Madrid and Universidad Complutense de Madrid (Calero 2016).

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Vocal Practice and Technique in Ancient Greek Theatre.
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Although the study of Music in ancient cultures is a relatively young branch within the disciplines related to both Music and Philology, there is increasing interest among researchers of recent generations. It is a general tendency to approach this study from two methodologies that complement each other. On the one hand, research in organological reconstruction of the instruments found in archaeological sites allows researchers to deepen the knowledge of these specimens beyond the theoretical assumptions that can be reached by mere deduction. Musical computing advances must be added to this trend. They permit to work with an extreme detail the acoustic characteristics of the different instruments, mainly aerophones, that have been found. Furthermore, it is the work of the philologist to delve into the sometimes inextricable worlds of the harmonic treatises of the musical theory of Ancient Greece, trying to understand them in the first place from the approach in original language to their content (the translations are sometimes not as correct as one might expect), for, in a second phase, their interpretation from a specifically technical and practical perspective, a task for which the assistance of current studies in this area is needed. An excellent example of this is the impressive work by Psaroukakes and Terzes (Ψαρουδάκης and Τερζής 2013).

Product of all this interest is the gradual appearance of monographs and specialized magazines on the musical life of Greco-Roman Antiquity. Although there were some previous books, the edition of Martin L. West (1994) marks an inflexion point within this discipline. We are all, in a way, heirs of this monograph, which, to a large extent, remains a reference book for those who investigate this complex world.

However, in this book a few pages (39-47) were devoted to the singing voice, succinctly analysing its uses in the musical context of Ancient Greece.

Even fewer are those devoted to voice in the monograph by José García López, Francisco Javier Pérez Cartagena and Pedro Redondo Reyes (2012, 158–60) in the study of the voice within the context of Ancient Greece. All this is due to the fact that the study of the voice presents some added difficulties, since obviously neither larynxes have been preserved in the archaeological findings nor written sources on ways of singing or vocal techniques have reached our hands, although we know that some were written.

There are many examples that can be found in the original sources that deal with the production of sound in speech and singing, although, for the most part, they approach it from a point of view more inclined to aesthetics than to technique. Not surprisingly, the ancient Greeks were not interested in anything that had to do with the practical part of music, considered by phi-

losophers as a complement to the service of the science of number, the true essence of music.

Pythagoras and his followers opened a trend in which all music could be reduced to the mathematical interval and the physical and acoustic relationship between sounds. Only with the appearance of Aristoxenus in the musical theoretical panorama, back in the beginning of the fourth century BCE, perception and hearing begin to be part of the interest of new scholars of the subject.

However, voice and singing have not been the subject of a similar interest as instruments, and therefore publications on this matter are not so abundant, except when the nature of vocal sound and the impressions it makes on a public are the target of a study. We often read about how the voice of different interpreters (singers, actors, orators, etc.) sounded like, what their vocal quality was like, etc. Sometimes, we can achieve a deeper knowledge on how they prepared their instrument, what they ate to preserve their vocal flexibility and some other issues that will be dealt with in this book.

I propose to find out if there is enough textual material so as to get an idea about their voices, their singing technique, how they faced technical problems when they had to perform a work, what were the vocal particularities that they were forced to solve in order to earn a living on stage during a music festival, a theatrical performance or simply enjoying themselves at a symposium. It is intended, therefore, to confer on this work the novelty of seeing the selected material in the light of what we could call a singing technique, if it is possible to glimpse it, through its professional execution. This, if achieved, would form a novel description of singing and singers in Ancient Greece that has not been accomplished yet.

For my study, I am especially interested in treating the information offered by authors from the moment in which music ceases to be the object of mathematical study, to become the science of both hearing and reason. It is only then when the authors who have been studied here abandon to a certain extent, albeit never completely, the works developed by the heirs of the Pythagorean school about sound as an object of acoustic physics, to focus more on music as an object of human perception.

Aristotle's return to Athens after his Macedonian experience, in the second half of the fourth century BCE, implies a rotund change in the way nature is observed by scientists at the new Athenian school founded by him, the Lyceum. This institution runs in parallel with Plato's Academy, but, whereas the latter trained citizens to become the best rulers of Athens, the former delves into the most various matters of investigation and spreads its knowledge around their world.

It was in this context in which Aristoxenus got involved in the study of the acoustic phenomena of sound, music, and voice. He was a philosopher, musician, and music theorist, born in Tarentum, in Magna Graecia, in the south of Italy, and studied under the philosopher Aristotle in Athens. He is primarily known for his work on music theory. He wrote a series of treatises on the subject, including *Harmonic Elements* and *Elements of Rhythm*, both of which have survived, although not complete. In these works, Aristoxenus proposed a new approach to music theory, which emphasized the importance of empirical observation and analysis over abstract mathematical principles. He believed that music was a fundamental aspect of human nature, and he argued that the study of music was essential for a complete understanding of the world. He rejected the Pythagorean idea that music was based on mathematical ratios, and instead emphasized the importance of the human ear in determining what sounds were harmonious. According to him, nothing that cannot be heard by us can be the object of our study, implying a fierce critic against those who used the fraction of the monochord to find the smallest intervals, sometimes impossible to be heard by the human ear.

Aristoxenus also made important contributions to the field of musical notation. He developed a system of musical notation that used letters and symbols to represent different musical notes and rhythms. This system was later adopted and expanded upon by other music theorists and composers. In addition to his work on music theory, Aristoxenus also wrote on philosophy and ethics. He believed that the ultimate goal of human life was to achieve happiness, and he argued that this could be accomplished through the cultivation of virtue and the pursuit of pleasure in moderation. His ideas and teachings influenced later philosophers and musicians, like Saint Augustine's *De musica* and Boetius' *De institutione musica*, and his approach to music theory helped to lay the foundation for the development of Western music in the centuries that followed.

In the Lyceum, Aristoxenus found the best context in which he could develop his study on how vocal production worked, but also on seeking explanations of a scientific nature to the production of sound and collecting – which are of great interest for our work – some problems faced by performers during their vocal performance. His legacy is indisputable, both for many of the scholars of Antiquity who came after him and for us, since it allows an approach to the study of this discipline from the perspective of experience and experiment.

1. Humans as a musical species

It is not an easy task to define what music is. There may be as many definitions as human beings, but most of us can agree that music is a language that uses sound and rhythm to create emotional and expressive experiences. It implies that our brain is capable of understanding the organization of sounds, including melody, harmony, rhythm, and timbre, to create a coherent and meaningful composition. In this task, we can find that any type of sound can be understood as music and, consequently, as art. This includes noise and absence of sound! One of the best examples of this is John Cage's *4' 33"*, a composition first written for piano, but that can be adapted for any instrument, group of instruments or voice. There are multiple videos of it on the net. It is a composition in three movements for solo piano, although it has been adapted for multiple groups of instruments or voice, written over a silence that lasts four minutes and thirty-three seconds.

It is a universal language that has the power to communicate emotions, ideas, and cultural values, having been an integral part of human culture for thousands of years. As Bruno Nettle affirms (2010, 23-25), music can be defined as "the human communication through sound outside the realm of language".

Music has always been associated with the perception of *good* and *happy*, so that we identify with this type of emotions the sounds that symbolize joy, such as, for example, the song of birds, which acquire the quality of *musical* for us, while others of a neutral nature, such as the barking of a dog, don't (even though they might!).

Ethnomusicology believes that the issue is that societies may not first develop the concept of music and then decide what attributes it may have, but construct the definition of the concept of music once they face the existence of musical sound, according to its function and value. The result is simple: it is not easy to specify what we mean when we use the term *music*, even though we all claim to know what it is. Therefore, the concept of music can vary between cultures and can also change between those who share the same culture.

When we adopt a more global view of music, it seems that creation and performance are fundamentally due to the human capacity to discover sound patterns and identify them afterwards, because, without biological processes of auditory perception and without a cultural consensus that identifies what is perceived, it is very difficult for music and musical communication to exist. This is especially important in traditions devoid of musical notation and based on oral tradition.

However, it has also been noted in history that music, as well as laughter, doesn't need to mean anything to give us pleasure. Archaeology has shown that music was used by our species, either *Homo sapiens sapiens* or *Homo sapiens neanderthalensis*, as the Slovenian *ca.* 50 000-year-old allegedly flute found in Divje Babe attests. Even though this example has been questioned by some researchers, who doubt of its being a musical instrument, there can be no doubt of the flutes found in Geissenklösterle, in southern Germany, and in Isturitz, by the Pyrenees, where around twenty exemplars have been found, dated about 36 000 years ago. These flutes imply both music and entertainment, music and rituals, music and human social relations. There is no reason to deny that singing while playing instruments was not present in these human communities of Antiquity.

Singing, as a primitive behaving, must have developed in different stages along the evolution of primates (Geissmann 2000). If someone studies the contexts in which non-human primates sing and how they evolve according to the sonorous environment in which they live, one can conclude that songs in primates developed from such sounds to more specialized functions.

It therefore makes sense to assume that the same can be applied to the evolution of the singing behaviour of the human being and that the powerful calls of the first hominids may have been the substrate from which human song emerged, to end up transforming, in the course of time, into articulated language. Song is undoubtedly a fundamental universal for the *Homo sapiens*.

While the concept of music may vary, all cultures share song and dance, even establishing patterns of internal repetition and variation when using rhythmic structures based on distinctions between note lengths and dynamic accents. There are some contexts where music fulfils similar functions in all cultures. It is at the heart of music, for example, its ability to sacralise rites and, therefore, the religious environment has made it a universally shared way of glorifying and serving divinities (Nettl 2010, 42–49). The ritual functions of music become an alternative to a certain type of power and have their own intrinsic strategies, so that it can become more assertive than brute force, legitimizing what power alone cannot.

On the other side, we are all born with an inherent appreciation of music, except for those who may suffer from a perception or cognitive deficit, and our relationship with the social environment is established to a large extent through the links generated by the members that make it up. To rise a musical event to the category of social music, two or more individuals are required, between which some kind of coordination is necessary, even when it is a simple chant

executed in unison. In this way, in music that is built on multiple parts, there must be an orderly and simultaneous interaction of the participants, with a distribution of roles, even if they are only that of performer and listener. Music, in addition, like dance, has helped to strengthen social ties between individuals from very early stages of the history of evolution: they have the ability to manipulate those around us, transmit information about the natural world, can facilitate the emotional and cognitive development of children.

In addition, music and dance performed together involve the use of synchronized vocalizations and movements. The ultimate goal that is achieved through them is their capacity to belong to a group in which all its members feel identified. It implies cognitive coordination within it, as well as the creation of an emotional state shared by its members and the trust that arises among those who are part of the experience.

According to (Benzon 2002), music can be defined as a means by which individual brains are paired through shared activity, as the product of human group behaviour, formal or informal, that is, as sound humanly organized by a consensus only possible on a common ground of experience. However, this definition can be clarified a little more by attributing to music the idea that it is a cultural tradition that we share and transmit because our species has developed a capacity for structured listening within an order in sound that enables to differentiate what we consider musical execution from what we perceive as noise.

Current studies in disciplines that combine music and language, such as Neurolinguistics and Neuropsychology, have been able to describe the different processes that take place in the brain during our training as professional musicians and as passive listeners of music. It has been observed (1) that the posterior temporal turn is greater in the brain of musicians than in that of non-musicians and (2) that, while music may have some independence from language within the adult brain, it may have required language networks for its development during childhood.

Having therefore been built on those of language, the neural networks of music can later become independent and survive even though those of language are affected or destroyed by brain damage. Singing is an important event because it assumes the integration of melody and speech, or what is the same, music and language. Whether words and song melodies are stored in memory independently of each other or somehow together remains a controversial point among neuropsychologists, although there hasn't been much research in this regard yet. It is more commonly believed that melody and lyrics are stored separately in the brain, but they always remain connected so that one can act

to activate the other. In this way, whenever we hear a familiar melody, two interconnected neural systems are put into operation: one, the melody analysis system, activates the storage of the melody memory, while the other, the language analysis system, does the same with the lyrics (Mithen 2006, 34–54).

In the same terms that can be used for analysing speech acts, one can speak of music, as an act that is shared in all its elements by a community that understands it and uses it in their daily musical relationships. Following Nettle (2010) in this sense, a culture can generate a repertoire that is maintained or changed through generations, but also an individual entity, whether person or community, can generate musical idiolects. The ability to classify music with respect to function and context into categories that we usually call *repertoires* is within our nature as humans. This gives a symbolic meaning to the mere acoustic production or to any coherent interpretation of that production, so that what characterizes human music, unlike animal music, is that the association of at least two different criteria is needed to be built in our mind, since not only physical perception acts as a former of the aesthetic and cultural criterion that can define a type of music, rather, as a species, we have been able to develop a rational criterion that understands, analyses and evolves music at all times.

Due to all these difficulties, ethnomusicologists prefer to focus on the functional contexts and roles of music within each of the environments in which it develops, being analysed as an organized cultural activity. Ancient Greeks weren't an exception to this way of classifying music, so that in this sense and opposed to the treatise that we have already mentioned by Aristoxenus, Pseudo Plutarch's late *De musica* became a source of mythological-historical information about the musical tradition of his culture.

2. The importance of music in Ancient Greece

Ancient Greeks, as one might expect, were no exception to this and their civilization developed an important tradition dedicated to learning, teaching, analysing and understanding of music, both in its practical and theoretical facets. All of it happened because music in Greece was (and is!) an essential part not only of private life, but also of public life, as can be observed in iconographic and textual sources. That is also the main reason why there was a great proliferation of festivals throughout *Hellas*. According to what Pseudo Plutarch writes in his *Me-*

morabilia (1131-1136)[1], music creates camaraderie in the sense of religious and philosophical fellowship, imprinting devotion for those who cultivate this art, as it was admired for having been invented by gods themselves.

Music was never considered a trivial occupation in Ancient Greece. Aristides Quintilianus (1.1-2) admired it for being useful to the other sciences, as he considered music the beginning and end of all things in human life. Following the platonic ideas about music, he thought that this whole art filled our soul with beauty, so that it became an essential tool for education at any age: children could enjoy the magnificence of melodies, ephebi could find beauty of speech in it, and adults could research the proportions of the universe through the mathematical part of music, whereas all of them can relish the delectation in creates. Singing is a powerful tool that humans use to show their emotions, be it pleasure, sorrow, inspiration, enthusiasm, etc. (Aristides Quintilianus 2.4).

However, the term *mousikē*, 'the art of the Muses' is not very frequently found when someone delves into ancient Greek Literature. A very first example of the use of the term *mousiké* can be read in *Apophthegmata* or *Sentences* (6.13), by the Seven Sages of Greece. They belong to the seventh century BCE, the turning point between the Archaic and the Classic periods, a very late phase if we think of Homer before them:

> For not even the painter dear to the gods would be given
> the line and a good shape
> if he did not learn the technique, the musician (*mousikos*) would never exist
> for inspiration, if I didn't learn the musical elements (*mousika*)[2].

Along the sixth century, this term can be found only in twelve occasions, whereas in the fifth century it appears about seven hundred times. This multiplication of the use of *mousikē* and its derivatives is the mirror in which we can see how ancient Greeks felt that the arts linked to the Muses, the *musikē technē*, were an essential part of their daily life and rituals. Music acquired in this way it most important value in their culture: its capacity to sacralise rites (Calero 2022). This musical explosion takes place in the main *poleis*, but also around sacred spaces, like the ancient festivals in honour of the gods (Delphi, Corinth, Olympia, Nemea, Delos, etc.). Where it was necessary to pay tribute to a god with the best honours, there was music.

[1] All ancient sources are cited according to the rules of *Thesaurus Linguae Graecae* and *Diccionario Griego-Español* (CSIC).

[2] All translations from Greek or Latin in this book are of my own.

The practical side of music was a challenge for ancient philosophers. Aristotle (*Politics* 1339a) reflects on the fact that it is not easy to determine the nature of music or find the reasons why it should be cultivated. However, he agrees that music stimulates the virtue of character, in the same way that exercise does with the body, and also serves for the amusement and cultivation of intelligence. However, he doubts whether or not music must be included in education and if it should be considered as education, game or fun.

However, Aristotle follows the ideas that Plato had already exposed in his *Republic* (398d-402a), whose analysis of the relation between harmony and rhythm with songs support the paramount importance of music in moulding the character of people when it penetrates their souls. Mithen (2006) holds the idea that rhythm may be the most important feature of music, for it has profound anthropological implications, in the idea that it was essential in the evolution to the bipedal phase of early hominids. Rhythm is inherent in actions such as walking, running, or coordinating the body effectively. Bipedalism requires the evolution of mental mechanisms that allow us to maintain the rhythmic coordination of muscle groups corresponding to each particular skill.

Lévéder (2017) explains this internal rhythm that was developed by our change into bipedalism and describes how the way of walking that characterizes *Homo sapiens* has to do with the involvement of a fluid series of actions that have been the product of the development of the skill itself and that can be summarized in two movements that make up a rhythmic swing: the swing phase and the posture phase (*stance phase*), in which the legs rotate their work one after the other. The leg that carries out the swinging phase is propelled thanks to the force developed by the big toe of its foot, swings under the body in a semi-flexion position and finally extends again when the foot makes contact again with the ground from the fall of the heel (*heel strike*). When this last movement phase happens, the leg remains stretched and supports the body in what has been called *posture phase*, to make way for the next leg, which will do the same oscillatory work.

So, what is this *mousikē* all about in Ancient Greece? I have already said that this term alludes any art linked to the Muses. Its etymology puts it in relation to any quality not only artistic, but also spiritual, since one of the tasks of the creator is to reveal the past helped by the Muses through the sung word, as well as through mime or dance. The *aoidoi*, the Homeric professional singers, lend their mouths and voice to the Muses, so that they can sing of the past glory of their people, as we can see in the very beginnings of *Iliad* ("Sing, oh Goddess, the anger of Pelida Achilles") and *Odyssey* ("Muse, tell me of the

skilful man"). The sacred sung word and the instrumental sound that accompanies it preserve memory against oblivion and silence, becoming the most powerful tool, becoming the most powerful tool that sinks its roots in Olympus itself.

Centuries later, Aristides Quintilianus (1.4) describes *mousikē* as a science of perfect *melos* and accompaniment. Hence, one must deduct that this perfect *melos* means singing, as far as the highest artistic elements in musical production, which are melody, rhythm and text, come together with instruments as the conjunction of the highest artistic elements in musical production.

In addition, Aristides Quintilianus picks up another tradition in which music is the art of convenience in voices and their movements. Through these words, he is referring to those who focus their interest only on the more theoretical side of this discipline. Aristides Quintilianus' definition on music can be put in direct relation with the Aristoxenian tradition in terms of its theoretical content, as well as with Plato and Aristotle for its ethical and educational character, therefore making his treatise one of the most important of late date. This educational value that Aristides Quintilianus confers to music is observed, for example, in Plato's *Republic* (436a), where emphasis is placed on the way in which musical genres modify our behaviour, as I have said earlier. The teachings of Damon, who associated the stability of the political system with that which provides music to the soul, are reflected in the ideal State model proposed by Plato in *Republic* and *Laws*, whose backbone is the achievement of *Good* as a metaphysical principle.

In *Laws* (672e), Plato states that choral singing is somehow the most important way in which music demonstrates its benefits in the education of citizens. These profits of musical education proceed from the fact that rhythm and harmony penetrate the soul, bringing upon it grace to those who are educated. Moreover, Plato was musically educated in the Damonian precepts of what happens to be the right music for the citizen and, therefore, for the State. He will perceive more accurately the deficiencies and the lack of beauty of the works of nature and those created by the human being, praising and welcoming into his soul the beautiful things that will make him a good man, as well as reproving and rejecting ugly things from a young age. In short, Aristides Quintilianus believes that the task of music is not to organize among themselves the parts of the voice, but to gather and harmonize everything that has nature, Aristotle's *physis*, as a masterpiece of creative perfection. This current of thought had been inaugurated by Aristoxenus in his treatise, thus opening a new type of approach to music in later musical-theoretical works that did not

exist before him: perception (*logos*) through hearing (*akoē*) became the foundations that allowed theorists to understand musical phenomena as the older Pythagorean current had not permitted yet.

From Aristoxenus onwards, the education of hearing enhances an obligatory condition by which musical knowledge becomes 'experience' (*empeiria*). The sensation that this experience produces in our ear generates 'sense', *aisthēsis*, which becomes the basis of the new harmonic knowledge. This revolution in music theory superseded the mere numerical relationship of the Pythagorean intervallic proportions (*diastēmata*).