

## From the Vocal Gesture to the Writing of Music

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### ABSTRACT

In the present study I will analyse the multifaceted functions of the external vocal gestures of the chironomical type and their influence on the first trace-forms of music writing : neumes. I will also outline the impact of vocal gestures within the dynamics of the learning process in singing and in the transitional process from oral musical culture to music writing. My aim is to extend the study of vocal gestures towards the exegesis of the writing of music. From an ontological and epistemological standpoint I will draw hypotheses concerning the processes leading from an *audio-oral* musical memory culture to an *oral-visual* musical memory culture all the while maintaining the former in our Western countries. I will rely on a methodology as it stands at the crossroads of clinical observations on the use of vocal gestures as mnemonic auxiliaries for singers, and a theoretical reflection on perspective processes, from ontological and epistemological perspectives. From my theory on external vocal gestures I will develop an analysis of the first musical sign-traces (Vitale 2007b; 2007c; 2008a; 2009a). My personal results will be backed up by videos and different materials. The gestures of the *instrument-voix* – and not those of another musical instrument – are truly the tools that made possible the *magical and paradoxical act* of “fixing” Music (Vitale 2007b; 2009a).

### BACKGROUND

The aim of this study is the reconstruction of the processes that allowed the dawning of the long and complex passage from the tradition of oral musical culture into written musical culture in the Western world. These two forms, although far from being reciprocally exclusive have nonetheless led to distinct sets of dynamics proper to each of the two forms. However, what interests us is not to evaluate the scope of this passage from a specifically historical standpoint – many studies on this subject already exist – but rather to examine the *a-posteriori* reconstitution of the process related to the different types of memories, namely psychological and bodily memories, that have in turn made music writing possible – a most significant advent not only in the history of music but also for the demarcation this passage signifies from a social, cultural and historical point of view. The impact of this advent related to the transposition of the arial trace of sound into a conservable written entity will trigger, throughout the centuries not only an evolution of the code of music writing – a code that will be streamlined with more and more precision – but also it marks an evolution, inherent in the biological relation between human beings and time, memories and creativity. Preserving these two forms – oral and written – corresponding to ways of creating and living out a culture, will remain active in a most significant manner in mixed corollary practices revealing interesting cross references.

The process of understanding the sensory forms that allowed the fundamental transition from the culture tradition of oral music towards the culture tradition of written music within the framework of the history of Western human culture, will shed a new light on the problematics involved in the ontological and epistemological aspect underlying the oral as well as the written forms of musical creativity and the origin of their respective thought processes.

### AIMS

This work aims at filling a considerable gap in scientific research, a gap concerning both the epistemological aspect of learning processes and the impact of the complex relations of voices-gestures-memories in the dynamics of learning and of transmission of music. The further purpose of this research is to redefine the connections on which are based the transition from audio-oral tradition (the relation between ear and voice, fundamental to the art of singing) to the writing of music, widening the scope of thinking relevant to the problematics proper to writing itself from an ontological perspective. This study stands at the crossroads of the different means of the transmission of knowledge, of *savoir-faire* and the training of *savoir-faire* with the human voice.

### METHOD

This method is a cross-section of different forms of analysis. On the one hand we have elaborated the data resulting from my own systematic research over many years within various types of establishments dedicated to the transmission of the teaching of singing in France. This research concerned the reconstruction of the psychodynamic processes underlying the study of the human voice viewed in all its polyvalence and multifunctionality as a musical instrument, which I call the “*instrument-voix*”. (Vitale 2007b). The study made use of clinical observations based on video film supports which were later analysed. In this previous study we also researched and analysed the functions of different vocal gestures and determined their functionality. We will refer to this research (Cf. Vitale 2007b; 2007c; 2008a; 2009) in the present study to develop its findings towards the analysis of vocal chironomical gesture, which is hand gesture, with all the impact that we consider this gesture has had in the transmission of oral musical culture tradition towards the advent of music writing. On the other hand we focus on the analysis of the practice of study and rendition of Gregorian

chant as repertoires marked out to be historically both “an object of writing” and at the same time as a stimuli generator for concrete formal solutions provided in the first trace-forms of music writing. Our personal experience in the interpretation of this repertoire has proved highly significant.

*“The world that emerged from the greco-roman culture was familiar with the roughly alphabetic music notation, which the Hellenist theoreticians had elaborated and which Boethius had registered in his Latin vulgarisations (V century), It had even been used to note Christian songs (papyrus of Oxyrhinchos, III century) that never the less were maintained in the line of pure oral tradition. The mainly improvised characters, based on psalm recitations embellished in a conventional manner by diverse ornamental formulas did not lend itself to the precise notation of each musical «note» (...). The first neumatic notations appeared almost at the same time in the Orient and in the Western world between the end of the VIII century and the beginning of IX century and they showed certain relationships. As for the Latin West, it is generally agreed that the introduction of musical notation is associated with the diffusion of Roman song in the Carolinian empire.” (Luca Ricossa, “Écriture neumatique” in *La musique du Moyen Âge*, F. Ferrand (ed.), Paris, Fayard, 1999, p.183-184).*

We wonder what kind of musical requirement had driven monks at some point in the history of the Middle Age to the necessity of finding and elaborating new tools, means to fix melodic cells, vocal lines and entire melodies of the oral repertoire. What kind of tools might they have used, and why? Our interest precedes that of the notation because notation carries, underlying itself a “code” and fixed norms shared by experts, so there is already a defined structure of signs that would from then onwards be at an advanced stage in the process of the evolution of writing tools. What interests us is to analyse the first attempts at fixing orality within the microstructure of vocal line or even more precisely of “vocal gesture”. Thus, vocal gesture in all its inflexions and variants becomes the “micro-particle”, structuring and forming the chain of orality. This chain consists of the pieces of the repertoire on the one hand (musical links), and on the other hand of musicians that follow each other through time (human links).

What particularly interests us is to consider the first traces of vocal gestures, to analyse the first steps of the passage from the oral tradition towards an first attempt at “spontaneous” yet uncoded musical writing, that go back to the very first forms of vocal-musical traces transposed from “impulse” on to a fixed support, to study their phenomenology, the associated forms thus going back to the dynamics of the music and practices of singing that had generated them. This approach takes into consideration the relations between aural memory, bodily memory (sensorimotor) and visual memory.

The defining line between orality and the gradual, complex advent of writing was “marked” (in the double meaning of the original sense of the term) by the transition

from an “arial” element towards a “liquid” element symbolised by the composite that marked its trace and later towards ink. It is thus about one support fixing on another more stable and tangible support “the visible of the invisible” namely the invisible side of singing; singing characterised by its impalpable, elusive nature is converted into a visual concrete and stable support contained within a limited space – organised and ornate - thanks to the precise and precious work of a human hand. The transition from a spontaneous vocal production into a vocal production based on the reading of a written support, marks the passage from the use of aural memory towards the use of visual memory while maintaining the internal correspondence of the two types of memory. The use of fixed written music, in the beginning only for isolated and scattered musical events, gradually and progressively became a veritable culture phenomenon that intensified through time, making use of the practice of writing for the original conception of music and for the fixation of the sound event. The practice of committing to writing would develop the visual memory faculty but it would not remain isolated and independent from the sound event but rather interrelate with sound events through the complex workings of the aural-oral-visual circuit.

Originally – according to our hypothesis based on previous research (Vitale 2007b; 2008a; 2009) which treats the analysis of the impact of the hand gestures (chironomical gestures) within the dynamics of the learning processes of singing, the gesture of the hand reproduces and exteriorises in a spontaneous manner the movement of the voice in its inflections before becoming a written gesture that organises the written traces to be introduced and ordained in a limited and fixed space (material support) necessarily reduced and defined. The space of the material support committed to a given pre-established limited space implies a different relation to the spatial gesture from that of the arial space where voice is born. It takes form and spreads in the practice of singing – simultaneously accompanied by the drawing in the air, the chironomical gesture that can still be seen to this day among Gregorian singers

We will consider here the internal metamorphosis carried out by the chanting monks that participated in the early stages of the advent of music writing, whose aural sensation but also bodily sensation with its corporal memories grounded in the chiasme “the intelligence of the body and the body of the intelligence” (Vitale 2009), elaborated strategies to translate the scope of vocal signs felt/experienced into the fixed signs that have symbolic value. These symbols as such were necessarily limited and will constitute only much later the object of a code with its own internal rules, synthesising concepts, symbolising pitch, intensity and duration... However we focus on the previous stage, that of the birth of a strict code. To that effect, we focus on the transformation that is first and foremost corporal from orality to the will to commit the musical moment to writing. What were the reasons that drove the charter monks no longer to entrust their chants only to their memory?

We seek out the psycho-physical dynamics that concurred to create this passage that marks a new

orientation of humanity in its manner not only of conceiving and living out music but also of conceiving time, and with it the relation to life, to the recollection of the past and at the same time to the recollection of the self whose trace we hope to leave behind. This equally concerns the means the human being has of “making” music and/or listening to it; his way of participating in one of the rituals of the Art of time – music. The threshold between yesterday and tomorrow, between today and what we choose to leave behind and “how”.

Music remains alive only if I transmit, only if I constitute a link in the chain of tradition that I must know in order to understand the internal rules and the codes. My presence is measured both in the maintenance of tradition and in the trying out of new approaches, for to renew I must be familiar with what existed in the past and propose new procedures.

## RESULTS

### The chironomical gesture

The bridge between the procedures of the oral processes and those of the written music processes (committed to a given support by a hand-gesture) necessarily implies the use of the hands. According to our findings in clinical observations, conducted in the field of the teaching of singing over many years (Vitale 2007b; 2008a; 2009), we have observed that hands, chironomical gesture, are used in much the same way - long before the writing process- in the practice of learning singing. We consider this phenomenon very significant most especially in as far as when analysed in detail it highlights the significant underlying role of this recurrent habit of singers of using their own hands at different stages of the study and interpretation of song.

The chironomical gesture (from Greek : *cheir*, hand) occupies according to our hypothesis a significant role both in the processes of functional memories put to use in the study of singing and in the development of musical/linguistic memories that are activated through the use of the human voice (Vitale 2007c; 2008a; 2009). For all these reasons we think it is important to analyse the role of this gesture more closely.

The most usual chironomical gesture is that of the hand cutting through the air and slipping away into it. It is constituted and characterised by the contact of the tip of the index and that of the thumb in a gesture similar to the act of sewing with a needle between the tips of these two fingers (Vitale 2007b). By their extremities, these two fingers touch forming a soft, light and more or less circular design in the air, reminiscent again of the image of the act of embroidering, of an embroidery woven in the air and not on a fixed support. We have noted and observed this gesture with numerous singers from all different musical genres in a wide variety of situations at the learning stage of singing and most especially during the phases of memorising and retention. This gesture bears its own characteristics, outlined above, because of which it differs in a most significant way from a gesture for example of a rhythmic type marking weak and strong beats and characterised by a

vertical internal movement. The chironomical gesture on the contrary differs by its particular flexibility / flexuosity, by the sinuosity and the circularity peculiar to it.

The contact between the tip of the finger and that of the thumb sollicit the precise area where the tactile sense is located. We wonder what role the tactile sense – most important in the dynamics of learning all musical instruments – occupies within the dynamics of learning the *instrument-voix*, the only musical instrument not demanding the use of an act of the hand. The *instrument-voix* is the only music instrument that coincides with the body of its performer. This embodiment marks a plurality of specificities both at a perspective and at a cognitive level, as well as at that of the means of transmission. More precisely it concerns the double problematics touching both the Body of transmission and the Transmission of the body.

With the advent of musical notation, the different writing tools that constitute a bridge - the extension of the hand to the trace left on the support - are held by the hand at the same point, between the thumb and the index, in a most significant manner. This designates an irrefutable continuity between the oral gesture and the writing gesture.

This chironomical gesture in the shape of “pincers” allows for great precision, favouring the detail and the quality of the “catching” of the vocal line and at the same time (and reciprocally) by this movement it captures the thought, which is first manifested in the form of an interior voice (Vygotski) even before the thought is expressed through speech.

We consider the precision of the embroidery and of the “*fioriture/arabesque*” both of the vocal gesture and the writing gesture, graphic, as functional : it allows the development of the main thought – the idea – through details rendering it “precious” in its decoration and underlining all its dignity and potential richness. Thus, a vocal as well as a manual dynamic is created that “weaves” the signs of sounds in the air in order to prolong and perpetuate these sounds on a silent medium : paper. This paper medium will remain silent until such time as a person breathes into it a voice that will bring it back to life, into existence.

We put forward the hypothesis that the chironomical gesture is the gesture of ideas, or even better the gesture of “the working of ideas”, of the savouring of elaboration, the “chiselling of ideas” which are modulated and declined in more complex forms of thought.

## CONCLUSIONS

From an ontological as from an epistemological point of view we seek to discover where the vocal gesture begins. In thought ? When I first think of it then visualise it, or directly in its practical exterior gesture? These questions concern the problem of temporality but also that of the nature of gesture itself. Where is gesture formed ? In its “representation”, meaning we can also speak of a cerebral gesture which then becomes a physical gesture ? Of course the brain is a full physiological part of the body,

as the theory of mirror-neurons demonstrates. Where is the origin of vocal gesture? What kind of processes is it based on? What activities are implicated through it? How, and to what extent does the weight of experience assist the representation of the musical gesture? And in the specific case of the voice, to what extent does aural memory influence kinesthetic sensorimotor memory? And, on the other hand, how and to what extent does kinesthetic sensorimotor memory (the regulation of gestures and microgestures) influence in turn aural perception and memorisation? How can the nature of these interrelations be established? And their respective influences on each other? In what order? What are the internal rules governing them?

### The epistemological value of gesture

The external chironomical gesture has always appeared essential to all dimensions of song learning. The quality of the external gesture of the hand, composed of a mosaic of micro-gestures that define it in all its micro-sequences, has a decisive influence in the study of singing on the quality of vocal production, for example on the quality of the phrasing and flexibility the vocal line. This gesture is also a very important aid in sound definition. It contributes to precision in the achievement of *abbellimenti* such as the *ribattuta di gola* (called *trillo* in Caccini's treatises), whose realisation is always accompanied by this same gesture, seen with very specific and identifiable characteristics among students, even among singers who do not know one another.

For instance, the flexibility of the wrist and the speed and lightness of movement of the index finger are an imitation or, more accurately, an external anticipation of the attitudes required of the mobile velum of the palate and the uvula, according to the subjective perception of singers, a manner of imagining (and transposing) this internal vocal gesture.

Another category of external gestures reproduces the movements of the internal vocal gesture but *in the opposite direction*. For example, the hand makes a movement contrary to the melodic vocal movement: while the voice goes up, the gesture of the hand goes down. This divergence suggests a counterpoise and gives depth to the high notes. Or, in the opposite movement, it also suggests a counterpoise and gives lightness to the low notes. The gesture brings a balance. We can speak therefore of the benefit of paradox.

But beyond all its historical variations, all its categories, it is the epistemological value of the gesture that persists. This value is the cognitive activity of the realisation that the gesture provokes in the singer: "*At a theoretical level, realisation is very far from a mere illumination, which would simply move like a flashlight, bringing into view what was not yet seen without transforming anything. In fact, realisation is a conceptual reconstruction of what the action has done. Reconstitution means that there is awareness of connections,*

*generalisation, etc. In other words, action alone moves towards a goal, and it is satisfied when the goal is attained. It is dominated by what I call achievement. Whereas realisation also includes comprehension: It involves knowing how one has succeeded. [...] Realisation is the interpretation and explanation of the action.*"<sup>1</sup>

Jean Piaget

Gestures prove to be valuable as "bridges", "carriers" and "mirrors" of the whole of the sensory-motor experience of the *instrument-voix*. In the complex processes involved in the learning process of the *instrument-voix*, they have both a power of acquisition and of intervention on knowledge, *savoir-faire*, and of imparting *savoir-faire*, related to the use of the voice, and as such they play an essential role.

### From the vocal gesture to the writing of music

Continuing my research (on vocal gestures), I extend the study of vocal gestures, transferring them to the exegesis of the writing of music. For vocal gestures may be the bridge which would have allowed the slow and gradual transition from an oral musical culture to a written musical culture, without the former disappearing.

The chironomical gesture, this strange habit that singers have of "embroidering in the air,"<sup>2</sup> has however in our view, very important cognitive functions: among others, this gesture is a strategic solution that allows the singer to "fix" his own voice, even if this fixation is carried out in exteriority, which is not without further consequences. In other words, this act of "fixing" is both internal and external, and one could say it is not confined to exteriority, to the transience of the moment during which it is produced: the gesture is inscribed, like writing, in the body, as in a mirror which in a specular manner reflects a correspondance between the external and internal gesture.

The external vocal gesture which is that of the hand not only allows the singer to externalise, but also to achieve the specular movement-action: it helps to fix the vocal sign in the body of the singer, the body-book (*corps-livre*), his bodily memory, even before the advent of writing. (Vitale 2007b, 2007c).

Originally, chironomical vocal gestures would have been the source of fixation of the repertoire (for example in the case of medieval chironomy that facilitated the fixing of liturgical repertoire), but also of the memorisation of the repertoire of the singer in his "body-book", *his body memory*, and then in written music/musical writing. Through these gestures, the singer perceives his voice, his hearing (aural memory), his sight (visual memory) and the chironomical gesture, the tactile memory of the gesture that

<sup>1</sup> Bringuier, Jean-Claude, *Conversations libres avec Jean Piaget*, Paris, Robert Laffont, p. 133. Own translation.

<sup>2</sup> Vitale, Alessia, *Dal silenzio al suono. Voce Corpo Sensi Memorie*, Roma, Ed. Borla, 2003, p. 54.

melts into space and cuts through the air, as one and the same sensation. (Vitale 2007b, 2007c).

The chironomical gesture seems somehow to "sew" the voice to the air, to time and to the body. Time is considered here in its chronological dimension, it is the time of the clock, and also subjective time, dilated, psychic time. The index and thumb are brought close to each other when they are not united in an act which is reminiscent of the anthropological gesture of sewing with a needle held between these two fingers. As if one could by the same gesture hold the voice between the tip of one's fingers in order to "mani-pulate" with extreme precision with the pleasant and almost illusory sensation of being able to "touch" it.

In this gesture language the senses of sight and touch, visual and tactile qualities join in a transferential mode of synesthetic activity, almost as if filling a void due to the excess of interiority and the ineffability of the *instrument-voix* sometimes, by illusion, perceived and experienced in complete channel intangibility. (Vitale 2007b).

This ensemble of sensory solicitations that the chironomical gesture permits facilitates the acquisition of a script that is here not made of traces of ink, but of sensory traces permeating - and leaving indelible interior marks there - the body-memory and its cartography, "sculpted" by the vocal gestures.

In this sense, singers are throughout their existence living books of an assimilated repertoire, musical scores which are living and permanently available to others. Books made of human flesh that have sedimented and transmitted music, traditions, the historical gestures of others' bodies, and have thus constituted a living "intercorporeality" (Merleau-Ponty), a sort of network of living bodies, forming a veritable cartography<sup>3</sup> of the realm of sensitivity and of all its possibilities (Vitale 2007b).

The body of a singer is therefore dedicated to becoming a "woven-body-fabric" of sensitive traces. The voice itself is always a trace. The movements of chironomical gestures are trace-mirrors, vocal signatures which, like all signatures, reveal the identity and the unicity of the individual (Vitale 2007b, 2007c).

Western writing of music is born of the grain of the voice, its texture, of the vocal *in-corporation* that is contained *in* the chironomical gesture. Subject to determining the exact role of chironomical gesture in the birth of musical writing when orality prevailed over writing, this role has probably evolved. The chironomical gesture became a valuable aid in the range of the techniques employed. It is perhaps even the source of a primitive neumatic writing, which later would have evolved into notation. This is, at least, what is suggested by medieval chironomy, which we have evidence to believe existed well before the first neumatic notations.

In this sense, we can say that musical writing is born of the voice. This could explain the fact that once writing was included in the system of music learning, a solid

interdependence of the voice and writing was created. This is found to be especially constraining when one attempts to free the voice from old rules of aesthetic expression and when other types of musical writing must be found. It is then necessary to reinvent musical writing to be able to invent a new artistic use of the voice. The two dimensions prove to be interdependent. (Vitale 2007b, 2007c).

If the most recent acquisitions of the human voice, such as humming, the annexation of laughter, of hiccups and of some onomatopoeia, are included in artistic use, then the writing of music must also undergo significant changes in order to follow these evolutions of the singing voice. (Vitale 2007b, 2007c).

Curiously, the new inventions and experiences of music writing are not without strong similarities of spatial configurations, which return us to the hypothesis that musical writing is continually born and reborn of the vocal gesture (Vitale 2007b, 2007c). And if neumes, these supple outlines of vocal inflections, are reproduced through a gentle movement of the hand, if they coincide with the late beginning of musical writing in the Western world, and if, "*In fact, music and poetry were reluctant to resort to writing*" (Dufrenne)<sup>4</sup>, it seems interesting to note the similarities of structure and bearers of meaning between this primitive form of writing and modern and experimental attempts at writing of music.

It is even more remarkable that the need for new representations of music writing coincides with the need to define a new aesthetic relation to the voice *in all* its dimensions: certain modern scores, vocal or otherwise, need to be written differently, because their composers are seeking new forms of vocal dynamics, exploring the limits, the "thresholds" between the spoken and the sung (*parlé-chanté*), shouting and laughter, babbling and crying, etc. One thinks of the *Sequenza III* of Berio for example, or certain pages of Stockhausen or of Nono, to mention just a few. And one can not help thinking that recent attempts to reform music writing share some similarities with the beginnings of the writing of music. (Vitale 2007b, 2007c).

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I highlight the importance of external vocal gestures of the chironomical type, which not only occupy a central place in the different phases of learning to sing, but would also have been the source of inspiration for the first forms of neumes. By allowing the realization of the slow and gradual transition from an *audio-oral* musical memory-culture to an *oral-visual* musical memory-culture – while maintaining the former – these neumes would constitute the first "shorthand" sign-traces, having the value of audible *Imago*, of musical writing in the West. Indeed, they are truly the gestures of the *instrument-voix* and not those of another musical instrument – the tools that made possible the *magical and paradoxical act* of "fixing" music (Vitale 2007b, 2007c).

<sup>3</sup> Cf. the work of Marie-Louise Aucher, in which the concept of human musical cartography is analysed.

<sup>4</sup> Dufrenne, Mikel, *L'œil et l'oreille*, Paris, J.M. Place, 1991. p. 139.

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