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"Analysis beyond Notation in XX$^{th}$ and XXI$^{st}$ Century Music"
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# Representing Performance in Ethnomusicological Studies

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**Abstract**

Back in the 1970s a number of ethnomusicologists started to elaborate a theoretical reflection on performance as a central issue in the study of music making. This forced them to develop other ways of visualizing music for their analytical purposes. This article deals with how performance has been represented in ethnomusicological studies. I shall discuss how the graphic rendition of a sound recording is simply the mirror of what a scholar perceives, or the consequence of his/her will to emphasise a specific aspect, mediated through the possibilities offered by (and the limits of) the Western semiographic system. After presenting a series of examples on how various scholars chose to graphically visualize musical performance, this paper shows how the contemplation of the strategies used to visualize performance in ethnomusicological studies can be a fruitful way of reflecting upon various topics, namely 1) the impassable limits of score transcription for understanding music as a performative phenomenon; 2) the analysis of the graphic solutions adopted by the ethnomusicologist as a way to better understand their idea of what the performance is; 3) the role played by technology in promoting new analytical approaches and methodologies; 4) analysis in ethnomusicology as an "artisanal process".

**Keywords:** Ethnomusicology, performance analysis, graphic representation, visualizing music

## La representación de la *performance* en los estudios etnomusicológicos

**Resumen**

A partir de los años setenta algunos etnomusicólogos comenzaron a elaborar una serie de reflexiones teóricas sobre la *performance* como elemento central para el estudio del *music making*, lo cual ha conducido a la necesidad de elaborar modalidades alternativas de visualización de la música con finalidad analítica. Este artículo trata sobre cómo se ha representado la *performance* en los estudios etnomusicológicos. Discutiré si la representación gráfica de una grabación sonora es simplemente el espejo de lo que percibe el estudioso o la consecuencia de su voluntad de enfatizar un aspecto específico, mediada (y limitada) por las posibilidades ofrecidas por el sistema semiográfico occidental. Tras considerar una serie de ejemplos sobre cómo los estudiosos han decidido representar gráficamente la *performance* musical, este artículo intenta demostrar que el análisis de las estrategias de visualización de la *performance* en los estudios etnomusicológicos puede ser considerado como un modo útil para reflexionar sobre algunos aspectos, tales como: 1) los límites infranqueables de las transcripciones en pentagrama para entender la música como fenómeno performativo; 2) el análisis de las soluciones gráficas adoptadas por el etnomusicólogo como una estrategia para dar a entender mejor su idea sobre lo que es la *performance*; 3) el papel que juega la tecnología en la promoción de nuevos enfoques analíticos y metodologías; 4) el análisis en etnomusicología como un "proceso artesanal".

**Palabras clave**: etnomusicología, análisis de la *performance*, representación gráfica, visualización de la música

## A representação da performance em estudos etnomusicológicos

**Resumo**

A partir dos anos 70 do século XX, alguns etnomusicólogos começaram a elaborar uma série de reflexões teóricas sobre a performance como elemento central para o estudo do *music making*, as quais conduziram à necessidade de desenvolver outras formas de visualização da música que possam auxiliar os seus objetivos analíticos. Este artigo mostra como se tem representado a performance em estudos etnomusicológicos. Discutirei se a representação gráfica de uma gravação sonora é simplesmente um espelho do entendimento do pesquisador ou a consequência da sua vontade de enfatizar um aspeto específico, mediada (e limitada) pelas possibilidades que oferecem o sistema semiográfico ocidental. Após apresentar uma série de exemplos que mostram como vários académicos decidiram representar graficamente a performance musical, este artigo pretende mostrar que a análise de estratégias de representação da performance em estudos etnomusicológicos pode ser considerada um meio útil para refletir sobre aspetos, tais como: 1) os limites intransponíveis das transcrições em pentagrama para entender a música como fenómeno performativo; 2) a análise das soluções gráficas adotadas pelo

etnomusicólogos como uma estratégia para dar a entender melhor a sua ideia sobre o que é a performance; 3) o papel que desempenha a tecnologia na promoção de novos enfoques analíticos e metodologias e; 4) a análise em etnomusicologia como um "processo artesanal".
**Palavras-chave:** etnomusicologia, análise da performance, representação gráfica, visualização da música

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Ethnomusicology's specific interest in performance analysis began more than four decades ago[1], albeit with some delay compared to other disciplines[2]. In truth, ethnomusicologists have devoted their attention to the performance of orally transmitted music ever since the discipline came into being. Music at the moment it is played more than the written page, acoustic outcomes more than the signs on the score, musicians and their relationship with the social context more than "the work" as an absolute object have all been important subjects of study for many scholars. But it was only in the 1970s that a number of ethnomusicologists began to elaborate a theoretical reflection on performance as a central issue for the study of music making (Blacking 1971, Asch 1975, Herndon and Brunyate 1975, Blacking and Kealiinohomoku 1979, Herndon and McLeod 1979, McLeod and Herndon 1980).

The "Cultural Analysis" –as John Blacking called the method of analysis he proposed in the early 1970s– can be considered as a context-sensitive and performance-based approach. Its main aim is:

> […] to describe both the music and its cultural background as interrelated parts of a total system. Because music is humanly organized sound, there ought to be relationships between patterns of human organization and the patterns of sound produced in the course of organized interaction (Blacking 1971: 93).

An even more "holistic approach" caught on in the following years, which focused on the sound, the context and the people involved in the performance (both musicians and audience) in order to gain a deeper understanding of the music making. As Anthony Seeger states:

> […] in the analysis of the structure and performance of music (and by performance, I mean the entire performance context), an analytical isolation of the sounds produced from the total event of producing and hearing them is avoided. This analytical isolation has hampered much of ethnomusicological analysis. The production of sounds and the sounds, themselves, are of a single piece (1980: 40).

This kind of context-oriented approach for the study of music phenomenon can undoubtedly be considered one of the main contributions that ethnomusicology has made to the other musicological disciplines. However, as I shall argue later, analysing the relationship between music and the social context is only one of the ways adopted by ethnomusicologists in their approach to the musical performance.

This article deals with how performance has been represented in ethnomusicological studies. Attention will only be paid to graphic representations. Films or other forms of visual animation will not be taken into consideration, despite the awareness of their ever-growing

[1] This article has been elaborated starting from a paper presented at the "Analysis beyond Notation in XX$^{th}$ and XXI$^{st}$ century music" panel at the EuroMac VIII - European Music Analysis Conference (Leuven, 17-21 September 2014).

[2] In 1980 Anthony Seeger and Charlotte Frisbie note that the importance of the musical performance has largely been ignored in ethnomusicological studies, if compared with other disciplines such as linguistics, folklore, sociology and anthropology (see McLeod and Herndon 1980).

relevance in ethnomusicological research (see Feld 1976, Baily 1989, Zemp 1990, and Adamo 2010). The article aims to give more than a general overview of the different graphical solutions adopted by various ethnomusicologists in their books. In the next paragraphs I will show how contemplating the strategies of visualization of the performance in ethnomusicological studies can be a fruitful way of reflecting upon various topics, namely 1) the impassable limits of score transcription for understanding music as a performative phenomenon; 2) the analysis of the graphic solutions adopted by the ethnomusicologist as a way to better understand their idea of what the performance is; 3) the role played by technology in promoting new analytical approaches and methodologies; 4) analysis in ethnomusicology as an "artisanal process".

**Other ways to visualize music: necessity, ideology, and possibility**

Since they mainly deal with "other music" and approach it from "another point of view" (as compared to historical musicologists), ethnomusicologists have been obliged to elaborate "other ways to visualize" music for their analytical purposes. Scholars have long stressed the limits of score notation. Béla Bartók (1951), one of the pioneers of the discipline proposed its integration with diacritical signs. Later, its subjectivity was stressed (Seeger 1964), but recognition was also given to its great usefulness in allowing the comparison of two or more musical performances (List 1974). Since other forms of graphic rendition of sound-recording were considered more useful, some scholars abandoned score notation or, in many cases, integrated it with plots, diagrams, grids, drawings, photos, waveforms, spectrograms, and so on. Finally, even though staff paper is nowadays no longer considered indispensable, some kind of visual representation of music still seems to be a must for the majority of ethnomusicologists, particularly in performance-based analytical approaches.

In 2005, the 2nd issue of *The World of Music* journal focused on "Notation, Transcription, Visual Representation". The opening article by Marin Marian-Bălaşa concerns the ideological aspect of musical representation. The Romanian ethnomusicologist concentrates on the role played by musical transcription in the history of ethnomusicology, assumed as a means of affirming its scholarly quality and scientific dimension, as a way to "legitimate and expand its own domain, authority, legitimacy, and autonomy" (Marian-Bălaşa 2005: 16). Starting from his original perspective, the author criticizes "analyticism", namely "the exaggerated, self-referential, and redundant performance of analysis" (Marian-Bălaşa 2005: 16), and underlines how transcribing music (included visualizing it without staff notation) is an elitist practice which is more useful to scholars than to those cultures and people that represent themselves through their music.

But, other than that, it is true to say that the majority of ethnomusicologists still need to visualize the music they are studying. We might therefore ask ourselves whether we simply choose the graphic rendition that better represents our analytical ideas, or if (and how) our analytical ideas are guided, influenced or strongly determined by the visual representations that we choose to adopt. The graphic rendition of a sound recording is frequently the mirror of what a scholar perceives, or the consequence of his/her will to emphasise a specific aspect, mediated through the possibilities offered by (and the limits of) the Western semiographic system. This is

the case of the four scholars who were asked to transcribe and analyse the same musical recording at the well-known "Symposium on Transcription and Analysis" organized on the occasion of the Eighth Annual Meeting of The Society for Ethnomusicology, which took place in November 1963 at Westland University (see England 1964). The transcriptions of a Hokwe song with a musical bow made by Robert Garfias, Mieczyslaw Kolinski, George List, and Willard Rhodes are all different, both from a musical point of view and in terms of the graphic choices. If, as regards the musical perspective, this was the result of the subjective interpretation of the recorded piece (i.e. diverse metrical interpretations were proposed), the visual outcomes directly depended on the aspects that every scholar chose to emphasize (the metrical structure, the overtones produced by the bow, the melodic contour, etc.)[3].

In other cases, the graphic rendition strictly depends on the tool the researcher uses to visualize the music. Ethnomusicologists first started to show an interest in a graphic representation of music that was different from score notation many years ago. Charles Seeger and his melograph, a mechanical apparatus able to plot the melodic line (Seeger 1958), is a well known case. At the same time, electronic aids such as loopers and speed variation controllers for tapes began to be used to improve aural transcription (Jairazbhoy and Balyoz 1977). Later, the advent of digital technology made a breakthrough in ethnomusicological research, and this can also be observed in the graphic rendition of the analyses proposed by several scholars. Indeed, many of them started to use software developed for phoneticians (*Speech Analyzer*, *Praat*), sound engineers, record producers (*Melodyne*, *Sound Forge*, *Adobe Audition*), research in gesture, human-computer interaction, ethology (*Anvil*), or specifically for musicologists (*Sonic Visualizer*); in fact, all these tools offer alternative ways to visualize music.

It is obvious that an automatic pitch extractor allows microtonal variation and embellishments such as *vibrato* and other kinds of ornamentation to be analysed with a previously unthinkable precision. Likewise, spectrums and spectrograms allow a thorough analysis of timbre, while studies on sounds converted into digital files permit a huge quantity of data to be processed with statistical methods. It is therefore clear that the diffusion of these new tools has significantly modified the aims of ethnomusicological research. Not only have analytical methodologies been transformed, but the object of the analysis is also different. The change in the way of visualizing music, both with the aid of new technologies or by developing personal graphic renditions (diagrams, drawings, plots, etc.), has made it possible to study previously overlooked aspects of music, which were very difficult to take into consideration without an appropriate graphic rendition, and performance is one of these.

## The ethnomusicological approach to musical performance

Performance is a polysemous term. If we look it up in the dictionary or in the scientific literature, we find various definitions and, accordingly, different ideas of what performance is

[3] The introduction to the Symposium by Nicholas M. England, the 4 transcriptions with the corresponding commentary, and the final remarks by the Chairman-Moderator Charles Seeger are all published in the Vol. 8. No. 3 of the *Ethnomusicology* journal (see England 1964, Garfias 1964, Kolinski 1964, List 1964, Rhodes 1964, and Seeger 1964).

and how to approach it. Performance studies propose a broad interpretation of this concept, including sport, business, sex, rituals, arts and everyday life. As Marvin Carlson states: "all human activity could potentially be considered as 'performance'" (1996: 5).

In recent years, the theoretical framework of many historical musicologists has been marked by a performative turn. They have refocused their attention from the scores towards the music-making, enriching their analytical toolkit with methodologies borrowed from other disciplines, such as the ethnographic approach or the use of software for analysing recordings (Rink 2002, Cook 2013). At the same time, musical performance has been investigated by various popular music scholars, who have devoted their attention to the role technology plays in producing and consuming music, problematizing the complex relationship between mediated music and live performance (Frith 1996, Auslander 2004, and Zagorski-Thomas 2014).

What is there to say about the situation in ethnomusicological studies? In the afore-mentioned quotes from John Blacking and Anthony Seeger, the study of performance is intended as the analysis of the relationship between music and the cultural context in which it is played and lives. Undoubtedly, this was, and still is, a valid perspective offered by these ethnomusicologists, but the last few decades have seen the development of different approaches (see Cámara de Landa 2014). Since performance analysis continues to be a crucial topic, several paradigms, theoretical frameworks, methodological suggestions, and operating models have been proposed by various scholars over the last forty years (Seeger 1980, Stone 1982, Feld 1984, Qureshi 1987, Titon 1988, Kisliuk 1998, Martin Clayton, Byron Dueck, and Laura Leante 2013). Summarising these is not a simple task and is beyond the scope of this article. However, I do believe that it is possible to group most of them into three main trends, namely: performance as structuring music, as body action/s, and as social/musical interactions. These should clearly not be considered as distinct categories, but, rather, as three very common approaches to such a complex phenomenon as musical performance.

The first approach, *performance as structuring music*, is directly linked to the nature of the object usually analysed by ethnomusicologists, that is to say, orally transmitted music. In this case, they are not faced with a written score, nor with an "original recording" as in popular music studies. They typically approach the music by taking part in a musical event, observing and listening to a performance and eventually recording it with audio or audio-visual devices. However, ethnomusicologists are well aware that what they have listened to or captured is only one of the possible renditions of that kind of music. Therefore, the work of many scholars does not simply consist in describing a specific performance, but in comparing a certain numbers of performances collected on different occasions with the aim of finding their common features, understanding their structural principles, so as to define the virtual model governed by an often implicit grammar.

The second approach, *performance as body action/s*, concerns the relationship between music and the corporal nature of the human being/s involved in it, including the performers and the audience. In this case the scholar pays particular attention to the role the body has in music making, whether it is a body playing a musical instrument, dancing, interacting with the other musicians on the stage or with other people in a ritual context. The kinesics and proxemics of the

performers, the way a musician moves his hands to obtain a certain sound, the gestures of a dancer in relationship to the music, the mutual position of the various musicians and their instruments in the same ensemble, and the path of a ritual procession through the streets of the village are all aspects that have undergone in-depth analysis in many ethnomusicological studies.

The last approach, *performance as social/musical interaction*, focuses on the relationship between the sound and the context in which it is produced, including both the occasion (concert, ritual, ceremony, etc.) and the people attending the event. Understood as either the collaboration and/or competition between the people actively involved in a performance or as the involvement of an audience, social and musical interaction is a central point for a discipline that considers music as primarily a social practice. This is a particularly rich field of research if we consider the fact that social interactions in music radically diverge depending on the cultural area, musical genre and practices, the environments or locations intended for the performance, audience typologies, and the different functions that music can take on in different contexts.

**Visualizing the performance**

Whatever approach they decide to adopt, many ethnomusicologists need to visualize musical performances for their research. Graphic rendition is a useful tool, both during the real analysis, when the scholar examines the collected data, and for showing the results of this analytical process in a book in the classroom or during a lecture. Obviously, musical performance can be represented and visualized in different ways. This is why, as demonstrated in the previous paragraphs, ethnomusicologists approach it in various ways. But it also depends on the huge variety of music that is to be found in different cultures around the world. These are the main reasons why analysis in ethnomusicology can be considered as an "artisanal process". However, this is certainly not due to a lack of general theories or methodological references of theoretical frameworks to be applied to different musical cultures and practices; in many cases, ethnomusicologists have been inspired by the work of their colleagues and use their methodological suggestions to analyse the music they are dealing with. Ethnomusicologists mainly resort to a qualitative approach and refer to methodologies which are as open as possible, allowing them to analyse "their music" in accordance with its own peculiarities. Hence, the discipline is characterized by a methodological pluralism which promotes the overlapping of various approaches or the elaboration of new ones, which even includes the way that music is visualised for analytical and descriptive purposes.

What follows is neither an annotated nor exhaustive presentation of graphic rendition in performance-oriented ethnomusicological research. Starting from the three previously presented categories, I shall propose some representative examples from ethnomusicological literature or from my own research to illustrate how different kinds of performances have been visualized.

**Performance as structuring music**

The analysis and comparison of single performances is the most common method used by ethnomusicologists to understand musical structure in terms of form, pitch, duration, and timbre. One of the aims for those scholars, who deal with most African dance music, is to identify its

cyclical structure. They are able to do this during their fieldwork, for example, by speaking with the musicians, but also by correlating the dancers' steps with the accentual recurrence in the music and, mainly, by comparing a certain number of performances.

Various forms of notation have been adopted for African music (see Arom 1973, Grupe 2005). Many transcriptions have been used in analysing its metro-rhythmical aspects to graphically emphasize the cyclical nature of this kind of music. An interesting case in point is the transcription of a Xhosa song made by David Rycroft (1967), who proposes a staff notation arranged in a circle (see figure 1)[4].

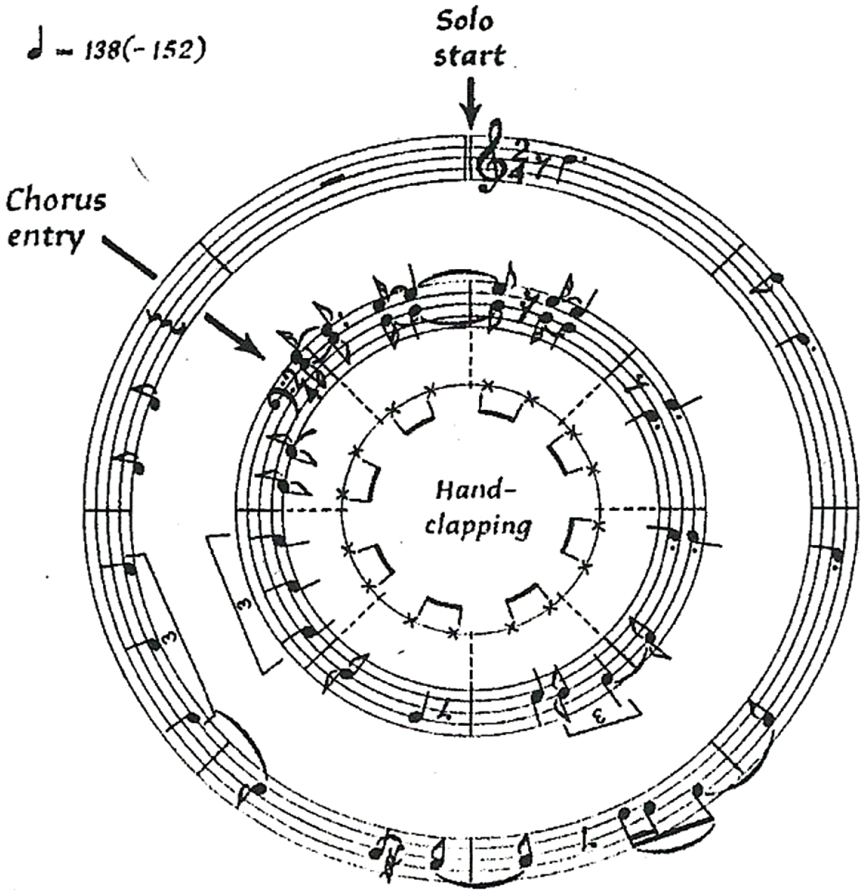


**Figure 1**.

Simha Arom (1993) proposed a different graphic solution: in his analysis of a Pygmy song for voices and drums called "*Bobangi*" (see figure 2), the French ethnomusicologist replaces the staff notation with a grid filled in with various numbers. In this case the information about the

[4] This and some of the other examples in this article were also presented and described by Enrique Cámara de Landa in his article "Beyond the staff: "alternative" systems in the graphical representation of organized sound" in this issue.

melodic contour is lost, but the diagram clearly shows the overlapping of different metrical layers and, finally, the macro-period and its internal asymmetric subdivision.

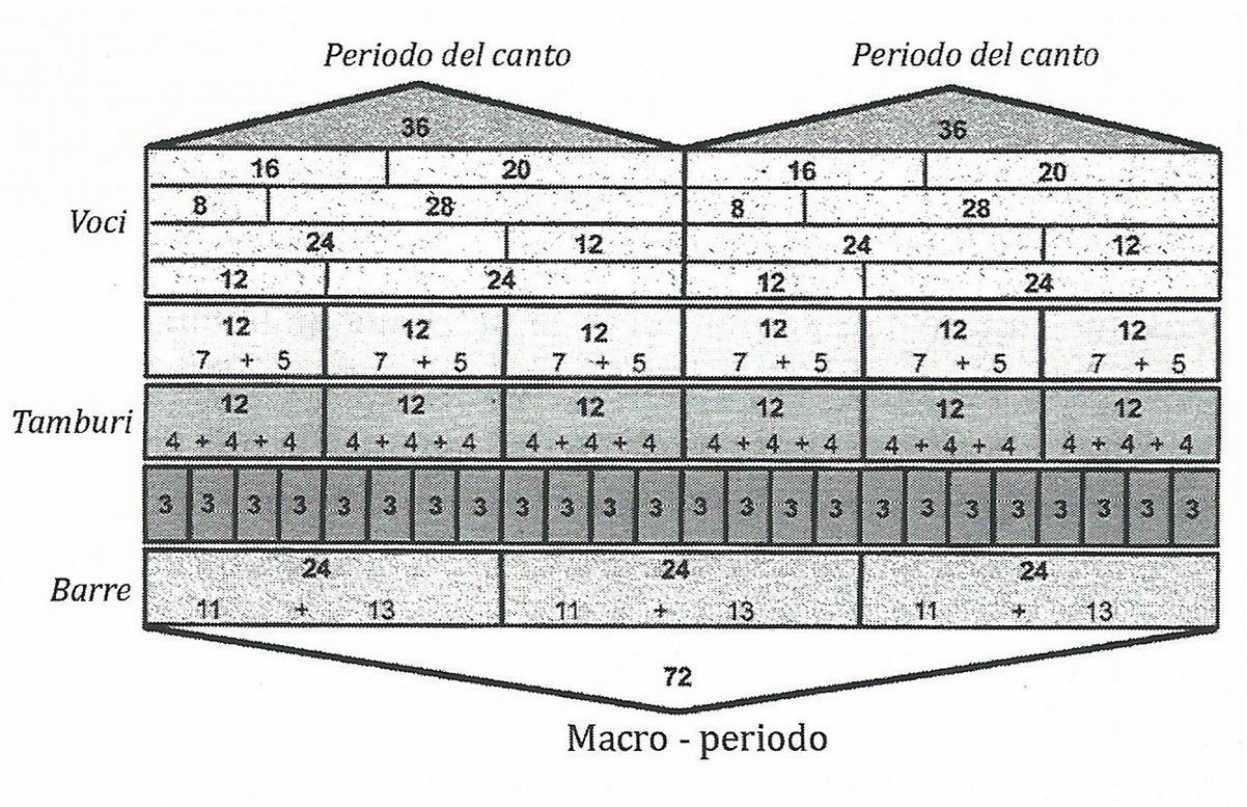


**Figure 2**.

The 1980s research on central and southern Italy dance music carried out by various ethnomusicologists is another example of how the comparison of various performances can be used to extract the grammar rules that guide a specific musical genre.

In 1982, Francesco Giannattasio analysed a Sardinian accordion dance from Villanova Monteleone, a village located in the north of the island. His aim was to describe its modular structure and he used several graphic solutions to do this (Giannattasio e Lortat-Jacob 1982). A grid (see figure 3a) was used to indicate the dance step (3, 2b or 2a) and the tonality (Eb, Bb of F) of the ten parts that make up the dance (from A to G). A line with various forks (see figure 3b) represents how these parts can be combined each other. Another path accompanied by staff notation (see figure 3c) describes the inner structure of each part as the combination of a certain number of rhythmic and melodic patterns.

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| | | A | A' | A'' | B | B' | C | D | E | F | G |
|---|---|---|---|---|---|---|---|---|---|---|---|
| passo | 3 | | | | | | X | X | | | |
| | 2b | X | X | X | X | X | | | | | |
| | 2a | | | | | | | | X | X | X |
| tonalità | MIb | | | | | | | | X | | |
| | SIb | | | | X | X | | X | | X | |
| | FA | X | X | X | | | X | | | | X |

**Figure 3a**.

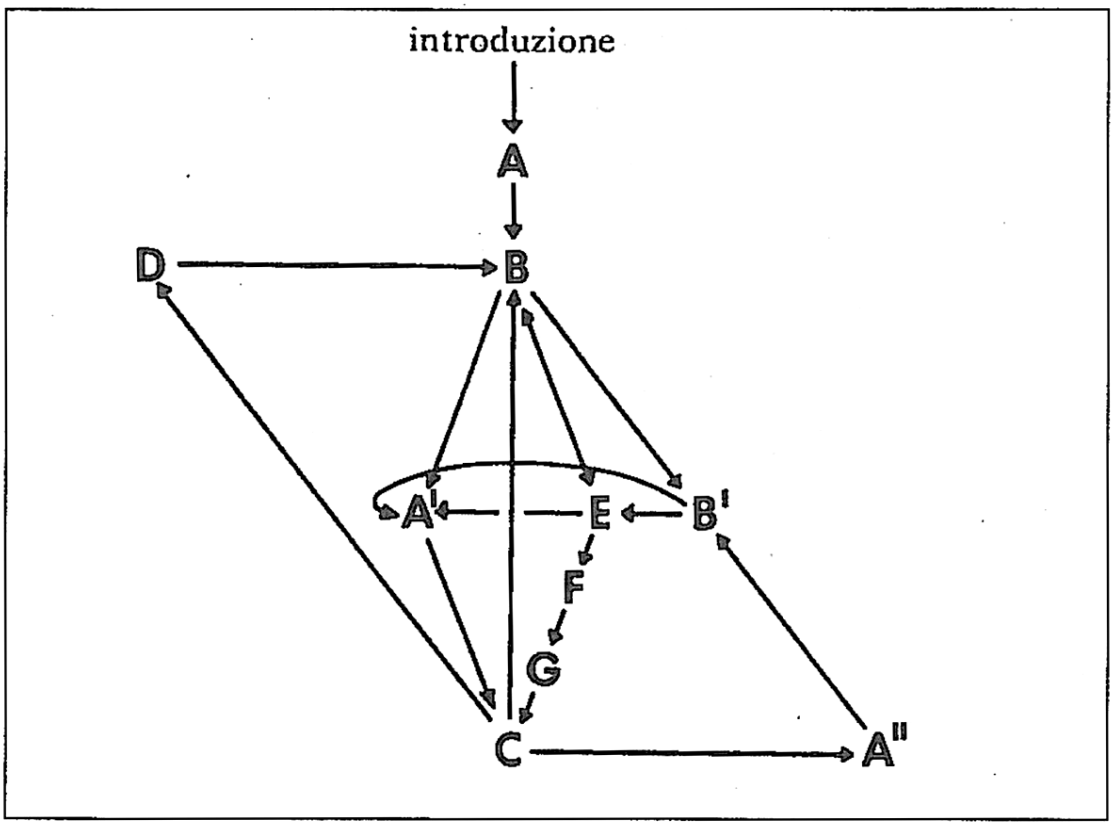



**Figure 3b**.

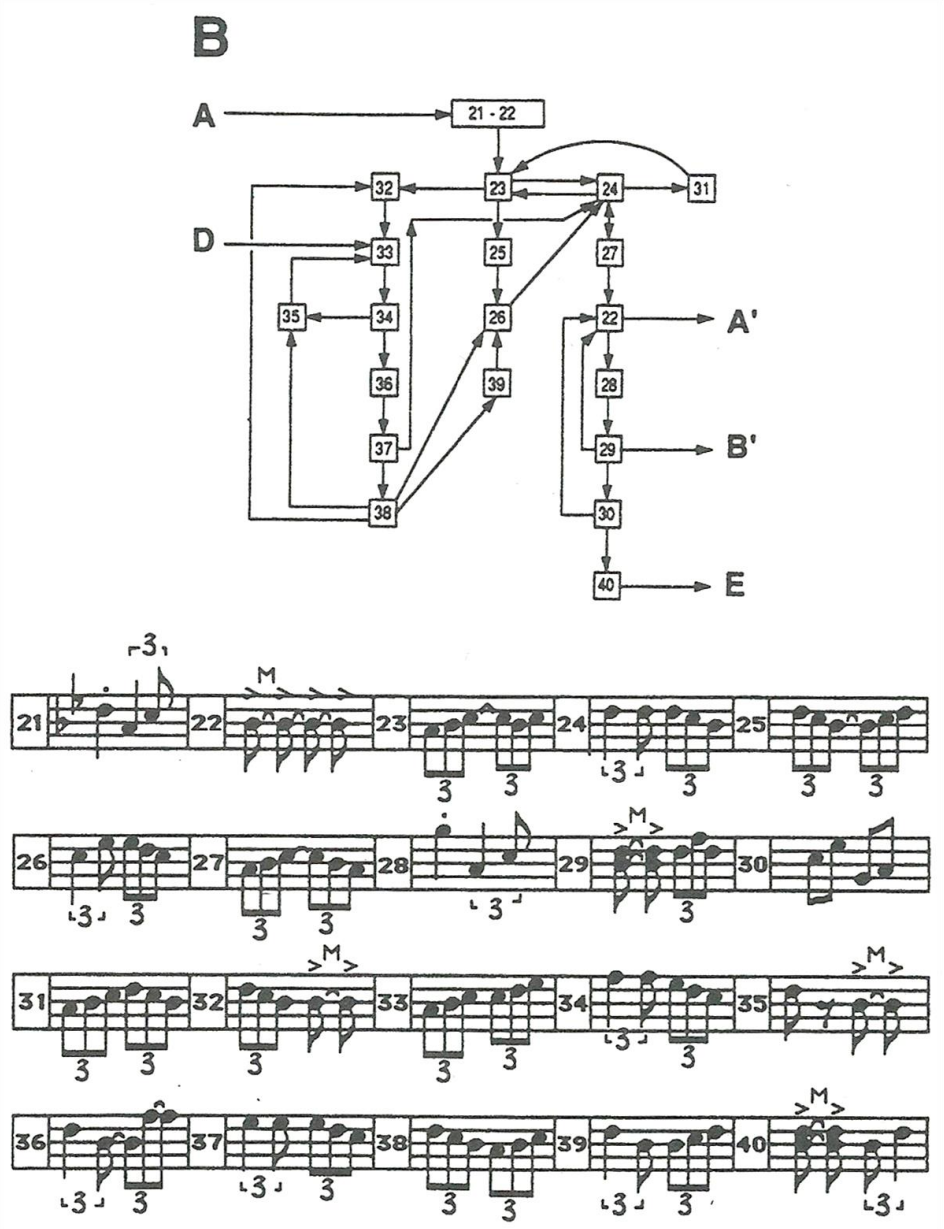



**Figure 3c**.

Bernard Lortat-Jacob devoted his attention in the same article to the formal structure of a type of dance music from southern Sardinia, usually played with the accordion or with the *launeddas*, the folk triple clarinet typical of this area. Lortat-Jacob took a specific performance as a case study and made a detailed analysis of how every musical unit (called *noda*) has some rhythmic and/or melodic element in common with the previous and the following one. As we are told by Andreas Bentzon (1969), this is because the main structural principle that leads the *launeddas* player is to not repeat the same melodic material while, at the same time, trying to search for a "thematic continuity" through continuous micro-variations. Lortat-Jacob considers a spiral (see figure 4) as being the most effective figure for visualizing these structural and

aesthetic principles. The numbers along the path of the spiral symbolise the various *nodas* and the line that links every pair of *nodas* describes what they have in common.

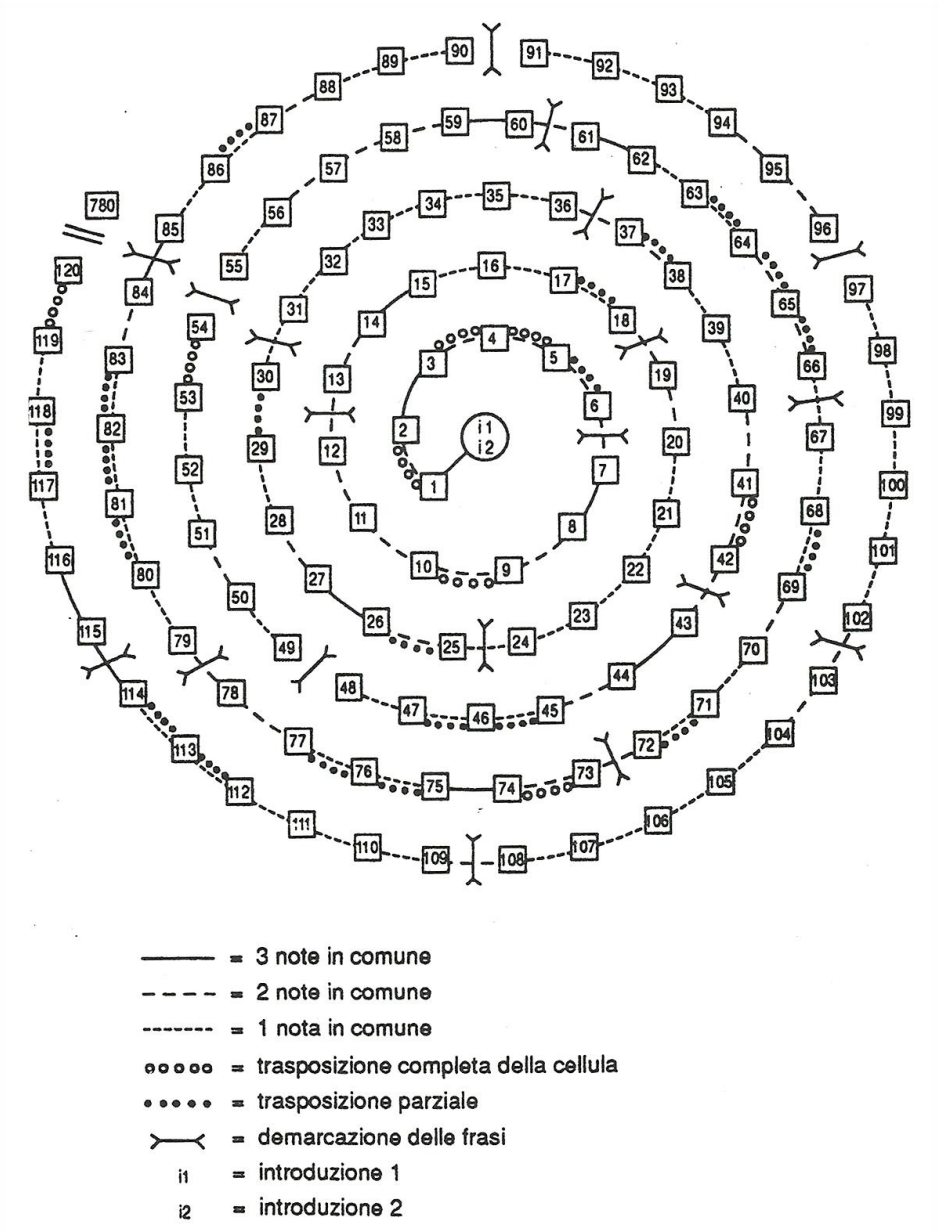



**Figure 4**.

During my research on Afro-Cuban religious music I compared different performances of the *orun seco* (Lutzu 2013). The *orun seco* is presented in the first part of a ceremony called *toque de santo* (or *tambor*) and is a long suite of rhythmic patterns involving three *batá*, that is to say, three double headed, hourglass-shaped drums. Every pattern is played as a tribute to a specific *oricha*, one of the deities that populates the pantheon of the *santería*, the most widely practiced Afro-Cuban religion. To visualize the relationship between the duration of a single

section and the whole *orun seco*, I used a waveform with a different colour for every *oricha*. It is also possible to compare the inner structure and the duration of various performances by putting various waveforms on the same timeline (see figure 5).

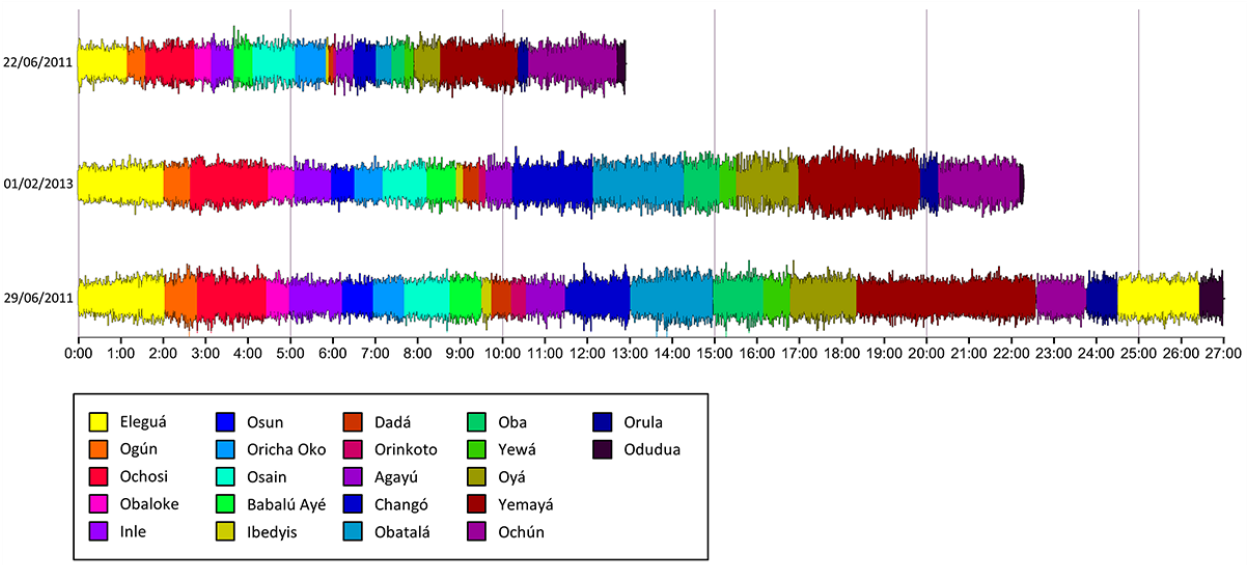



**Figure 5**.

Many scholars adopt the *gamut* (a staff in which the duration value of every note signifies a greater or lesser presence in a piece of music) to represent the set of pitches of which a melody is composed. This has long been the most effective way of defining and visualising the musical scale (see Giuriati 1991). Using a computer greatly enhances this kind of analysis. The ethnomusicologist Paolo Bravi has created a script for the *Praat* software[5] called *Tonogram*, which is a diagram with the frequencies on the horizontal axis and their recurrence on the vertical axis. Bravi has used the *Tonogram* to deduct the scale effectively sung by improvising poets from southern Sardinia (Bravi 2010)[6]. Every peak in the various diagrams (see figure 6) represents a recursive frequency (namely, a note of the scale): the higher the peak, the more often the corresponding note was sung; the wider the peak, the less precise the intonation.

[5] *Praat* is a computer software for phonetics analysis designed by Paul Boersma and David Weenink from the University of Amsterdam (see Boersma 2001).
[6] Some of these *Tonograms* can also be seen on the www.sardinianoralpoetry.net website. [Accessed 12th September 2015].

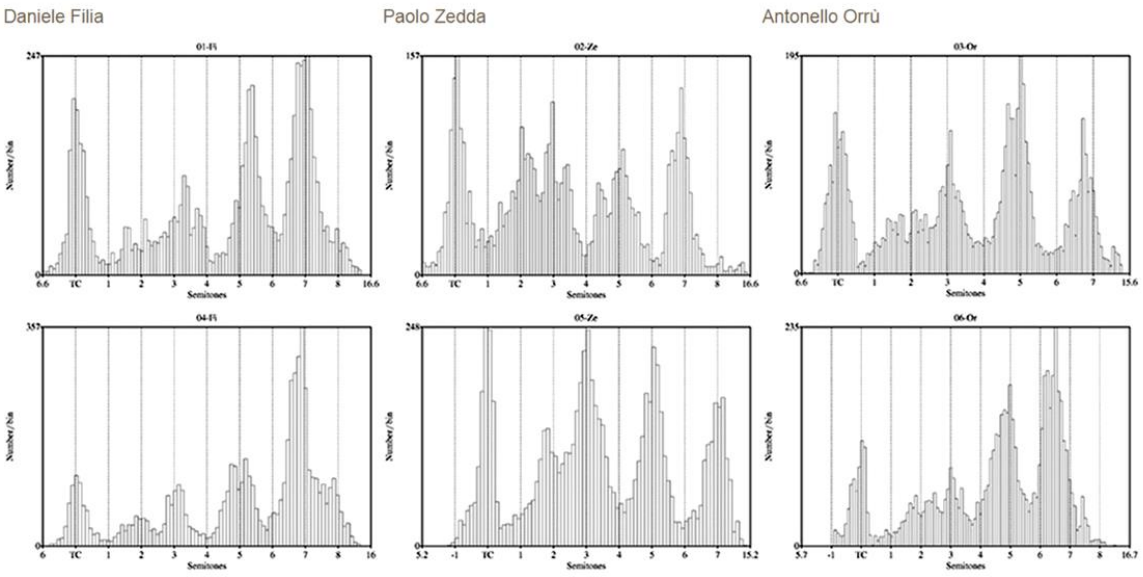



**Figure 6**.

Many software programmes allow the pitch to be extracted from a digital recording. Nowadays, this is a very common tool among ethnomusicologists, who observe the plot of the melodic contour to analyse a singer's or a musical instrument's effective intonation. In Figure 7 we can see Wim van der Meer's transcription of a Hindustani musical performance by Ahir Bhairav (van der Meer 2005). He proposes three different graphic renditions of the same fragment: a *Praat* extraction of the pitch, *sargam* notation and traditional staff notation. This example is extremely effective in showing how analytical outcomes are directly linked to the visual representation of the music. Every transcription has its own advantages and limitations; choosing one rather than another strongly determines the analytical process.

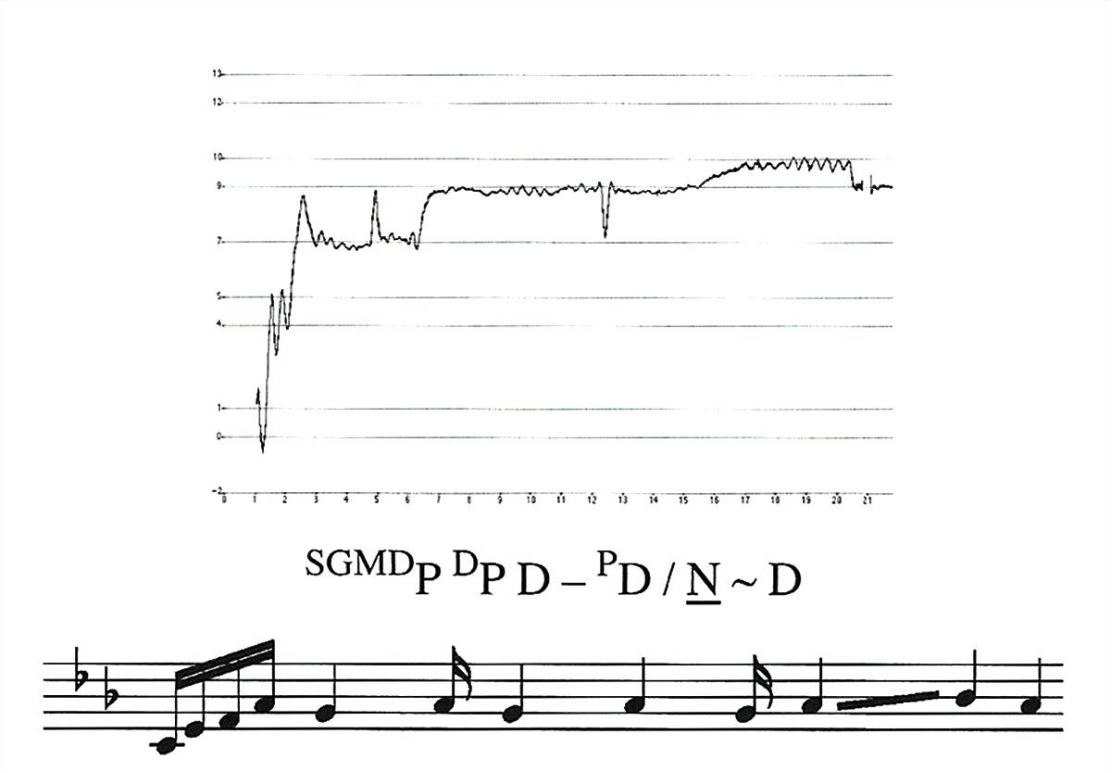



**Figure 7**.

The employment of various kinds of software, and the visible results that these produce are also used for the analysis of timbre. Different kinds of two and three-dimensional diagrams can be employed for this purpose. The spectrum and spectrogram are examples of the former type, such as the one used by Triinu Ojamaa (2005) for the analysis of the throat singing technique (see figure 8). On the other hand, an example of a three-dimensional diagram was proposed by Albrecht Schneider (2001) to describe the evolution in time of the harmonic spectrum of a Turkish *saz* (see figure 9).

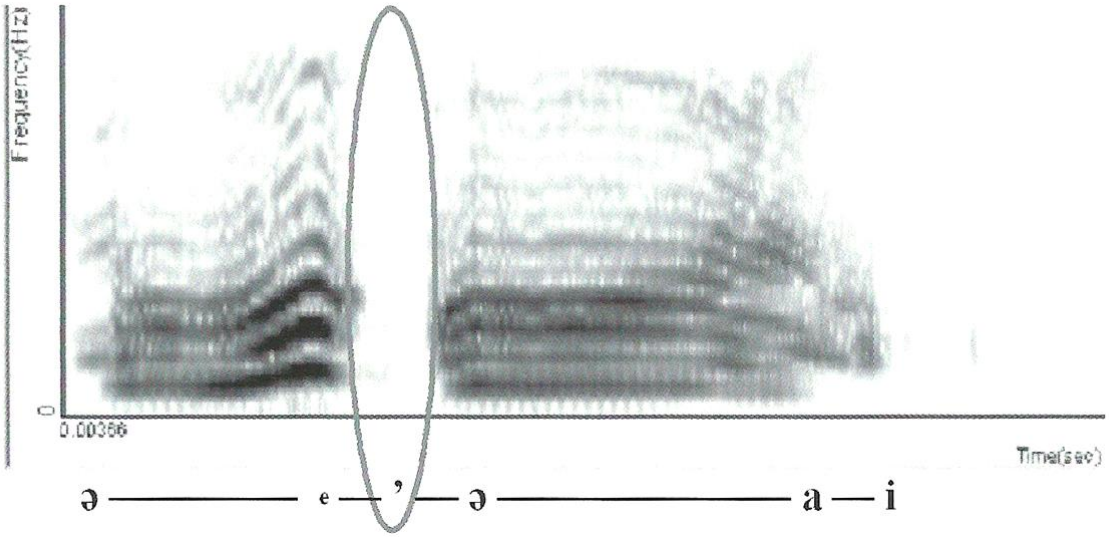



**Figure 8**.

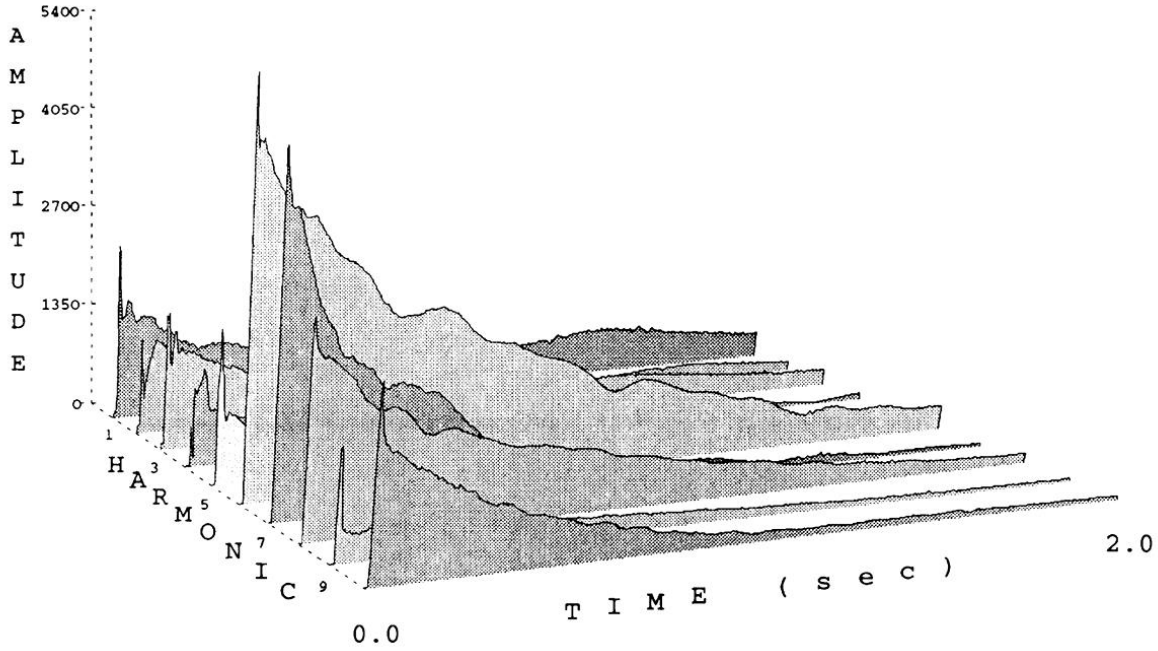



**Figure 9**.

The final examples in this paragraph show how diagrams and plots have also been used for the analysis of the temporal dimension of music, including micro and macro phenomena. In order to analyse the entrainment in a recording of singing with clap stick beating, Martin Clayton, Rebecca Sager, and Udo Will (2004) place the waveform above the spectrogram of the

same fragment (see figure 10). The diagram proposed by Richard Jankowsky (2013) in his analysis of the rhythmic elasticity in Tunisian *stambēlī* plots how the bpm increase in time during the same performance (see figure 11).

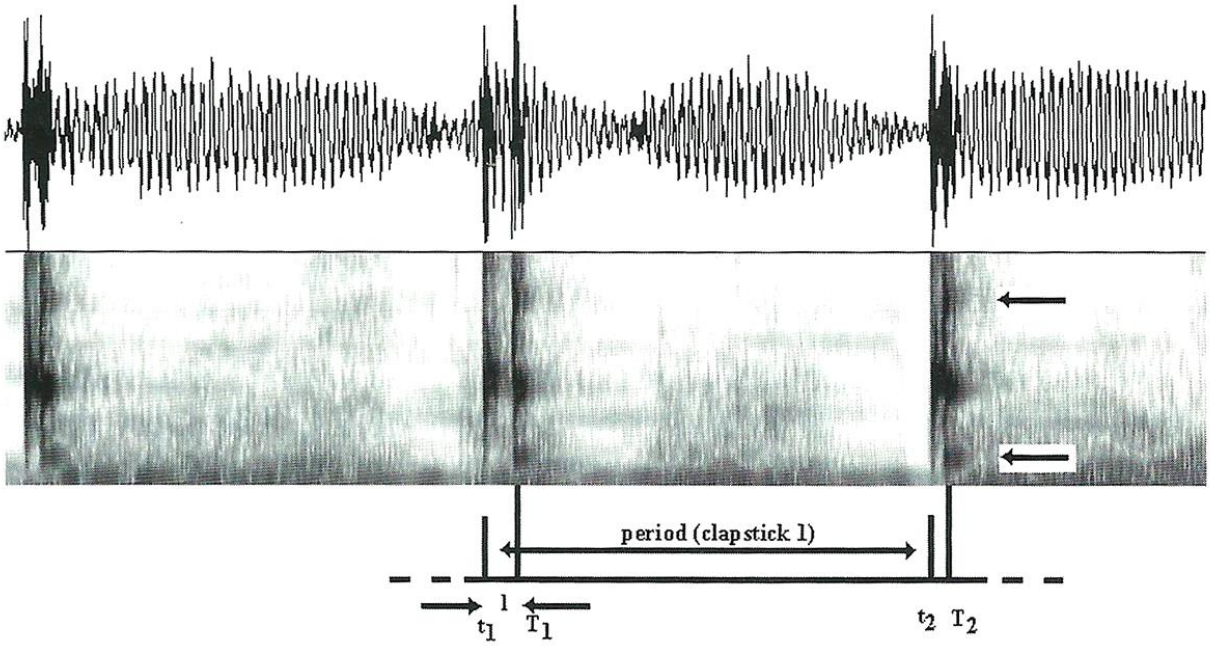



**Figure 10**.

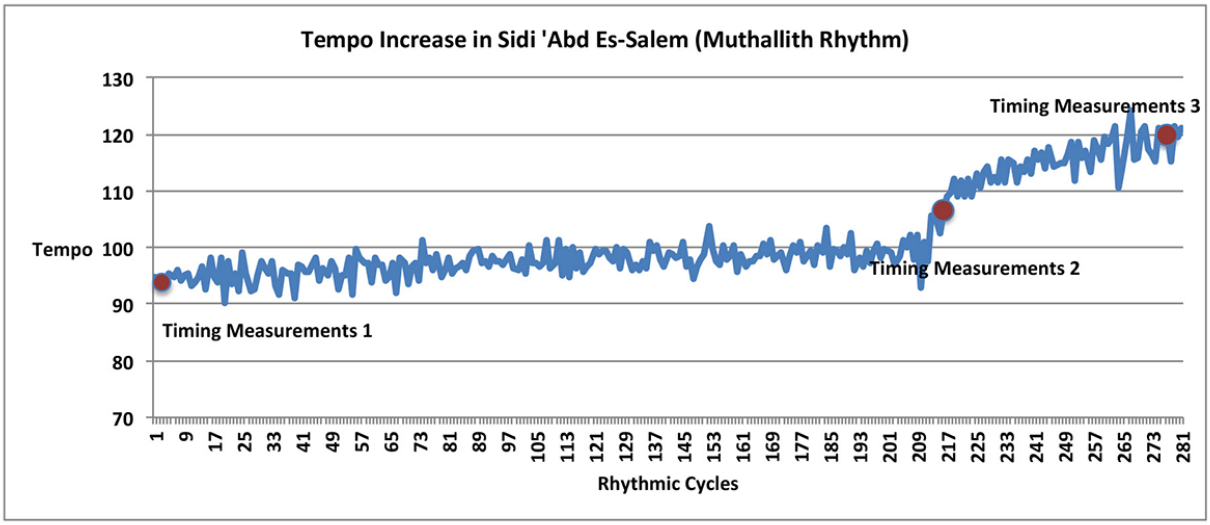



**Figure 11**.

**Performance as body action/s**

Making music implies the presence of acting bodies. Ethnomusicologists have devoted particular attention to this topic, focusing on how the bodies, of both the musicians and the audience, are involved in the musical performance. Graphs and diagrams, as well as photographs and sketches, have been extensively used to better analyse and represent this aspect of music making.

In recent years, theoretical frameworks such as *embodied music cognition* (Leman 2007) and the diffusion of new technological tools for the analysis of body movement have significantly increased the study of musical gestures. Starting from the work by Delalande (1988), Wanderley and Depalle (2004), and others, Rolf Ingre Godøy and Marc Leman (2010) distinguish four functional categories of musical gestures: sound producing, communicative, ancillary or sound facilitating, and sound accompanying. Some of these are strictly required for playing a musical instrument, while many others are optional and, as ethnomusicologists have observed, culturally variable. In any case, the involvement of the body in music making cannot be represented with standard musical notation.

In his *Musique et extase*, Jean During (1988) illustrates the head movement the Sufis make during the *dhikr* ritual with a drawing that shows the correct sequence (see figure 12). John Baily also uses a drawing to visualize the finger positions in the Afghanistan *dutār* playing technique (Baily 1985) (see figure 13).

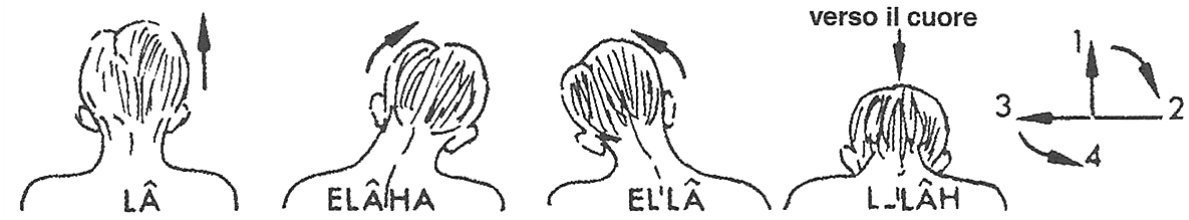



**Figure 12**.

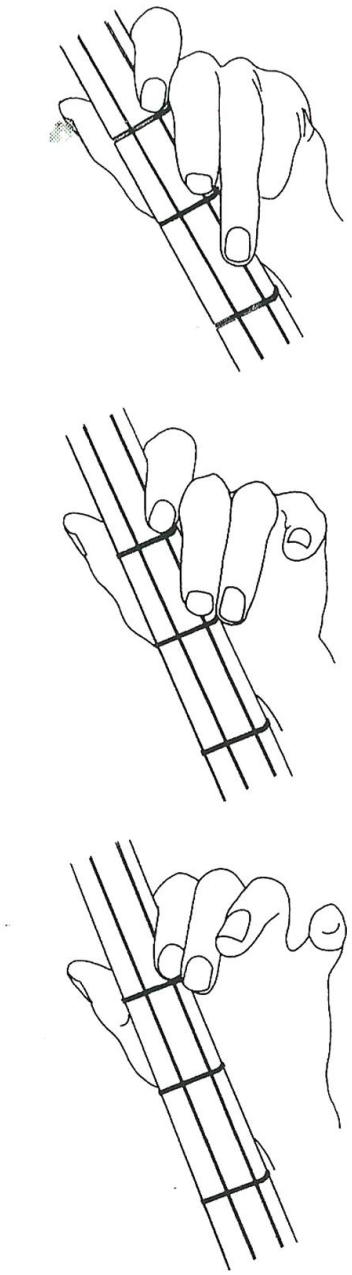


**Figure 13**.

Working on Karnatak vocal music, Lara Pearson (2013) opts for a graphic rendition that integrates four different elements: a pitch plot, *sargam* notation, staff notation and a series of pictures (see figure 14). The plot of the movements the singer makes with his right hand during the performance is obtained through tracking the video recording and drawing over the picture. It is a very effective way of finding the relationship between the singer's gestures and the sonic events.

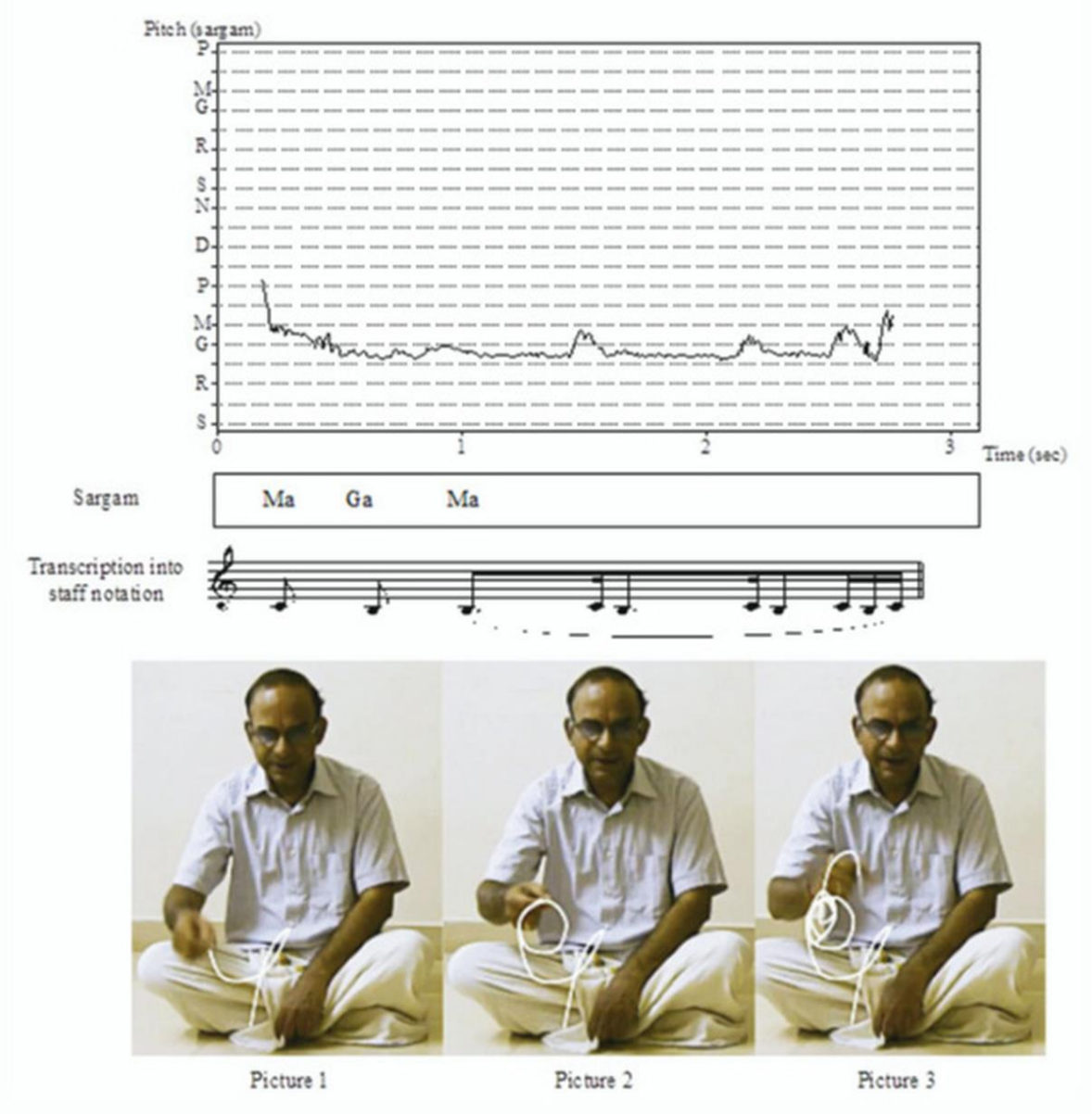



**Figure 14**.

Mapping performers' body movements allowed ethnomusicologists to identify musical practices characterized by the primacy of the gesture. I use this term to define instrumental techniques, repertoires, genres or single pieces in which the musical structure is strictly linked to, or directly derives from, gestural behaviours. Such behaviours are very difficult (or impossible) to investigate through a traditional aural transcription and can be better analysed by directly observing a performance or by visualising it with a system of notation that takes into account body involvement in music making.

In describing a pan flute polyphonic repertoire from the Solomon Islands, Hugo Zemp shows how the different intervals that form the bichords are the consequence of the position of the pipes. In effect, they are not ordered from the lowest to the highest, as in the majority of pan

flutes, but are irregularly arranged on the instrument. Since the player always blows into two adjacent pipes, the melodic interval directly depends on the particular setting of this instrument (Zemp 1981). The notation proposed by Zemp (see figure 15) puts the score notation together with a series of drawings (one for every bichord) in which the pairs of blown pipes are highlighted.

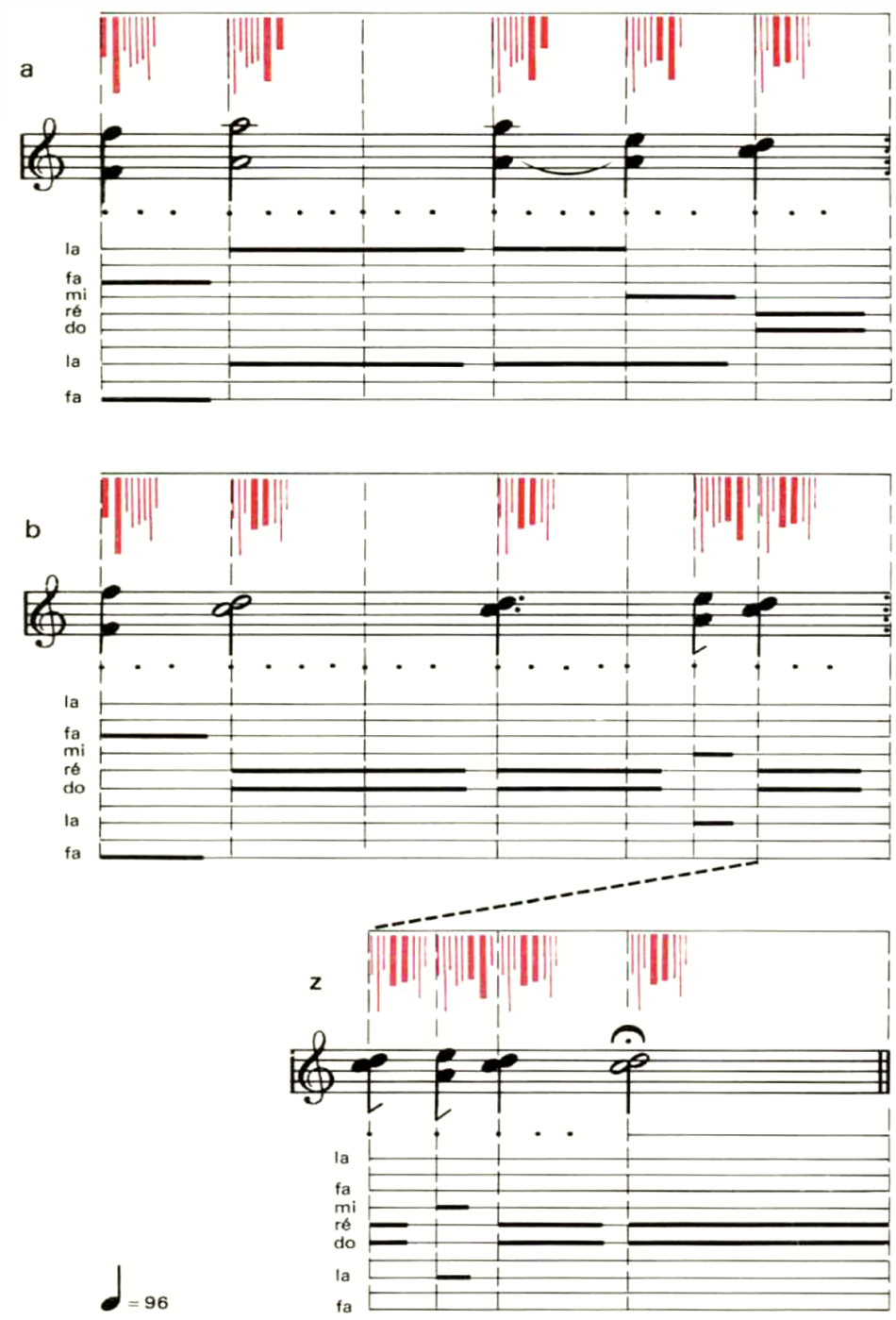



**Figure 15**.

Some years ago, with the help of two engineers, I developed a device for the analysis of the finger movements in the *launeddas* (the Sardinian triple clarinet I mentioned above), starting from the prototype of an electric version of the instrument[7]. We called the software that controls the device, the *e-launedda* The *e-launedda* window is divided into two parts: the upper one displays the *mancosedda* (the left-hand melodic pipe) and the lower one the *mancosa* (the right-hand melodic pipe). For each of the two chanters, time is shown on the X axis and the position of the fingers on the Y axis. The *fingering chart* displays all the possible finger combinations on the left. The four circles represent the fingered holes, corresponding, from left to right, to the index, middle, ring and little fingers; the circles are black when the hole is closed, and white when it is open. Although the *e-launedda* also records the sound produced during the performance, its purpose is to detect the exact fingering used to produce every single note, so as to highlight the relationship between music and gesture. Figure 16 compares the movements of the left-hand for two different typologies of instrument, called *fioràssiu* and *puntu 'e òrganu* (the *launeddas* is a family of various instruments, each of which has a different ambitus for each of the two chanters). The plots show that similar gesture patterns occur in both the instruments, although the music outcome is considerably different from the functional point of view, with the Bb, the tonal center, switching from downbeat to upbeat.

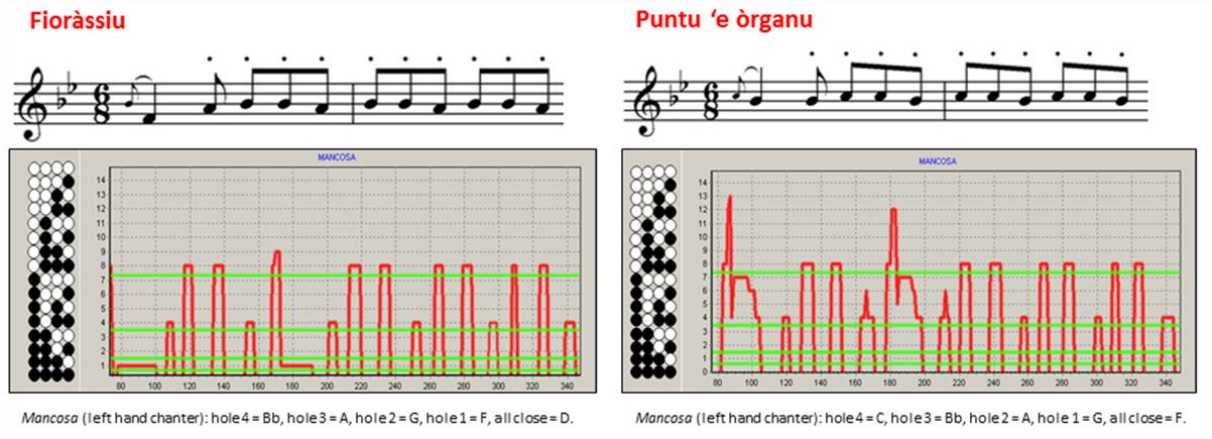



**Figure 16**.

The mutual position of the musicians around an instrument, on the stage, or in the social or ritual space is equally important for the analysis of the musical performance. In most cases their position is not random but defined by tradition or customs, and it can therefore be understood (and explained) in terms of both functional and symbolic reasons. Figure 17, by Gerard Kubik

[7] Engr. Francesco Capuzzi created the device called *elettroneddas* and Engr. Guido Coraddu developed the *e-launedda* software. The results of my research are still unpublished; I presented them as a paper at the 18th Meeting of the ICTM Study Group on Folk Musical Instruments (Stubičke Toplice, Croatia, 13-17 April 2011) and at *Analysis, Cognition and Ethnomusicology* joint meeting of the Annual Conference of the British Forum for Ethnomusicology and the Third International Conference on Analytical Approaches to World Music (London, 1-4 July 2014).

(2010), shows the position of the five musicians and their playing area in an *akadinga* xylophone from Uganda.

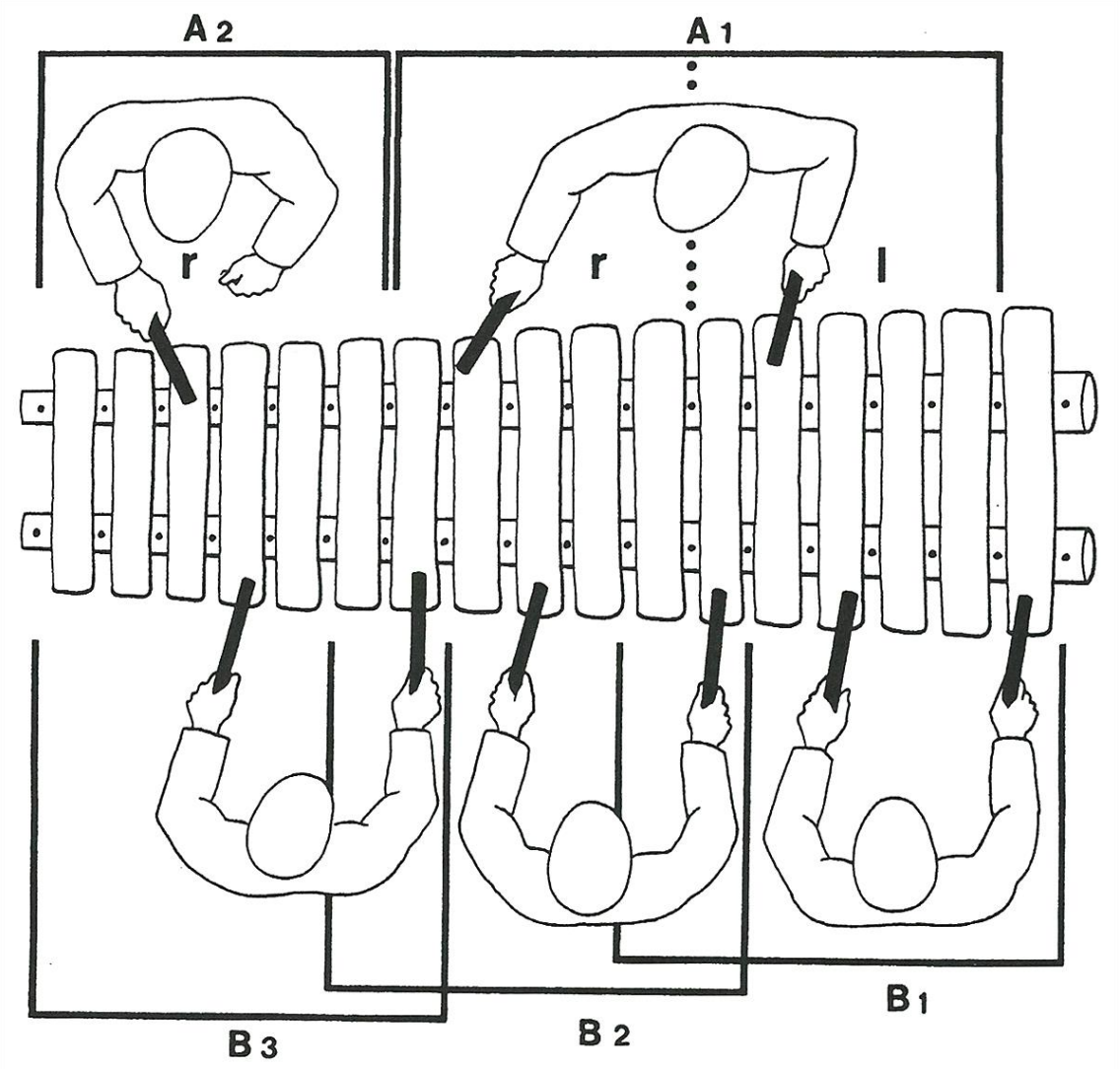
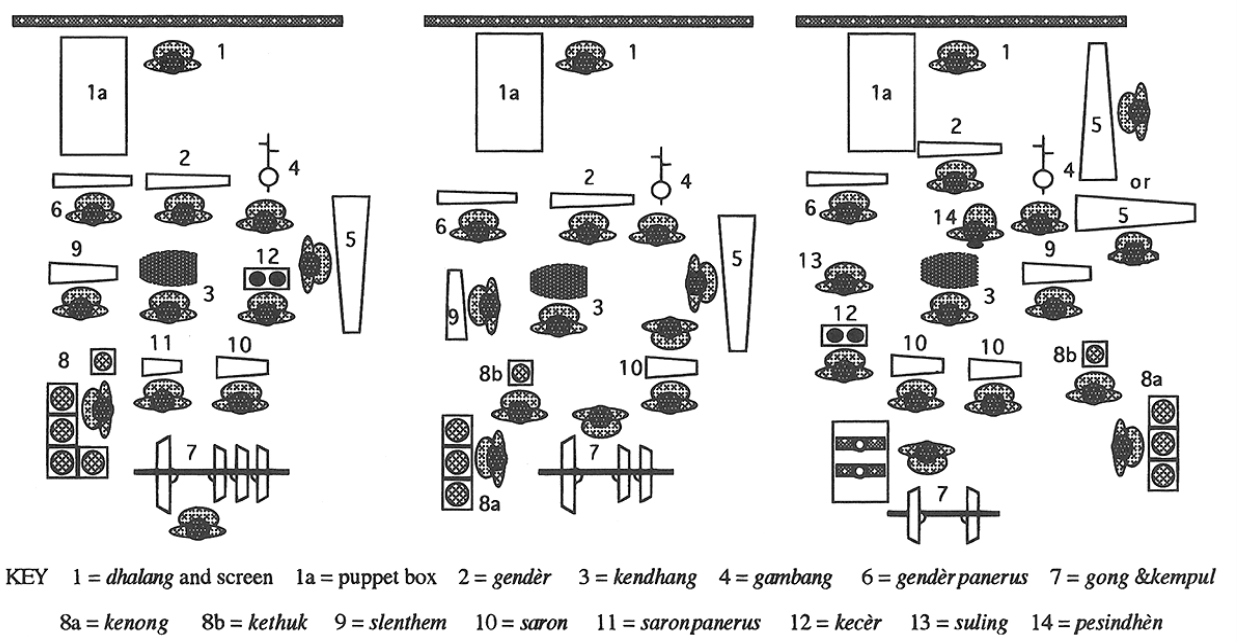



**Figure 17**.

Benjamin Brinner (1995) uses a drawing to show the possible disposition of the musical instruments in a Javanese gamelan ensemble (figure 18), as does Bernard Lortat-Jacob (1996) when he describes the position of the brotherhood members during the *Lunissanti* procession in the village of Castelsardo (Sardinia). The three choirs, each of which have to sing the *Miserere*, the *Stabat Mater* (called *Stabba*) and the *Jesu*, are positioned respectively at the head, in the middle and at the end of the procession (figure 19).




KEY 1 = *dhalang* and screen 1a = puppet box 2 = *gendèr* 3 = *kendhang* 4 = *gambang* 6 = *gendèr panerus* 7 = *gong &kempul*
8a = *kenong* 8b = *kethuk* 9 = *slenthem* 10 = *saron* 11 = *saronpanerus* 12 = *kecèr* 13 = *suling* 14 = *pesindhèn*

**Figure 18**.


CORO 3
JESU
LU-CRUCIFISSU
LANCIA E SPUGNA
MALTEDDU E TINAGLIA
SCALA
CROGI
CORO 2
STABBA
LA-PIEDDAI
CURONA DI SPINI
ACCIOTTI
CULUNNA
FUNI E CADDENI
GUANTA
CALIGIU
CORO 1
MISERERE
LU-CABBU-DI LU-MOLTU

**Figure 19**.

I use a picture with the names of the instruments to illustrate the mutual position of the three drums in an Afro-cuban *batá* consort (figure 20). In this musical culture the mutual position of the instruments has both a symbolic reason and a functional explanation. The bigger drum is always located at the centre of the consort; this is because in the religious tradition it is considered the most important drum (its name is *iyá*, which means "mother" in the Yoruba language) but also because it must be clearly heard by the other two musicians, since it is the rhythmical guide of the ensemble (see Lutzu 2013).


**Figure 20**.

Drawings similar to a plan have been often used to map the path of the musicians (and their music) in the places or in the ritual spaces during processions, parades and other events where the movement of the music is required, such as the *Mouse ceremony* among the Suyá described by Anthony Seeger (1987) (figure 21) or the Carnival parade in the village of Montemarano (south Italy) studied by Giovanni Giuriati (2010) (figure 22).

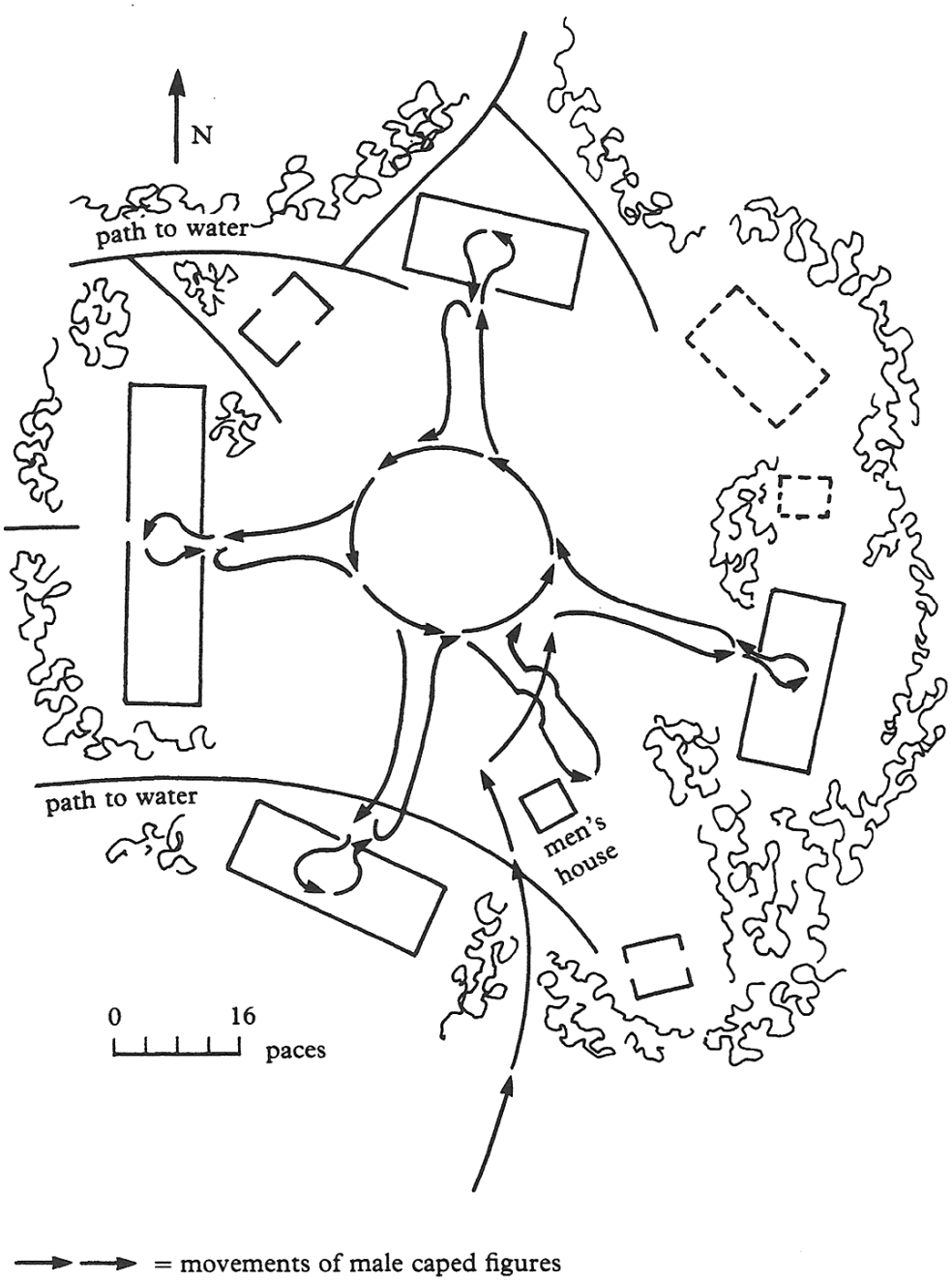

N
path to water
path to water
men's house
0
16
paces
= movements of male caped figures

**Figure 21**.

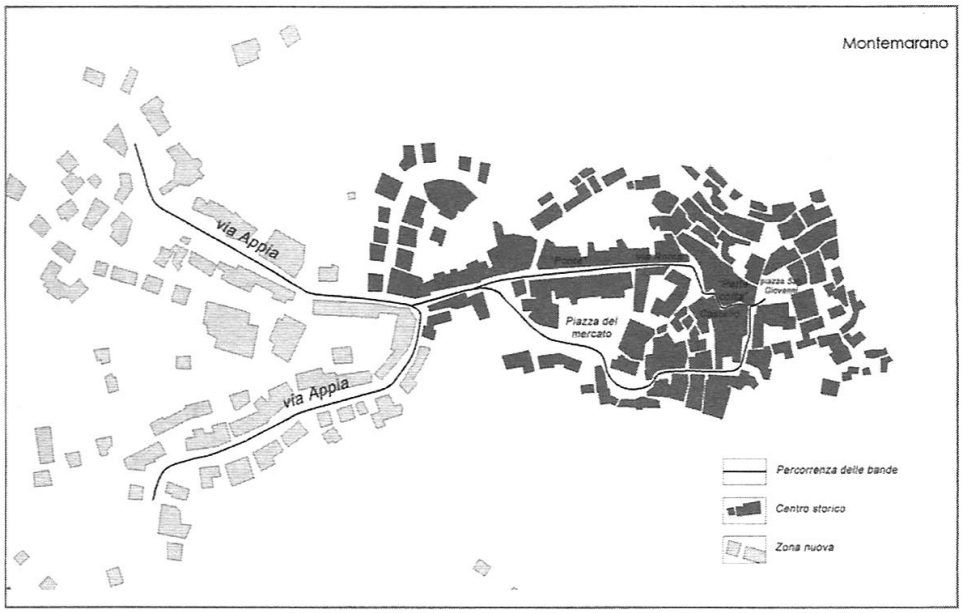



**Figure 22**.

**Performance as social/musical interaction**

Music is a social practice; it is usually performed at events or on occasions that involve at least two or more people. In the majority of cases, the musical outcome is directly influenced by the context (a public festival, a secret ritual, a concert hall, a stage, the street, etc.), as well as the interaction between the people attending the performance, each of whom has their own role. This was the direction followed by Regula Qureshi, in whose opinion "what analysing music in purely abstract structural terms does not provide, is an understanding of the dynamic that motivates the production of music, i. e. the meaning or significance of the sound system in terms of the social use and cultural context" (Qureshi 1987: 57). Starting from her research on *qawwalli* music, she elaborates a model for the analysis of the operating principles that govern the multi-layered relationship between sound and context in a musical performance (Qureshi 1987). In so doing, Qureshi developed the *Videograph*, a method of visualising and interpreting video-recorded performances that provides a graphic representation of audience behaviour as it occurs in response to the music. The graph shows the score transcription at the top, while the listeners are listed in the first column. The brief texts which describe the listeners' behaviour are placed in the temporal axis of the graph in sync with the music (figure 23).

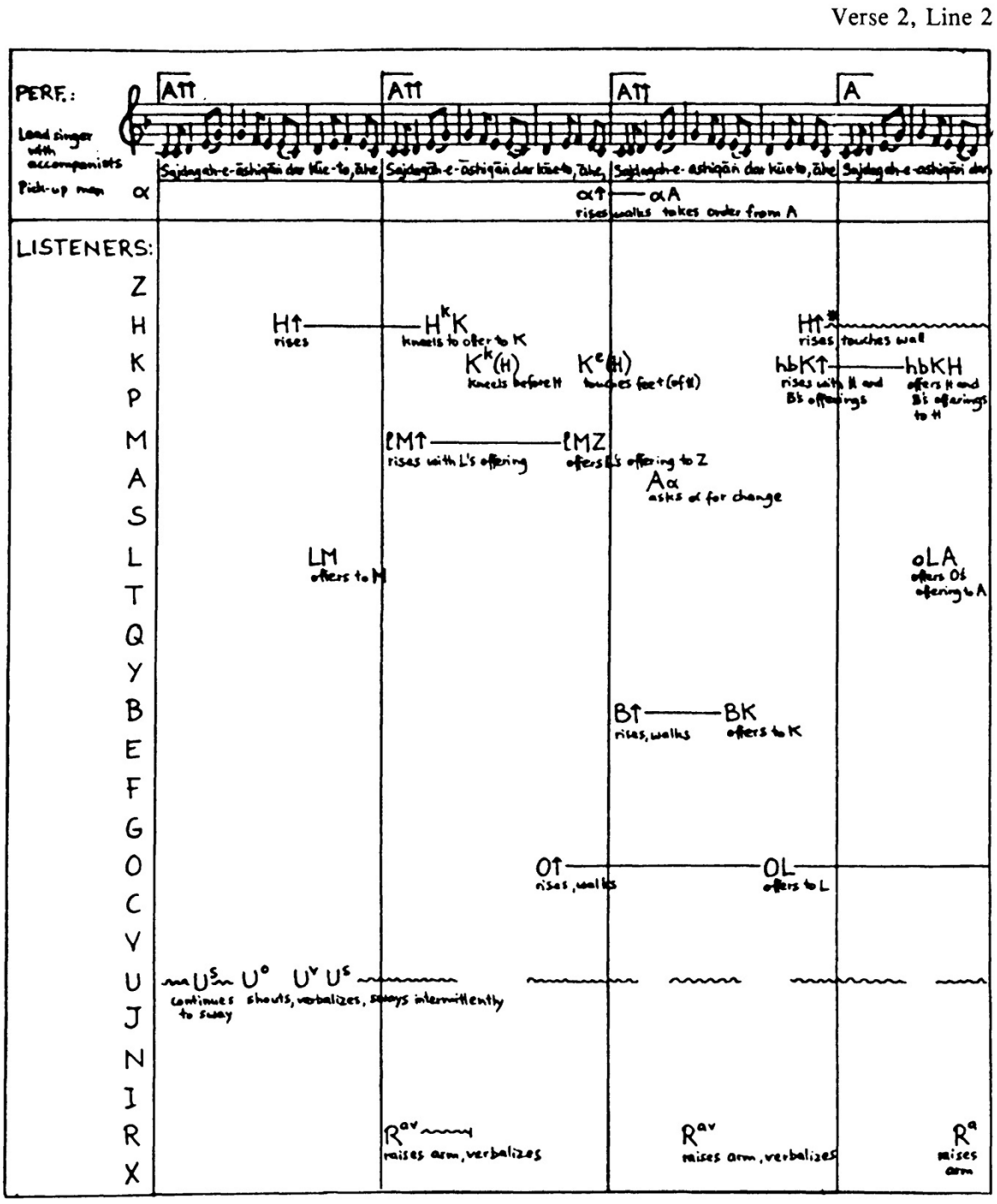



**Figure 23**.

According to this approach, many other ethnomusicologists have analysed performance not only as an event that produces sound, but as the result of the social and musical interaction between the people who are involved therein. Nikki Moran (2013) studied the role of visual contact in regulating and supporting the interplay in North Indian classical music. By analysing the videos recorded during her fieldwork, she recognises four main "looking behaviours", represented as a series of drawings in which the arrows indicate the gaze direction of the two musicians (figure 24).

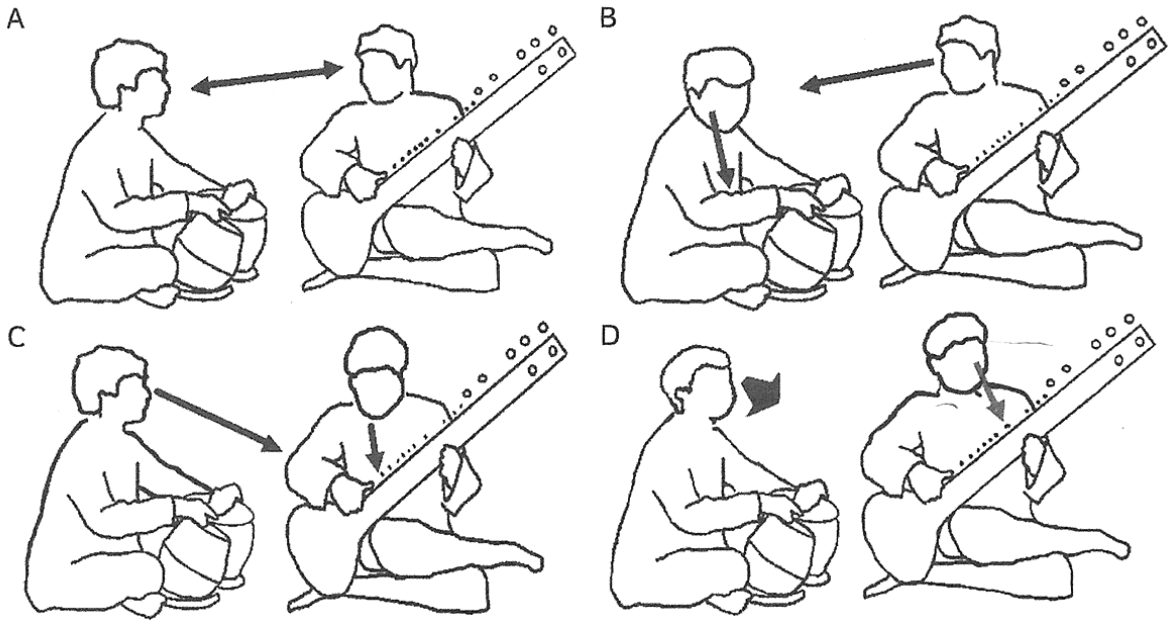



**Figure 24**.

I proposed a graphic that integrates drawings and pictures (figure 25) to describe the social and musical interaction during the various ritual phases that characterize a *cajon* ceremony in the contemporary Afro-Cuban spiritist culture[8]. People attending the ceremony are represented with coloured figures in the drawing, one for each ritual role (the blue rectangle for the musicians, the yellow one for the singer, etc.). The red arrows reveal the direction of the social interaction, conveyed via spoken word, dance, singing or instrumental music.

[8] The results of this research are still unpublished; I presented them as a paper at the 19th Congress of the International Musicological Society: *Musics, Cultures, Identities* (Rome, 1-7 July 2012), and at the XXXth European Seminar In Ethnomusicology: *Crossing Bridges* (Prague, 3-7 September 2014).

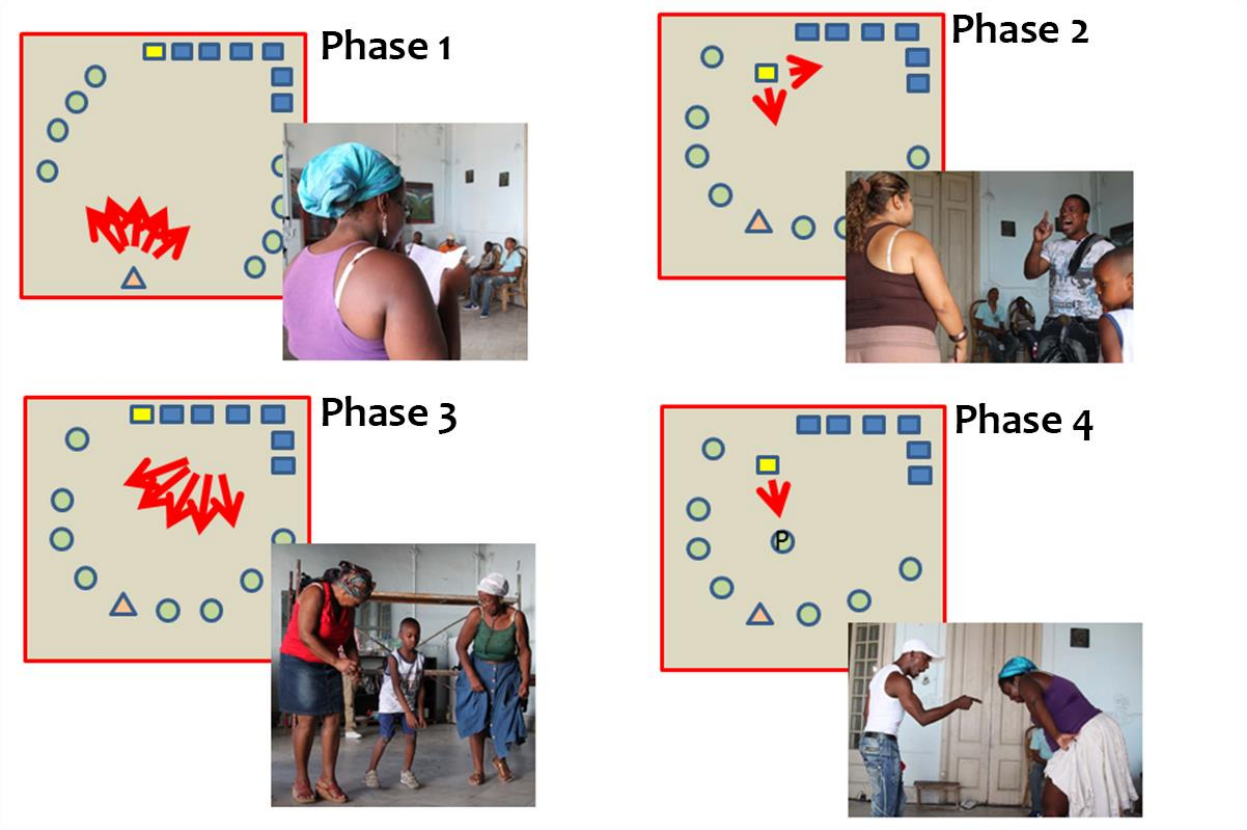



**Figure 25**.

## Conclusions

Taking part in a musical performance, both as musicians or as the audience, is not just a matter of hearing, but an experience that involves all the senses. Ethnomusicologists have devoted particular attention to performance, seen as the action of bodies that interact and communicate with each other through organised sounds. In so doing, most scholars avail themselves of visual and/or graphical representations of the music and/or the musicians, both during the analysis process and/or as a way of presenting the results of their analysis, a task for which the score has proved to be an insufficient tool.

If one leafs through the various ethnomusicological publications, plenty of different solutions for visualizing the musical performance can be found. This is due to the large variety of musics around the world, but also because the ethnomusicologists have approached performance from different perspectives. As I have tried to demonstrate in this article, the analysis of the various graphic solutions adopted to represent the musical performance is a profitable way of better understanding the scholars' different points of view. I argue that three main tendencies can be identified: performance has been investigated to describe the structure of orally transmitted music, to analyse the involvement of the body in music making, and to study the relationship between music and context.

Within these main tendencies, new questions and topics have emerged over time. In what

can simply be considered the normal evolution of a scientific discipline, the role played by the new technologies should be taken into consideration. In the last few decades, the ever-increasing availability of specific devices and/or software offers previously unthinkable tools for visualizing music, thereby promoting the development of new scientific questions, fields of research, analytical approaches and methodologies for the study of the musical performance.

The observation of the great variety of graphic solutions proposed by ethnomusicologist offers other food for thought: although there are some widely accepted analytical models, most scholars have elaborated their own way of visualizing the musical performance, in accordance with their analytical aims, the technology they are using, and the nature of the music they are dealing with. The manner in which the musical performance is represented in ethnomusicological studies is the result of an "artisanal process" that strongly involves the visual dimension. Plots, diagrams, grids, drawings, photos, waveforms, spectrograms and other graphic solutions have been adopted: a variety that is the mirror of the means by which ethnomusicologists have approached music making and its performative nature.

**Bibliography**

Adamo, Giorgio. 2010. *Vedere la musica: Film e video nello studio dei comportamenti musicali*. Lucca: Libreria Musicale Italiana.

Arom, Simha. 1973. "Une méthode pour la transcription de polyphonies et polyrythmies de tradition orale". *Revue de Musicologie* 59 (2): 165-190.

_____. 1993. "Une parenté inattendue: polyphonies médiévales/polyphonies africaines". In: Meyer, Christian (ed.), *Polyphonies de tradition orale. Histoire et traditions vivantes*, pp. 133-48. Paris: Créaphis.

Asch, Michael I.. 1975. "Social Context and the Musical Analysis of Slavey Drum Dance Songs". *Ethnomusicology* 19 (2): 245-257.

Auslander, Philip. 2004. "Performance Analysis and Popular Music: A Manifesto". *Contemporary Theatre Review* 14 (1): 1-13.

Baily, John. 1985. "Music Structure and Human Movement". In: Howell, Peter, Ian Cross, and Robert West (eds.). *Musical Structure and Cognition*, pp. 237-258. London: Academic Press.

_____. 1989. "Filmmaking as Musical Ethnography". *The World of Music* XXI (3): 3-20.

Bartók, Béla. 1951. "Introduction to Part One". In: Bartók, Béla and Albert B. Lord, *Serbo-Croatian Folk Songs*, pp. 3-20. New York: Columbia University Press.

Bentzon, Andreas F. W.. 1969. *The Launeddas. A Sardinian Folk Music Instrument* (2 voll. Acta Musicologica Danica n°1). Copenaghen: Akademisk Forlag.

Blacking, John. 1971. "Deep and Surface Structures in Venda Music". *Yearbook of the International Folk Music Council* 3: 91-108.

Blacking, John and Joann W Kealiinohomoku. 1979. *The Performing Arts, Music and Dance*. The Hague: Mouton Publischers.

Bravi, Paolo. 2010. "Osservazioni preliminari sugli assetti intervallari nel canto a mutetus della

Sardegna meridionale". In: Schmid, Stephan, Michael Schwarzenbach, and Dieter Studer-Joho (eds.), *La dimensione temporale del parlato*. Atti del 5° Convegno Nazionale AISV - Associazione Italiana Scienze della Voce, Abstract Book & CD-Rom Proceedings, pp. 375-390. Torriana: EDK.

Brinner, Benjamin. 1995. *Knowing Music, Making Music: Javanese Gamelan and the Theory of Music Competence and Interaction*. Chicago: University of Chicago Press.

Boersma, Paul. 2001. "Praat, a System for Doing Phonetics by Computer". *Glot International* 5 (9/10): 341-345.

Cámara de Landa, Enrique. 2014. *Etnomusicologia*. Reggio Calabria: Città del Sole.

Carlson, Marvin. 1996. *Performance: A Critical Introduction*. London and New York: Routledge.

Clayton, Martin, Byron Dueck, and Laura Leante (eds.). 2013. *Experience and Meaning in Musical Performance*. Oxford: Oxford University Press.

Clayton, Martin, Rebecca Sager, and Udo Will. 2004. "In Time with the Music: The Concept of Entrainment and Its Significance for Ethnomusicology". *ESEM Counterpoint* 1: 1-82.

Cook, Nicholas. 2013. *Beyond the Score: Music as Performance*. New York: Oxford University Press.

Delalande, François. 1988. "La gestique de Gould: élements pour une sémiotique du geste musical". In: Guertin, Ghyslaine (ed.), *Glenn Gould Pluriel*, pp. 85-111. Québec City: Lousie Courteau.

During, Jean. 1988. *Musique et Extase. L'Audition Mystique dans la Tradition Soufie*. Paris: Albin Michel.

England, Nicholas M.. 1964. "Introduction". *Ethnomusicology* 8 (23): 223-233.

Feld, Steven. 1976. "Ethnomusicology and Visual Communication". *Ethnomusicology* 20 (2): 293-325.

_____. 1984. "Sound Structure as Social Structure". *Ethnomusicology* 28 (3): 383-409.

Frith, Simon. 1996. *Performing Rites: On the Value of Popular Music*. Cambridge: Harvard University Press.

Garfias, Robert. 1964. "Transcription I". *Ethnomusicology* 8 (23): 233-241.

Giannattasio, Francesco and Bernard Lortat-Jacob. 1982. "Modalità di improvvisazione nella musica sarda: due modelli". *Culture musicali* 1: 3-35.

Giuriati, Giovanni. 1991. "Scala". In: Agamennone, Maurizio, Serena Facci, Francesco Giannattasio, Giovanni. *Grammatica della Musica Etnica*, pp. 83-111. Roma: Bulzoni Editore.

_____. 2010. "Percorrere la musica. Percorsi sonori processionali di musicisti e ascoltatori in uno spazio musicale". In: Giuriati, Giovanni and Laura Tedeschini Lalli (eds.), *Spazi sonori della Musica*, pp. 173- 208. Palermo: L'Epos.

Godøy, Rolf Ingre and Marc Leman. 2010. *Musical Gestures: Sound, Movement, and Meaning*. New York and London: Routledge.

Grupe, Gerg. 2005. "Notating African Music: Issues and Concepts". *The World of Music* 47 (2): 87-103.

Herndon, Marcia and Roger Brunyate (eds.). 1975. *Proceedings of a Symposium on Form in Performance, Hard-core Ethnography*. Austin: Office of the College of Fine Arts, University of Texas.

Herndon, Marcia and Norma McLeod. 1979. *Music as Culture*. Norwood: Norwood Editions.

Jairazbhoy, Nazir A. and Hal Balyoz. 1977. "Electronic Aids to Aural Transcription". *Ethnomusicology* 21 (2): 275-282.

Jankowsky, Richard C.. 2013. "Rhythmic Elasticity and Metric Transformation in Tunisian Stambēlī". *Analitycal Approaches to World Music* 3(1): 34-61.

Kisliuk, Michelle. 1998. *Seize the Dance! BaAka Musical Life and the Ethnography of Performance*. Oxford: Oxford University Press.

Kolinski, Mieczyslaw. 1964. "Transcription II". *Ethnomusicology* 8 (23): 241-252.

Kubik, Gerard. 2010. *Theory of African Music*, Vol. 1. Chicago: University of Chicago Press.

Leman, Marc. 2007. *Embodied Music Cognition and Mediation Technology*. Cambridge: MIT Press.

List, George. 1964. "Transcription III". *Ethnomusicology* 8 (23): 252-265.

_____. 1974. "The Reliability of Transcription". *Ethnomusicology* 18 (3): 353-377.

Lortat-Jacob, Bernard. 1996. *Canti di Passione*. Lucca: Libreria Musicale Italiana.

Lutzu, Marco. 2013. "El conocimiento de los tambores: saperi e pratiche musicali tra i suonatori di batá cubani". PhD Thesis in Storia e Analisi della Culture Musicali, Università 'La Sapienza' di Roma.

Marian-Bălaşa, Marin. 2005. "Who Actually Need Transcription? Notes on the Modern Rise of a Method and the Postmodern Fall of an Ideology". *The World of Music* 47 (2): 5-29.

McLeod, Norma and Marcia Herndon (eds.). 1980. *The Ethnography of Musical Performance*. Norwood: Norwood Editions.

Moran, Nikki. 2013. "Social Co-Regulation and Communication in North Indian Duo Performance". In: Clayton, Martin, Byron Dueck, and Laura Leante (eds.). *Experience and Meaning in Music Performance*, pp. 40-61. Oxford: Oxford University Press.

Ojamaa, Triinu. 2005. "Throat Rasping: Problems of Visualization". *The World of Music* 47 (2): 55-69.

Pearson, Lara. "Gesture and the Sonic Event in Karnatak Music". *Empirical Musicology Review* 8 (1). http://emusicology.org/article/view/3918. [Accessed: 12th September 2015].

Qureshi, Regula Burckhardt. 1987. "Musical Sound and Contextual Input: A Performance Model for Musical Analysis". *Ethnomusicology* 31 (1): 56-86.

Rink, John (ed.). 2002. *Musical Performance: A Guide to Understanding*. Cambridge: Cambridge University Press.

Rhodes, Willard. 1964. "Transcription IV". *Ethnomusicology* 8 (23): 265-272.

Rycroft, David. 1967. "Nguni Vocal Polyphony". *Journal of the International Folk Music Council* 19: 88-103.

Schneider, Albrecht. 2001. "Sound, Pitch, and Scale: From "Tone Measurements" to Sonological Analysis in Ethnomusicology". *Ethnomusicology* 45 (3): 489-519.

Seeger, Anthony. 1980. "Sing for your sister: The Structure and Performance of *Suyá* Akia". In:

McLeod, Norma and Marcia Herndon (eds.), *The Ethnography of Musical Performance*, pp. 7-42. Norwood: Norwood Editions.

_____. 1987. *Why Suyá sing: A Musical Anthropology of an Amazonian People*. Cambridge: Cambridge University Press.

Seeger, Charles. 1958. "Prescriptive and Descriptive Music-Writing". *The Musical Quarterly* 44 (2): 184-195.

_____. 1964. "Report of the Chairman-Moderator". *Ethnomusicology* 8 (3): 272-277.

Stone, Ruth M.. 1982. *Let Inside be Sweet: The Interpretation of Music Event Among the Kpelle of Liberia*. Bloomington: Indiana University Press.

Titon, Jeff Todd. 1988. *Powerhouse for God: Speech, Chant, and Song in an Appalachian Baptist Church*. Austin: University of Texas Press.

Van der Meer, Wim. 2005. "Vision of Hindustani Music". *The World of Music* 47 (2): 105-118.

Wanderley, Marcelo M. and Philippe Depalle. 2004. "Gestural Control of Sound Synthesis". *Proceedings Of The Ieee* 92 (4): 632-644.

Zemp, Hugo. 1981. "Le jeu d'une flûte de Pan polyphonique". In: Rouget, Gilbert (ed.), *Ethnomusicologie et représentations de la musique*, Le Courrier du CNRS n°42, p. 8. Paris: Centre National de la Recherche Scientifique.

_____. 1990. "Visualizing Music Structure Through Animation: The Making of the Film Head Voice, Chest Voice". *Visual Anthropology* 3 (1): 65-79.

Zagorski-Thomas, Simon. 2014. *The Musicology of Record Production*. Cambridge: Cambridge University Press.

**Biography / Biografía / Biografia**

Marco Lutzu, ethnomusicologist, gained his PhD in *Storia e Analisi delle Culture Musicali* (History and Analysis of Musical Cultures) at the University of Rome "La Sapienza". In 2014 he has been postdoc researcher at the University of Venice "Ca' Foscari". He is Teaching Assistant at the Universities of Cagliari and Venice "Ca' Foscari", and Adjunct Professor at the Conservatory of Cagliari "G. P. da Palestrina" and at the University of Florence. He is currently serving as a member of the Scientific Committee for the Italian Study Group on Music Theory and Analysis (GATM). He is Coordinating Editor of the online journal *Analitica: Rivista Online di Studi Musicali* (http://www.gatm.it/analiticaojs). He carried out fieldwork in Sardinia and Cuba. His main research interests are in vocal and instrumental Sardinian traditional music, Afro-Cuban religious music, music and religion, performance analysis, rhythm, and rap music. He presented papers at the meetings of the most important world ethnomusicological societies (ICTM, ESEM). His publications includes books, articles, CDs, and ethnographic documentaries; in 2012 edited the *Enciclopedia della Musica Sarda* (L'Unione Sarda), a multimedia encyclopedia in 16 volumes.

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