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"Analysis beyond Notation in XXth and XXIst century music"

Alessandro Bratus and Marco Lutz (Guest editors)

## Beyond the Staff: “Alternative” Systems in the Graphical Representation of Organized Sound

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### Abstract

In this article, a reflection on the limits of the staff in the representation of organized sound is briefly presented, followed by the consideration of the proposals that some ethnomusicologists have developed to highlight particular aspects of music. Some antecedents are provided, such as the synoptic transcription (Constantin Brăiloiu) and the paradigmatic transcription (Nicolas Ruwet). Other proposals will be discussed, like the graphical representation of musical structure (Bernard Lortat-Jacob, Hugo Zemp) or the use of spectrograms (Charles Seeger, Mireille Hellfer, Lortat-Jacob, Grazia Tuzi), graphic devices (Charles Adams), musemes (Philip Tagg), sonograms (Enrique Cámara), frame by frame musical transcription (Gerhard Kubik), and local systems of notation. According to these proposals, the graphical representation of music beyond the staff maintains its efficiency in current ethnomusicology (with different objectives and even different targets). Moreover, I will argue that it is necessary to take into consideration the place occupied by the use of these tools in the tensions and interactions between etic and emic perspectives, and the need to reconcile the internal consistency required for any system of visual representation of sound, with the need to make permanently flexible proposals based on intercultural dialogue.

**Keywords:** Descriptive notation, graphs, spectrogramms, etic-emic perspectives



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## Más allá del pentagrama: sistemas “alternativos” en la representación gráfica del sonido organizado

### Resumen

En este artículo se presenta una breve reflexión sobre las limitaciones del pentagrama en la representación del sonido organizado, seguida por la consideración de las propuestas desarrolladas por algunos etnomusicólogos para evidenciar aspectos particulares de la música. Se mencionan antecedentes como la transcripción sinóptica (Constantin Brăilou) y la transcripción paradigmática (Nicolas Ruwet). Otras propuestas comentadas aquí son la representación gráfica de la estructura musical (Bernard Lortat-Jacob, Hugo Zemp), el uso de espectrogramas (Charles Seeger, Mireille Hellfer, Lortat-Jacob, Grazia Tuzi), recursos gráficos (Charles Adams), musemas (Philip Tagg), sonogramas (Enrique Cámara), notación a partir de películas silentes (Gerhard Kubik) y los sistemas locales de representación de la música. De acuerdo con estas y otras propuestas, la representación gráfica de la música que persigue la superación de las limitaciones del pentagrama sigue vigente en la actual etnomusicología (con distintos objetivos y finalidades). De este modo se espera demostrar la pertinencia de considerar el lugar ocupado por estas herramientas en las tensiones e interacciones entre las perspectivas *etic* y *emic*, así como la necesidad de reconciliar la coherencia interna requerida por todo sistema de representación visual del sonido con la conveniencia de elaborar permanentemente propuestas flexibles basadas en el diálogo intercultural.

**Palabras clave:** notación descriptiva, gráficos, espectrogramas, perspectivas *etic-emic*

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## Para além da pauta: sistemas “alternativos” na representação gráfica do som organizado

### Resumo

Este artigo apresenta uma breve reflexão sobre as limitações da pauta na representação do som organizado, com base nas propostas que alguns etnomusicólogos têm desenvolvido para realçar aspectos particulares da música. Para além dos antecedentes considerados –tais como a transcrição sinóptica (Constantin Brăiloiu) e a transcrição paradigmática (Nicolas Ruwet)–, são também analisadas outras propostas como a representação gráfica da estrutura musical (Bernard Lortat-Jacob, Hugo Zemp), o uso de espectrogramas (Charles Seeger, Mireille Hellfer, Lortat-Jacob, Grazia Tuzi), de dispositivos gráficos (Charles Adams), de musemas (Philip Tagg), de sonogramas (Enrique Cámara), da notação de filmes mudos (Gerhard Kubik), e de sistemas locais de notação. De acordo com estas propostas, a procura de superação das limitações da partitura nos processos de representação gráfica da música, mantém a sua eficácia na Etnomusicologia atual (com diferentes objetivos e finalidades). Procura-se, desta forma,

demonstrar a pertinência de considerar o lugar ocupado pela utilização destas ferramentas nas tensões e interações entre as perspectivas *émica* e *ética*, e a necessidade de conciliar a consistência interna, necessária para qualquer sistema de representação visual do som, com a necessidade de apresentar propostas permanentemente flexíveis baseadas no diálogo intercultural.

**Palavras-chave:** notação descritiva, gráficos, espectrogramas, perspectivas *ética* e *émica*

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### **Persistent presence of the staff**

The following reflections on the limits of the staff in the representation of organized sound and the proposals that some ethnomusicologists have developed to highlight particular aspects of music through its visual representation, have been presented in the session “Analysis beyond Notation in XX<sup>th</sup> and XXI<sup>st</sup> Century Music” (EuroMac VIII - European Music Analysis Conference, Leuven 17-21 September 2014).

In the early 1970s Diego Carpitella (1972) referred to the limits of “Euro-cult musical semiography” in dealing with realities outside the scope of Western classical music and its derivatives. The awareness of these limitations, identified by many ethnomusicologists in different countries, convinced some of them not to use the staff in their musical analysis. However, this traditional system of notation is still present in the literature of the discipline in a very high degree (as anyone may check by taking a look at the recently published volumes of journals such as *Ethnomusicology*, *Yearbook for Traditional Music*, and *The World of Music*).

Usually, in the analysis of traditional and popular music, two different types of use of the pentagram are observed. The first is the traditional notation, with or without the addition of diacritics. The second organizes the materials on the staff in an unconventional way to achieve certain objectives. This second type of use recognizes well known historical antecedents, of which I quote here only a few. More than half a century ago, Constantin Brăiloiu (1973) proposed the synoptic transcription, consisting in the disposition of the homologous elements of a musical piece on a column to highlight what he called *Variationstrieb* (instinctive mechanisms of variation). Thus, the process of creation of musical form is shown, allowing the ethnomusicologist to penetrate in the mind of the musicians to unveil their organized sound production mechanisms (figures 1, 2, and 3).

The image shows a musical score for a religious text in Romanian. It consists of a vocal line and a multi-staff accompaniment. The tempo is marked as  $J=118$ . The lyrics are in Romanian and are written below the notes. The score is arranged in two columns, with the vocal line on the left and the accompaniment on the right. The accompaniment consists of multiple staves, likely representing different instruments or voices. The lyrics are:   
 n Tu - kă - tē ma - ma, Mă - ri, -  
 Tu - kă - tē ma - ma pe - ti - nē. n Pe - dē tē - tē la - tu - ri - le, -  
 n Kă al - tu nu și - măi bi - nē.  
 n Tu - kă - tē ma - ma, mi - rî - să.  
 I - a - ră - tă - i ma - mi mi - re - i - le, n Kă pî - te - i - a și - măi bi - nē -  
 n Tu - kă - vă ma - ma - pe - tri, -  
 n Rî - m - az pu - tu' ce - lu - i.  
 kă Tu, Nu - țu - kă, dă - a - i vu - a - i,  
 Ma - mi nu i - o - vî trî - bu - i  
 Al - tu gî - du - ță, Nu - țu - kă,  
 I Pă - nă - i lu - mî, Nu - ță, da. n Da - a - șă m - an su - pă - ra - tu,  
 Sîn - gu - ru - ță m - an a - flă - tu.  
 Tu - kă - tē ma - ma, Nu - țu - kă, Tu Nu - țu - kă și Mă - ri,  
 I Rî - m - az pu - tu' ce - lu - i.  
 Nu m - az ce - lu - i' dur - nin - tu,  
 Ce - la - vî stînd și - ko - tin - du. n Tu - kă - vă ma - ma pe - tri.  
 n Rî - m - az pu - tu' ce - lu - i.  
 n Tu - kă - tē ma - ma, Mă - ri,  
 Sî - z - dru - mu - țu a - u - rit,  
 n Su - rî - ță - lu ho - dî - nit. n Tu - kă - vă ma - ma, al - gî.

Figure 1.

Bocet

Figure 2.

I ca. 120

Bocet

I. 50

Figure 3.

It is also known that synoptic transcription, coupled with other factors that we needn't mention here, was at the base of the paradigmatic transcription proposed by Nicolas Ruwet in his "*Méthodes d'analyse en musicologie*", published in 1966 and reissued in 1972 (figure 4). Ruwet's method takes into account the non-parametric elements and singles out repetition (which plays a fundamental role in music) as a criterion for segmentation. This allows for an analytical description of the formal components of a piece at its several levels of articulation (figure 5).

Figure 4.

Figure 5.

Numerous scholars applied these proposals in order to induce and represent the procedures of formal construction in the music of oral tradition for which they considered there was a lack of explicit theories. From the seventies on, many studies have been conducted along these lines, some of which were subjected to verification from natives in order to make explicit the underlying “ethnotheories”. In a different key, Carlos Vega (1941) had earlier published the two volumes of his *Fraseología*, the work in which he presented an original method for the arrangement of notated music, whose main merit lay in reflecting the music’s internal formal articulation (figure 6). Vega used the term “phrase” to designate every musical segment consisting of a boost and a support –a very close concept to that of dynamic unity proposed two decades later by Cooper and Meyer (1960)– and presented many examples from both Western classical and orally-transmitted traditional music. While many Latin American scholars have applied this system in their transcripts, the main limitation of this concept of phrase is that it does not take account of the *emic* perspective<sup>1</sup>.

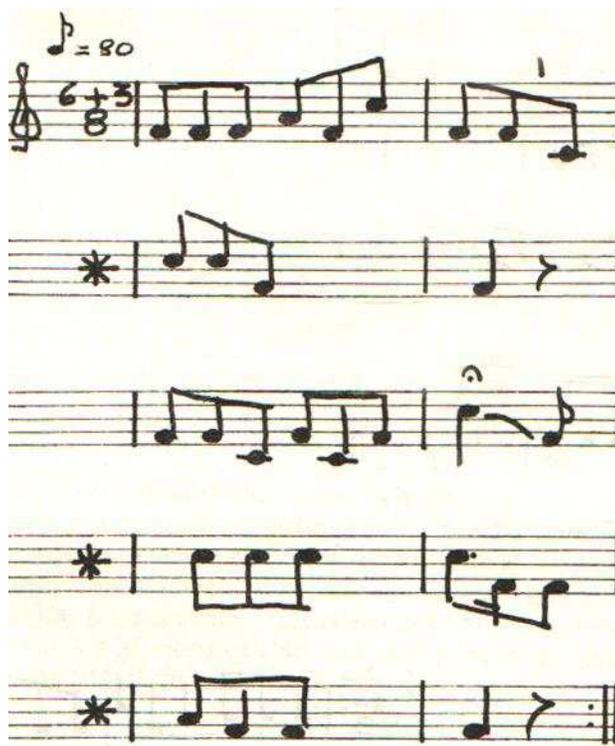
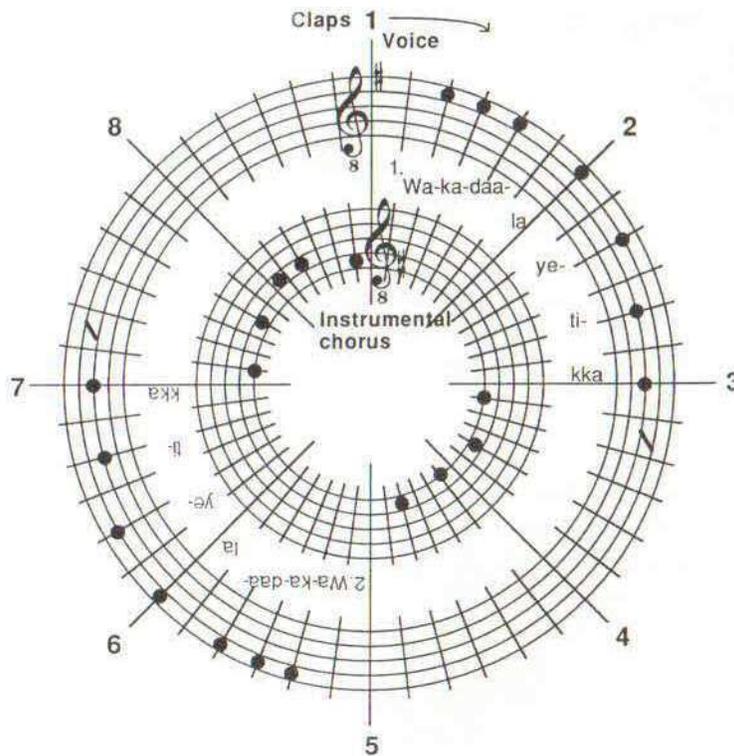


Figure 6.

### Graphic resources

Other authors combined the traditional notation system with graphic resources, or even changed the usual horizontal arrangement of the staff to show features of the structure such as cyclical recurrence. David Rycroft did it in 1967 with the Ngumi polyphony, and Catherine Gray took the same approach in 1993 with the endongo lyre of Uganda (figure 7).

<sup>1</sup> For a critical consideration of this proposal, see Cámara de Landa 2014.



**Figure 7.**

In the early eighties, a team of ethnomusicologists linked to the Musée de l'Homme published, under the coordination of Gilbert Rouget (1981a), a series of musical transcriptions in which they evidenced the structural articulation of sound pieces, both those with a closed form and the improvised ones (another outcome of the proposals made by Brăiloiu and Ruwet). In this booklet, some authors merely used the paradigmatic disposition of the transcription and added signs to the traditional notation: Pierre Sallée (1981) indicated the change in the vocal register of two Gabonese Pygmy women through the use of normal and double stems (figure 8); Gilbert Rouget (1981b) distinguished between solo and group singing among girls from Bénin (the transcription was made by Trân Quan Hâi) (figure 9). Other authors combined staff with graphics: Bernard Lortat-Jacob (1981) presented his transcription of a Sardinian dance in which, besides using a paradigmatic arrangement (which only served to show the formal articulation of phrases that were six ternary pulses long), proposed a spiral graph to demonstrate the application of two principles to the construction of musical form: non-repetition and thematic continuity (figure 10). Hugo Zemp (1981) analyzed a polyphonic musical piece played on a Panflute by an 'aré'aré soloist through three types of transcription: in the center, a classical staff notation (lower dots indicate pulsation blow); below, a graph with the intervals and their duration; above, a schema indicating execution technique<sup>2</sup>. Here we see the emergence of a new element: a kind of

<sup>2</sup> For both Lortat-Jacob's and Zemp's proposals, see the text by Marco Luzzi in this volume.

tablature showing the adjacent tubes are blown each time (figure 11). This broad concept of tablature also appears in other transcription proposals, such as that developed by Gerhard Kubik (1965 and 1972) in his method called “frame by frame musical transcription”. Kubik filmed the execution of musical instruments (drums and xylophones, for example) and then played back the images without sound and decoded the information presented in each of the frames by representing it on graph paper and indicating the contact of the sticks with the vibrating body (white circle to the right and black circle to the left). Among the analytical conclusions drawn by Kubik from the use of this method of transcription features the frequent coincidence of movements *in levare* –that is, while raising the sticks– with the stressed portion of the pulses rendered by the performers of the Sub-Saharan African xylophone, which corresponds to a conception of rhythm that provides an almost permanent contrametricity. In Kubik’s method the staff has completely disappeared, and the horizontal lines indicate the xylophone’s bars. The time notation is also modified, since the vertical lines do not indicate the bars, but the frames of the film (figure 12). We might also recall another kind of transformation of the principle whereby durations are represented: the “temporalized or chronometrical transcription”, in which the vertical lines correspond to seconds (Macchiarella 1987, figure 13).



Figure 8.



Figure 9.

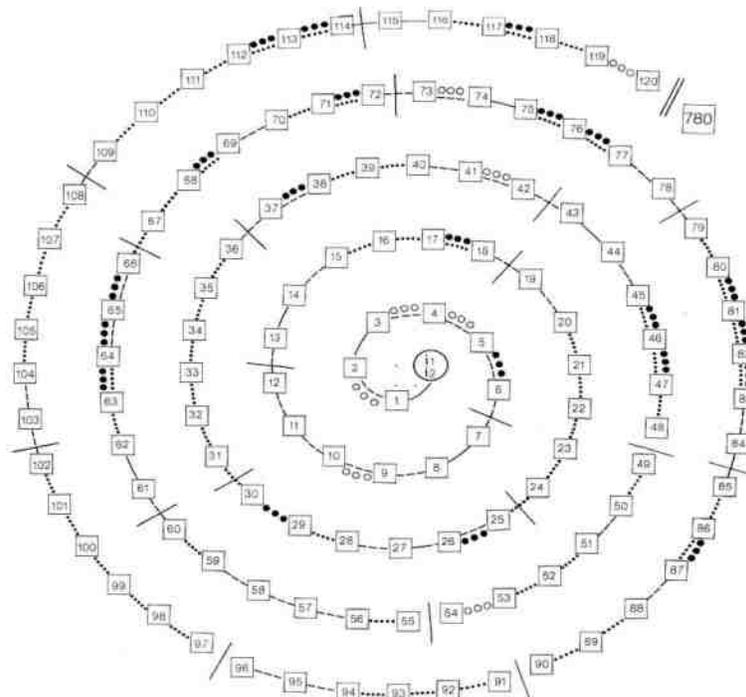


Figure 10.

Figure 11 consists of three musical systems, labeled 'a', 'b', and 'z', each presented within a dashed rectangular frame. Each system includes a staff with notes, a staff with red vertical lines, and a staff with solfège syllables (la, fa, mi, ré, do).  
System 'a' shows a sequence of notes on a staff, with red vertical lines above. Below the staff are five lines with solfège syllables: la, fa, mi, ré, do. The notes and red lines are arranged in a specific pattern across five measures.  
System 'b' shows a similar sequence of notes on a staff, with red vertical lines above. Below the staff are five lines with solfège syllables: la, fa, mi, ré, do. The notes and red lines are arranged in a different pattern across five measures.  
System 'z' shows a sequence of notes on a staff, with red vertical lines above. Below the staff are five lines with solfège syllables: la, fa, mi, ré, do. The notes and red lines are arranged in a different pattern across five measures.  
A tempo marking '♩ = 96' is located at the bottom left of the figure.

Figure 11.

Figure 12 is a musical score for two instruments, WAKULELA (II) and OPACHERA (I). The score is divided into two systems of six measures each. The first system covers measures 0 to 60, and the second system covers measures 60 to 130. The notation uses a five-line staff with various note heads and stems. A bracket at the bottom right of the second system is labeled "Ineractitud de toque".

Figure 12.

Figure 13 is a musical score for voice and piano. The score is divided into two systems of six measures each. The first system covers measures 0 to 10, and the second system covers measures 10 to 20. The notation includes a vocal line with lyrics and a piano accompaniment. The lyrics are: "VA... en SI I LLA RE GI SI PRO" and "TO LE".

Figure 13.

Scholars studying improvised music in different parts of the world have also shown the extemporaneous procedures of form-building through a combination of the paradigmatic organization of staves with graphics and the addition of one more tool: literary metaphors. Giovanni Giuriati (1985) used the term “kaleidoscopic procedure” for the *Tarantella de Montemarano* (a free combination of pre-existing phrases, figure 14) and resorted to the image of the meccano game in the *Ballo di Villanova Monteleone* (the use of modules that support different possibilities of “insertion”, figure 15), while he employed the metaphor of the telescopic dining table to describe the *Saltarello di Amatrice* (a change in length of musical phrases by repetition or deletion of their central portion, figure 16).

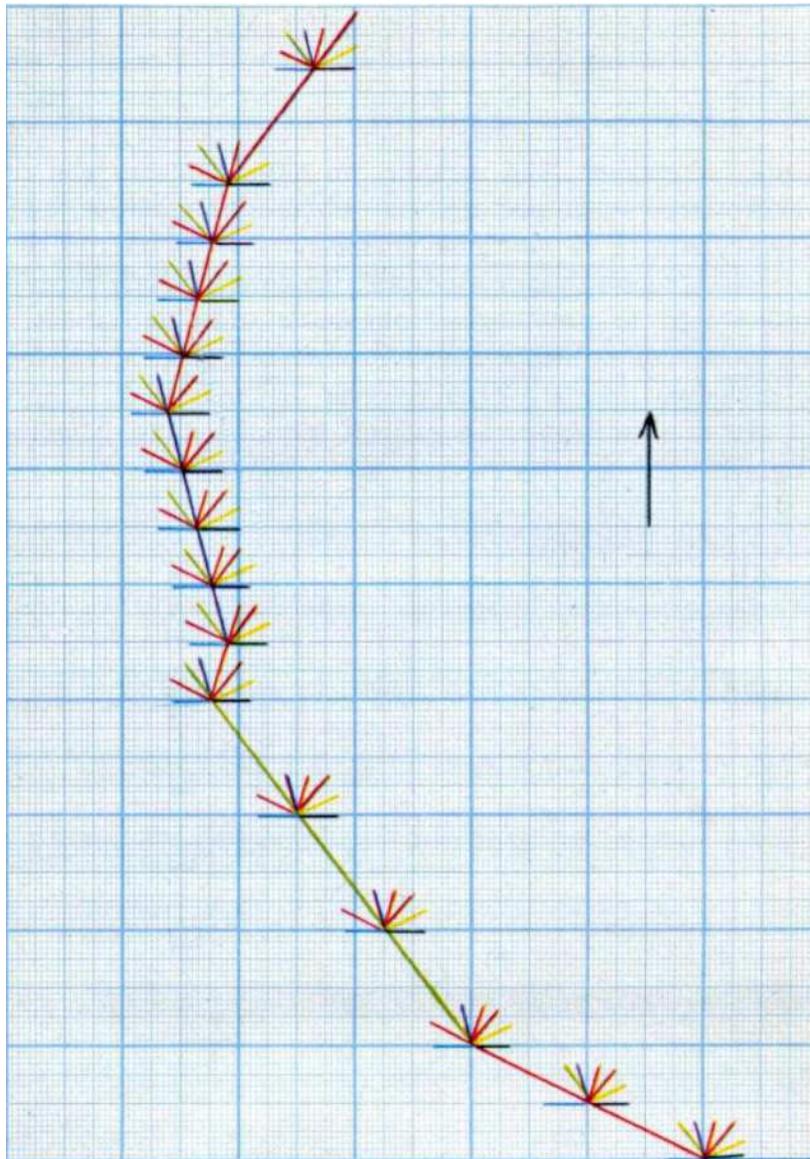


Figure 14.

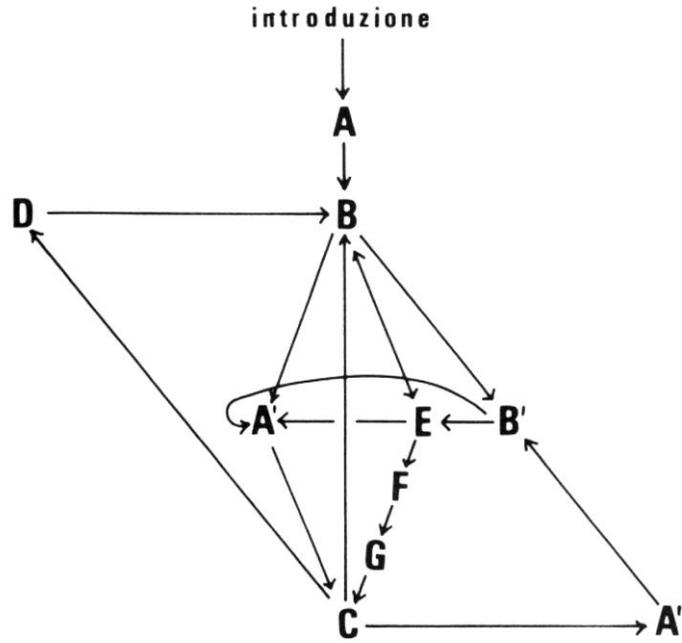


Figure 15.

A <sub>6</sub>	B <sub>6</sub>	C <sub>4</sub>	D <sub>4</sub>		
			D <sub>4</sub>		
A <sub>8</sub>		C <sub>4</sub>		E <sub>6</sub>	F <sub>4</sub>
A <sub>8</sub>					
A <sub>6</sub>		C <sub>4</sub>			G <sub>4</sub>
					G <sub>4</sub>
					G <sub>4</sub>
				F <sub>4</sub>	
A <sub>6</sub>		C <sub>4</sub>	D <sub>4</sub>		
A <sub>8</sub>			D <sub>4</sub>		
A <sub>8</sub>					
A <sub>6</sub>	B <sub>8</sub>				
	B <sub>6</sub>				
A <sub>6</sub>		C <sub>4</sub>			
A <sub>8</sub>		C <sub>4</sub>	D <sub>4</sub>		
			D <sub>4</sub>		
A <sub>6</sub>	B <sub>10</sub>	C <sub>4</sub>			G <sub>4</sub>
					G <sub>4</sub>
A <sub>6</sub>		C <sub>4</sub>	D <sub>4</sub>		
			D <sub>4</sub>		
			D <sub>4</sub>		
A <sub>6</sub>	B <sub>14</sub>	C <sub>4</sub>			G <sub>4</sub>
		C <sub>4</sub>			G <sub>4</sub>
					G <sub>4</sub>
				F <sub>4</sub>	
A <sub>6</sub>		C <sub>4</sub>	D <sub>4</sub>		
A <sub>6</sub>		C <sub>4</sub>			F <sub>4</sub>
A <sub>6</sub>		C <sub>4</sub>			F <sub>4</sub>
A <sub>10</sub>		C <sub>4</sub>			F <sub>4</sub>
A <sub>8</sub>		C <sub>4</sub>			
	B <sub>14</sub>	C <sub>4</sub>			
		C <sub>4</sub>			
A <sub>8</sub>		C <sub>4</sub>	D <sub>6</sub>		
			D <sub>4</sub>		
A <sub>6</sub>		C <sub>4</sub>			
A <sub>8</sub>		C <sub>4</sub>	D <sub>4</sub>		
A <sub>6</sub>		C <sub>4</sub>		E <sub>10</sub>	F <sub>4</sub>
etc.					

Figure 16.

Other analysts resorted to disciplines related to mathematics, like Charles Adams (1976) in his study on the melodic contour typology, (figure 17 and 18), the modification of the note heads to indicate timbral features (Nattiez 1989 on the *katajjait* of the Inuit, figure 19) or a combination of systems, like the traditional staff notation with lines instead of notes (Biaggiola 1979 on peddlers in Campania, figure 20), and other "hybrid" resources.

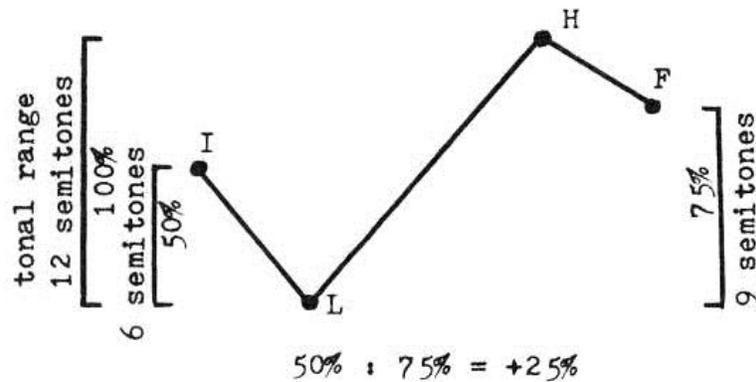


Figure 17.

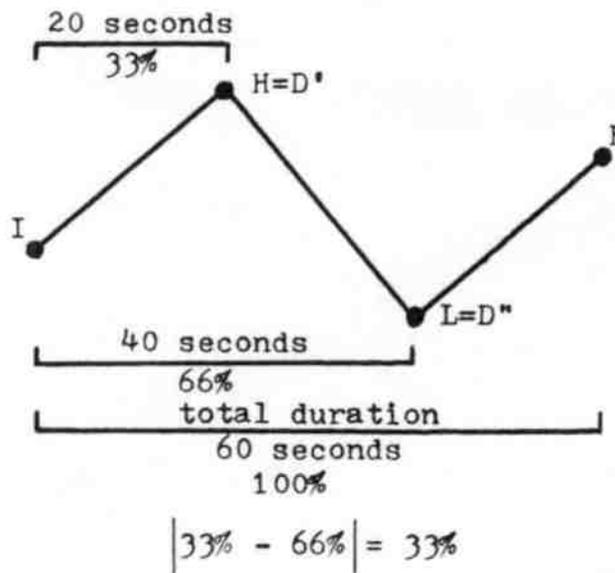


Figure 18.



*Capitone*  
3 vvm; Frattamaggiore (NA); 24.12.1975 Francesco Colella 48; Genaro Anatriello 32, e Antonio Pezzella.

*e i' vaghe trovan'i o canosce  
e suocci'e chisto chè  
ratele viv'è robba viva*

Figure 20.

### Spectrograms

As with the staff, the graphics were never removed from music analysis, but the use of electronic aids made it possible to address the observation of other parameters of organized sound<sup>3</sup>. The contribution made by Charles Seeger (1958) through his melograph is well known, and so are subsequent experiences with devices showing the harmonic spectrum of a sound.

In 1981, Mireille Hellfer and Jean Swarz used sonograms to analyze two acoustic versions of a manuscript in Tibetan pneumatic notation (figure 21). These sonograms are able to overcome the limits of the transcription staff (which does not reflect the freedom and ductility of such unmeasured songs); they also allow the evaluation of pitches and durations and demonstrate the harmonic spectrum of voices<sup>4</sup>, facilitate visualization of the two different interpretations of the same pneumatic sign, and also show both the six parts of each of the executions and some features of their performance.

<sup>3</sup> On the use of electronic aids for the purpose of music analysis, see some introduction to the topic like the text by Macchiarella (2000), which focuses on ethnomusicological analysis and describes a number of devices invented during the twentieth century in order to transcribe and analyze tunes; or the contribution by Giuliana Fugazzotto (1987), who describes a computer-assisted method of analysis applied to several performances of a Sicilian popular song in two towns (the goal was to obtain graphic evidences of stylistic differences recognized by the native population).

<sup>4</sup> The black lines indicate the concentration of particle movement and they match each sound's harmonics.

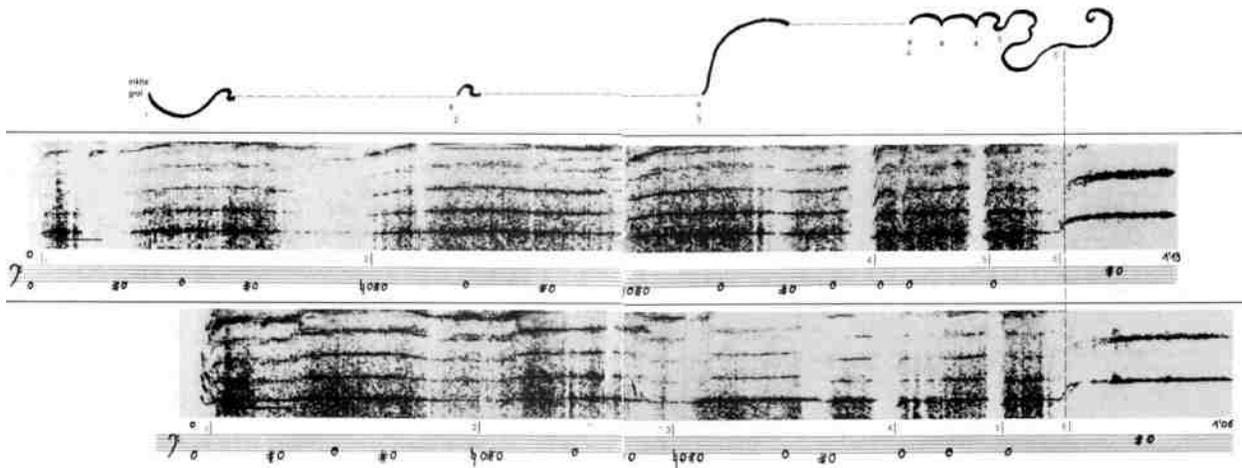


Figure 21.

In his book *Canti di Passione*, Lortat-Jacob (1996) uses sonograms to illustrate vocal timbres issued individually by each of the singers and the timbre resulting from the superposition of the four male voices (*falzittu, bogi, contra, bassu*). Sonograms serve to demonstrate the phenomenon of *quintina*, the “fifth voice” that the singers produce as the ideal for their own sound and style –the result of the fusion of different overlapping harmonics when producing perfect chords (figure 22).

Cicli degli armonici e altezze musicali corrispondenti

<b>bassu</b>	<b>contra</b>	<b>bogi</b>	<b>Fusioni degli armonici</b>
arm. 6= 600 RE	arm.4= 600 RE	arm.3= 600 RE	quarta fusione RE
arm. 5= 500 SI	arm.3= 450 LA		
arm. 4= 400 SOL	arm.2= 300 RE	arm.2= 400 SOL	terza fusione SOL
arm. 3= 300 RE		arm.1= 200 Hz SOL	seconda fusione RE
arm. 2= 200 SOL	arm.1= 150 Hz RE		prima fusione SOL
arm. 1= 100 Hz SOL			

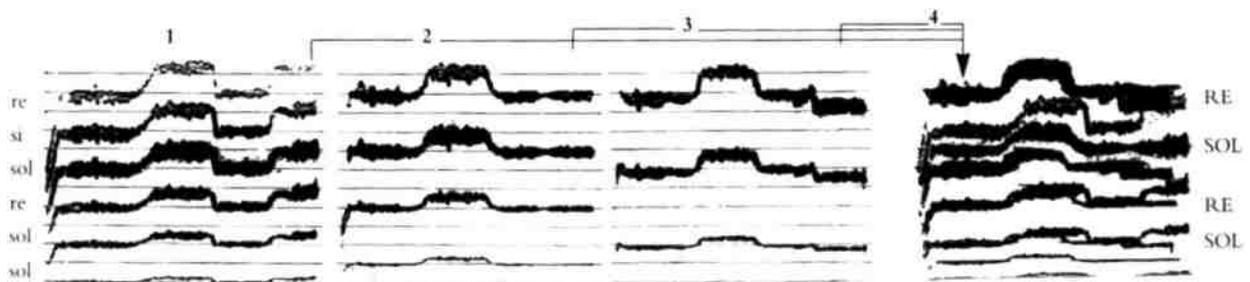


Figure 22.

Grazia Tuzi (2012) also analyzed spectrographic features of recordings made of female performers of song and tambourine –*pandereta*– in Cantabria (figure 23). Thus, she identified and demonstrated the instrumental timbre, which depends on the type of tambourine used and the way it is played, and is an important aspect of individual musical identity (that of each *panderetera*) as well as of local identity (that of each valley), both highly valued by insiders.

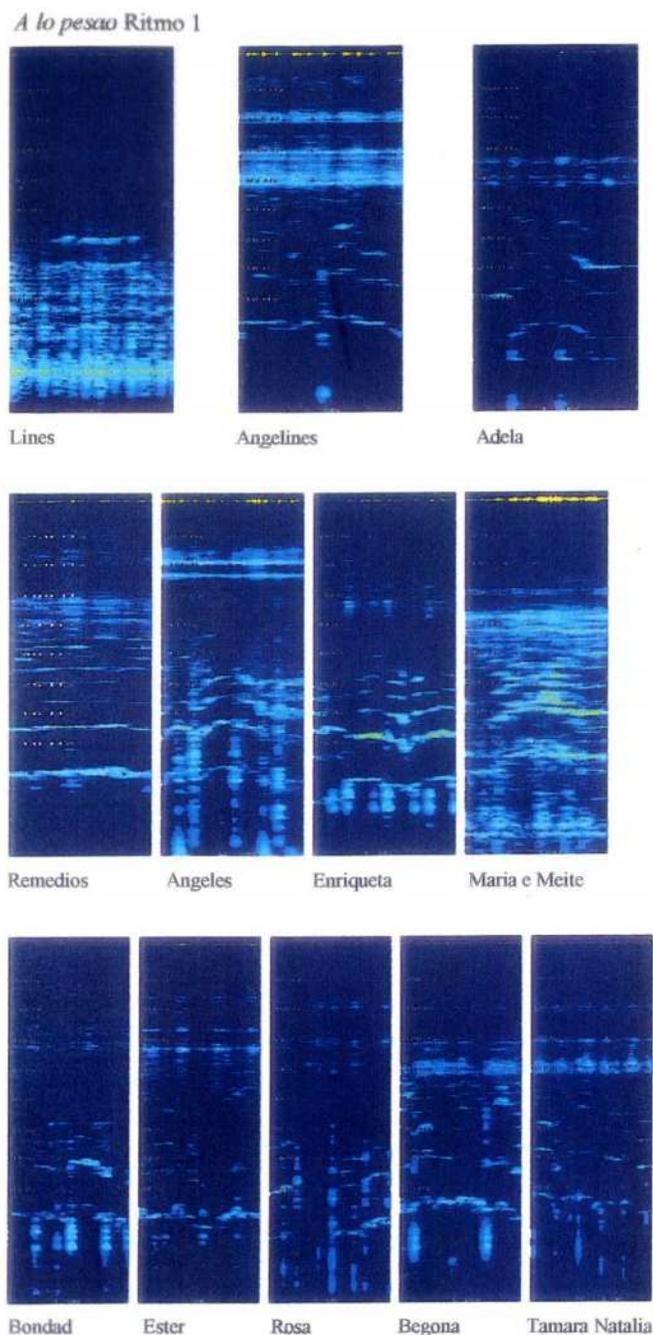


Figure 23.

Franz Födermayr and Werner Deutsh, the Italian scholar Giorgio Adamo (1996), and many other researchers have produced interesting proposals on intelligent analysis of sound (including three-dimensional representations)<sup>5</sup>. The experimental nature of such activities make many of these proposals ephemeral<sup>6</sup> and each one of them requires a specific introduction to their languages and mechanisms.

### Concluding remarks

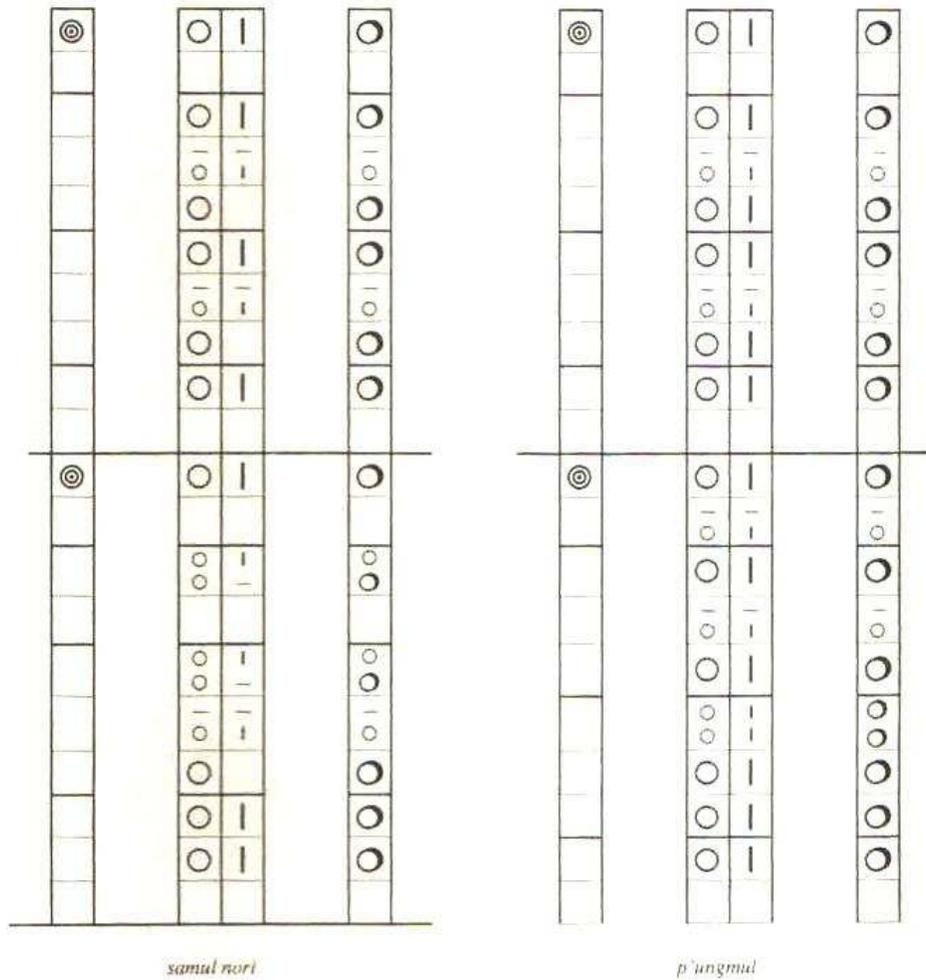
Many other approaches could be mentioned, such as alternating or mixing two types of notation (for example traditional *sargam* of India and Western classical in Van del Meer 2005) or being instead restricted to one (Hesselink 2004 on the Korean drum *changgo*, figure 24), and explaining the symbols used through a literary text –as in some notations for Western drums indicating the several types of stroke, or those explaining fingering positions on some instrument (Hesselink 2004, figure 25). Other authors exemplified the use of *musemes* in a composition by creating new categories for that kind of analysis (Philip Tagg 1979 on the music of the TV series *Kojak*), or specified the traits of a stylistic repertoire by resorting directly to sound excerpts –sonograms– taken from recordings (Enrique Cámara 1999 on the Italian tango during Fascism). And there are still many other procedures, from those using guitar tablature (usually taken from methods to play this instrument in folk and popular music) or animation techniques (like Zemp 1990 on the use of the two vocal registers in yodeling), to those who coordinate various systems –dance notation, gestures, proxemics, movements– in their descriptions of performances (like the videographic method devised by Regula Qureshi 1995, figure 26)<sup>7</sup>. The eclecticism we find today in various areas of ethnomusicological research also affects the visual systems of music representation. Moreover, cybernetics and informatics greatly expanded the possibilities of representing organized sound. This process continues growing exponentially today and facilitates visualization of musical phenomena and interactive analysis.

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<sup>5</sup> For the publications of Födermayr and Deutsh, see Adamo 1996.

<sup>6</sup> Such is the case of some of the contents in the book edited by Barry Brook (1970) on musicology and the computer.

<sup>7</sup> See Lutz's text in this volume.

**Och'ae Chilgut****Figure 24.**

**Playing Techniques of (S)amul nori and (P)'ungmul.**

instrument	symbol	tradition	explanation of technique
<i>changgo</i> :	○	S, P	stroke of the mallet
	⊙	S, P	above stroke preceded by a grace note
		S, P	stroke of the stick
	·	S, P	tip of the stick lightly striking drum head
	¡	S, P	stick stroke on the beat, preceded by a striking of the tip
	○	S, P	stick and mallet striking simultaneously (opposite heads)
	⊗	S, P	above stroke on the same head (stick side)
<i>soe/pre-damped</i> :	○	S, P	strong stroke preceded by a quick damping with the fingers
	⊙	S	above stroke preceded by a grace note (played as a rebound)
<i>soe/post-damped</i> :	○	S	quickly damp with fingers and thumb after initial striking
<i>soe/undamped</i> :	○	S, P	strong stroke
	○	S, P	weaker stroke
<i>soe/fully damped</i> :	●	S, P	strong stroke (damped with fingers and thumb)
<i>ching</i> :	⊙	S, P	strong stroke

**Figure 25.**

Verse 2, Line 2

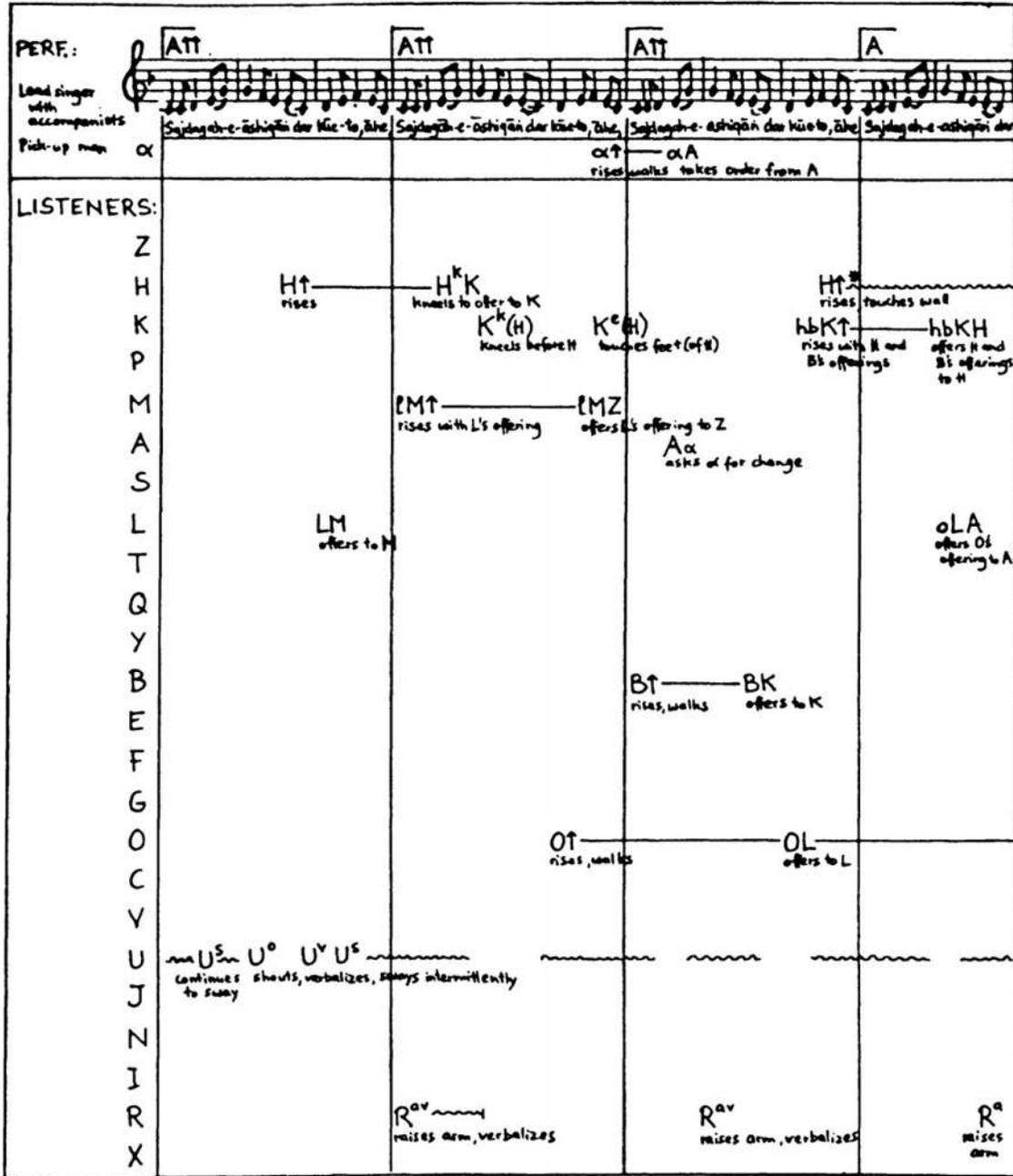


Figure 26.

However, beyond the wide variety of tools developed lately in the field of intelligent music analysis and its representation, no really innovative proposal seems to have appeared recently in the ethnomusicological debate that has taken place over the last century about issues such as the instrumental nature of any visual representation, or the emic pertinence of the data considered

relevant by scholars.

Still, the convenience of re-reading the classics in this field (Charles Seeger, Bruno Nettl or George List) should not preclude our constant review and critical evaluation of proposals that continue to occur in the domain of the representation of organized sound with an epistemological intention. The lonely and undisputed reign of the staff has died. Long live the staff!

## Bibliography

- Adamo, Giorgio. 1996. *Analisi del suono e modelli psicoacustici nella ricerca musicologica*. Roma: Discoteca di Stato (internal publication).
- Adams, Charles R. 1976. "Melodic Contour Tipology". *Ethnomusicology* 20 (2): 179-215.
- Biaggiola, Sandro. 1979. *Campania 1: venditori ambulanti*. Cetra SU 5002.
- Brăiloiu, Constantin. 1973. Rouget, Gilbert (ed.), *Problèmes d'ethnomusicologie*. Genève: Minkoff Reprint.
- Brook, Barry (ed.). 1970. *Musicology and the Computer*. New York: The City University of New York.
- Cámara de Landa, Enrique. 1999. *Passione Argentina. Tanghi italiani degli Anni '30*. Roma: Discoteca di Stato.
- \_\_\_\_\_. 2014. "De la terminología al análisis. Carlos Vega y la música folklórica". In: Cámara de Landa, Enrique (comp.), *Estudios sobre la obra de Carlos Vega*, pp. 57-86. Buenos Aires: Gourmet Musical.
- Carpitella, Diego. 1972. "L'insufficienza della semiografia musicale colta nelle trascrizioni etnomusicologiche". In: *Atti del Symposium internazionale sulla problematica dell'attuale grafia musicale (23-26 ottobre 1972)*. Roma: Istituto Italo-latino Americano. Reprinted in 1973. *Musica e tradizione orale*, pp. 225-34. Palermo: Flaccovio.
- Cooper, Grosvenor and Leonard Meyer. 1960. *The Rhythmic Structure of Music*. London/Chicago: The University of Chicago Press.
- Fugazzotto, Giuliana. 1987. *Una metodologia di analisi computerizzata del canto popolare*. Bologna: Università degli Studi di Bologna (Dipartimento di Musica e Spettacolo).
- Giuriati, Giovanni. 1985. "'Percorsi' improvvisativi nella musica strumentale dell'Italia centro-meridionale." In: Giuriati, Giovanni (ed.), *Forme e comportamenti della musica folklorica italiana: Etnomusicologia e didattica*, pp. 15-43. Collana di Studi e Ricerche sulla Didattica Musicale 2. Milano: Unicopli.
- Gray, Catherine T. 1993. "The Ugandan lyre *endongo* and its music". *British Journal of Ethnomusicology* 2: 117-142.
- Hellfer, Mireille and Jean Schwarz. 1981. "De la notation tibétaine au sonogramme". In: Rouget, Gilbert (ed.), *Ethnomusicologie et représentations de la musique*, pp. 9-10. Paris: CNRS.
- Hesselink, Nathan. 2004. "*Samul nori* as Traditional Preservation and Innovation in a South Korean Contemporary Percussion Genre". *Ethnomusicology* 48 (3): 405-439.
- Kubik, Gerhard. 1965. "Transcription of Mangwilo Xylophone Music from Film Strips". *African*

- Music 3-4*: 35-51.
- \_\_\_\_\_. 1972. "Transcription of African Music from Silent Film: Theory and Methods". *African Music 5* (2): 28-36.
- Lortat-Jacob, Bernard. 1981. "Danse de Sardaigne: Composition renouvellement". In: Rouget, Gilbert (ed.), *Ethnomusicologie et représentations de la musique*, pp. 6-11. París: CNRS.
- \_\_\_\_\_. 1996. *Canti di Passione*. Lucca: Libreria Musicale Italiana.
- Macchiarella, Ignazio. 1987. "Vexilla Regis" [musical transcriptions and notes on the recording]. In: Arcangeli, Piero, Roberto Leydi, Renato Morelli, Pietro Sassu with collaboration of Carlo Oltolina (eds.), *Canti liturgici di tradizione orale*, pp. 11-12. Albatros: Alb21. 4 LP. Ried.: Udine: Nota, 2011, 1 vol. with 3 CD, pp. 146-147.
- \_\_\_\_\_. 2000. "Analisi ed etnomusicologia. Una introduzione". In: Macchiarella, Ignazio (ed.), *Bollettino di analisi e teoria musicale 7/1 (L'analisi nell'etnomusicologia)*: 9-71.
- Nattiez, Jean-Jacques. 1989. "Semiología dei giochi vocali inuit". *Ethnomusicologica (Quaderni dell'Accademia Chigiana XLIII)*: 167-88.
- Qureshi, Regula. 1995. "Suono musicale e contesto: un modello di performance per l'analisi musicale". In: Magrini, Tullia (ed.), *Uomini e suoni*, pp. 213-252. Bologna: CLUEB.
- Rouget, Gilbert (ed.). 1981a. *Ethnomusicologie et représentations de la musique*. Paris: CNRS.
- \_\_\_\_\_. 1981b. "Structure d'un chant initiatique du Bénin". In: Rouget, Gilbert (ed.), *Ethnomusicologie et représentations de la musique*, pp. 10-11. Paris: CNRS.
- Rycroft, David. 1967. "Ngumi Vocal Polyphony". *Journal of the International Folk Music Council 19*: 88-103.
- Ruwet, Nicolas. 1966. "Méthodes d'analyse en musicologie". *Revue Belge de Musicologie 20/1-4*: 65-90. Ried. in: *Langage, musique, poésie*, pp. 100-134. Paris: Éditions du Seuil, 1972.
- Sallée, Pierre. 1981. "Jodel et procédés contrapunctiques des Pygmées". In: Rouget, Gilbert (ed.), *Ethnomusicologie et représentations de la musique*, pp. 9-10. Paris: CNRS.
- Seeger, Charles. 1958. "Prescriptive and Descriptive Music Writing". *The Musical Quarterly 44*: 184-95.
- Tagg, Philip. 1979. *Kojak, 50 Seconds of Television Music: Towards the Analysis of Affect in Popular Music*. Göteborg: Musikvetenskapliga Institutionen (Studies from the Dept of Musicology, Göteborg, 2).
- Tuzi, Grazia. 2012. *La pandereta. Suoni e identità della Cantabria*. Udine: Nota.
- Van der Meer, Wim. 2005. "Visions of Hindustani Music". *The World of Music 47* (2): 105-118.
- Vega, Carlos. 1941. *Fraseología: Proposición de un nuevo método para la escritura y análisis de las ideas musicales y su aplicación al canto popular*. Vol. 2. *La música popular argentina: Canciones y danzas criollas*. Buenos Aires: Imprenta de la Universidad.
- 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.



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