

SAXOPHONE, THE NEW ARTISTIC MINDSET IN MÉTA DUO CONTEXT

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SUMMARY. While creativity in music continued to progress, the saxophone was still often seen as a jazz instrument only by senior generations of composers. A new form of virtuosity emerges with the development of Electronics, where sonorities undergo extremely complex transformations, sometimes resulting in particularly original sound combinations. In this article, the highlight is placed on the concept of “Méta-duo” – an innovative sound venture where the saxophone, an instrument with an expressive and malleable tone, interweaves with the richness and profusion of the acousmatic space. This nonconformist chamber structure is an exploration of the boundaries between acoustic and electronic sound, between live human expression and digitally processed sound textures. The saxophone becomes a bridge between the real and imaginary, in a dialogue of acousmatic sound projections that amplifies, antagonizes, or contains the musical gesture. Starting from the acousmatic tradition described by Pierre Schaeffer and developed by François Bayle, the analysis is focused on how these projects go beyond simple sound experiments and turn into models of interdisciplinary collaboration and the redefinition of auditory perception.

Keywords: Saxophone, Daniel Kientzy, Enneaphony, diffusor, Méta-duo, acousmatic

1. Introduction

Through contemporary pieces and original compositions, Méta-duo crafts an auditory experience that transcends the conventional limits of chamber music, highlighting an ethic of co-interpretation, where the instrumentalist

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and the sound engineer share their artistic responsibilities, resulting in an open and unexpected creative process. Enneaphony raises the issue of sound spatialization through an octophonic system, transforming the concert space into an active participant in the *auditory act*. *Phonostück, through fixed media formulas, challenges the audience to listen to the sound itself, without any visual reference, thus becoming a part of the acousmatic aesthetic*. The central element is the use of extended techniques for the saxophone (slap tongue, multiphonics, microtones, glissando, frullato, key sounds), which generate complex sound materials, ideal for real-time digital processing (delay, dynamic filters, reverberations, granularization).

The situation of the saxophone continues to change due to the talent and the free and unprejudiced thinking of some new interpreters, and starting in the '80s, the instrument started becoming appealing to the public of "classical" music. In this instance, the composer becomes the closest partner of the interpreter, and so contemporary music and the interpretative technique together cause an evolution in both the instrument and the instrumentalist.

Owing to interpreters such as Rudy Wiedoeft, known for his techniques of slap tongue and double-détaché, Sigurd Raschèr, with his extreme registers, and, as might be expected, Daniel Kientzy, the saxophone would expand its traditional limitations and define a particular language, turning into a genuinely modern instrument indeed. Accordingly, the extended techniques are: slaps, Flatterzunge (flutter-tonguing), growl, multiple sound double-détaché (double cross-beat), flattements, bisbigliando, Aeolian sounds, tambourine sounds, micro intervals, natural harmonics, glissandi, key noises, and blowing/air noises. To the above can certainly be added those which are the trademark of the saxophone player Daniel Kientzy: tongue-ram-beck (tongue-ram-beak), arraché (plucked), jeté (slap), inversion (reverted sound), baiser-beck (kiss-beak), trumpeting, slap-ouvert (open slap), harmonico-tuilage (harmonic and subtones), pizz-beck (bass pizz), libranche (free reed), inharmonico-diffraction (approx.: inharmonic, diffracted sound), étouffer (muting), timbrologie (tone colors or timbres), saxalpin (alpenhorn, natural horn), trump-specter-fluctuation, tukusonies, flutage, vox-trump, baisers-bocal (kiss-beak), barrissement (the bellowing technique), saxnay (the Sax-Ney technique) and so on.

1.1. Meta Duo

Méta-duo is an innovative interpretative and technological concept developed by Daniel Kientzy in collaboration with sound engineer Reina Portuondo, an unusual duet. More than just a simple duet, Méta-duo represents a true fusion between the human performer and the acousmatic - the sound technician. The technician goes beyond merely amplifying the instrument; instead, they process, transform, and project the sound in real-time.

The term “acousmatic” refers to a method of listening to sound without seeing the source that produces it. However, not all music played through speakers qualifies as acousmatic. It only falls under this category if it was specifically created for that mode of listening—meaning it was composed to be experienced exclusively through speakers, without any live instrumentalists performing.

This partnership leads to the appearance of meta-instrumental music, where sound evolves into a fluid entity, constantly moving and transforming, and the soundstage emerges as a three-dimensional realm, reshaping the interpretation of contemporary music. To be more precise, every sound emitted by the saxophonist is altered, projected, or amplified by the digital co-author. The saxophone’s sound is not simply transmitted as such to the audience; instead, it undergoes continuous transformation, evolving into raw material for the emerging acousmatic structures³. The sound technician is no longer just an operator; they have transformed into a true performer, working with an open score that allows their intentions to be directly reflected in the structure of the musical piece. Unlike electroacoustic music, where sound distribution and processing occur after the composition is finished, in Méta-duo all of this takes place in real time, in front of the listening audience⁴.

The live nature of electronic intervention enables prompt rhetoric, enabling the technician to respond creatively and often unpredictably. This dynamic creates a system in which the relationship between saxophonist and technician is at once interpretative, reactive, and compositional, generating a unique interpretive experience at each performance⁵.

1.2. Enneaphony system

The Méta-duo ensemble stands out in the contemporary music landscape using Enneaphony. This is a spatial sound-projection system that allows the audience to participate in a three-dimensional sound experience.

Designed specifically for Daniel Kientzy’s performances, this system consists of eight loudspeakers, which are positioned in a circular pattern around the concert hall, with a ninth loudspeaker at the center, intended to balance the acoustic source⁶.

Unlike other sound systems, Enneaphony allows for a compositional vision of space. The sound is not felt only at a fixed point but is multiplied or

³ Kientzy, Daniel. *Le Saxophone en France : Histoire et Répertoire*, Paris : L’Harmattan, 1996, pp.112-114.

⁴ Emmerson, Simon. (ed.), *Music, Electronic Media and Culture*, Aldershot: Ashgate, 2000, pp. 23-26.

⁵ Emmerson, Simon. *Living Electronic Music*, Aldershot: Ashgate, 2007, pp. 67-69.

⁶ Bayle, François. *Musique Acousmatique : Propositions... Positions*, Paris : Buchet-Chastel / INA-GRM, 1993, pp.14-17.

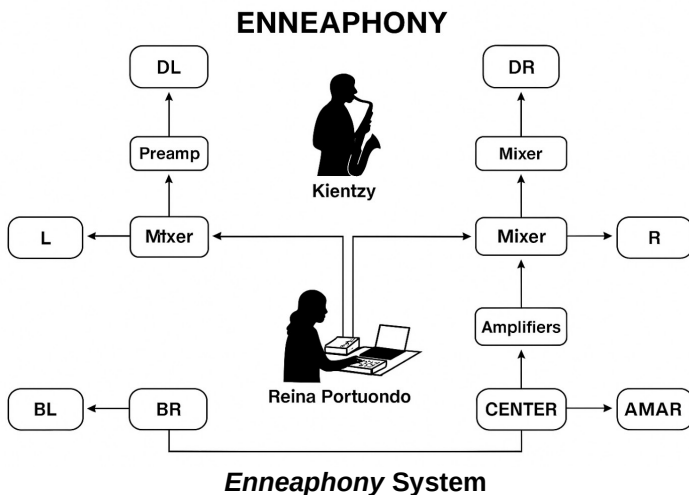
modulated in real time. Within the Méta-duo, the technician can be considered a real interpreter, able to influence the sound trajectories according to the artistic intention of that moment⁷.

The Enneaphony system retains the acoustic music as a basic principle, which it takes to another level. By adding the live interpretative side, the sound processing is not predetermined but reacts in real time to each instrumental sound. We can practically say that, at the moment of interpretation, the saxophonist is disseminated in space and reconstructed in several forms, which generates a different perception of sound. As a result, the perception of sound can be dynamic, or layered, at times⁸.

Once the sound multiplication effect given by this particular spatial dynamic is created, the live-listening audience perceives an amalgam of virtual sounds rather than a single instrument. This effect causes one to think about the audio systems in which position and movement in space modify the auditory experience. Therefore, the audience at a Méta-duo concert will have a different sound perception, depending on the seat occupied in the hall⁹.

In addition, the circular placement of Enneaphony outlines a non-linear musical form, in which the performing intentions are shaped both in time and especially in space. Thus, musical structures will become diffuse, radial, or spiraling. An explanatory diagram of the Enneaphony system will be shown below.

Figure 1



⁷ Dufour, Denis. *Espace, Temps et Perception dans la Musique Électroacoustique*, Paris : INA-GRM, 2000, pp.47-48.

⁸ Kientzy, Daniel. *L'Art du Saxophone*, Paris : Éditions Henri Lemoine, 1982, pp.58-59.

⁹ Landy, Leigh. *Understanding the Art of Sound Organization*, Cambridge, MA: MIT Press, 2007, pp.43-45.

Table 1

DL, DR	front speakers, LEFT / RIGHT, in front of the audience.
Preamp.	preamplifier, which has the role of increasing the level of the audio signal from the saxophone microphone.
Mixer	consoles that modulate and direct the audio signal to the speakers. Amplifiers = amplifiers that increase the volume of the signal for the speakers.
L, R	Side speakers, placed on the left and right.
BL, BR	Speakers behind the audience, left and right.
CENTER	The central speaker, positioned under the audience or sometimes above, in the middle of the space.
AMAR	is an auxiliary speaker, which creates additional spatial effects (reverberant).
Kientzy	the saxophonist
Reina Portuondo	the sound engineer

Explanation of the diagram

Taking into account the details presented above, we can say that the circuit of this system commences with the saxophonist and travels through the microphone to the preamplifier, reaching the mixer. The sound engineer processes the sound signal, which he sends through the mixer and amplifiers, projecting it afterwards through the eight speakers. Each broadcast station is capable of conveying different materials, including processed multiphonics, filtered fragments, and delays.

Among the advantages that electronic music carries in this case, as Lucian Ghișă details in his article on electronic technologies, can be listed: “precision in execution and detailed control of all the elements of sound, regardless of their complexity”¹⁰. Practically, in live performance, the musical piece benefits from real-time sound modulations, even during the performance, with the spatialization of the sound as the defining feature.

¹⁰ Ghisa, Lucian. *Tehnologii electronice utilizate în „Voix” de Ciprian Gabriel Pop (Electronic technologies in “Voix” by Ciprian Pop)*, ICTMF, vol. 2, No. 1, 2011, pp.98-99.

If the stereophonic tradition only sees “balancing” as an effect, in Enneaphony, space becomes a structural parameter. The composer or the performer decides on sound paths, circular migrations, and spatial overlapping. In this sense, Dufour (2000, pp.47-48) ¹¹ sees spatialization as “a third layer of composition, after time and frequency”. The impact on the listener is radical: each seat in the hall offers a unique mix. Two people, seated at different distances, do not hear the same music. The idea of a “relative work” is created, where the identity depends on the physical position of the receiver. It is a music of plurality of perceptions.

One can conclude that Enneaphony is not simple technical equipment. It is an analogous part of the interpretative act, incorporated within the artistic entity. It is a fusion between sound and space which redefines contemporary music (Emmerson, 2007, pp. 67-69) ¹².

1.3. Phonostück

In the absence of a live instrumental presence, Phonostück is a work intended strictly for listening through loudspeakers. It is a musical form in which the only protagonist is the sound, without the presence of the performer on stage.

The word is of German origin and could be translated as a recorded sound piece. As the name suggests, a Phonostück is constructed with sounds that are processed, reverberated, multiplied, and filtered until they acquire a new identity, most often originating in Daniel Kientzy’s saxophone emission. He conceives his Phonostück as an auditory introspection, in which the speakers, the ear, and the space become the main exhibits, but in the absence of a classical score. Thus, the sound line is composed in the studio, which clearly represents the opposite of traditionalist interpretation.

Listening to this type of performance can be almost hypnotic; it brings the space to life, creating the illusion of a presence that is ultimately absent.

Some examples of Phonostück from Daniel Kientzy’s repertoire include “Le voix du saxophone,” “Meta – animos,” and “Nocturne pour Luigi Nono.” In all of these works, the sound of the saxophone is processed and reverberated to create a spatial unfolding of sound.

1.4. Connections with the acousmatic theory

Pierre Schaeffer¹³ believed that listening without seeing the source produces what he called “reduced listening”, shifting the focus entirely to the

¹¹ Dufour, Denis. *Espace, Temps et Perception dans la Musique Électroacoustique*, Paris : INA-GRM, 2000, pp.47-48.

¹² Emmerson, Simon. *Living Electronic Music*, Aldershot: Ashgate, 2007, pp. 67-69.

¹³ Schaeffer, Pierre. *Traité des Objets Musicaux*, Paris : Le Seuil, 1966, pp.84-86.

sound material itself. Kientzy transposes the principle: the saxophone disappears from the visual field, allowing only its sonic traces to exist in an abstract space. Unlike Schaeffer's approach, Kientzy begins his experiment with an eclectic instrumental register, which differs from everyday sounds. However, through extreme processing, the saxophone becomes unrecognizable: the sound spans from granulations, reminding of the noise of metal, to immense drones. Thus, the saxophone is revived only as an "acoustic ghost".

2. Extended techniques for saxophone

The use of complex language for both the saxophone and the sound technician is one of the defining features of the Méta-duo project. The combination of intricate saxophone techniques and real-time digital processing creates a wholesome experience, where this blend of acoustic expression transforms each performance into a unique artistic act with its own unrepeatable identity.

Daniel Kientzy, known for his ability to play all seven types of saxophones – sopranino, soprano, alto, tenor, baritone, bass, and contrabass – documented in his work *L'Art du Saxophone*, a variety of modern interpretation techniques, procedures that often exceed the classical parameters of the instrument¹⁴. Among these, the most widely used are:

"Slap Tongue" - an extended technique used on the saxophone that produces a percussive sound resembling a "snap." It adds a unique element to the interpretive performance. In *Meta Duo*, the "slap" sound of the "slap tongue" effect becomes a primary sound material, used for complex electronic constructions. The effect, described by Kientzy as "one of the first sonic extensions of the saxophone capable of generating percussive variations"¹⁵, is captured through contact microphones and introduced into the digital audio workstation (DAW), where it is processed with reverberations and delays. In this way, Reina Portuondo articulates an aesthetic of immediate transition from acoustic to digital¹⁶.

"Multiphonics" - a technique involves the simultaneous production of multiple sounds using specific, unconventional fingerings, supported by a flexible embouchure. The result is a timbral cluster that offers a distinctive experience for the listener. The sound engineer can exploit this effect with the help of software, which decomposes sound frequencies. Most often, he uses spectral analysis,

¹⁴ Kientzy, Daniel. *L'Art du Saxophone*, Paris: Éditions Henri Lemoine, 1982, pp.58-59.

¹⁵ Kientzy, Daniel. *Saxologie*. Nova Musica, 1991, pp.52.

¹⁶ Jiang, Zhaoxiang and Pruksavanich, Wisuwat. "Non-Polarization on the Alto Saxophone: Daniel Kientzy's Reforms in Music for the Saxophone Family." *Música Hódie*, vol. 25, 2025, e81517.

which helps reconstruct digital clusters in real time. Multiphonics constitute a fundamental part of the contemporary saxophone vocabulary. In his manual, Kientzy describes them as “unstable results, but essential for expanding the sound spectrum”.¹⁷ In digital practice, these effects are spectrally analyzed and transformed into electronic “clusters”, delivering unique textures. Recent studies confirm the relevance of multiphonics for the automatic recognition of instrumental techniques and artificial intelligence applied to sound analysis.¹⁸

“Microtones” - these sounds fall between two semitones and are utilized to create unique sound colors that go beyond conventional limits. Microtones, which cannot be accurately reproduced on classical instruments, are explored as an intensely valuable sound resource. Kientzy demonstrates that the saxophone allows for precise variations through special fingering techniques and subtle adjustments of the embouchure.¹⁹ In Meta Duo, these micro-shifts are recorded and then digitally multiplied or amplified, resulting in interval sequences that would be impossible to achieve otherwise.

“Glissando” - this technique is achieved by adjusting the consistency of the lip muscles while simultaneously moving the fingers gradually. The glissando, described as “the sliding movement that demonstrates the natural flexibility of the air column through the reed”²⁰, is transformed in the Meta Duo experiment into a continuous sound line. Not only does the acoustic sound slide, but the software also creates extensions and deviations, synchronized with “automation curves”. In this way, the performers blend the physical gesture of the breath with the digital manipulation of the musical material.

“Frullato” - in this technique, the performer directs the air column into the instrument while rapidly vibrating the tongue, typically using the syllable “FRU.” This creates a trill effect, produced lingually, through pronounced vibrato. This effect is the ideal material for granular synthesis. Thus, the sound particles formed most often through its decomposition, multiplying the energy initially created. The “frullato” technique, by the rapid vibration of the tongue on the reed, generates an intense and loud effect, appreciated by Kientzy for its textural qualities.²¹ In Meta Duo, this effect is ideal for digital granular synthesis processes, where the sound stream is broken into particles and recomposed into new sound architectures. This type of process has been identified as

¹⁷ Kientzy, Daniel. *Les sons multiples aux saxophones*. Paris: Éditions Salabert, 1981, pp.37.

¹⁸ Lostanlen, Vincent; Andén, Joakim; Lagrange, Mathieu. “*Extended playing techniques: The next milestone in musical instrument recognition.*” arXiv preprint, arXiv:1808.09730, 2018, pp.5.

¹⁹ Kientzy, Daniel. *Saxologie*. Nova Musica, 1991, pp.110.

²⁰ Jiang, Zhaoxiang and Pruksavanich, Wisuwat. “*Non-Polarization on the Alto Saxophone: Daniel Kientzy's Reforms in Music for the Saxophone Family.*” *Música Hodie*, vol. 25, 2025, e81517, pp.8.

²¹ Kientzy, Daniel. *Les sons multiples aux saxophones*. Paris: Éditions Salabert, 1981, pp.72.

favorable for automatic performance recognition and the exploitation of gestures in electronic music²².

“Key sounds” – without blowing air into the instrument, the performer presses the keys, producing a mechanical noise; this generates a percussive, dry sound, which brings a notable contribution to the expressive palette. The mechanical sounds of the saxophone keys, often seen as residual sounds, are revalued through electroacoustic aesthetics. In Meta Duo, they are captured with omnidirectional microphones and treated as digital percussion materials: their compression and sequencing generate unusual rhythmic structures. Thus, even the mechanical elements of the instrument become an integral part of the music.

These effects, in the context of the Méta-duo, are taken over by the sound engineer and processed in real time. Variable delays, dynamic filters, as well as reverberations and spatial transpositions are used²³. This approach generates a flowing sound entity with artificial intelligence applied to sound analysis continuous evolution, but without a clear outline. We can say that the sound engineer sketches in real time, through digital filtering, each sound or gesture of the saxophonist performer.

Another decisive component in Méta-duo is the spatialization of these sounds. What matters a lot is where it is heard, not just what it is heard. For example, a Frullato effect can begin in a speaker behind the audience, propagate in a circular pattern, pass through the front, and then gradually dissipate and fade out again to the rear of the hall. This creates a sensation of movement within the space²⁴.

Apart from the expressive side, this type of approach to interpretation has an ethic of shared coordination. In this sense, Daniel Kientzy relinquishes total control over his sound and includes Reina Portuondo to have the freedom to express her creativity. This fusion reflects a characteristic of postmodernism, which is expressed through an aesthetic of interpretative plurality. The resulting sounds are both familiar and foreign, transforming the saxophone into an augmented entity with the ability to transcend its traditional boundaries, particularly through the use of technology²⁵.

²² Lostanlen, Vincent; Andén, Joakim; Lagrange, Mathieu. “*Extended playing techniques: The next milestone in musical instrument recognition.*” arX preprint, arXiv:1808.09730, 2018, pp.11.

²³ Miranda, R. Eduardo. *Computer Sound Design: Synthesis Techniques and Programming*, Oxford: Focal Press, 2002, pp.34-35.

²⁴ Dufour, Denis. *Espace, Temps et Perception dans la Musique Électroacoustique*, Paris: INA-GRM, 2000, pp.47-48.

²⁵ Butler, J., Mark. *Playing with Something That Runs: Technology, Improvisation, and Composition in DJ and Laptop Performance*, Oxford: Oxford University Press, 2014, pp.76-77.

3. The theoretical and post digital dimension

While Schaeffer²⁶ theorized sound as an abstract object, Bayle²⁷ shifted the emphasis to acousmatic perception and subjective experience. Kientzy belongs here but goes further: he interprets space and the relationship with technology as part of the sound object. Emmerson²⁸ introduces the concept of “electronic sound ecology”: electronic music does not exist in a vacuum, but in relation to the acoustic architectural context. Dufour develops the idea of spatial perception as an element with semiotic value. Kientzy applies these ideas by means of multiple loudspeakers and the saxophone–processor relationship.

The concept of “post-digital”²⁹ defines an art form that no longer treats technology as an end in itself, but as an integrated part of the human experience. In this context, Méta-duo and Enneaphony become emblematic examples: it is not about technological spectacularity, but about generating a collective and fluid experience, where the instrument, the software, and the audience coexist.

4. Conclusions

The most interesting effect of the Méta-duo project is the way it alters the audience’s auditory perception. While traditional music typically assumes a stable relationship between space, sound, and source, Méta-duo breaks this connection, generating an unstable, acousmatic perception.

In the theory proposed by Pierre Schaeffer and further developed by François Bayle, acousmatic refers to the situation in which the audience only perceives the sound itself, without any visual reference.³⁰ Méta-duo takes this practice a step further, as it involves real-time transformation of sound sources, both in terms of timbre and spatial arrangement. The result is special, a truly unique auditory experience. For instance, a short timbral effect from the saxophone can generate processed echoes, disseminated in the space around the listener. Sounds that may be coming simultaneously

²⁶ Schaeffer, Pierre. *Traité des Objets Musicaux*, Paris: Le Seuil, 1966.

²⁷ Bayle, François. *Musique Acousmatique: Propositions... Positions*, Paris: Buchet-Chastel / INA-GRM, 1993.

²⁸ Emmerson, Simon. (ed.), *Music, Electronic Media and Culture*, Aldershot: Ashgate, 2000, pp. 57-58.

²⁹ Cascone, Kim. “The Aesthetics of Failure: ‘Post-Digital’ Tendencies in Contemporary Computer Music.” *Computer Music Journal*, 24, nr. 4 (2000), pp.12-18.

³⁰ Schaeffer, Pierre. *Traité des Objets Musicaux*, Paris: Le Seuil, 1966.

from different directions overlap, move away, then approach again, all without the audience being able to identify the initial sound origin³¹.

In conclusion, the relationship between the interpretive act, the audience, and the space in Méta-duo is not a fundamental one. The space becomes an active participant, rather than just the medium for unfolding events, where the performers create unique collective and immersive experience.

This synthesis presents a model in which technology plays a decisive part in the musical act, where instead of a traditional score we encounter a complex network of perceptions and gestures, and the stage is replaced by a sensory space - this is what music could represent in the post-digital era.

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³¹ Bayle, François. *Musique Acousmatique : Propositions... Positions*, Paris : Buchet-Chastel / INA-GRM, 1993, pp.16.

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