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“The Timbres of *Timbres-durées*: Between Note and *Objet Musical*”

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The Timbres of *Timbres-durées* : between note and *objet musical*

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Timbres-durées, Olivier Messiaen and Pierre Henry's collaboration in *musique concrète* from the spring of 1952, is generally considered an exception in the former composer's output of traditional acoustic music, and an early footnote in the latter's long career in *musique concrète*. It is one of the earliest examples of *musique concrète* for tape (as opposed to phonograph), and was one of the first experiments in spatializing electroacoustic music. *Timbres-durées* was also one of Messiaen's last short experimental pieces using serial techniques to generate rhythmic structures and form. My past writings have shown that these symmetrical combinations and permutations of note lengths and rhythmic motives are extremely similar to those used by Messiaen in his better known *Livre d'orgue* and *Quatres études rythmiques*.¹ Concentrating on the sounds chosen by Messiaen, this study explores the role of timbre in this little-known rhythmic étude, while also considering the work as an episode in the development of Messiaen's musical language.

A wide range of sources from the period of *Timbres-durées*' creation were consulted for this article. Pierre Henry very graciously shared his copies of the scores of *Timbres-durées* including Messiaen's manuscript in traditional notation, and his own scores showing tape lengths instead of note lengths. Also from Henry's archive came a *Repertoire et analyse de sons* describing the sounds chosen by Messiaen. Henry most likely created this list as a pedagogical document for use at GRMC concerts and in promotional lectures on *musique concrète* in 1952 and 1953. Another copy of this document with the addition of handwritten examples in traditional notation was found in the archives of Antoine Goléa, who wrote and lectured on both *musique concrète* and Messiaen's music in the 1950's. I also make reference to radio interviews, articles and program notes by Messiaen, Schaeffer, Henry, and Goléa. Finally, the recording of *Timbres-durées* released by the GRM in 2004 was essential to my analysis and is the source of the following commentary.²

Messiaen was already familiar with the innovations of Schaeffer's studio when he began working with his former student, Pierre Henry, in February 1952. He had attended the concert at the Théâtre de l'Empire in 1950 and participated in radio broadcasts discussing the new *musique concrète*, giving his opinion on Henry's *Musique sans titre*.³ In an interview with Jean Boivin, Henry reported that it was the studio's conversion to tape technology that attracted Messiaen's active participation.⁴ In a little-known 1952 radio interview with Goléa, Messiaen further explained that he was interested in tape as a medium because "...it has the potential to realize extremely complicated rhythms in a rigorously mathematical manner; rhythms that would not be possible with instruments and human performers..."⁵ Despite comments by both Messiaen and Schaeffer concerning the similarity of their respective interest in natural sounds, ("We are people who work from nature," as Schaeffer put it⁶), from the beginning, Messiaen seems to have been more interested in using tape as a precise means of measuring time than as a medium for capturing new timbres.⁷

That said, the recorded sounds Messiaen chose for *Timbres-durées* were clearly not an afterthought. Rather, they were intended to be subordinate, secondary to his rhythmic plan. Like his later orchestral work, *Chronochromie*, the title of *Timbres-durées* refers to Messiaen's notion that timbre colors lengths of time that would otherwise be silent. Though his ideas would evolve, in 1952 Messiaen was still distinguishing between timbres that were "noise" and timbres that were "musical." His program note tellingly describes *Timbres-durées* as, "a rhythmic work with no musical sounds."⁸

In the previously cited 1952 Goléa interview, Messiaen explains that he hoped that taped sounds would realize his theoretical rhythms more abstractly than the familiar timbres of traditional acoustic music. "I tried to make only make only the note-lengths themselves audible, abstract note-lengths, that were almost inaudible and only thinkable. I didn't accompany them with musical sounds, just noises, timbres, like the title says. The timbres were meant to bring out, to emphasize the durations."⁹ Messiaen believed that with certain timbres, the lengths of the sounds (durations) would be more noticeable than the sounds themselves. He imagined these sounds might bring the rhythms to the foreground of the listening experience differently than, for example, the organ and piano of his *Livre d'orgue* and *Quatre études*.

But Messiaen also used timbre in *Timbres-durées* as he had in his other serial experiments with rhythm: as a sort of marker, a guide for the listener. By linking the parameters of rhythm and timbre, as he did in passages of his *Livre d'orgue*, he effectively tags individual note values and rhythmic motives, making it easier for the listener to distinguish between them. Schaeffer himself recognized that serial passages of the *Livre d'orgue* showed a treatment of pitch that anticipated the autonomy of the *objet sonore*.¹⁰ In *Timbres-durées*, Messiaen links duration not just to timbre, but to the morphology of a sound on a tape loop, a recorded event, including its attack, decay and variations of intensity.

Messiaen's use of what he imagined would be self-effacing sounds to highlight his rhythmic constructions disappointed both Schaeffer and Henry, who felt that *Timbres-durées* was too traditional, and did not sufficiently engage the new possibilities of tape as a medium. Indeed, his kaleidoscopic works for organ and orchestra had probably led them to believe that his project would take an entirely different direction, and would exploit the vast timbral potential of *musique concrète*. As Schaeffer recounted: "We invited Messiaen to a feast where we thought everything would flatter his taste, but he didn't even open the cupboards. He clapped his hands and murmured, *Something like that, the least sound possible*."¹¹

Henry's working notes show that work on *Timbres-durées* began during the first nine days of February 1952.¹² Henry recalled that Messiaen's first step was to choose the five families of percussive sounds or *directions sonores* that were to be used.¹³ Once Messiaen had given him some initial indications concerning his general timbral preferences, Henry spent nearly a month recording and manipulating sounds, creating several hundred tape loops. From these loops,

Messiaen made a second selection and wrote out his prescriptive manuscript score in traditional notation.¹⁴ Using Messiaen's manuscript, Henry created a monophonic *concrète* score on graph paper, showing tape lengths instead of note lengths. This score, dated 15 April 1952, was probably used as an *aide-mémoire* during the *montage* of the first version of *Timbres-durées*.

Henry finished creating the tape of this version by early May, but Messiaen was not satisfied with the results. He made some cuts to his score, and agreed to Henry's innovative suggestion to spatialize the work. The spatialized version of *Timbres-durées* was performed in two concerts on May 21 and 25, 1952 during a Parisian festival of Western twentieth century music organized by Nicolas Nabokov, called *L'Œuvre du XXe siècle*.¹⁵ The story of these concerts and Henry's spatialisation of *Timbres-durées* is an entire subject unto itself, which will be addressed in my doctoral thesis.¹⁶ Here however, I will keep the focus on timbre.

Messiaen's enduring interest in metallophones and water sounds is reflected in the timbres he chose for *Timbres-durées*.¹⁷ They appear at the top of the *Repertoire et analyse de sons* compiled by Henry and include water sounds (*eau*), rubbed membranophones (*sons frottées*), the homogenous white sound from a Chinese cymbal (*son blanc homogène d'après un cymbale chinoise*), metallic percussion (*percuté métal*), and wooden percussion (*percutés bois*). It is interesting to note that the white noise cut from the reverberation of a Chinese cymbal and the jets of water against gongs and buckets were not lumped with the metallic percussion instruments, but were deemed different enough to warrant their own category. It is not clear whether Messiaen or Henry decided upon this manner of dividing up the families of timbres.

In his manuscript score, Messiaen referred to the sounds by their sources. The exceptions to this rule were the sounds which had been altered to such an extent that they reminded him of other events, like the : "squeaking pulley" and "bleating goat." This practice of describing non-instrumental timbres through metaphor also riddles his birdsong cahiers which took on a new importance shortly after Messiaen finished *Timbres-durées* and visited the home of the naturalist Jacques Delamain. In his transcriptions from Delamain's garden from June of 1952, he compared the timbre of a quail's call to drops of water, and a woodpecker's rapping to splashing water or a woodblock. These were all sounds that had been recently employed by Messiaen in *Timbres-durées*.¹⁸

According to Messiaen's program note, Personnage A, the first of *Timbres-durées*' four rhythmic motives, or *personnages rythmiques*, "contains eleven prime [note values] which are subject to new permutations in each sequence [...]. Each duration in personnage A has its own timbre : one hears a new version of the string drum imitating a bleating goat, sounds which have had filters or reverberation applied to them, and recordings of drops and jets of water."¹⁹ In its original order, from the first sequence of the work, the eleven sounds of Personnage A are presented from the shortest sound to the longest.

Personnage A is a series of sounds which Messiaen wanted to be heard as a series of durations linked to a series of timbres. As early as 1952, Messiaen's former student Jean-Etienne Marie noted a similarity between these linked parameters and Cage's prepared piano - where a pitch and the timbre of a given preparation are always linked.²⁰ Messiaen also refers to Cage as a fellow innovator in his short text for the programs of the 1952 concerts, "Attendre 200 ans." Interestingly, Messiaen's diary from 1949, the year that Boulez invited Cage to present his music for prepared piano at Messiaen's analysis class at the Conservatoire, noted the idea for a series of timbres in an organ work.²¹ The subsequent rearrangement of these sounds leads to the "absence of continuity and ordered disparity" a state which Messiaen once suggested in his early critiques of musique concrète as an ideal goal for the new art.²²

The third sound of Personnage A (in its first permutation) labelled "E6" in both Messiaen and Henry's scores, is a recording of a stream of water directed into a pail. On Henry's *Repertoire et analyse des sons*, all of the water sounds are labelled "E" for *eau*, and seem to have been chosen from a far greater number of tape loops which were not used. (E2 and E5 are drops of water, E9 is a stream of water plunged into a bucket and gradually pulled out again, and E12 is a stream of water against a gong). On his score showing how he wanted Henry to construct his piece Messiaen also noted some other information about the sound E6. "Do 1" indicates the setting on the *phonogène à clavier*, a machine with a piano keyboard which allowed the precise transposition of tape loops. Here Messiaen noted not the original setting but the transposition setting. He also indicated that the sound is reversed, and was recorded at or amplified to a level that can be described as mezzo forte (at least in relation to the other sounds.) Most strikingly, and characteristic of his dependence on *écriture*, Messiaen notes the length of the note in traditional notation.

In comparing Messiaen's manuscript to Henry's *concrète* score, we remark that in contrast, Henry noted only which tape loop he would need to use (E6), the and the length in centimeters of tape to be produced from the loop, since the other factors Messiaen meticulously noted at each repetition, were of course, automatically inscribed in the tape loops themselves. Only in the first sequence of his score did Henry note the dynamic levels - in later sequences the dynamics remain unchanged and are not noted.

The *Repertoire et analyse de sons* further clarifies the transformations that the original recording of sound E6 underwent. The first part of the document describes the original unaltered sound, labelled as tape loop (*boucle*) number 227 (abbreviated "B227"). Described as "A stream of water in an empty bucket - a continuous and homogenous sound in a medium register, recorded at the setting B2 [on the *phonogène à clavier*]." On Henry's copy of the document there is a space on the page after which the text describes how the original recording was manipulated for use in the work "sound used : (B228) An extract of loop 227 lowered a major seventh, played in reverse with pure reverberation added, 368 centimeters in length."

In Goléa's copy of the *Repertoire et analyse de sons*, the empty space left for examples on Henry's copy has been filled with a transcription in traditional notation of the altered sound, labeled "example 6" alongside the equivalent length in traditional note values for the 368 centimeters of tape. The transcription of the jet of water in traditional notation (a widely spaced and trilling chord across the bass and tenor registers) is extremely similar to Messiaen's transcriptions of

natural timbres (the wind in the trees, running water, and birdsong) found in his *cahier de chants d'oiseaux* from June of 1952.²³ The notation on Goléa's copy is quite possibly Messiaen's own transcription in traditional notation of the recorded and altered sound.

The exercise of transcribing the wind, gurgling water, or a cawing crow may seem futile in the technological context the electroacoustic studio where tape could capture such sounds precisely. Yet it was this very manner of imaginative transcription that renewed Messiaen's musical language in his subsequent works from the 1950's like *Reveil des oiseaux*, and *Catalogue d'oiseaux*. Recent studies have shown that he transcribed many recordings of birdsongs, both tapes and records, for use in his later works – the first known example being the American bird sounds used in *Oiseaux exotiques*.²⁴ Messiaen's preference for traditional notation was a conceptual barrier that prevented him from fully exploiting the new *musique concrète*, yet Messiaen creatively took advantage of this very barrier, using musical écriture, his remarkable ear, and imagination to capture natural sounds in new ways that I suggest were informed by his encounters with electroacoustic music.²⁵ The transcription of sound E6 found in Goléa's papers is an interesting anticipation of Messiaen's musical development during the 1950's.

Messiaen's disappointment with the sounds he had chosen for *Timbres-durées* also led to his realization that timbral fluctuations are also rhythms, that rhythm and timbre are inextricably linked. The composer would return to this idea in his examination of rhythm in the first volume of his *Traité*.²⁶ Messiaen chose streams of water for the long durations of personnage A, but ultimately found that these sustained sounds did not necessarily give an impression of unity. As he put it, "I must say that I was disappointed with some of the timbres I myself had chosen. In nature there are particularly lively timbres, and those that disappointed me, were the streams of water, because I wrote long values for the streams of water, and in such streams, as you know, there is a gurgling. Each little gurgle is a new event for the ear and where I expected a long value, there were a thousand short values striking the ear one after another *and leaving no impression of a long value*."²⁷ He already hints at this in his short text for the May 1952 concerts, "Attendre 200 ans".

Later in the 1950's, at the time when he was incorporating transcriptions of water sounds into his *Chronochromie*, Messiaen, a card-carrying *rythmicien* (scholar of rhythm) made a veiled reference to his one-time experience with the recorded water sounds of *Timbres-durées* in his preface for a special issue of the *Revue musicale* dedicated to *musique concrète*. "Thus, our old companion, Time, reveals to us one of his secrets : at the interior of each expected note-length, changes in dynamic create thousands of unexpected short lengths, recalling the prediction of *Macbeth's* witches, 'until / Great Birnam wood to high Dunsinane hill / Shall come against him...!' Yet, the miracle occurs: the forest begins to march! The once docile whole and half notes begin to move, much to the *rythmicien's* dismay! There is no need to travel to the moon to learn something new - microphysicists have told us this already, and *musique concrète* confirms it."²⁸

Just as Messiaen would continue to carefully study the natural timbres like those he employed in *Timbres-durées*, he also repeatedly exhorted younger composers writing both acoustic and electroacoustic music to turn to nature for ideas. Messiaen was attracted to Schaeffer's studio hoping that tape would be the perfect medium for serial rhythmic constructions. His traditional ideas about notation and timbre conflicted with the new implications of recorded sound. The timbres Messiaen chose defied and surpassed the traditional notation which was inextricably linked to his ideas about rhythm. Despite his disappointment with the sounds he initially thought would be subordinate to his rhythms, Messiaen's experience lead him to develop his ideas concerning the nature of timbre. Though he would not continue to work in the medium of *musique concrète* we can posit that his experience at the GRMC contributed to new developments in Messiaen's musical language.

¹ Most notably in my 2006 Master's thesis at Université Lumière Lyon 2, *Les Timbres-durées d'Olivier Messiaen et la relations du compositeur avec la musique concrète*, dir. Anne Penesco, and again in "Rhythm and Form in Olivier Messiaen's *Timbres-durées*" presented June 22, 2008 at the Messiaen 2008 International Centenary Conference at the Birmingham Conservatoire.

² *Archives GRM*, Vol. 1, GRM-INA 275512.

³ A radio broadcast of a conversation between Pierre Schaeffer, Olivier Messiaen, Roland-Manuel and Serge Moreux concerning the 1950 concert of musique concrète at the Théâtre de l'Empire, on the Chaîne nationale and produced by the Radiodiffusion française, is conserved in INA archives, reel 96INA8505PA259. Messiaen's critique of *Musique sans titre* was also recorded for the Chaîne nationale, broadcast 21 september 1951. INA archives, reel MU02716 or 97INA8505PA173.

⁴ Boivin, Jean, *La Classe de Messiaen*, Paris : Bourgeois, 1995, p. 117.

⁵ "Depuis qu'elle est exécutée sur ruban, qu'elle est découpée sur ruban, c'est la possibilité de faire entendre d'une façon rigoureusement mathématique des durées extrêmement compliquées qui ne seraient pas exécutables avec des instruments et surtout des instrumentistes."

Messiaen interviewed by Antoine Goléa circa 1952, reused in *Acousmathèque* on France Musique, 5 February 1985, and conserved in the INA archives, reel 85M07019G0004. Unfortunately I have not been able to locate the original 1952 reel. All translations in this text are my own, unless noted otherwise.

⁶ Messiaen on the subject: *Olivier Messiaen et les oiseaux*, film réalisé par Denise Tual et Michel Fano, 1973. Schaeffer on the subject: *A la recherche de la musique concrète*, p. 182, and "Les voix de l'avant-garde" of June 3 1959 rereleased in *Pierre Schaeffer, l'œuvre musicale*, GRM-INA 1990, disc 4, track 9. It is in this recording where Schaeffer proclaims, "Nous sommes des gens qui travaillent d'après nature."

⁷ Michel Chion was the first to make this observation in his Fayard biography of Pierre Henry.

⁸ "un travail de rythme sans aucun son musical."

⁹ "En composant cette œuvre, j'ai essayé de faire entendre des durées seules, des durées abstraites, presque des durées qui ne sont pas audibles, mais seulement pensables. Je ne les ai pas accompagnés des sons musicaux, mais seulement des bruits, des timbres, ce comme le dit le titre. Les timbres qui étaient destinés à les faire valoir, à les mettre en valeur."

¹⁰ Schaeffer cited Messiaen as a precursor of musique concrète "... for his experimentations with symmetrical constructions where the series is not entirely divorced from traditional language," making reference to Messiaen's experiments in integral serialism and symmetrical permutations where individual pitches are always linked to the same attack and intensity. *A la recherche d'une musique concrète*, Paris, Seuil, 1952, p. 182.

¹¹ "Messiaen, que nous avons convié à un festin de sons où tout, pensions-nous devait flatter sa gourmandise, n'ouvrirait même pas les armoires, frappait dans ses mains et murmurait : quelques choses comme cela, le moins de son possible." Schaeffer continues, "Messiaen, restait malheureusement un peu loin du réalisateur, laissait se produire cet étonnant Timbres-durées qui demeurera sans doute à la fois le plus grand succès et le plus grand échec de cette période."

Schaeffer, "Vers une musique expérimentale", *La Revue musicale*, no. 236, (1957), p. 18. For Pierre Henry's reaction to *Timbres-durées*, see his interview with Boivin cited in *La Classe de Messiaen*, pp. 117-118, or Michel Chion's biography of Henry, published by Fayard. Henry reiterated his views in his interview with the author at Studio SonRe, Paris, February 6, 2008.

¹² Pierre Henry's agenda from 1952, graciously consulted for the author by M. Henry.

¹³ Interview with Pierre Henry, February 6 2008.

¹⁴ A clean version of a sample from this manuscript was created by Messiaen for the May 1952 concert programs, and has been reproduced in the English and French versions of Nigel Simeone and Peter Hill's biography, *Messiaen*, New Haven : Yale, 2005, p. 198 and Paris : Fayard, 2008, p. 259. An extract from a version of Henry's concrète score, also created for the 1952 programs can be seen in Erhard Karkoschka's *Notation in New Music*, New York, Praeger, 1966, p. 164, with a longer example found in the program conserved in the Schaeffer archive, IMEC.

¹⁵ *Timbres-durées* may or may not have been played on the student concert of 23 May 1952. It was among a list of works from which the attendees had to vote and choose from. Messiaen was in competition against his former student Boulez in a category comprised of serial works of musique concrète. I have found no record of the winner. A program with ballot is conserved in the Schaeffer archive (IMEC).

¹⁶ Dir. Anne Penesco at the Université Lyon 2, *Le développement du langage musical d'Olivier Messiaen*.

¹⁷ In a 1966 interview Messiaen linked the two families of sounds, likening the resonance and halo of harmonics of gongs, tam-tams and bells to the "strange and enormous sounds of nature, like waterfalls and mountain torrents." L'émission radio, *Musique de Notre Temps*, avec Claude Samuel "Où va la musique?" 25 janvier 1966

¹⁸ Messiaen's notes from the Charente 12-14 juin 1952, BnF Département de la musique, Ms. 23079.

¹⁹ "Le personnage A contient 11 nombres premiers, destinés à subir des permutations nouvelles à chaque séquence. [...] Le personnage A possède un timbre par durée : on y entend une nouvelle version du tambour à corde imitant une chèvre qui bêle, des sons filtrés et réverbérés, des enregistrements de gouttes d'eau et de jets d'eau."

²⁰ *Musique vivante, introduction au langage musical*, Toulouse, Privat/PUF, 1953, pp. 158-160.

²¹ C.f. Simeone and Hill, 2005, op. citée, p. 109.

²² Messiaen's analysis of musique concrète broadcast 21 September 1951. "*cette absence de continuité, cette disparité ordonnée*"

²³ BnF Ms. 23079.

²⁴ This was first observed by Robert Fallon in his study "The record of realism in Messiaen's bird style", in *Olivier Messiaen: music, art and literature*, eds. Dingle and Simeone, Aldershot, Ashgate, 2007, pp. 115-136.

²⁵ This experience certainly might have played into Messiaen subsequent shift to orchestrating the timbre of birdsong with chords instead of single notes, a practice which appears for the first time in certain transcriptions of his birdsong *cahiers* from 1952. The first composers of spectral music later cited this manner of thinking as a precursor to their own technologically-aided projects in orchestrating timbre.

²⁶ Although Messiaen was disappointed with *Timbres-durées*, it should be noted that his harsh judgements turned out to be more or less typical of his output from his "experimental period" of 1949-1951. Later in life, Messiaen distanced himself from even his best known experimental works, claiming his *Quatres études rythmiques* as the work "of one of many Messiaens that are now dead." With the exception of *Timbres-durées* however, he would continue to revindicate the importance his serial innovations. In reference to the the *Livre d'orgue*, Messiaen insisted that "even if one finds the music is long, ugly and useless, it represents one of my greatest rhythmic victories."

²⁷ "*Je dois dire d'ailleurs que j'ai eu une déception pour certains de ces timbres, que pourtant j'avais choisi. Dans la nature [il y a] des timbres particulièrement vivants, et ceux qui m'ont déçu, c'étaient les jets d'eau, parce que j'avais décrit pour ces jets d'eau des valeurs très longues, et dans les jets d'eau comme vous savez, il y a un crépitement. Chacun de ces crépitements est un événement nouveau pour l'oreille, et là où j'attendais une très grande valeur, il y en avait un millier de petites valeurs, [...] – dans la peinture impressionniste par exemple, où il y a des milliers de petites couleurs, les petites valeurs frappaient toutes l'oreille les unes après les autres et il n'y avait plus de grande valeur.*"

²⁸ Preface to the 1959 issue of *La Revue musicale*, "Expériences musicales", p. 5.

"*Et voici que notre vieux compagnon le Temps nous livre un de ses secrets. À l'intérieur de chaque durée prévue, les changements dynamiques créent des milliers de petites durées imprévues. Rappelons-nous la prédiction des sorcières de Macbeth: "Tant que la forêt de Birnam ne marche pas vers Dunsinane..." – Or, le miracle se produit: la forêt se met en marche! Les sages longues et brèves qui s'agitent ici pour le plus grand désarroi du rythmicien... Point n'est besoin d'aller dans la lune pour apprendre du nouveau: la microphysique nous l'avait déjà dit – la musique concrète le confirme.*"