

**THE USE OF SILENCE IN SELECTED COMPOSITIONS
BY FREDERIC DEVREESE: A MUSICAL ANALYSIS
OF NOTATED AND ACOUSTIC SILENCES**

**EL USO DEL SILENCIO EN UNA SELECCIÓN DE COMPOSICIONES
DE FRÉDÉRIC DEVREESE: UN ANÁLISIS MUSICAL
DE LOS SILENCIOS ANOTADOS Y ACÚSTICOS**

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ABSTRACT

Frédéric Devreese (b. 1929) is a prominent Belgian classical and film composer who has written over 200 musical compositions, including 22 film scores. In this article, we approach the analysis of four of his compositions, including one film score cue, by examining the presence and absence of silence. The chosen pieces were personally recommended and selected by the composer himself, as being relevant for their usage of silence. Our subject of study is primarily focused on silences that are represented in the score (i.e. rests, phrase marks, staccati, breath marks, etc.). However, a brief comparison with two selected recordings for each score will be made, as part of a comparative analysis. Two new musicological tools are presented and tested in this study, namely: Barcode of Synchronized Rests (BSR), and Barcode of the Silent Waveform (BSW). Consequently, a better understanding of the analyzed compositions is achieved, and an analytical method for studying functions of silence is suggested, opening horizons to future silence-based musicological studies.

Key Words: silence, rhythm, contemporary music, film music, instrumental music.



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RESUMEN

Frédéric Devreese (n. 1929) es un célebre compositor belga de música clásica y música de cine, autor de más de 200 composiciones musicales, entre ellas 22 bandas sonoras. En el presente artículo, se propone el análisis de cuatro de sus composiciones, incluyendo una escena de una banda sonora, desde la perspectiva de la presencia y ausencia del silencio. Las piezas fueron recomendadas y seleccionadas personalmente por el compositor, siendo relevantes por su uso del silencio. Nuestro objeto de estudio está principalmente enfocado sobre los silencios representados en la partitura (p.ej.: silencios de figuras, ligaduras de fraseo, staccati, comas de respiración, etc.). No obstante, una breve comparación de dos grabaciones para cada pieza se realizará como parte del análisis comparativo. Dos nuevas herramientas musicológicas son presentadas y puestas a prueba en este estudio, a saber: Código de Barras de los Silencios Sincronizados (CB-SS), y Código de Barras de la Forma de Onda Silenciosa (CB-FOS). Consecuentemente, se persigue una mejor comprensión de las piezas analizadas, y se sugiere un método para el análisis de las funciones musicales, abriendo horizontes para futuros estudios musicológicos basados en el silencio.

Palabras clave: silencio, ritmo, música contemporánea, música de cine, música instrumental.

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1. INTRODUCTION

1.1. STATE OF THE ART

Although there are many writings on silence, surprisingly few scholars have taken a musico-analytical approach for studying the functions of silence in music. This article analyzes the use of silence in four selected compositions of Frédéric Devreese (b. 1929). Devreese is one of the most prolific living Belgian composers, with a large corpus of concert and film music performed worldwide. In the current musical landscape, where composers increasingly often use electronic and digital instruments, Devreese stands as an exponent of a generation of orchestral composers. The uniqueness of his musical style resides in the use of a mixed language, that combines tonal and non-tonal elements, and the avoidance of standard chord progressions with a strong influence of Jazz music (Bosmans, 2005). Also, Devreese's eclectic music 'has a liking for dance rhythms and uses the technique of permanent variation, with logical but surprising evolutions' (Mertens & Knockaert, 2013).

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To a certain degree he maintains tonality, but he avoids confirming cadence-formulas and common harmonic sequences. He colours the tonal system through the frequent use of the so-called major-minor chord (major and minor thirds together). This chord also makes a link to jazz, with its typical blue-note character (the use of the minor third as deviation). The influence of jazz in his early music is clear enough, heard in the many echoes of Gershwin in his piano concertos and his one symphony. The constantly varying rhythm forms the backbone of this music. Devreese has a predilection for three-against-two rhythms. The dynamic structuring and the orchestration also contribute to the creation of climaxes (Bosmans & Diependaele, 2014, p. 3).

Even though Devreese is a prolific composer, with a large corpus of concert and film music performed worldwide, the published discussions of his music are relatively scarce. Most of the writings on the music of Devreese come from sources such as concert notes (McGovern, 2019; Walschaert, 2019), liner notes from CD booklets (Knockaert, 1993; Grauwels, 2005), transcribed interviews with the composer (Kerckhoven, 2004; Knockaert, 2019) and biographical compilations on his life and oeuvre (Mertens & Knockaert, 2013; Bosmans & Diependaele, 2014). However, during our literature review no in-depth musico-analytical articles were found on the compositions of Frédéric Devreese, which certainly deserve further examination. At the same time, none of these writings focus specifically on his usage of musical silence, a gap that the present article is aiming to fill.

The compositions that we are going to examine here were selected by Devreese himself in an email correspondence in which he pointed to four scores that might be interesting to analyze for their silence usage. These pieces span over a period of almost 50 years and they prove how the composer has experimented with silence devices at different stages in his career. Each piece presents multiple silence instances that actively contribute towards the elaboration of the musical fabric. There, the treatment that musical silence receives is far from being random. Rather, it presents a distinctive function that draws the listener's attention to the silence phenomenon itself. Thus, silence, and not sound, acquire foreground importance in these passages. At times, this is achieved by mathematically calculated pauses—like in the case of *Danse de l'Auberge*—, at others, silence irrationally contradicts the expectations of the listener on the feeling of closure—as in the ending of *Valse sacrée*. By analyzing the selected musical pieces, we shall discuss some of Devreese's most striking and fascinating musical passages and compositional techniques, in order to provide some deeper insight on his musical style, beyond the abovementioned discussion of harmony and rhythm.

Before focusing on the music of Devreese, we believe that it is necessary to briefly describe the state of the art of the current and past musicological studies on silence. Nowadays, there are, at least three contrasting approaches for analyzing silence: score-based, recording-based, and perception-based analysis. These approaches rely primarily on the three silence types defined by Margulis (2007): notated silence, acoustic silence, and perceived silence. In our study, we will focus on analyzing scores and audio recordings, by looking at notated silences contrasted with acoustic silences. Some core definitions are:

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- *Silence*. ‘Absence of sounds’ (Schafer, 1967, p. 5).
- *Notated Silence*. ‘Markings on musical scores that may indicate an acoustic or perceived silence’ (Margulis, 2007, p. 251).
- *Acoustic Silence*. ‘Periods on recordings during which acoustic analysis shows below-threshold sound stimulus’ (Margulis, 2007, p. 251).

We would like to point out that we will not be defining silence as ‘not intended’ sound (Cage, 1961, p. 14). The silences studied in Devreese’s music are intentionally notated in the scores and/or deliberately played by the performers. Although absolute absence of sound does not exist in the natural musical environment, relative absence of sound is still a valid construct. In a way, the relative absence of sound may be understood as a low-density level, and thus, it could be extended to other types of silence, which shall not be discussed here.

Our literature review has shown us that the vast majority of analytical studies on silence only deal with notated silences, mainly in their rest form. One of the first musicologists to theorize and analyze rest-notated silences was Hugo Riemann (1849-1919) defining end-rests, inner-rests, rests at the beginning of a motive, among others (Kim, 2013). Although Riemann’s harmonic theories have become relatively popular, his writings on silence still remain largely undiscovered. We can find a temporal continuity among the silence studies of the last six decades through the works of Braman (1956), Lissa (1964), Clifton (1976), Dougherty (1979), Gaudibert (1995), Judkins (1997), Harris (2005), Cooper (2011) and Yin Lo (2015).

Braman (1956) did not mention rhythmic silence as a distinct category in his list of 24 silence devices. However, he did describe numerous rhythmic devices created by silence, namely: accented beat vacant, anacrusis, asymmetrical separation, augmentation, barking or ritarding effect, calando, meter change, symmetrical separation, and syncopation, among others (1956, p. 40). Lissa (1964) acknowledged the importance of silence in the creation of rhythmic values, patterns, and flow. In this line, Judkins (1997) also insisted that ‘musical silences are charged with meaning by the tonal and rhythmic material surrounding them’. Clifton (1976) spoke of rhythm within a tripartite classification: ‘temporal silences’, ‘silences in registral space’, and ‘silences in motion’. Cooper (2011) questioned whether silence possesses an underlying rhythm, and how it can disorient the listener by being placed on the downbeat of a bar. Dougherty (1979), Gaudibert (1995), Harris (2005), and Yin Lo (2015), did not address rhythmic silence as a separate silence type in their classifications, granting more importance to structural silences.

Braman (1956) focused his first classification on the position in which the silence occurs, specifying the formal units that are being separated by silence (sections, phrases, or motives). Lissa (1964, p. 445), defined silence as ‘one of the structural elements of the sound fabric’. Clifton (1976) described how registral silence can emphasize long-span connections and create a ‘structural register’. Dougherty (1979) spoke openly of structural

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silence, along with pre-performance silence, and post-performance silence, as a subtype of the normative silences, later referenced and criticized by Judkins (1997). Gaudibert (1995) defined three types of silence that have a heavy structural impact: interrogative silence (not-conclusive), integrated silence (recursive) and punctual silence (conclusive). Harris (2005) asserted several types of structural silence in Handel, attributing them to Corelli: silence that demarcates formal and harmonic boundaries, pre-cadential silence, and interruptive silence. Cooper (2011, p. 25) distinguished two types of silences: structural silence (formal separation), and dramatic silence (interruptive)—focusing his research on the latter. Cooper added that structural silences that ‘usually occur on weak beats or half-beats, are common place and generally merit no special attention’. Contrarily, Yin Lo (2015) focused his research entirely on structural silences developing a threefold classification: opening silence, closing silence and transitional silence. This classification has a strong connection with Dougherty’s three non-normative silences: predictive silence, retrodictive silence, and juxtadictive or simuldective silence.

Unfortunately, each of the abovementioned authors used their own terminology to express a more or less defined taxonomy of silence types. Hence, different authors can be referring to a similar silence category, while using different terms. Many of these systems are rather comprehensive, but still remain largely unknown in the broader international musico-analytical circles. In this context, we would like to overview how the structural and rhythmical functions of silence have been studied and described. The distinction between rhythmic and structural silence lies mainly in the impact that silence has on the surrounding music. Rhythmic silence contributes to a temporal pattern, while structural silence acts as a separator or highlighter of a formal unit (motive, phrase, section, etc.).

1.2. AIMS AND REPERTOIRE STUDIED

This article aims to analyze the notated and acoustic silences of four scores of Frédéric Devreese (b. 1929): *Passage à 5: for violin, guitar, accordion, piano and contrabass* (2002/2015b), the third movement, “*Variations*”, from *Mascarade pour piano* (1953/2015a), “*Danse de l’Auberge*” from André Delvaux’s film *Un Soir un train...* (1968), and *Valse sacrée: for symphonic orchestra* (1989/2005). As stated above, the composer selected these compositions himself, due to the specific ways in which they make use of silence. Each of these scores shall be compared with two reference recordings (see references for full details). Our analytical goal is threefold: to improve our understanding of the constructive functions of silence in the selected compositions by Devreese, to present an analytical tool that allows us to compare condensed representations of notated and acoustic silences, and to strengthen the conceptual framework on musical silence through the analysis of scores and audio recordings.

1.3. METHODS

To achieve such objectives, we have developed two tools for a systematic analysis of notated and acoustic silence: (1) the Barcode of Synchronized Rests (BSR) dedicated to

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notated silence, and (2) the Barcode of the Silent Waveform (BSW), reserved for acoustic silence. These two tools were created explicitly for this article to objectively represent the notated silence of a music score and the acoustic silence of an audio recording in a timeline. They are applicable to any sheet music or audio recording and they can be used to provide a proper visualization of the presence/absence of silence in a musical composition. Most silence analysis rely on the commentary of music extracts. However, the BSR and BSW allow the music analyst to visualize silence in relation to the macro-structure of a musical composition, which implies a discretization and reduction of musical silence in relation to time.

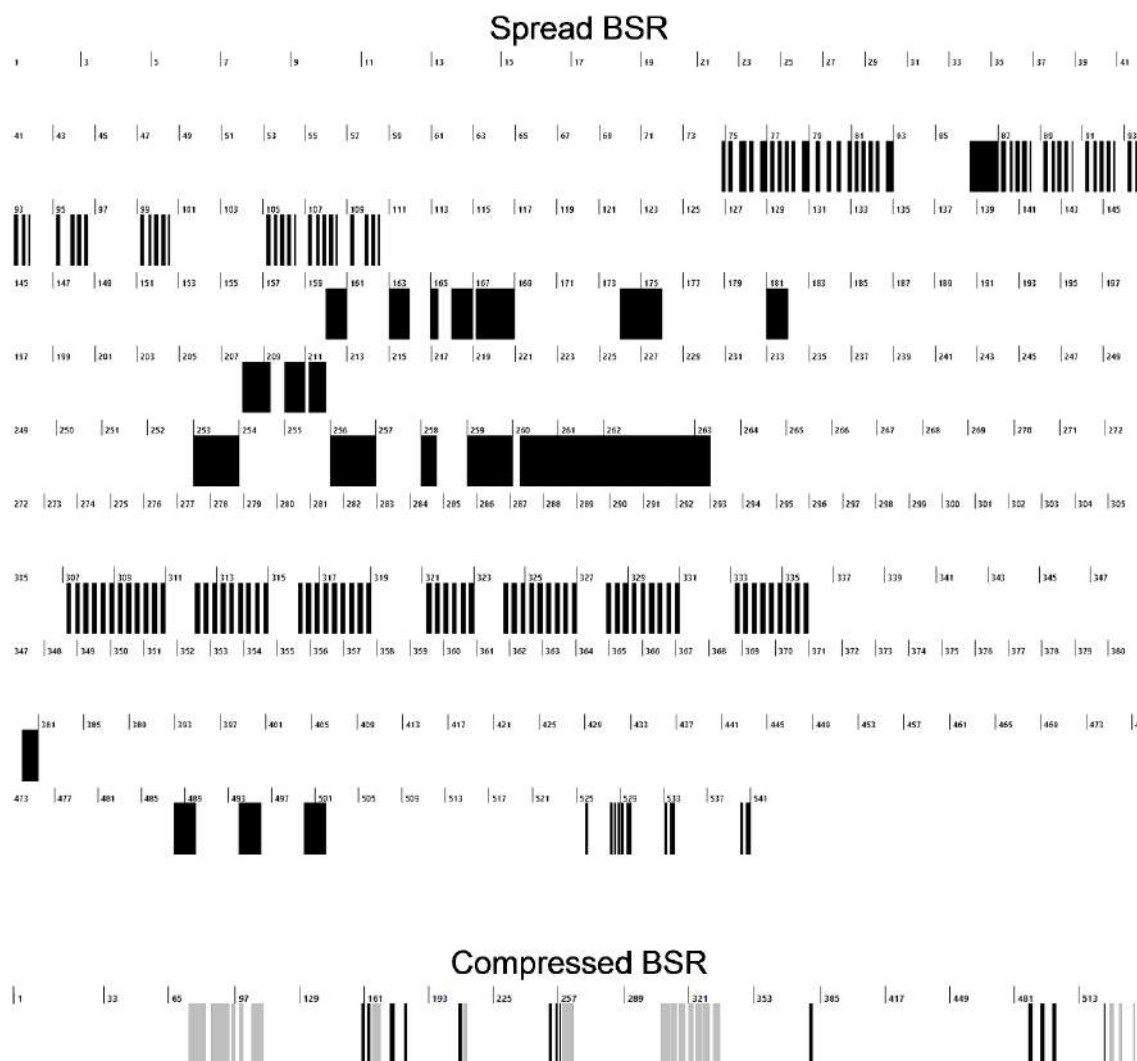


Fig. 1. BSR for Passage à 5 (2002) at two levels of resolution.

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With black stripes, the BSR displays the instances of rests that occur simultaneously in all written parts. These vertical stripes are indicated in a horizontal timeline of bar numbers. The information represented is manually extracted from the rests of the score and it can be displayed at various levels of resolution (see Fig. 1). The potential danger of using a compressed BSR is that it may lead to the creation of clusters that may look like big long rests, whereas in fact, what we observe are multiple instances of smaller rests. To avoid misleading the viewer, therefore, we have decided to highlight these clusters in gray, while using black to represent the individual rests' occurrences that do not overlap.

In contrast, the BSW is made by overlapping the empty sections of an audio waveform at various levels of amplitude in a vertical temporal axis, graded in minutes and seconds (see Fig. 2). In this specific study we zoomed into the waveform at seven levels of amplitude—every 6 dB, starting at 0 dB and ending at -36 dB. We have enhanced the differences between the seven layers using a grayscale palette. In this figure, white stands for absence of silence, black means presence of silence, and gray reflects the degree of variability between these two conditions.

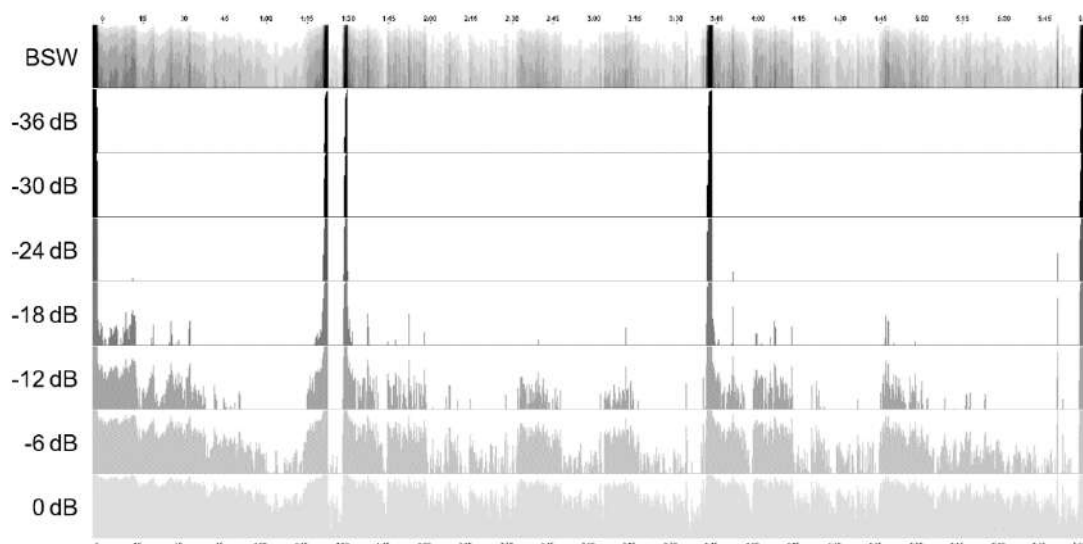


Fig. 2. Unfolding of the Barcode of the Silent Waveform (BSW) for *Valse Sacrée* (rec. 2011) at seven levels of amplitude.

Our discussion of the four scores and eight recordings are arranged in the following manner. First, we present a brief overview of the synchronized rests of each piece. For all four pieces, we provide a small table that groups the rest instances into clusters (see tables 1-4). The first column names the section in which the cluster occurs. The second column numbers the clusters (c.) in their order of appearance. The third column indicates the span of bars during which the silences occur. The fourth column states the number of rests (NR). Finally, the fifth column indicates the average rest duration of each cluster. After an individual discussion of each piece, we proceed to the comparative analysis including the BSR and BSW of all the musical material.

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2. DISCUSSION

In this discussion section, short extracts of scores, spectrograms and waveforms of the four analyzed pieces have been included to provide a better visualization of the silence devices. In each of these extracts, the rests have been numbered in red indicating their number in the series, with the view of helping to identify them better in tables 1-4.

2.1. *PASSAGE À 5*

Passage à 5 is a theme with variations structured into 6 sections: Introduction-Theme, Variations 1–4, and Finale. Altogether, it presents 156 absolute rests grouped in 12 clusters. These rests and clusters have been included in table 1, with their bar numbers and average duration.

Sections	C	Bars	NR	Avg. dur.
Theme	1	74–82	19	0.17
	2	86	1	0.27–1.09
Var. 1	3	87–111	44	0.11
Var. 2	4	160–168	5	0.85
	5	174–181	2	1.23
	6	208–211	311	0.86
	7	253–259	4	0.618
Var. 2/3	8	260–263	1	3.39–5.03
Var. 3	9	307–335	63	0.12
Var. 4	10	380	1	0.83–3.43
Finale	11	488–501	3	1.64
	12	525–540	10	0.18

Table 1. Synchronized rests and silence clusters of *Passage à 5*.
Source: Own elaboration based on Devreese (2002/2015a).

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The rests from clusters 1, 3, 9, and 12, display primarily a rhythmic function, creating both symmetrical (c. 9) and asymmetrical (c. 1, 3, 12) separations. Considering the brief average rest duration and the overall dynamics (*f-ff*), the analysis shows that the release tails of these sounds fill the rests almost completely (see fig. 3). In a way, these rhythmic rests (3 vs. 2) help to sharpen the staccato articulation. In Braman's (1956) terminology they would be labeled as minimal silences, distinct from the much longer and scarce self-assertive silences that draw attention to themselves.

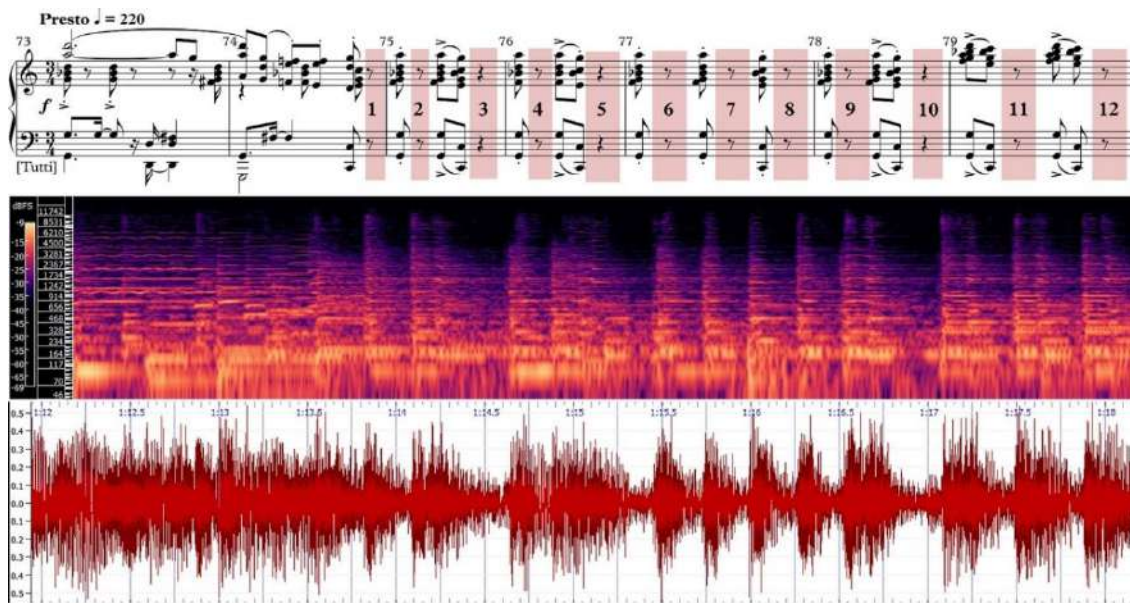


Fig. 3. Cluster 1. Rhythmic silences in *Passage à 5*, mm. 73-79 (Devreese, 2002/2015a; 2006).

In table 1, clusters 2, 8, and 10, were written as a span duration, as they are followed by an end-bar, c. 8 also has a fermata sign, while c. 10 is preceded by a fermata note. For our calculations, we presumed that the end-bar with or without a fermata sign, could add up to an extra measure of silence. These clusters and the last rests from c. 4, 6 and 12 are end-rests, because of their conclusive structural functions. The last two rests of the score can also be interpreted as a detached-ending. Clusters 4, 6 and 7 have a motivic function associated to the interrupted motif (see fig. 5) of the accordion that culminates with a *tutti* chord (*ff* c. 4 and 6, *pp* c. 7). This motif follows a shrinking progression in eighth notes: 12, 6, 4, 1 (c. 4, 7); and 12, 4, 1 (c. 6). If we examine the rest durations, we see an irregular sequence: 6, 6, 2, 6, 11/19 (c. 4, 7); and 8, 6, 5 (c. 6). This ternary distribution (ABA), defines the start, middle and end of the second variation. The longest inner-rests are found in c. 5 and 11, where the rests interrupt a longer musical phrase (4–5 bars). There is a contextual difference between both clusters: c. 5 has two silences (2 and 1-measures long, respectively) and uses only guitar and double bass (*p* crescendo to *f*); while c. 7 has 3 symmetrical silences (2 measures long each) in *tutti* (*ff* in crescendo). The latter constitutes the climax of the piece, because of its abruptness, insistence, and position (see fig. 4).

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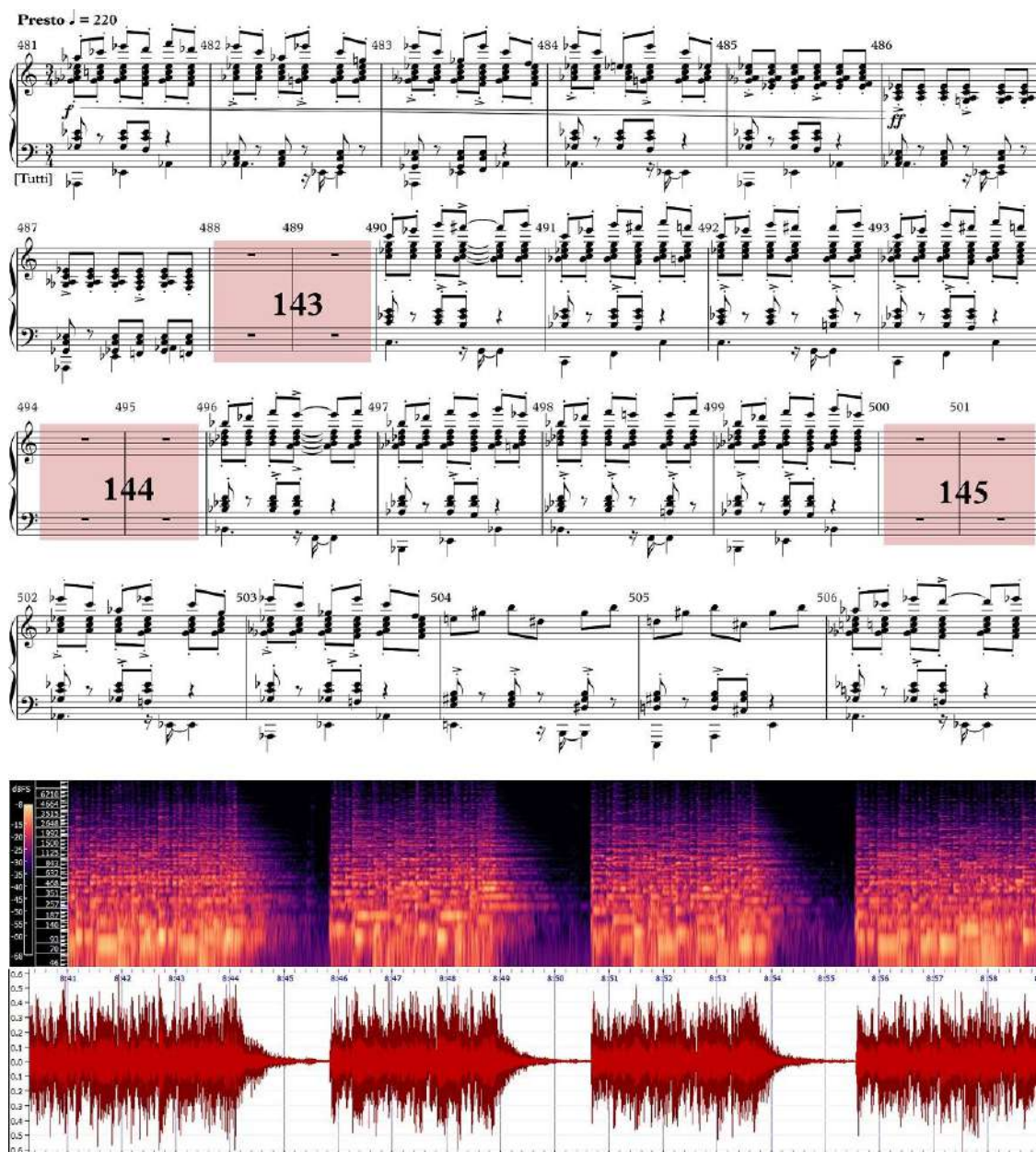


Fig. 4. Cluster 11. Climatic silence in *Passage à 5*, mm. 481-506 (Devreese, 2002/2015a; 2006).

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Presto $\text{♩} = 220$

155 f [Tutti] 156 158 159 long 160 161 [Accordion]

65

162 163 164 165 166 167 168

66 67 68 69

169 Variation n°2 [Acoustic Guitar] 170 171 172 173 174 175 176 177

p f p

[Double Bass Pizz.]

65 66 67 68 69 70

Fig. 5. Cluster 4. Structural silences: anticlimactic [65], interrupted motive and fragmentation [66-68], end-rest [69], phrase interruption [70]) in *Passage à 5*, mm. 155-177 (Devreese, 2002/2015a; 2006).

2.2. “Variations” from *Mascarade*

The third movement, “Variations”, from *Mascarade* presents 40 absolute rests spread throughout 5 sections: theme, variations 2–3, and coda. Variation 1 has no rests. In table 2, these rests have been grouped into 11 clusters, indicating their bar numbers and average duration.

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Sections	c.	Bars	NR	Avg. dur.
Theme	1	8, 38	2	0.5
Var. 1	–	–	–	–
Var. 2	2	78–9	1	1.34
	3	113–121	3	0.60
	4	122–3	1	1.34
Var. 3	5	130–141	12	0.61
	6	142–5	6	0.23
	7	157, 161	2	0.23
	8	162–6	6	0.23
	9	173	1	0.91
	10	177, 181	2	0.23
Coda	11	207–213	3	0.74

Table 2. Synchronized rests and silence clusters of *Mascarade*.
Source: Own elaboration based on Devreese (1956/2015a).

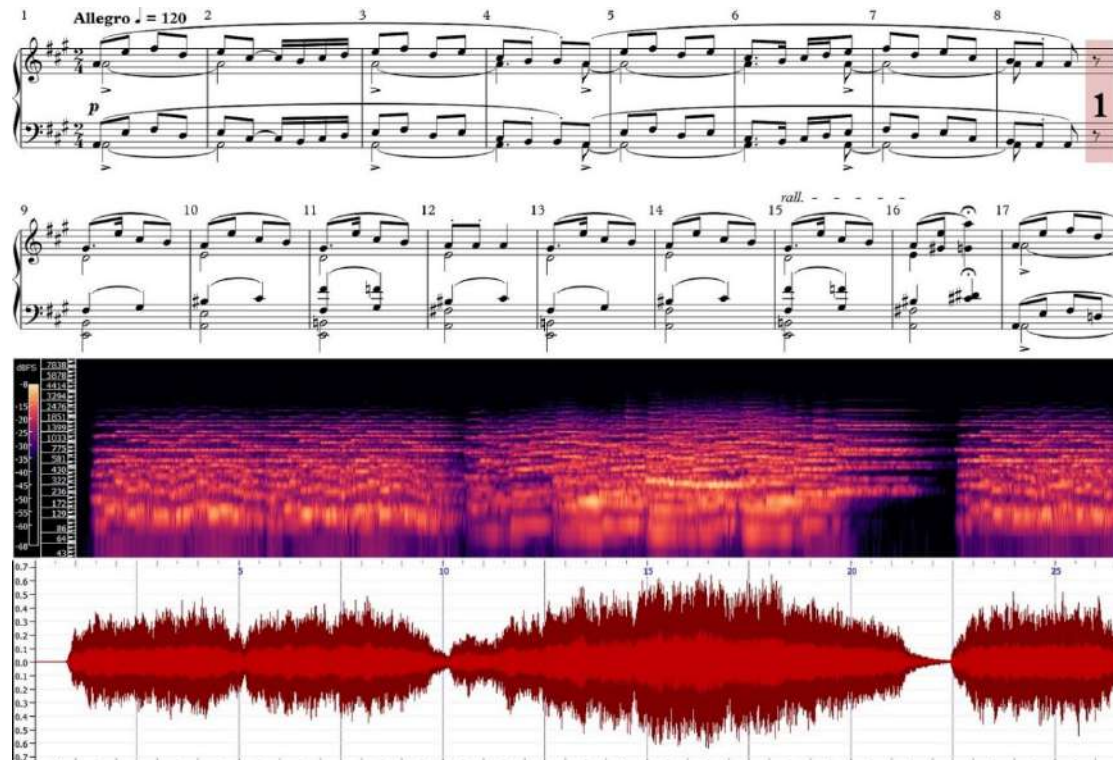


Fig. 6. Breath marks, cadential phrase separation in *Mascarade*, mm. 1-17 (Devreese, 1956/2015a; 1989).

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The theme (bars 1–40) only has 2 rests (bars 8, 38): 0.25 and 0.75 s, respectively. These are, primarily, end-rests, likened to the breath-marks of a phrase end, as the ones of bars 40, 44, 61, 69 and 77. It is worth noting that the fermata of bar 16 produces a larger silence separation than the eighth note rest of bar 8 (see fig. 6). Variation 1 (bars 41–77) has no synchronized rests, but only the abovementioned breath-marks. The 5 rests in Variation 2 (bars 78–129) define an ABA form: A (bars 78–9), B (bars 113, 115–16, and 121), and A (bars 122–3). The first and the last silences (1.34 s each) have a motivic function, detaching and reiterating the head of an 8-measure phrase (see fig. 7). The 3 inner rests of B (0.45, 0.45, and 0.91 s) are placed as a culmination of a rising passage, followed by the reprise of A.

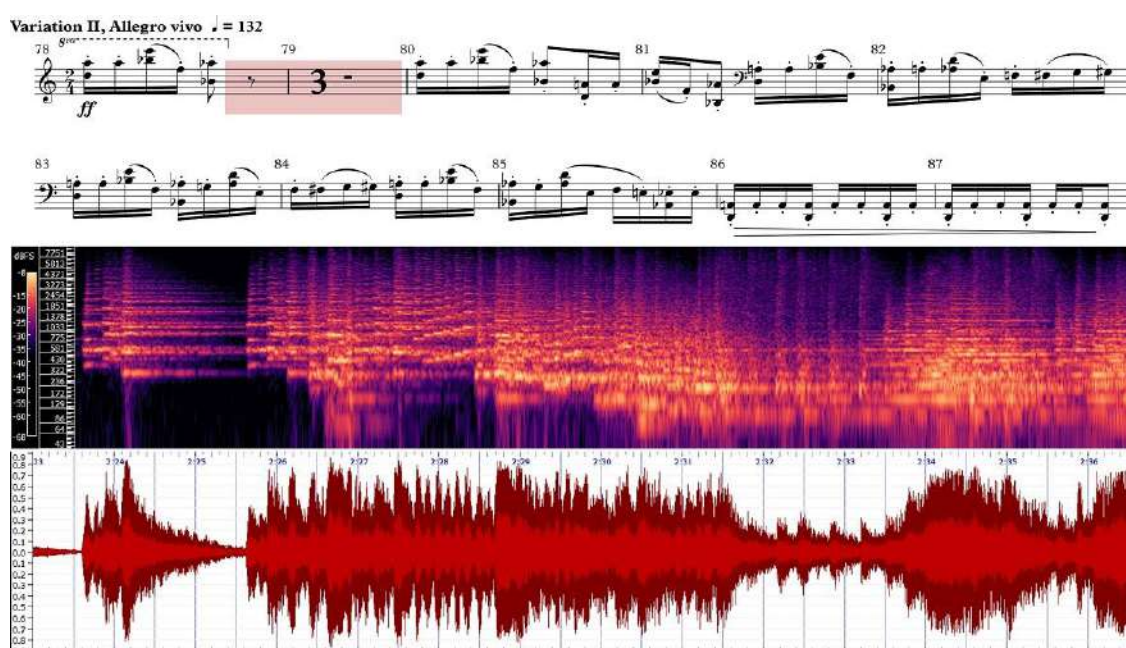


Fig. 7. Detached head of initial motive from *Mascarade*, mm. 78-87 (Devreese, 1956/2015a; 1999).

Variation 3 (bars 130–181) is more complex: 29 rests grouped in six clusters (c. 5–10). The first 12 rests (bars 130–141) arrange as 3+4+5 (see fig. 8). Most of them play a rhythmic (3 vs. 2) and motivic role, except for rests 10, 14 (interruptions for greater impact), 18 (anacrusis) and 19 (end-rest). The clusters 6 and 8 are identical, 6 rests (0.23 s each) in 3+3. They continue the rhythmic function of the c. 1 adding a new melodic line. Clusters 7 and 10 are also twins, 2 rests (0.23 s each) equivalent to bar 8. The long rest of bar 173 (0.91 s) is a variant of bar 153. This omission marks the climax of the variation. The coda (bars 182–216) has 3 rests (excluding the final rest) with an augmenting duration: bar 207 (0.3 s), bar 211 (0.6 s), bars 212–13 (1.32 s). The first is analogous to bar 177, while the second and third form a double detached-ending, deluding the listener with a false ending effect (see fig. 9).

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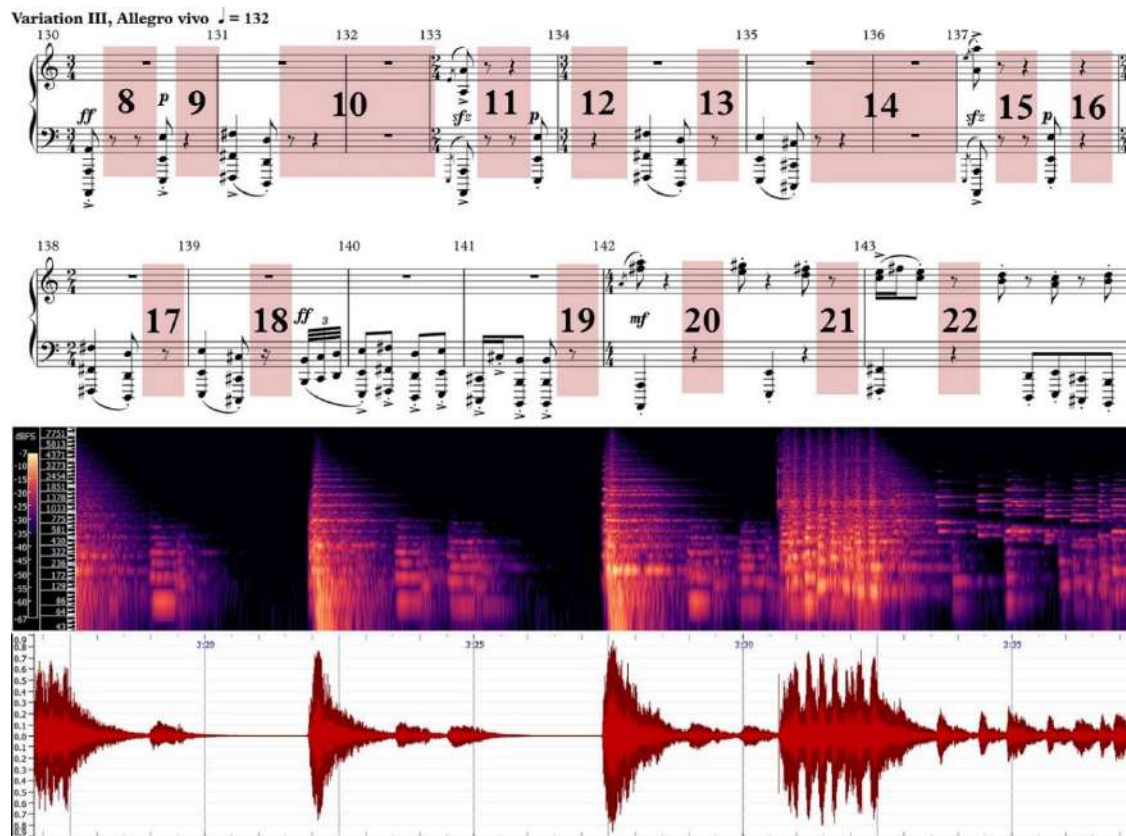


Fig. 8. Fragmentation with eco/delay effect, cross rhythm (3 against 2) in *Mascarade*, mm. 130-145 (Devreese, 1956/2015a; 1999).

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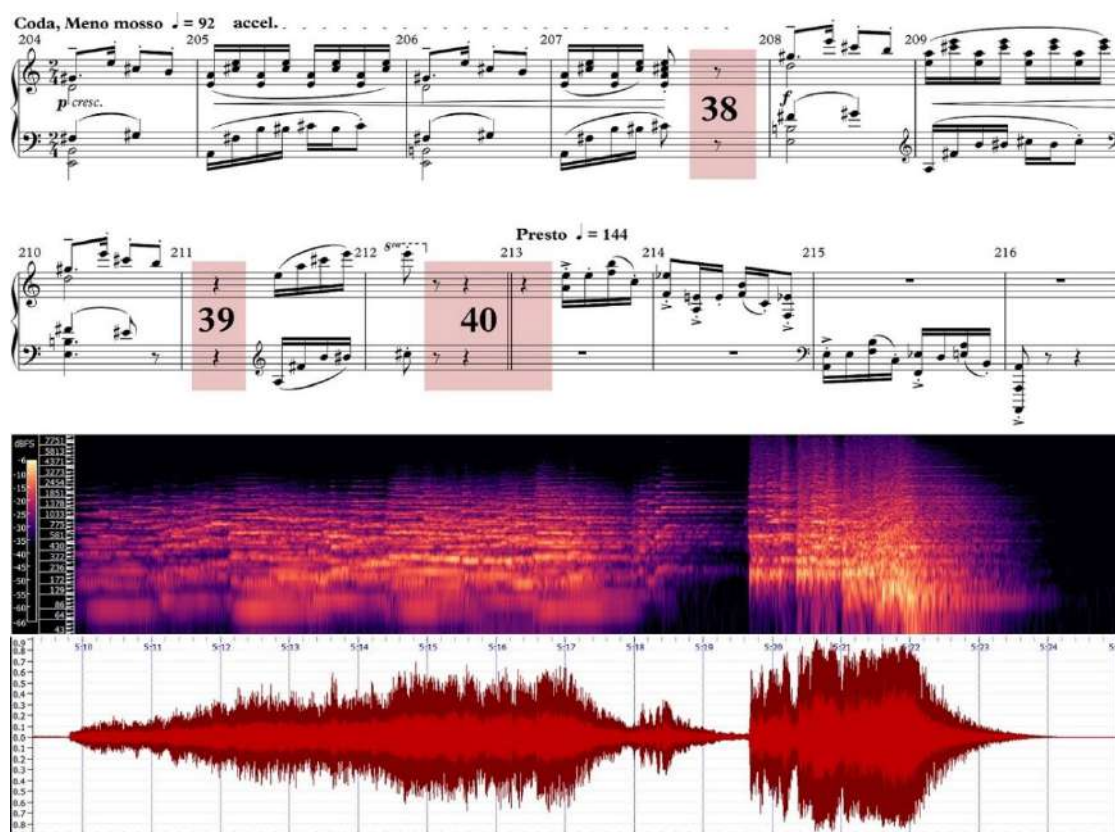


Fig. 9. Double detached ending in *Mascarade*, mm. 204-2016 (Devreese, 1956/2015a; 1999).

2.3. DANSE DE L'AUBERGE

The score of *Danse de l'Auberge* has only 3 rest-notated silences, in bars 8, 11 and 14, with a duration of 2.5, 1.88, and 1.25 s, respectively. In the film, these three rests get filled diegetically by footsteps in eighth notes. Similarly, in bars 1–6 we encounter 3 'silences' filled with a resonance written for strings and electronic organ. If we combine all six silences, we obtain a shrinking silent progression (7, 6, 5, 4, 3, 2 quarter notes) that complements an expanding sounding material (1, 2, 3, 4, 8, 8 quarter notes). This creates an effect of interruption, acceleration and gradual thematic exposition which adds both structural and rhythmic value. The rhythmic value comes from the accelerando, and the structural from the detached head of the opening motive, through a liquidation and progressive introduction of the musical material.

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Sections	c.	Bars	NR	Avg. dur.
	0**	0	1	10
	1*	1–2	1	4.38
	2*	3–4	1	3.75
Intro	3*	5–6	1	3.13
	4	8	1	2.5
	5	11	1	1.88
	6	14	1	1.25
Theme	–	–	–	–

Table 3. Synchronized rests and silence clusters of *Danse de l'Auberge*.

Source: Own elaboration based on Devreese (1968b).

Note: ** is a preperformance silence * external sounds to the score happen in the scene.

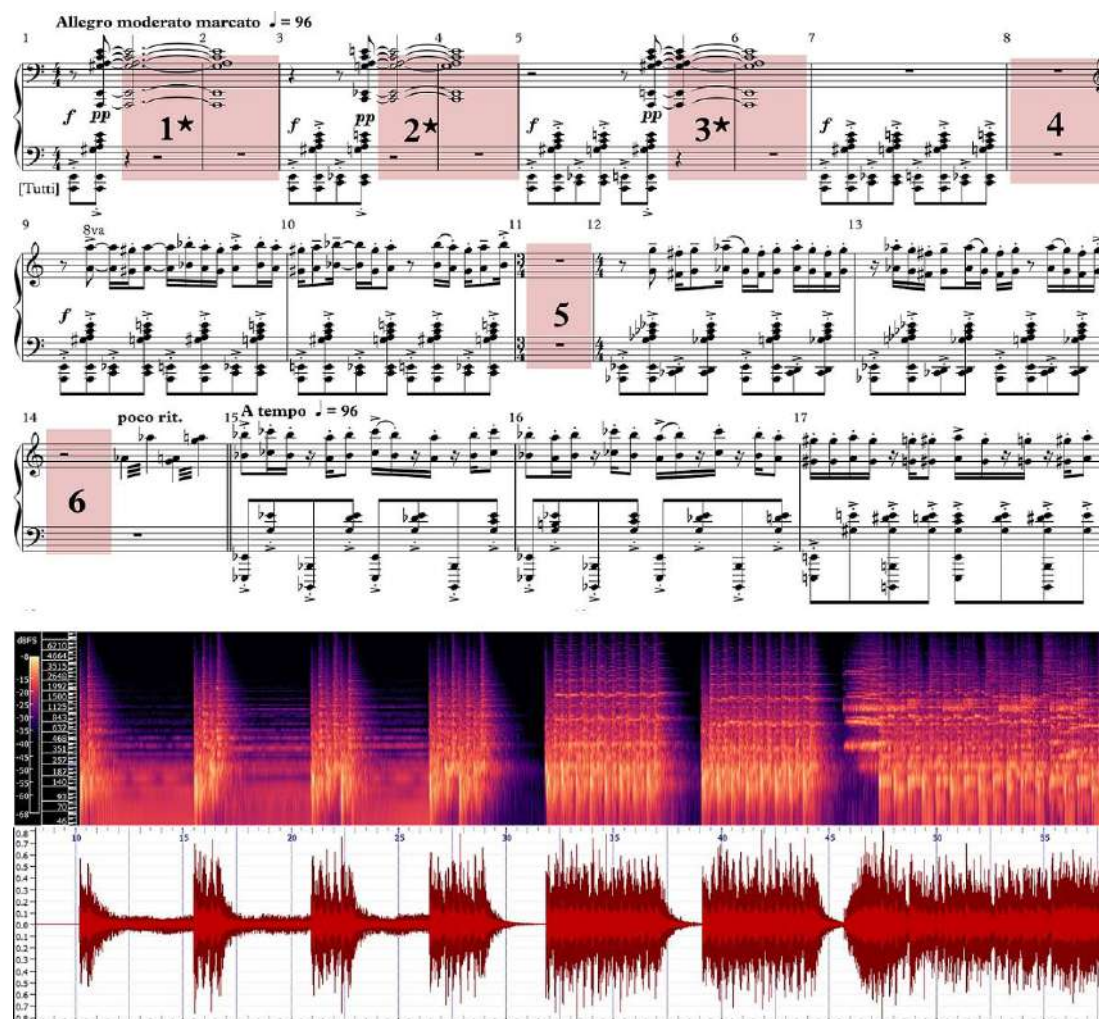


Fig. 10. Progressive start, fragmentation in *Danse de l'Auberge*, mm. 1-17 (Devreese, 1968a; 1994).

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2.4. *VALSE SACRÉE*

In *Valse sacrée*, 4 rest-notated silences were found in bars 31–2, 163, 171–2, and 238. The first and the third are 1.67 s each, while the second and the fourth are 0.69 s each. An interesting effect of incomplete ending is achieved by finishing the composition with the same material that has been sounding before the first and third silences (bars 25–30, 165–170, 240–5). The second and the fourth rests act as the resolution to a climax, preceded by a rising section. However, due to a shorter duration, these rests are likely to get covered by the resonance of the *tutti* chord (see fig. 11-12). A pause that is not rest-notated is found in the double bar that separates the introduction from the waltz, potentiated by a fermata sign (bar 24).

Sections	c.	Bars	NR	Avg. dur.
Intro	–	–	–	–
Start Waltz	1	31–2	1	1.67
End Waltz	2	163	1	0.69
Start Waltz	3	171–2	1	1.67
End Waltz	4	238	1	0.69
Start Waltz	5**	246	1	1.67

Table 4. Synchronized rests and silence clusters of *Valse sacrée*

Source: Own elaboration based on Devreese (1968a; 1968b).

Note: ** is a post-performance silence.

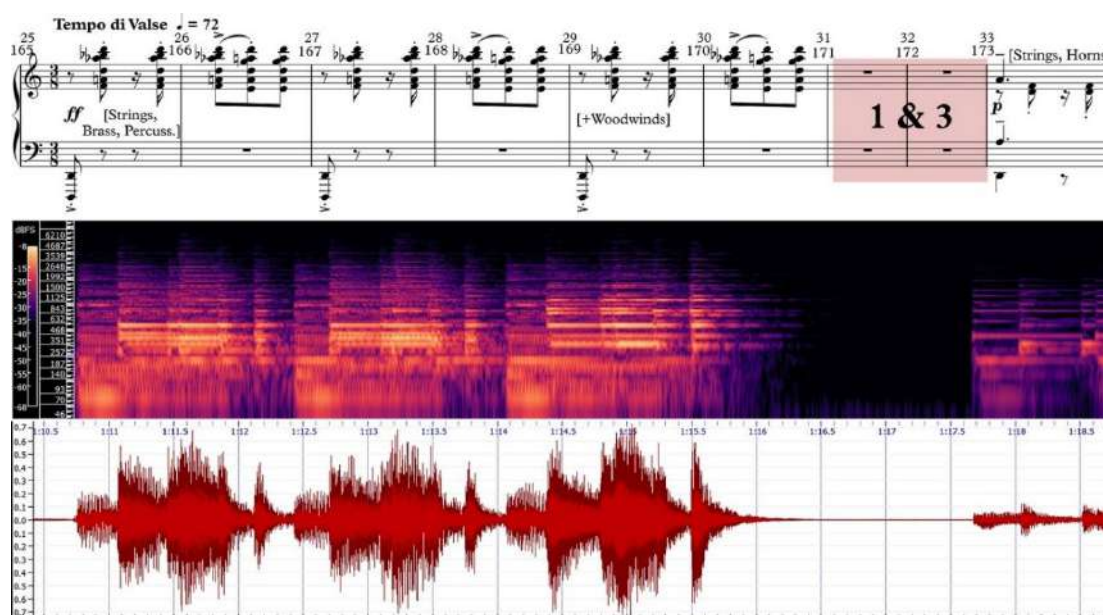


Fig. 11. Interrupted False ending effect in *Valse Sacrée*, mm. 25-33, 165-172 (Devreese, 1989/2005, 2011).

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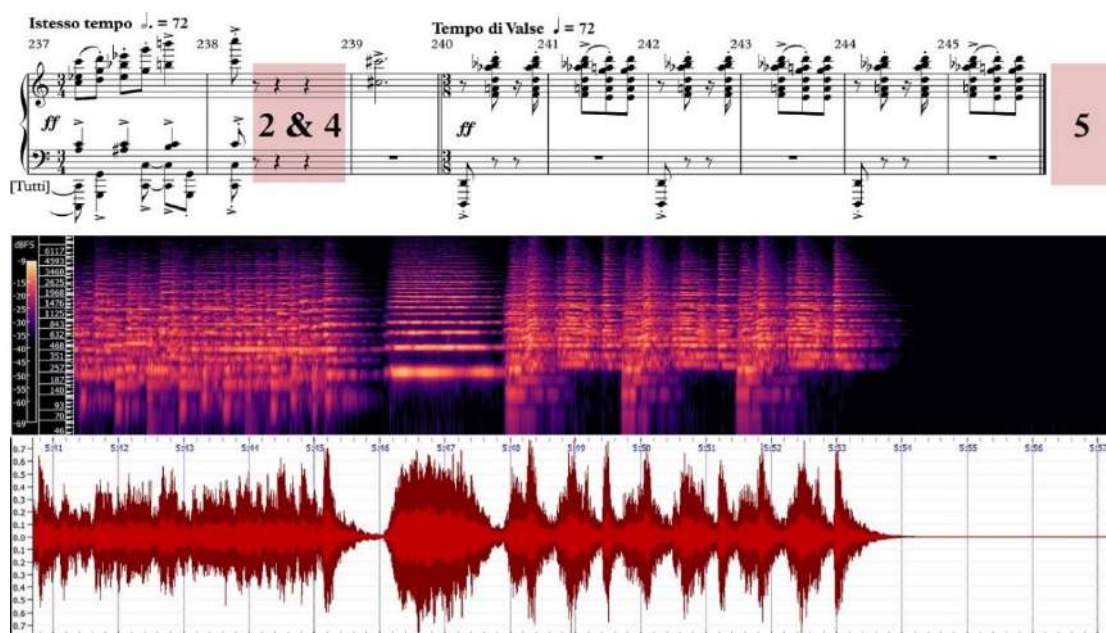


Fig. 12. Interrupted ending achieved in *Valse Sacrée*, mm. 240-5 (Devreese, 1989/2005, 2011).

2.5. COMPARATIVE ANALYSIS

In Fig. 13 we present the silence barcode diagrams for all four scores and eight audio recordings, which allows for an easy comparison of their rest positions within the form. The discussion of each of these pieces individually shows the wide variety of silence devices in Devreese's music. In terms of quantity, the first two pieces present more silence instances than the last two. In this sense, the BSR and BSW help us visually identify the density and position of silence. Fig. 13 shows the degree of variability that exists between the mechanical reading of the score (following all the tempo indications precisely) and the recording of a real performance. We have selected two recordings to prove that there is a considerable degree of variability between different performances too, though a relatively strong correlation in the presence of silence can be drawn between the selected recordings. Also, we can see how many acoustic silences are not notated as rests, and how some synchronized rests are not reflected clearly in the waveform.

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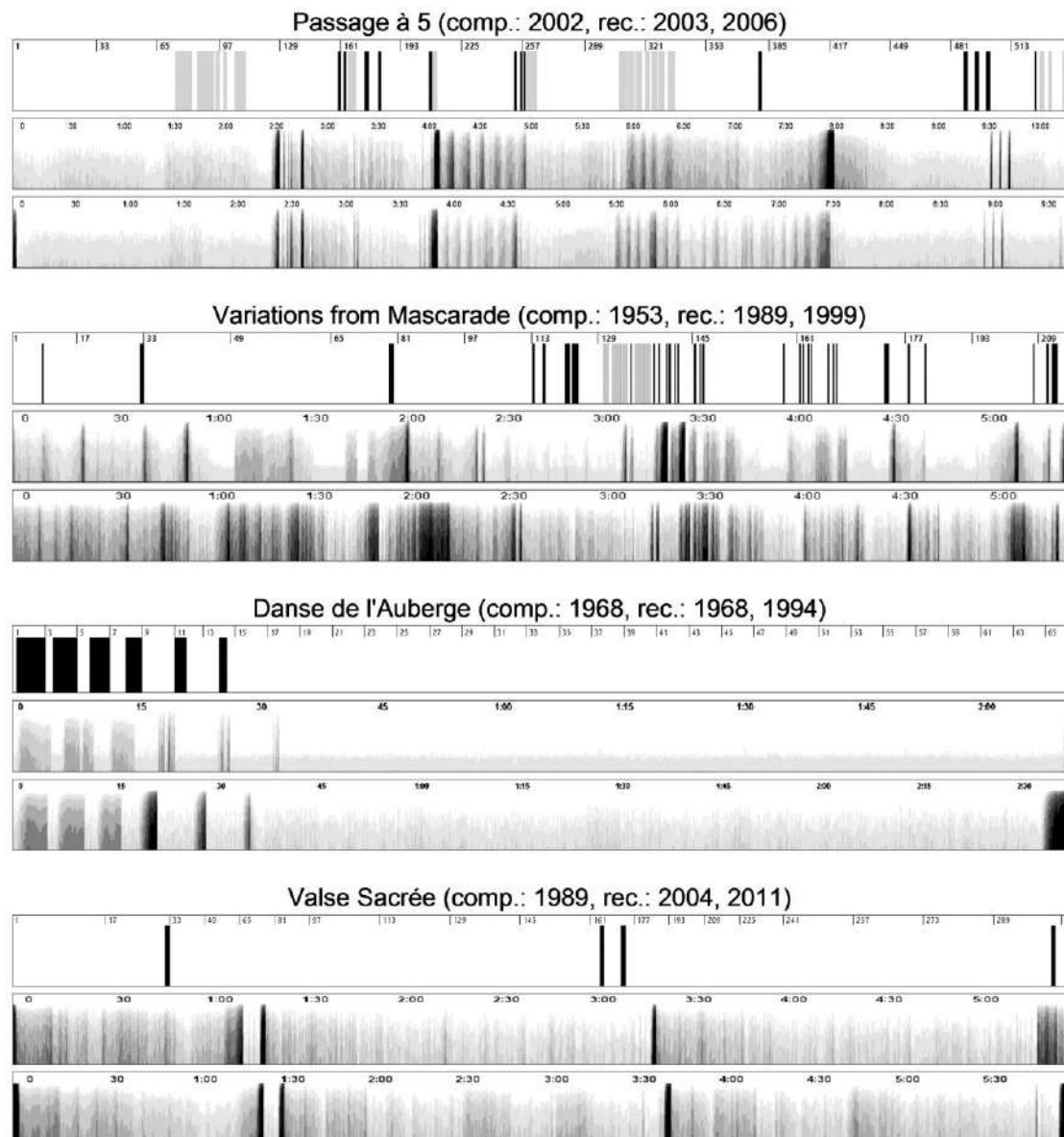


Fig. 13 BSR and BSW of our four case studies.

From all four pieces, *Danse de l'Auberge* has the strongest correlation between BSR and BSW, and it also seems to be the clearest to illustrate graphically. As described in section 2.3, the silence devices of *Danse de l'Auberge* can be classified as rhythmic and structural simultaneously, since there is an accelerando effect produced by the shrinking silences and a progressive presentation or motivic introduction to the dance.

Valse Sacrée presents silences of a structural type only, since they appear isolated, structuring the piece in a palindrome form. It is interesting to notice how the BSR and BSW seem to be inverted. This happens because between bars 24 and 25 there is a double bar, with a fermata sign on the last chord of bar 24. According to the score, there should not be any silence between those two bars, since there are no clear silence marks. However, both the orchestral and piano recordings present a silence in that place, that becomes equivalent in duration to bars 31–2 or 171–2, which last two empty bars. On the other

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hand, the rests from bars 163 and 238 are two and a half beats but have surprisingly little impact as acoustic silence as it is shown by the BSW, remaining almost hidden. The most striking and clever silence device in this waltz cannot be easily understood by only looking at the barcodes, since it is based on the music that precedes the silences. As explained in section 2.4, the waltz ends with the introduction, puzzling the listener, who might be expecting the music to continue whereas it has already ended.

Both *Passage à 5* and *Mascarade* present multiple instances of rhythmic and structural silence. With BSR and BSW we can discern the nature of these silences by paying attention to their frequency and periodicity. The silences that are relatively isolated tend to be structural, while the silences that repeat at regular intervals are more likely to create a rhythm. There is a stronger correlation in *Passage à 5* between acoustic and notated silence than in *Mascarade*. In part, this happens because of the dynamic contrasts of the latter. Sometimes, these contrasts are more effective in creating acoustic silence than the rest marks of the score. The greatest silences according to the score are the interrupted notated silences, found in *Passage à 5* in bars 488–9, 494–5, and 500–1; and in *Mascarade* in bars 78–9, 121, 122–3, 131–2, 135–6, 173, and 212–3. Nevertheless, according to the audio recordings, the largest acoustic silences are found in the double bars that separate sections: in ‘Passage à 5’ between 380 and 381, and in ‘Mascarade’ at bars 61–2 and 203–4.

3. CONCLUSION

This article argues that Frédéric Devreese’s use of silence reveals its rhythmic and structural functions, namely: cadential phrase separation, end-rest, detached head of initial motive, fragmented texture, eco/delay, detached endings, false endings, progressive start, anticlimactic and climatic functions, interrupted motives and phrases, among others. To make this claim, four scores –selected by the composer himself– have been analyzed in order to shed light on how silence operates in a specific musical context. This analysis has shown that, in their usage of silence, *Passage à 5* and the third movement of *Mascarade* are the most sophisticated pieces from the corpus. These two pieces display multiple silence instances of rhythmic and structural importance in a wide variety of musical situations. On the contrary, *Valse sacrée* presented only four structural pauses arranged as a palindrome, while *Danse de l’Auberge* opens with six striking pauses where the rhythmic and structural functions blend in a large-scale motivic expansion rendering an *accelerando* gest.

It should be noted that diverse approaches were taken by scholars for analyzing musical silence in the past, prevailing the analysis of sheet music and the creation of new silence classifications. In this study, we included the commentary of audio recordings in order to enrich the analysis of silence by examining both its notated and acoustic values. Currently, there is, to some degree, a conceptual chaos in terminology between these classifications of silence types and functions. Although we have tried to draft a brief chronology on silence classifications in the state of the art, a well-established and precise taxonomy for silence functions has not been found. The contribution of this article is then

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to shed some light on silence identification and structural distribution in a more specific context, the music of Frédéric Devreese.

At present, no other analytical studies on the use of silence in the works of Devreese were found. However, there are several analyzes on the use of silence in the oeuvre of other composers. For instance, the expressive functions of silence in the music of Handel have been discussed by Harris (2005), the dramatic disruptive pauses of Beethoven's music were addressed by Cooper (2011) or the recurring silence in the dodecaphonic pointillistic writing of Webern has been further studied by Yin Lo (2015). To a certain extent, Devreese integrates and develops the silence devices of previous generations, e.g.: the expressivity of Handel, the drama of Beethoven or the fragmentation and symmetry of Webern. However, the innovation of Devreese's use of silence lies in the specific ways in which he develops musical silence –as described in the analysis above–, and in his capacity to construct silence devices in a mixed language. This implies a combination of tonal and non-tonal elements, remaining fresh and accessible to broader audiences, without losing its musical complexity and sophistication.

It is hoped that the results of the present research will benefit musicologists, composers, performers, and listeners. For musicologists, this study attempts to improve our current understanding of musical silence in the compositions of Devreese. At the same time, it suggests some new musicological tools, such as the BSR and BSW, useful when approaching the musical analysis of silence. For composers, the compositional techniques discussed here, could inspire a creative implementation for their own music. For performers, this research presents a technical discussion of the musical silences in four pieces outlining their structural and rhythmic values. It also provides some more insight on the importance of score-represented silence and pauses, with the potential of increasing conscientiousness and expressiveness in silence execution. For listeners, the information of this study can help raise awareness and appreciation for the constructive functions of musical silence in the music of Frédéric Devreese.

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