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Erik Satie's *Vexations*: Analytical and Performing Aspects

ABSTRACT

The study of the connections between analysis and interpretation revealed the importance of analytical awareness in performing from memory, learning times, and achievement of high performative quality. We hypothesised that the study of performance features in a formally unstructured context could give similarly interesting results. The methodology we applied to study this piece is based on a morphological analysis, and on the analysis of the secondary parameters in 2 groups of 13 pianists: the first with performances extracted out of the 840 repetitions of *Vexations*, the second with performances of the generative page recorded in studio only once.

1. INTRODUCTION

Vexations remained unpublished and unknown until John Cage organised the very first performance in 1963. Cage's interest, followed by many other 20th-century artists, has made it a portrait of modernity even though after the first performance in New York only twenty-four have been documented (Bryars 1983). This is hardly surprising, since the execution of *Vexations* consists of 840 repetitions of a one-page piano piece lasting less than 2 minutes (Clarke 1982). On the 150th anniversary of Satie's birth — 21–22 May 2016 — the version performed in Vigevano's castle was organised as a musical relay — where the pianists performed one after another without intermission; it represented a rare opportunity to get acquainted with it in depth (Gillmor 1983; Orledge 1998).

To ensure the reliability of the event, four different kinds of collaborators were called for:

1. The performers: they followed one another at the same piano equipped with two benches; as the performer sitting on the right bench was about to end his performance, the following performer sat down on the left bench, ready to transfer to the other one — from left to right — and start playing when the repetition mark occurred;
2. The performance and count supervisors: they filled in a register with the performance count specifying the performers' names for every repetition. The supervisors also checked the recording and the screen with the information for the audience;
3. The musical assistants: they dealt with welcoming, preparing and assisting the audience and the performers;
4. The concert hall assistants.

Every pianist played for about 20 to 60 minutes, the equivalent of around 10 to 45 repetitions of *Vexations*' generative page. The piece presents clearly atypical elements which highlight two issues of great interest:

- a. its conventional conclusion after 840 repetitions which inhibits any attempt to perform a morphological analysis not limited to 1/840 of the whole piece;
- b. The traditional relationship among performer, composition and their audience is so provocatively modified that it is

disruptive. This made us wonder which analytical characteristics this phenomenon could acquire.

The study of the connections between analysis and interpretation revealed the importance of analytical awareness in performing from memory, learning times, and achievement of high executive quality. We hypothesized that the study of performance features in a formally unstructured context could give similarly interesting results.

The methodology we applied to study this piece is based on a morphological analysis, and on the analysis of the secondary parameters in 2 groups of 13 pianists: Satie's group, from which the 13 performances of the generative page were extracted out of the 840 repetitions of Vigevano's event, and the control group in which the 13 performances of the generative page were recorded in studio only once.

The morphological analysis examined the generative page, which is divided into 4 parts:

1. the exposition of a bass line (Example 1) with its thematic function in a single series of 13 crotchets rhythm string built on 11 notes — only A-flat is missing from the complete series —, in which descending and ascending intervals alternate precisely with a single exception at the end of the string, where unison appears; the 18 notes which create the series are distributed between F₃ and E₄, around middle C (C₄) and don't seem to have any logical cohesion based on sound heights generation criteria. The series tends to expand radially from the center (C₄). The unnatural way in which alterations are matched suggests that attention is focused more on the essence of individual intervals than on the quantitative management of the theme pitch as a whole. The boundaries of the reference space are reached towards the end: E is the last note, F is the 12th out of 18, and it is the penultimate considering only the notes belonging to the lower half of the whole space considered. Examining the trends of the lines divided into the two halves of the major seventh F–A, the sense of a progressively diverging extension is generally confirmed, except for the 'rebound' of F on G-flat;



Ex 1. Bass line.

2. The same thematic bass — in the left hand — supports a number of bichords in the right hand consisting of six semitones always alternating their distance from the bass by major sixths and minor thirds. The only exception is the second bichord which is a diminished fourth a major third away from the bass. It is interesting to highlight some rules on the use of intervals:

- a. use only intervals between unison and fifths (nominal fifth);
 - b. do not use semitones;
 - c. always alternate ascending and descending intervals, except for the final unison, placed at the end of the series as a conclusion for the chosen pattern;
 - d. do not use diminished intervals;
 - e. by choice use augmented intervals;
 - f. do not use double alterations in the thematic bass;
 - g. two consecutive intervals (descending and ascending) can no be the same and can not go back to the note they come from;
 - h. by choice two consecutive descending or ascending intervals must be different.
3. Repetition of the thematic bass;
 4. Re-proposal of the bass theme with inverted bichords in the right hand.

Two criteria have been employed in our rhythmic sequences analysis:

- Numeric-mathematical criteria: the numeric analysis highlights a pervasive use of the ‘2’ factor, as in the following scheme:

Q OO – Q Q OO OO – Q Q OO OO – Q OO // (OO)
1–2 / 2–4 / 2–4 / 1–2

- Metric-rhythmic criteria:

S uu S S (dactyl–spondee) Stressed + Unstressed + Unstressed
uu uu S S (pyrrhic–pyrrhic–spondee)
uu uu S uu (pyrrhic–pyrrhic–dactyl)

As is widely known, the dactyl is the metric basis of the hexameter in Homer’s poetry. Satie’s agoge indication reads ‘Très lent’ and adds that the piece should be performed with the most ‘serious stillness’ and ‘in the deepest silence’. The organisers of the event in Vigevano oriented the performance with online recommendations suggesting a tactus of 60 bpm to a quaver and general dynamics tending to *piano*.

The metric analysis underlines a constant reference to the two short central syllables and to a long one in the penultimate position with strong reference to the Greek metric feet.

2. ANALYSIS OF THE SECONDARY PARAMETERS

The analysis of the secondary parameters highlighted the relationship between the piece and whoever is perceiving it in its temporal evolution, allowing us to trace where and if there are any differences between a typical performing context and the programmatically atypical one of *Vexations*. By typical context we mean the one in which an individual performer — envisaged as a person or a group — relates to a single audience at an agreed and shared time, using a musical language with well-known forms and structures, conventionally shared and culturally accepted. In whatever way *Vexations* is brought forth, whether by a single hydrated and catheterised performer or in the less vexing form of the relay, the missing aspect is that of the conceptual and perceptive uniqueness of the piece for absolutely obvious reasons: the physiological decline of the mental performance in the case of a single performer (Kopiez 2003), the mutation of the conceptualising entity in the case of the relay, and the ethical and legal impossibility of relying on a single audience. This transformation of the audience as perceptual entity, which modifies itself during

the performance span, and of the performer, who either changes identity as such or undergoes a substantial alteration in his or her psychophysical conditions, make the *Vexations*’ event into one of the most interesting cases of cellular organisation.

Each part has its own elementary shape, but it also has the capability to change slightly over time. The slow and unpredictable mutation through repetitions is the essence of the multicellular organism which is more than the sum of its parts. The aesthetic essence of *Vexations* is not the sum of its 840 repetitions, but their slow and unsuspected mutation.

The question that arises and offers prospects of study of the greatest interpretative as well as educational interest is which signs there are of this dismantling relationship among performer-piece-audience, and the performative symptoms of this programmatic lack of formal orientation. Being able to recognise the methodological and performing problems of whoever is playing starting from the sound characteristics of the performance is the basis of every educational activity, and of every conscious activity of the performer as well, whenever he or she is studying or playing.

We started our observation from tension directions. The rhythmic structure, made of multiple groups of four bars — followed by a closure — is very clear and simple and represents a strong tension vector for the pianist, even though slurs and dynamic marks are completely absent.

The following aspects of the execution were examined:

- tension directions;
- dynamic fluctuations;
- beats fluctuations;
- prominent parts;
- resonance analysis.

The presence of a larger number of climaxes — points of higher tension — compared to the number of closures — points of greater easing of tension — highlights a division of strings of notes into one, two or three phrases, and the pianists’ different choice as far as the fragmentation of the string into significant nuclei is concerned. This quest is more obvious in the first and third string, the unharmonised ones, and less in the second and fourth. It is interesting to observe that the closures are almost entirely arrayed in the final bits of the basic rhythmic nuclei, while the climaxes are arrayed into bit 3 and/or 4, the ones that identify the central and invariable rhythmic part of the string.

The dynamic variation analysis was carried out by detecting the numeric values on the input signal reported by the Sound-Forge (Sony) programme at the climax, closing, minimum and maximum points of each string. The most important consequence is the extreme dynamic range with very significant projection between minimum and maximum, considering that the pianists had to abide by a protocol which clearly indicated a general dynamic level tending to piano. For technical reasons, namely in accordance with Volume Units, data must be evaluated as opposed to logical evidence since the minimum numeric value corresponds to the maximum volume and vice versa.

The mean values line of the dynamic perception highlights the 4-bar cyclic nature, proving once again the strong tendency of the pianists from both groups to refer to the basic rhythmic structures clearly identified beforehand.

The analysis of the pulsion fluctuations had to take into account the fact that the live performing group had some recommendations conceived by the relay organisers; according

to them the pulsation of *Vexations* had to be around 60 bpm to a quaver, while the group performing in the studio showed greater heterogeneity, especially regarding their basic pulsation choice.

The analysis of the prominent parts shows a substantial uniformity of both groups of pianists in the choice of bringing out the upper voice.

The resonance analysis highlights an easily predictable situation in both groups, where we can find a prevalent use of the pedal in the second and fourth string of notes, almost completely absent in the first and third one. This use is certainly more diversified in the closure of the beats of the four strings, justifying the hypothesis of a lack of precise positioning.

We verified when and to what extent the pulsion fluctuations occurred in the bits with tension significance, and when and to what extent this coincided with any relevant dynamic variations.

We considered in particular the points the musicians referred to in order to organise their performance so that it would be faithful to the musical text and expressive. We verified when and to what extent pulsion oscillations occurred in the tension beats, and when and to what extent they coincided with significant dynamic variations. There is a total of 123 pulsion oscillations while there are 274 tension events, and the match number, i.e. where the tense bit corresponds to a pulsion oscillation, is only 29. This means that 94 slowing downs or accelerations can't be justified by any concomitance with the detected tension points. Even if we admit that the pulsation (60 bpm) agreed upon caused adjustment problems, data are very atypical, because they can't be explained with a supposed difficulty of the composition, which is very simple even for a relatively skilled amateur.

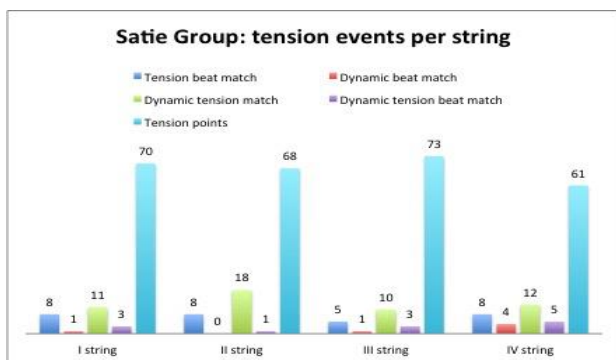


Fig. 1. Data concerning the experimental group.

The first graph (Figure 1) summaries the results of the data analysis concerning the experimental group, the one involved in the complete performance. The light blue bar represents the total number of tension events in the executions of the pianists in the group. The blue bar shows the number of apical events where an irregular rhythmic beat (tension-beat match) was observed; the light-blue bar indicates the number of apical events where a dynamic tension (dynamic-tension match) was observed, the violet one the number of apical events where both a dynamic tension and a beat one were observed. We can infer that the pianists in the experimental group rarely adopted the typical expressive behaviour with a slight preference for dynamic tension (blue bar).

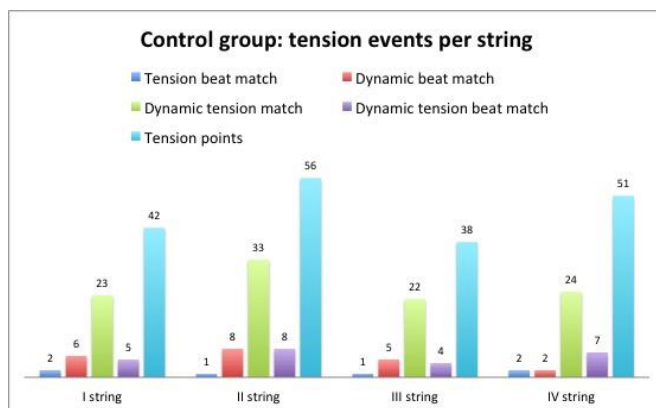


Fig. 2. Control group data.

Data on this second graph (Figure 2) refer to the control group, the one involved only in the performance of the generative page. The light-blue bar represents the total number of apical events in the executions of the pianists in this group, and as on the first graph the blue bar reports the number of apical events where a micro-diversion in rhythm and beat (tension-beat match) was observed, the light-blue one the number of apical events where a dynamic tension (dynamic-tension match) was observed, and the violet one the number of apical events where both a dynamic and a beat tension were observed. We can infer that the pianists in the control group adopted the typical expressive behaviour much more often, with a clear preference for dynamic tension (green bar). The two graphs highlight that the control group, just as the experimental one, displayed more apical events in the second and fourth string, but by far in a more significant quantity. In addition, they highlight that the rhythm-beat diversions occurred more often in the experimental group than in the control one.

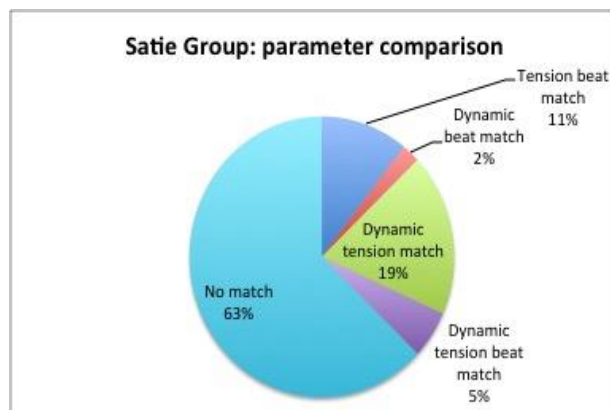


Fig. 3. Satie group values not divided into strings.

The graph (Figure 4) reports the assessment of the values not divided into strings regarding all the pianists in the group. The preponderance of dynamic tension behaviour is confirmed, however the lack of concurrence between apical events and expressive behaviour (no match) is highlighted and prevails.

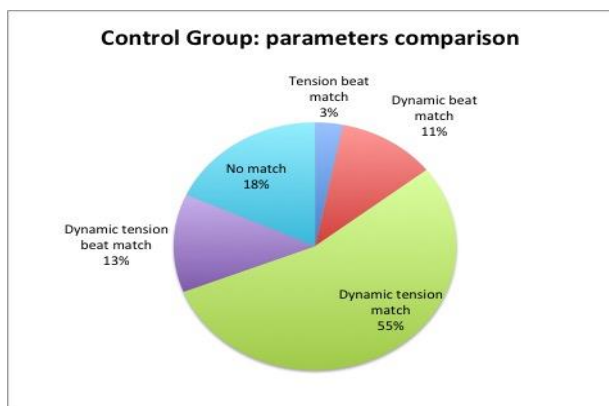


Fig. 4. Control group values not divided into strings.

Conversely, the graph referring to the control group (Figure 4) underlines the strong prevalence of concurrent dynamic tension behaviour with apical events, with a relevant reduction of the values regarding the lack of concurrence between apical events and expressive behaviour (no match). The comparison between these two graphs represents the most important result this study has revealed: the quantitative evidence of the connection between formal and performative bewilderment.

By comparing data gathered from the recordings of the two groups — live and in the studio performances —, the results underlined significant atypicalness of the secondary sound parameters. In fact, they detected an extremely low level of concurrence of tension points with the pulsion fluctuations, underlining a kind of dissociation between the significant points of the musical line of thought defining the tension and the micro-variations in the pulse in the live performance group.

3. CONCLUSION

In whoever is playing it, as in its listeners *Vexations*' dimension evokes a perceptual feeling of infinity whose every temporal fraction enjoyed, i.e. performed and listened to, represents a synchronous window which can be seized and analysed.

Therefore, the work's completeness shatters into a perceptual kaleidoscopic variety determined by constant variation in the performing conditions over time: the performers and the audience change, but also the light, the time, the day, and the listeners' state of mind — confused, hypnotised, bored or intrigued. The performer loses control over the form, and his or her centrality in the event, and must seek for a new identity in the microform, in a function relaying him or her to an event of which he or she is an infinitesimal part, like a cell in a vital organism. The answer to our initial question, namely, which traits are peculiar in the dismantling of the formal and performative relationship with the event, may be at least partly satisfactory considering every pianist's execution as a cell provided with its own function and defined by intrinsic bonds — the four generative strings — and extrinsic ones — the performing indications which guided and regulated the relay — with the event as a whole. As a matter of fact, every pianist can account for his or her performing choices within this complex framework of functions and links: the event is created in time like a Futurist puzzle, where the consistency of every single part — every pianist and every performance — is simultaneously the reason for its disintegrating power. However fasci-

nating this response may be, it does not explain what happens specifically within the relationship between the performer and the piece being performed.

The comparative study of the two groups of pianists highlights the significant atypicalness of the secondary sound parameters. The extremely low level of concurrence between the tension vectors and the pulsion fluctuations draws a sort of dissociation between the significant points of the musical line of thought, i.e. the ones defining the tension, and the awareness of their distribution during the performance.

Tension points represent the most sensitive moment of the uttermost complex cognitive processes where harmonic, historical and stylistic, gestural and broadly cultural knowledge converge. Adopting an imaginative but effective paraphrase, we could define this moment as the one where the performer takes their audience by the arm and drags it into the performing event with as much communicative energy they are humanly able to. The means used to identify and select these points are, more or less consciously, essentially analytical, and the tools to shape and manipulate the sound in those circumstances operate on dynamics, rhythm and timbre.

The comparison between the group which performed the whole piece and the control group, the one performing only the generative page, underlines the strong prevalence of expressive behaviour concurring with the tension points (matches) in the control group. Obsessive repetition and absence of formal references generated interpretative dismantling in the group performing the piece as a whole, and its obvious trait is expressive behavioural misalignment in the climax and closure points. The fact that the results highlight significant disjuncture between sound handling tools and any sort of analytical direction means it is the analytical direction itself which presides over all the executive choices. The lack of this kind of direction, which represented our constant reference, induces a highly significant disjunction of the sound parameters from the tension structure of the piece.

Despite the scarcity of the specimen, this study unfolds extensive and interesting considerations on the idea of musicality itself, and on the relationship between our comprehension of a piece of music and our emotional response.

The results show a significant dissociation between the sound modification actions adopted by the pianists in the sample group and an analytical direction, though extremely simple and limited to the generative strings, which appears in the tension points. The lack of a clear formal orientation inhibits any directional activity during the performance weakening the possibility for the tension points to catalyse the pulsion oscillations, which instead are mostly placed in non-tension points. If we broaden the concept of formal disorientation to every situation where whoever is playing can't direct the musical flow according to acknowledged and acknowledgeable structures, we obtain very interesting information, e.g. about the improper use of *accelerando* and *ralentando*. This is typical of a certain decadent amateurism emphasising the emotional response to the detriment of deeper musical understanding. Similarly, but in the opposite direction, absence of expressive fluctuation in the performance may not be the obvious sign of minor sensitivity to the language of music, but more likely the sign of a level of understanding not high enough to activate any kind of emotional response.

KEYWORDS

Satie's Vexation, Formal Disorientation, Secondary Parameters.

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