

# Fausto Romitelli's 'Syntactic Pertinences' of Timbre: Analytical Notes on *Lesson II of Professor Bad Trip*

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## INTRODUCTION: THE 'SPECTRAL MORPHOLOGY' IN ROMITELLI

In Romitelli's music of the first half of the 1990s there is a linguistic-musical problematization. This focuses on the compositional practice of 'instrumental synthesis' of timbre and raises questions about 'spectral morphology' and its syntactic relevance.<sup>1</sup> In this theorization, which Romitelli practices in pieces such as *Nell'alto dei giorni immobili* (1990), *La sabbia del tempo* (1991), *Natura morta con fiamme* (1991) and in the diptych *Mediterraneo* (1992–1993), one senses his desire to correlate different musical instances that are heterogeneous among themselves, integrating them into a unified and coherent linguistic-musical code, capable of prescribing strictly controlled procedures of construction and syntactic correlation of the musical discourse. Reading Romitelli's presentations of the above-mentioned pieces, one gets the impression that his main concern is the clarification of musical 'écriture'.

Romitelli distinguishes and classifies the basic elements of his musical language into two types: 1) timbral structures, related to processes of perceptual fusion; 2) harmonic structures, related to processes of perceptual fission.<sup>2</sup> In the first case, the

components are synthesized to form a unitary image of sound; in the second case, the individual intervallic components are recognizable. Romitelli calls the synthetic images of sounds ‘categorizations’, contrasting them with the ‘discretizations’ of harmonic structures.<sup>3</sup> More precisely, while it is true that the composer employs the term ‘aggregation’ several times for both structures – aggregates of frequencies and aggregates of intervals – there is a tendency to refer to harmonic structures by this expression. Thus, ‘categorizations’ have to do with acoustic space, allowing the exploration of its depth and so imagining a perspective of volumes or a modulation of thicknesses, while ‘aggregations’, as a distribution of discrete elements, allow the organisation of different time lines of a musical work in relation to the orders and transformations of its constituent objects.<sup>4</sup>

These are the years when Romitelli, after having completed his apprenticeship with Umberto Rotondi (1937–2007) and Franco Donatoni (1927–2000), is in Paris at IRCAM, first as a student then as a researcher, learning the *Composition assistée par ordinateur* (CAO) based on the computer language LISP (*List Processor Language*). In Paris, frequenting the composers of L’Itinéraire, Romitelli assimilates their methodological premise: ‘composer le son plutôt qu’avec le son’, integrating into it a reinterpretation of Donatoni’s figural articulatory-combinatory techniques. For this reason, Romitelli conceives of ‘spectral morphology’ by systematically relating algebraic-combinatorial logic to the spectralist logic of ‘instrumental synthesis’, adapting it to the categorical identification and the syntactic relevance of its constituent objects. This provides for the possibility of constructing units of combination or objects that are not to be understood as mere abstract signs, but as meaningful units regulated according to a linguistic-syntactic model theorized by Romitelli in ‘spectral morphology’.

The scientific, technological, linguistic and music-historical references of ‘spectral morphology’ are dealt by Romitelli in his very rigorous unpublished paper entitled *Pertinence du timbre*, which documents the issues he addressed with methodological rigor during his work as a researcher at IRCAM.<sup>5</sup> *Pertinence du timbre* deals with the categorization of sound objects on phonological grounds from the notion of sound image. Romitelli mainly refers to two texts: the well-known study on *Deux aspects du langage et deux types d’aphasie* by Roman Jakobson;<sup>6</sup> and the book by Robert Cogan, an American theorist and composer, published in 1984 with the significant title *New Images of Musical Sound*.<sup>7</sup>

Romitelli formulates in *Pertinence du timbre*: ‘Nous reconnaissons donc une unité de discours, non sur la base de chaque détail acoustique d’émission, mais sur la base de certaines oppositions fonctionnelles constantes. Notre intérêt n’est pas alors dans la phonétique (étude des propriétés acoustiques et articulatoires du langage) mais dans la phonologie (étude des sons pertinents au système du langage,

c'est-à-dire des caractéristiques d'articulation qui "s'insèrent dans un système d'oppositions fonctionnant dans le paradigme d'une langue (Eco)".<sup>8</sup> Thus, if instrumental synthesis places the composer before the problem of the isolated or pre-syntactic musical object, and if the linguistic relevance of musical discourse consists in the syntactic functionality of objects, then 'spectral morphology' must focus on the coordination and interaction between the transformation of timbral structures and the articulation of harmonic structures. A 'refinement' of musical language can only be realized on the discursive functionality inherent in syntactic logic, which presides over the coordination of structures or objects. It's a matter of 'sculpting' the 'spectral morphology' of objects according to their syntactic valence; this is equivalent to generating a system of oppositions that allows different units of aggregation to be differentiated, formed and highlighted.<sup>9</sup>

With the 'spectral morphology' of the musical object Romitelli theorizes a transitional space between harmony and timbre, stretched between the two extremes of a perceptual opposition, determined by the psychoacoustic interaction of several factors: harmonicity, the synchrony of the attack and the processes of modulation of sounds according to different levels of spectral density.<sup>10</sup> Fusion is perceptually governed by the logic of adherence and synthesis of categorization; fission, on the other hand, has to do perceptually with the discrete-analytic logic of combination. In both cases, it has to do with the functioning of perception by acting at the compositional level either on the idea of *texture* and its overall transformations, or on the figural organization of sound articulations. This polarity concerns the perspective depth of space, volume or sound thickness, which can be modulated through transitions relating to conformations that are now timbral, now harmonic.

### THE COMPUTER-ASSISTED COMPOSITION

One would not understand Romitelli's theorizing on timbral and harmonic structures without considering the *Composition assistée par ordinateur* (CAO). Romitelli belongs to a circle of composers who utilized personal computers and software developed for the Macintosh platform to create their works; he systematically employed PatchWork (PW), a program written in Common Lisp, to take advantage of spectral techniques. PW, indeed, provides the necessary mathematical functions to analyze and construct spectra, including their transformations and distortions.

In the PW-*Esquisse* manual (1996 version) the modules are divided into two parts: 1) Intervals, containing traditional functions related to serial, post-serial

and combinatorial operations; 2) Freq-Harmony, containing spectral functions related to harmonies and timbres calculated on frequencies instead of intervals.<sup>11</sup> PW provides for the possibility of manipulating sounds with both combinatorial and spectral modules, paving the way for an interrelationship between the two processes. PW therefore played a key instrumental role for Romitelli, allowing him to converge Donatoni's combinatorial techniques with French spectral procedures. In the two parts of the *Esquisse* library of PW one can catch the analogy with the 'categorizations' and 'intervallic aggregations' theorized by Romitelli in 'spectral morphology'; this also applies to the transitional space between timbre and harmony.

### RÉSONANCES

For Romitelli the equivalence between music and language is metaphorical. In 1993, Romitelli published a short article not coincidentally titled *Résonances*,<sup>12</sup> concentrating on the idea that musical composition is a 'travail de la signification'.<sup>13</sup> *Résonances* can be considered a programmatic-clarifying text; with it, in fact, Romitelli outlines the main directives of his musical poetics. When compared with *Pertinence du timbre*, *Résonances* seems to diverge in content: in fact, it reflects on the central theme of the metaphorical transposition of experience into musical structures. Yet *Résonances* also deals fundamentally with the object and language of music, that is, with the need to constitutively trace the compositional process back to 'l'art du timbre'. The genesis of musical language ('l'écriture') is equated by Romitelli with an 'apprentissage' that tends toward a relational systematization of musical signs capable of representing by mimetic resonance the primary dimension of lived experience. Thus, even in *Résonances*, Romitelli reflects on the thematic core of 'spectral morphology', namely, the musical object conceived in its symbolic-cognitive value. Romitelli speaks of 'objet vécu' on which mimesis and abstraction converge: 'L'objet musical doit résonner' as an enigmatic reference to our experience.<sup>14</sup> Then, there is a constitutive bivalence in Romitelli: on the one hand, the object is informatically modeled on the structures of timbre as a metaphor for sound; on the other hand, these structures have a metaphorical-symbolic valence insofar as they are virtually capable of resonating with experience.

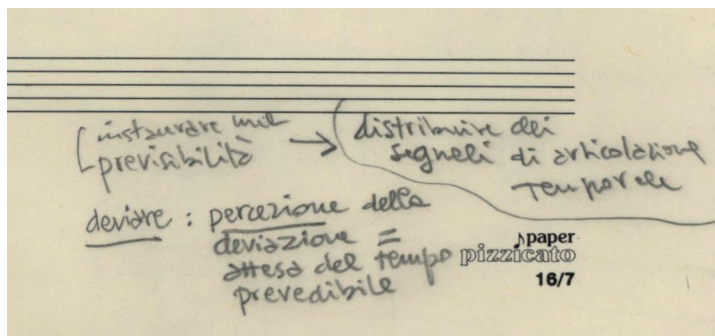
### 'SPECTRAL MORPHOLOGY' AND INFORMATION THEORY

In his 2001 interview with Véronique Brindeau, Romitelli underlines the linguistic significance of his music: 'Le compositeur *est* le langage qu'il crée' and that

'l'écriture implique en effet un travail de détail' as it relies on a temporal slowing down of the creative process, in contrast to the speed of the executive gesture that does not belong to it as such.<sup>15</sup> This time dilation, able to focus compositional work on details, draws on a 1958 text by Abraham Moles (1920–1992) entitled *Théorie de l'information et perception esthétique*.<sup>16</sup> That Romitelli was familiar with Moles' theses is evidenced by his presentation of *Kû* for fourteen instruments (1989). Nevertheless, Romitelli also recalls Moles in the mature phase of his musical production: among the sketches preserved in the FFR, there is a music paper with some brief personal notes that clearly refer to communication theory based on informatics; they concern the *Lesson II* of *Professor Bad Trip* (FIGURE 1).

It can be seen that in these notations the notions of predictability, deviation and expectation are related to the articulation of musical time. In *Pertinence du timbre*, treating the compositional process, Romitelli dwells on the management of the temporal evolution of a musical object. From a linguistic-formal point of view, time is essentially discrete. Operations 'dans l'espace du timbre', characterized by textural transformations, have to be functionalized to operations 'dans le temps'. It's important to remember that in Romitelli's musical 'écriture', which means for him 'écriture du timbre', the connection between the surface chordal combinations and the instrumental synthesis categories is constructively dialectical. In other words, Romitelli was able to syntactically functionalize objects by playing with the perspective fictions of timbre writing, related to the volumetric sensations of spectral variations and sound thickness densities. The combinatorics of discrete temporal positions, conceived by Romitelli on a linguistic basis, thus open up to the dialectical tension of growth and rupture, repetition and unexpected variation based on the distortions and distensions of acoustic space.

FIGURE 1. Fausto Romitelli, sketch: 'establishing predictability = distributing time articulation signals; deviate: perception of deviation = waiting for the foreseeable time'. Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.



The ‘spectral morphology’ of the object, hence, becomes the filter through which Romitelli re-reads the concepts of Moles’ information theory. The object can configure an independent center of attraction if it is isolated. This allows for the perception of time to become a property specific to it. Periodic or quasi-periodic repetition can in turn feed this binding attraction for perception, relating to the simplification of the structure of the message whose elementary units are summarized in an object. Romitelli often employs periodicity, accentuating it to the point of obsessive schematization in his formula-loops that catalyze entire sections. Romitelli’s ‘loops’ represent an extreme connotation of the periodic conduction of time, which can be outlined either in a literal form or in a more elastic and open form. A single object, therefore, either ‘sculpts’ a section by coinciding with it, or it’s the section that unfolds in a concatenation of several objects following a pattern of succession. In both cases, Romitelli structures the musical time by adjacent repetitions of one or more sections. Moles attributed the prediction or expectation of repetition to periodic continuity presupposing the memory of the listener. Romitelli reflected on continuity by working on phoneme-object discontinuities, deviations, false movements, and sudden formal reversals.

Of this complex theorization, developed on several levels by Romitelli around the core of ‘spectral morphology’ in the first half of the 1990s, I’ll now show some examples from *Professor Bad Trip Lesson II*, thus highlighting its operation especially in the late phase of his musical production.

### **PROFESSOR BAD TRIP**

The triptych *Professor Bad Trip*, divided into *Lessons I, II* and *III*, has impressed audiences since its first performances (between 1998 and 2000) with its powerful, violent and distorted sound, coming from the use of a very complex techno-instrumental device. These three compositions are for an amplified ensemble with the constant presence of the electric guitar, while the electric bass is added in lessons II and III. In the first lesson, the acoustic sound of the instrumental ensemble is overlaid with eight pre-recorded electronic tracks, which are then absent from the next two lessons. In addition to the two guitars, there is the electronic keyboard (used alternately with the piano), which contributes to further ‘electrifying’ the overall timbre. In addition, Romitelli also uses several secondary instruments, which are entrusted to different players in the ensemble: the harmonica, the kazoo, and the guitar pitch pipe.

The title is a quotation from the underground universe of the graphic artist Gianluca Lerici, who used to sign his comics *Professor Bad Trip*. In his program

notes, Romitelli claims to have been inspired by Henri Michaux's writings and drawings on the 'depraved' perceptual effects induced by the use of hallucinogenic drugs, especially mescaline. Romitelli also refers to Francis Bacon and his *Three Studies for a Self-Portrait* (1979, oil on canvas), saying that he wanted to pay homage to the psychedelic-progressive rock of the 1960s and 1970s. In this study, I'll not deal with these well-known and already extensively studied literary-pictorial aspects; instead, I'll concentrate on an exemplary analysis of certain parts of *Lesson II* in connection with the theories of 'spectral morphology'. I will use the sketches for *Bad Trip*, kept at the FFR, which are essential for reconstructing the author's compositional processes. My study will document how 'spectral morphology' operates in Romitelli's late works.

### RECURSIVE DEVIATIONS IN LESSON II

In the context of musicological studies of Romitelli, there aren't currently essays dealing with *Lessons II* and *III*. However, there are three articles analysing *Lesson I* worth mentioning. In the first, from 2014, Eric Maestri uses spectrographic representations to show how the instrumental articulation in *Lesson I* gives rise to complex and chaotic textures that often end up, saturating the basic harmonic structure.<sup>17</sup> The second essay, from 2018, is by Pascal Decroupet, who, by examining some of Romitelli's sketches preserved at the FFR, identified the resonant like-bell sound and the electric guitar pedal effects as the morphogenetic spectral models for the *Professor Bad Trip*.<sup>18</sup> Finally, the recent essay by Nicolas Moroz (2020), which also includes a careful study of the sketches, provides a rigorous analysis of the genetic morphology of the musical objects used in *Lesson I*.<sup>19</sup>

My choice of *Lesson II* as an exemplary model is motivated by the fact that it is a compositional work on deviation *ex abrupto*. I will show how Romitelli organized *Bad Trip II* through some circular and recursive pre-schematizations of the sketched musical ideas; in this way, the sudden, anti-narrative, temporal digressions also become part of a more extensive formal process of repetition, growth and saturation of the sound material. *Bad Trip II* presents a tripartite form, with subdivisions I, II, and III marked in the score; in each of these parts, the bar count begins anew. Two agitated cadenzas for solo cello, amplified and distorted by the wah-wah pedal, burst vehemently onto the scene between Parts I-II, and II-III, giving the impression of a complete break with what has gone before; yet these cadenzas take up and reinterpret the elements of the preceding main parts and, despite their agitated and fragmented form, act as a link to what follows.

Even in the context of the main parts of *Lesson II*, there are unexpected turns



that interrupt an ongoing compositional process, in order to immediately make room for the unexpected entry of a partially or completely different section. A clear example of this relationship occurs between bars 82–101 of Part II, where an unexpected scalar figuration appears in the piano's semiquavers (80 to the metronome); reduced to an essential linearity, this octatonic module completely cuts through the harmonic density of what has gone before. The entire ensemble gradually gravitates around the piano's scalar module, which is repeated six times constantly scaling down one octave, from high to low. So, on this module, an instrumental texture of scalar envelopes is formed.

This process of descending to the low is multiplied in a whirling way by repetitions that expand the sound space, crescendo to *ff* and rhythmically accelerating. There is a sense of an increasing twisting of the sound lines, paradoxically fixed and leaning towards the bass, orienting the listener in that direction and increasing its probable predictability. At the culmination of the process, a rapid densification coincides with an unexpected reconnection with what was interrupted at bar 82, restarting the previous part. This 'falling' episode attacks at the same time as the suspension of the compositional operations inherent in Part II, without forgetting where it came from. This triggers another type of compositional operation at a subordinate level, nested within the main upper one. Once the lower process has been completed, a reverse jump occurs resulting in a restart of the primary process, at exactly the point where it was suspended. Nesting is part of the recursive logic with which Romitelli constructed not only his *Bad Trip* cycle but most of his compositions.

An example of generative recursivity can be found in Part I. There is a handwritten outline of this first part by the composer, which allows us to partially reconstruct its harmonic architecture.

### THE PART I GRID

The opening bars of *Lesson II* focus on two objects: 1) the minor third E–G pedal of the two electric guitars; 2) a four-note motif played by the pianist into the kazoo, in combination with the harmonics of the guitar and the flute. As for the minor third E–G, it forms the permanent relational axis of *Bad Trip*, resting on the third and sixth strings of the guitar (EXAMPLE 1).

These relationships are prefigured in the two cells of frame 1 in Romitelli's grid, shown in full in FIGURE 2. This grid highlights the harmonic approach and syntactically circular methodology of Romitelli's compositional process. In each panel, the same chordal objects are repeated in the same order, with the occasional



EXAMPLE 1. Fausto Romitelli, *Professor Bad Trip: Lesson II*, bb. 1–3. © 1999 by Sté Ame des Editions Ricordi, Paris, R. 2892.

The image shows a musical score for three staves: Chit. el., Basso. el., and Tast. PF. The score is annotated with various performance instructions and dynamics. The Chit. el. staff has a 'Pedale WA-WA: +' marking and four 'sf poco' markings. The Basso. el. staff has 'con E-Bow e pedale di volume' and 'pp' markings. The Tast. PF. staff has 'mano destra: PIANO' and 'mano sinistra: KAZOO' markings, along with a circled section and the instruction 'scrivere nel Kazoo facendolo vibrare dolcemente; NON soffiare!'. There are also 'pp' markings and a 'sempre iniziare risorgente' instruction at the top right.

addition of new insertions that remain in subsequent panels. The result is a growth that gradually extends the same basic harmonic scheme. Regarding the score, frames 2 and 3 of the grid can be associated with the kazoo motif; the latter can be glimpsed in the bottom line of the second stave in the grid. In frame 4 there is the note 'via kazoo': in the score, it corresponds to the end of the introduction (bar 20) and the beginning of the main part of I, based on eight varied repetitions (the last repeated three times in a refrain) of an ascending trumpet melodic figure, from  $G_2$  to  $G_4$  acute, with descending resolution on  $F\#_4$  (EXAMPLE 2).

The eight repetitions of the trumpet module each form a closed section, as do the frames marked with the vertical red line on the grid. The harmonic grid pattern thus corresponds to a formal structuring of the piece by precise sections. This means that the grid is not only a working scheme, but a schematization that is also reflected on the musical level. The final accentuated semitone of the trumpet module always coincides with two chords of piano, which then descend towards the lower register, thus closing each of the eight sections (EXAMPLE 3). This cadential module is sketched in the grid, with the final two chords of the last cells of each box, from the fourth onwards. The three fermatas in frames 4, 5, and 6, correspond in the score to the fermatas of bars 26, 31 and 37.

The repetition of the melodic figure of the trumpet suggests a procedure of *loop* deformations, consistent with the circular-preparatory setting of the grid, which also shows an increase in chordal cells from frame to frame. The low C that appears in frame 5 corresponds to the glissando of the cello from the same pitch already present in the introduction (bar 14), then reinforced by the octave of the piano (from bar 33).

FIGURE 2. The Part I grid of *Lesson II*. Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.

The image shows a handwritten musical score on aged paper, titled "BAD TRIP 2" in the top right corner. The score is organized into measures, with red vertical lines marking specific points. The first measure is labeled "28 Mars: Romitelli" and contains circled numbers 1, 2, 3, and 4. The second measure is labeled "5" and includes the handwritten note "Vivacissimo Trombe + Trombi". The third measure is labeled "6" and contains the circled number 8. The fourth measure is labeled "9" and contains the circled number 9. The fifth measure is labeled "1000" and includes the handwritten note "Seascope I" and "19 Mars". The score is written on a grand staff with various musical notations, including notes, rests, and dynamic markings. There are also some scribbles and additional markings, such as a circled "F" with "+ lungo" and a circled "1000". The paper has a small stamp in the bottom right corner that reads "paper plastificato 1617".

EXAMPLE 2. Fausto Romitelli, *Professor Bad Trip: Lesson II*, the recurring trumpet motif.  
© 1999 by Sté Ame des Editions Ricordi, Paris, R. 2892.



EXAMPLE 3. Fausto Romitelli, *Professor Bad Trip: Lesson II*, bb. 24–26: piano cadenza.  
© 1999 by Sté Ame des Editions Ricordi, Paris, R. 2892.



Overall, Part I is characterized by a process of expansion of the ensemble which follows the phraseological anamorphoses of the trumpet, densifying more and more in ascending scalar chromatic figurations. This establishes a vectorial continuity of musical tempo that Romitelli would define in terms of increasing predictability; it converges on a triple refrain that coincides with the final variation of the trumpet motif (bars 58–61). This *climax* is followed by a brief, vehement and violent final section in *fff* (bars 62–65) which finally gives way *ex abrupto* to the cello cadenza.

### THE PRIMA CADENZA OF THE CELLO

The amplification filtered by the wah-wah pedal ‘electrifies’ the cello’s sound, making it like an unusual electric guitar. Although it’s a deviation from what precedes, this first, excited and virtuosic cadenza, immediately in *fff*, leads to the delicate timbrical-chords of the introduction of Part II (page 14 of the score). In fact, from bar 19, a gradual diminuendo begins, which, with alternating crescendo-diminuendo phases, slows down to two triple refrains. Romitelli writes, with regard to the *ppp*, ‘de plus en plus bruité avec “flautato” sur le ponticello et pedal wa-wa jusqu’à bruit blanc (son du “vent”)’. The cadenza unfolds on figurations based on some fundamentals from the harmonic structure of *Lesson II*. These fundamentals are indicated by the composer on three sheets in which the cadence is sketched by hand, in pen. These sheets, the first two of which are shown in FIGURES 3 AND 4, are kept at the FFR and allow us to reconstruct the compositional process.



FIGURE 3. The first sheet relating to the Prima Cadenza of the cello. Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.

The image shows a handwritten musical score for a cello cadenza. It consists of seven systems of staves. The notation is dense and includes various musical symbols such as notes, rests, slurs, and dynamic markings like *mf* and *ff*. The score is heavily annotated with orange circles and vertical lines, highlighting specific measures and sections. On the left side, there are handwritten labels for each system, such as "M1 1", "M1 2", "M1 1 1/2", and "M1 1", with corresponding circled numbers. At the bottom right, there is a handwritten note that reads "M1-1/2 Near". The overall appearance is that of a working draft or a score with extensive performance markings.

FIGURE 4. The second sheet relating to the Prima Cadenza of the cello. Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.

The image shows a handwritten musical score for cello, consisting of multiple staves. The notation is dense and includes various musical symbols, notes, and rests. Several measures are circled in orange, with numbers 10, 11, 12, 13, 14, 15, 16, 17, and 18 written inside the circles. On the left side of the page, there is a list of instrument abbreviations and their corresponding numbers:

- Sac (1)
- Sac (1 1/2)
- Sac (2)
- Sac (2 + 1/2)
- Sac (3)
- Sac (2)
- Sac (2 - 1/2)
- Sac 3
- Sac 3
- Sac 1
- Sac 2
- Sac 2
- Sac 2
- Sac 2

Below this list, there is a box containing the word "Cello" and the number "17". The score is heavily annotated with orange lines and circles, indicating specific syntactic pertinences of timbre. The handwriting is in black ink on aged paper.



Initially, the two fundamental notes E and C, already active in the harmonic fields of Part I, appear on the first sheet (FIGURE 3); the others appear on the second (FIGURE 4). These fundamentals are marked in the sketches with numbers circled in blue, arranged in a column on the left to indicate their duration in quarters. The sketches show a structure of sections marked with yellow circled numbers and divided into frames. In the score, sections built on G (a tremolo of harmonics with Bb) are inserted from bar 5, then alternating with sections on Ab from bar 8. The result is a repeated sequence of slightly varied sections based on the sequence of the fundamental C–E–G–Ab, to which the Eb is added from bar 15. Following Romitelli’s indications, in EXAMPLE 4, I propose a scheme for the whole cadence, indicating the sequence of the fundamentals.

**EXAMPLE 4. The sequence of fundamentals relating to the Prima Cadenza of the cello, bb. 1–15. Circled numbers indicate quarter durations.**

These sections are interspersed with short, repeated and varied figurations based on C and C# (indicated by segments in EXAMPLE 4). In substance, the cello cadence is played circularly on two co-respective levels: 1) a close-up formed by a convulsive succession of short, rapidly repeated figures, continuously deformed but recognizable; 2) at the base, a fixed, recursive matrix of fundamentals, on which each section rings internally occupying its own position, changing in it and alternating with what happens in the surrounding frames. From this kaleidoscopic interplay of recurring figures and objects, a temporal orientation emerges which, as mentioned above, leads to Part II.

### SPECTRAL MORPHOLOGIES

A slow exposition of four chords (the third homologous to the first), repeated three times, introduces Part II (bars 1–5). These chords, on *ppp/pp*, are played by the piano and string trio, while the fundamentals are played by the cello and electric bass. The harmonica (percussionist) doubles the piano's A<sub>5</sub> (EXAMPLE 5).

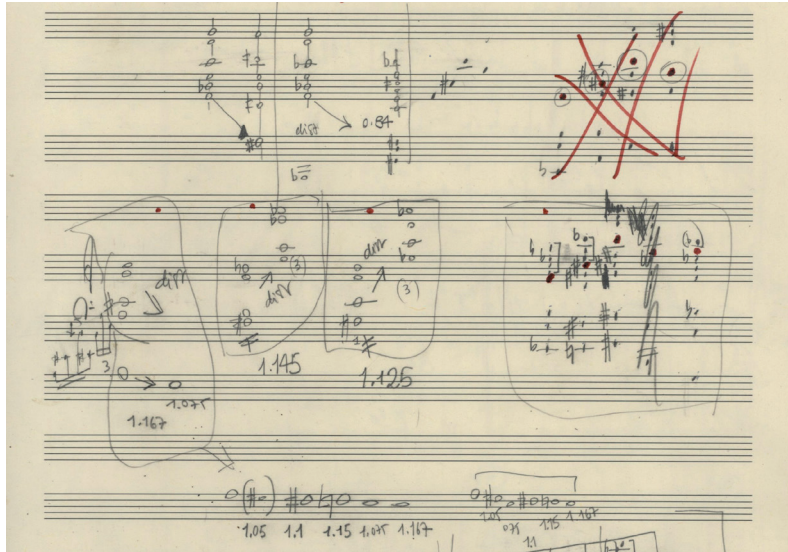
EXAMPLE 5. Fausto Romitelli, *Professor Bad Trip: Lesson II*, the three repetitions of the introductory chords in Part II. © 1999 by Sté Ame des Editions Ricordi, Paris, R. 2892.

The image displays a musical score for three repetitions of introductory chords in Part II. The score is organized into six staves, each representing a different instrument: Basso el. (Electric Bass), Tast. Pf. (Piano), Perc. (Percussion), Vno (Violin), Vla (Viola), and Vc. (Cello). The score is enclosed in a dashed rectangular border. The notation includes various musical symbols such as notes, rests, and dynamic markings. Key annotations include 'sempre' (always) written above the piano and electric bass staves, 'ppp' (pianissimo) and 'pp' (piano) dynamic markings, and specific performance instructions like 'via l'armonica' and 'proule laetante de vibrato' near the percussion staff. The score is divided into three distinct sections by vertical dashed lines, each representing one of the three repetitions mentioned in the caption.



The electric bass runs through the same fundamentals as the cello cadence (G–Ab–G–Eb). The first and fourth chords refer to the constituent chords of the sections in Part I. In the stave sheet of the FFR, from which we have taken Romitelli's annotations on the predictability of perception, are signed various coefficients relating to the construction of the spectra (FIGURE 5)<sup>20</sup>.

FIGURE 5. Some of Romitelli's spectral coefficients for *Lesson II*. Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.



Using 1.167 as the coefficient, the first of the four chords in EXAMPLE 5 can be derived from the homologous partials of four dilated spectra, whose fundamentals are C#, E, G and Bb. Since these fundamentals constitute a minor third cycle, a corresponding medium chord can be derived from them (EXAMPLE 6). Precisely, because this chord is obtained by approximation, Romitelli can make several similar versions of it.

The fourth chord is also derived from an extended spectrum by the fundamental Eb, but with a lower distortion coefficient, i.e. 1.1. The third chord, instead, can be extracted from the harmonic spectrum of Ab. These chords selected from their

EXAMPLE 6. The chord derived from the four spectra.



corresponding spectra correspond to Romitelli's concept of 'spectral morphology'. Romitelli alternates between different versions of the same object in his music: using a 'spectralist' typeface with pitches approximated by quarter tones to the frequencies of a spectrum, and using a typeface that works with chords chosen from the spectrum but is resolved in semitones. In the first case 'categorization' prevails, in the second case 'aggregation'.<sup>21</sup> The contrast between the harmonic and inharmonic spectrum is related to the opposition between dissonant and consonant. Romitelli discusses this in *Pertinence du timbre*: such oppositions can be functionalized beyond a simple abstract combination of objects to generate vectors or tensions perceived as necessary. Romitelli, however, does not use the harmonic spectrum of  $A^b$  from the major triad but ambiguously polarizes it on the piano's  $A^b$ – $B^b$ – $E^b$  triad, i.e. the partials 8, 9 and 12. It thus keeps a diatonic valence that contrasts with the dissonant sonority of the first and third chords, but on a perceptual level it forms a synthesis that is not immediately traceable to the harmonic content of the spectrum. Between these two different sonorities lies the anhemitonic chord, chosen from the  $E^b$  spectrum, which is less distorted than the G chord due to its 'whole tone' constitution between consonant and dissonant. These chords thus form a short sequence of harmonic modulations derived from differentiated spectral syntheses, but with some common components; in this way, they prefigure the harmonic frequency plan of the following Part II.

### FIGURAL DEFORMATIONS

Romitelli's musical objects have a formal sense: as relational systems, they can give rise to short, easily recognizable rhythmic-melodic correlations, repeated and interacting through vectorial oppositions. This is what happens in the second part of *Lesson II*. Four objects are taken from the introductory chords between bars 6–10: three rhythmic-melodic figures and an instrumental synthesis. They identify the sections that structure the main part of II. Thus, in this case, the objects take on a figural arrangement, unfolding on the G,  $A^b$ , G, and  $E^b$  fundamentals of the electric bass, i.e. the same as the cello cadenza and the chordal introduction.

The graph below (EXAMPLE 7) shows the four main objects. The first, which I call  $\alpha$ , consists of a descending melodic figure – from  $D_4$  to  $G_1$  – played by the electric guitar. A short melodic figure given to the viola-vibraphone pair – two descending minor thirds ( $D_4$ – $B_3$ / $D_5$ – $B_4$ ) linked by an ascending diminished tenth glissando – identifies the second object, which we call  $\beta$ : it's marked by the chromatics of the diminished octave/major seventh between the two descending minor thirds. The  $\gamma$  object can be identified in a vibraphone's quintuplet of sixteenth – two

ascending jumps of major ninths  $F_3-G_4$  and minor sevenths  $C\#_4-B_4$  – which is thus the diatonic counterpart of figure beta resulting in a whole-tone field. Finally,  $\delta$  is the instrumental simulation of the Doppler effect (strings and woodwinds), anticipated on bars 6–7 and exposed in full between bars 9–10.<sup>22</sup> These objects are not just made up of contrasting harmonies, but also form a set of opposing vectors, in accordance with the prescription of ‘spectral morphology’ to create a system of oppositions by analogy with language.

**EXAMPLE 7. The four figural objects of Part II of *Lesson II*.**

The image displays four musical objects, each enclosed in a dashed oval. Object  $\alpha$  is for electric guitar (Chit. el.) and features a melodic line with a trill and a triplet. Object  $\gamma$  is for vibrato (Vibr.) and shows a similar melodic figure. Object  $\beta$  involves violin (Vibr.) and viola (Vla.) parts, with a 'p solo' marking. Object  $\delta$  is for strings (archi) and consists of a complex, multi-stemmed texture with various articulations.

The sections formed on these objects recur repeatedly, pointing from bar 10 in the sequential order  $\beta, \gamma, \alpha, \delta$ , placing the figure of the viola (extended in dialogue with the violin) before the descending figure of the electric guitar. This sequence forms higher-order macro-sections that contain lower-order ones corresponding to the individual objects. In the course of repetitions, each of these sections takes up and extends the internal harmonic relationships based on the reference spectrum. Interpolations of other objects are added which, once inserted, become an integral part of the sequence. The recursive process constantly recycles the same objects, their sequence and the macro-sections they form. This continues until bar 122, when the solo piano takes up the cadential material of the first part of the lesson (EXAMPLE 3), after which the second cadenza of the cello erupts, its timbre again distorted as in the first cadenza.

FIGURE 6 shows Romitelli’s grid relating to the chord sequence of Part II. It is similar to that of Part I, shown in FIGURE 2; in fact, it also consists of frames separated

by lines in red, each of which is subdivided into compartments corresponding to harmonic transformations. The melodic figure  $\beta$  is recognizable in frame 2. The grid shows that Romitelli was already thinking of a recursive procedure in the early stages of his composition, as the same chords are repeated with an addition in each frame. There is thus a growth: from the two chords in frame 1, there are seven chords in frame 6, and then a chord is removed in frames 7 and 8. In frame 3, the figure  $\beta$  is repeated twice: the second time it expands to A. In the score, this coincides with bars 10–11, where the violin responds to the viola by expanding to  $A_5$ , prolonging the ascending chain of major sevenths ( $B_3-Bb_4-A_5$ ). In another sketch (FIGURE 7), Romitelli notes this extension of minor-third relationships to the interval  $F\#-A$ ; it then extends into the next chord as part of its spectrum.

This example shows the intersection of the combination and selection procedures. On the one side, there is an intervallic multiplication that produces a set of thirds; on the other side, the set derived from the intervallic multiplication makes it possible to select and alternate two different spectral fields.

With regard to the recursive process of the sections  $\beta$ ,  $\gamma$ ,  $\alpha$ ,  $\delta$  in the score, there are interruptions, which we have already pointed out when speaking of recursive deviations. The first interruption in the general development is between bars 31–39, converging on a refrain marked by a brief piano solo 'subito *pp*' (bar 39). A second break occurs in bars 56–60, where the guitar and the electric bass come to the fore, with a separate episode in *ff*: here the use of distorted spectra matches the distorted, violent 'rock' sound of the two guitars. Finally, between bars 82–101, there is the long descending scalar digression, which, as we have seen, is an episode within a larger one, which then picks up exactly where it left off. Through these deviations, the primary formal architecture of the identified main sections unfolds, which we can divide into four phases: bars 6–31, bars 40–56, bars 61–81, and bars 102–122.

This architecture is determined by two temporal factors: 1) the expansion of the macro sections (each corresponding to the repeated sequence of sections  $\beta$ ,  $\gamma$ ,  $\alpha$ ,  $\delta$ ), which tend to increase in duration in the first three phases, up to bar 81, and then contract in the fourth and final phase (bar 102–122); 2) the acceleration, which, in phases marked by a precise metronome value, rises from 60 in measure 6 to 84 in measure 102. This leads to a borderline phase in which the sections seem to be packed together, due to the contraction and the high rate of succession. The sound space, dense and full, seems to collapse into a cluster of crushed chords; but despite this extreme condensation, the main objects remain discernible, albeit in short chunks.

To organize this process of progressive accumulation of sections, Romitelli has again used framing grids, which directly juxtapose the deferred changes of the same



FIGURE 6. The harmonic grid of Part II of *Lesson II*. Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.

The image shows a handwritten musical score on aged paper, divided into four systems of staves. The score is annotated with circled numbers 1 through 8, indicating specific measures or sections. Vertical red lines separate these sections. The notation includes various musical symbols such as notes, rests, and accidentals (sharps, flats, naturals). There are several performance instructions written in Italian, including "ripetere" (repeat), "ritardando" (ritardando), "accel." (accelerando), and "trinita chiara" (clear trinity). A legend at the bottom right explains some of the symbols used, such as "TN" for trinity and "rel. progressivo" for relative progression. A note at the bottom center reads "ritardando a libro un momento microscopico che diventa macroscopico con nell. obliqua accel." (ritardando in the book a moment microscopically that becomes macroscopically with the oblique accel.).

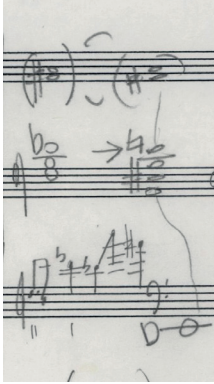
① *ripetere*  
②  
③  
④  
⑤  
⑥ *trinita*  
⑦  
⑧

*ritardando a libro un momento microscopico che diventa macroscopico con nell. obliqua accel.*

*ritardando*  
*accel.*  
*trinita chiara*  
*quadruplo*  
*pp.*

① *rel. progressivo*  
*TN*  
②  
③ *rel. progressivo*  
*rel. maggiore*  
*TN*  
④ *rel. prog.*  
*rel. mag.*  
*accel.*

FIGURE 7. The expansion by minor thirds of the figure  $\beta$  with extension on the next chord. Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.



object or of the section it forms. An example of this is given with the object  $\beta$ . First of all, Romitelli annotated four spectra according to an increasing dilation of the coefficient – 1.075, 1.167, 1.305, 1.42 – which can be united by the frequencies corresponding to the pitches of the melodic cell relative to the object in question (FIGURE 8).

The connection between the figural plane of pitches and the frequencies, belonging to one or more spectra, recalls the 'transition space' between timbre synthesis and figure. In the FFR there is also a diagram in which the composer, using his usual numbered boxes, sketches the transformations of the melodic cell between viola and violin (FIGURE 9). In it, the duration of each repetition of the cell is indicated in quarter notes (written in red); furthermore, some successive insertions and the instruments to be used are sketched in. Twelve repetitions in all are fixed, outlining a process of time dilation up to the sixth-seventh frame and then of subsequent contraction. This sketch is relevant for two reasons: 1) because it shows how Romitelli works by focusing on the single object, without losing sight of the syntactic correlation between different objects; 2) because the single object, here arranged in a figural key, is systematically conceived in its deformations or distortions.

FIGURE 8. The four spectra common to  $\beta$  (in red). Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.

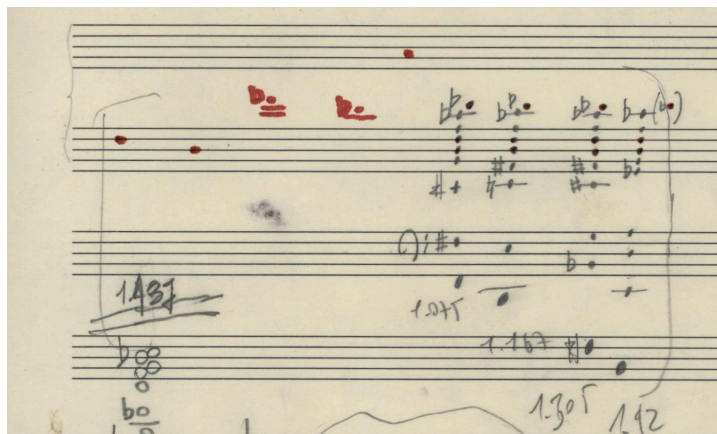


FIGURE 9. Romitelli's grid for variants of the object we call  $\beta$ . Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.

The image displays three pages of handwritten musical notation, likely a score for a string quartet, featuring a complex grid of circled numbers and annotations. The notation is written in black ink on aged paper. The grid consists of circled numbers (1 through 12) placed at various points across the staves, often with arrows pointing to specific notes or measures. The numbers are arranged in a roughly rectangular pattern, with some numbers appearing multiple times. The annotations include various musical symbols such as notes, rests, and dynamic markings, along with handwritten text and symbols like 'v', 'p', 'f', and 'ff'. The overall appearance is that of a working draft or a score with extensive editorial or performance markings.



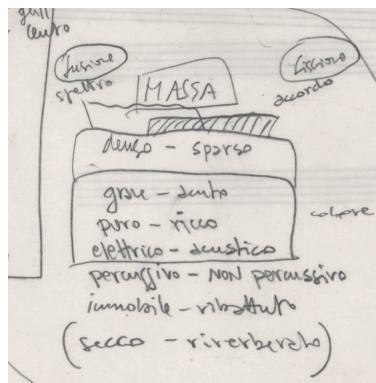
Disfiguring, in any case, presupposes work on the figure. The expansion of the section  $\beta$  from two to six quarters (frames 6 and 7) shows the periodic correlation between the re-reading of the cell and its repetition: Franco Donatoni, Romitelli's teacher, would have called it a growth without development. De facto, the main cell  $\beta$  does not evolve, but tends to remain fixed despite its rhythmic and figural deformations. This doesn't mean there isn't a certain degree of plasticity within each of the variants, of which the module is a part. As the section extends, it increases its internal ornamentation with additional interpolations that do not affect its basic structure. The connections within the sections are ensured by the common components between them.

## CONCLUSIONS

The cello's *seconda cadenza* is followed by the third and final part of *Lesson II*, where the ensemble converges on a repeated and measured series of crescendo-diminuendo on *ppp/pp*. The result is a repetitive, hypnotic liquefaction of sound, typical of Romitelli. The analysis of Part III is not within the scope of this study.<sup>23</sup> Indeed, I wanted to dwell on some salient aspects of *Lesson II*, to document Romitelli's compositional methodology concerning his theorizations of 'spectral morphology'. To demonstrate how Romitelli concepts of 'spectral morphology' are at work in *Bad Trip*, I present a graph taken from one of his hand-drawn sheets, held by Fondazione Giorgio Cini (FIGURE 10); it traces the sound field of action through pairs of opposites, referring to *Lesson II*.

The first opposition drawn above confirms the basic dialectic between fusion and fission, i.e., between spectrum and chord. The following contrasts concern the

FIGURE 10. Romitelli's sound graphic. Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.



mass divided into dense and sparse, the register divided into low and high, pure and rich (full) sound, electric and acoustic, and so on, up to the contrast between dry and reverberated sound. With this design Romitelli wanted to circumscribe the sonic territory of his trilogy in an essential form.

The syntax related to the concatenation of objects-phonemes, which Romitelli raised as a priority problem in his theoretical writings, essentially concerns the functionalization of his linguistic-musical code to the constitution of recursive units. The analysis of *Lesson II* from sketches has shown how objects are preliminarily understood and contextualized in units that are repeated either in contiguous or deferred form. Romitelli operates on the combination of intervallic formations and instrumental syntheses through procedures of substitution and selection, codifying in this way the transition between the two opposing levels of ‘aggregation’ and ‘categorization’. But it’s above all the modes of recursive logic that underpin the syntactic relevance of musical discourse in Romitelli. Already his sketches show, at the level of schematic design, a repeated series of objects, framed in boxes with inserts and variants suitable for orienting perception; this is in line with Moles’ information theory on the relationship between repetition and perception, to which Romitelli explicitly refers. With this procedure, Romitelli allows his *loop* (in the broadest sense) to coexist with the tension of orientation and direction, or rather to evoke in the listener the idea of global growth, even in the permanence of modular patterns.

The syntactic pertinences of Romitelli’s musical ‘écriture’ thus converge on a recursive, perspective conception of acoustic space; for Romitelli this becomes a symbolic metaphor of experience. According to the composer, there has been an epochal change that has radically affected our musical sensibility. Modern technology has irreversibly favored the ‘dirty’ inharmonic sound over the ‘pure’ acoustic, traditional harmonic sound. In compositions such as *Bad Trip*, Romitelli has incorporated this sound into his basic musical lexicon. All this is well known, but Romitelli has always emphasized the linguistic primacy of his music. In this study, I wanted to identify the methodological core of all Romitelli’s symbolic references in his ‘spectral morphology’, from which the electric exploration of sound has been fully developed in all its visionary violence.

## Notes

- 1 The ‘instrumental synthesis’ refers to the use of sound components with musical instruments. This process involves the elaboration of sound forms, ranging from the spectrum with harmonic partials to white noise. The use of untampered frequencies is also an important aspect of ‘instrumental synthesis’. For a more detailed discussion, see Gérard Grisey’s ‘Structuration

- des timbres dans la musique instrumentale', in: *Le Timbre, métaphore pour la composition*, Paris: Christian Bourgois–Ircam, 1991, sous la direction de Jean-Baptiste Barrière. Romitelli adopted and personally employed the procedures of 'instrumental synthesis', mentioning it several times in the explanatory notes of his compositions. For example, in the presentation of *Mediterraneo* for ensemble (1992), Romitelli writes that he was influenced by the problems of 'instrumental synthesis' of timbre and its syntactic relevance. Fausto Romitelli, 'Mediterraneo', in: *Italia/Francia: Musica e cultura nella seconda metà del XX secolo*, a cura di Amalia Collisani, Gabriele Garilli e Gaetano Mercadante, Roma: NeoClassica, 2020, p. 268.
- 2 Romitelli, 'La sabbia del tempo: presentazione', in: *Italia/Francia: Musica e cultura nella seconda metà del XX secolo*, p. 267.
  - 3 Romitelli, 'Mediterraneo', p. 268.
  - 4 Romitelli, 'Mediterraneo', p. 268.
  - 5 This text, which can be found in the form of handwritten notes at the Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli (henceforth FFR), is reproduced in its entirety in the doctoral thesis of musicologist Alessandro Olto, from the private archive of Laurent Pottier, entitled: *EnTrance. Spettralismo e composizione assistita all'elaboratore in Fausto Romitelli*, Doctoral Dissertation in Historical, Artistic and Audiovisual Studies, University of Udine, 2017, 247 pp., pp. 170–188. It can be found at the following link: <https://air.uniud.it/handle/11390/1132155#.YYKwAlPSIW0>.
  - 6 Roman Jakobson, *Essais de linguistique générale*, Paris: Les Éditions de Minuit, 1963, pp. 43–67.
  - 7 Robert Cogan, *New Images of Musical Sound*, Cambridge, Massachusetts and London: Harvard University Press, 1984.
  - 8 Romitelli, 'Pertinence du timbre', in: Olto, *EnTrance*, p. 175.
  - 9 Romitelli, 'Mediterraneo', p. 268.
  - 10 Romitelli, 'La sabbia del tempo: presentazione', p. 267.
  - 11 <https://support.ircam.fr/docs/om-libraries/old/PW-Esquisse.pdf>
  - 12 Fausto Romitelli, 'Résonances', in: *L'idée musicale*, sous la dir. de Christine Buci-Glucksmann et Michaël Levinas, Vincennes-Saint Denis: Presses Universitaire de Vincennes, 1993, pp. 43–45; also edited in: *Le corps électrique. Voyage dans le son de Fausto Romitelli*, textes réunis par Alessandro Arbo, Paris: L'Harmattan, 2005, pp. 127–129.
  - 13 These reflections come from a theoretical-philosophical paper by Hugues Dufourt entitled 'La mémoire créatrice', *InHarmoniques*, 4, September 1988, pp. 72–105.
  - 14 Romitelli, 'Résonances', p. 129.
  - 15 Romitelli, 'Entretien avec Véronique Brindeau', in: *Le corps électrique*, pp. 157–161; 159, 158–159.
  - 16 Abraham Moles, *Théorie de l'information et perception esthétique*, Paris: Flammarion, 1958.
  - 17 Eric Maestri (Eric), 'Movimento esogeno ed endogeno in Professor Bad Trip', in: *Have your Trip*, a cura di Vincenzo Santarcangelo, Milano: Auditorium, 2014, pp. 109–133.
  - 18 Pascal Decroupet, 'Le son kaléidoscopé: La révélation audible du son incurvé dans Professor Bad Trip Lesson I de Fausto Romitelli', *Dissonance* 143, 2018, pp. 15–23.
  - 19 Nicolas Moroz, 'Hacking the Hallucinatory: Investigating Fausto Romitelli's Compositional Process through Sketch Studies of Professor Bad Trip: Lesson I', *Archival Notes. Sources and Research from the Institute of Music*, 5, 2020, pp. 59–84.
  - 20 With PW it is easy to construct a harmonic spectrum: given a fundamental frequency  $f$ , one calculates the spectrum by determining the number of its partials according to the formula

$y = fx^n$ , where  $x$  denotes the number of the partial,  $n$  the distortion coefficient. If  $n = 1$ , the spectrum is harmonic since its partials are all integer multiples of  $f$ ; conversely, if  $n < 1$  the spectrum will be distorted by compression, if  $n > 1$  the spectrum will be distorted by dilation. Details on the distortion procedure are given in Moroz, 'Hacking the Hallucinatory', pp. 69–71.

- 21 In general, where Romitelli uses quarter-tone notation, the individual pitches approach the components of a spectrum and tend to unite in an 'instrumental synthesis'; on the contrary, where Romitelli uses traditional semitones, even when a chord is extracted from a spectrum, an harmonic and analytical view of the object prevails, which lends itself to ulterior possible combinatorial aggregation procedures.
- 22 Instrumental simulation is achieved by moving a quarter tone up and down around a given pitch or chord, crescendo and diminuendo. This effect of coming and going is often used by Romitelli in *Professor Bad Trip*.
- 23 For an analysis of the third part of *Lesson II*, see my study of the entire Romitellian trilogy: Luigi Manfrin, *Fausto Romitelli: Professor Bad Trip*, Genève: Édition Contrechamps, 2024.

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