Hacking the Hallucinatory: Investigating Fausto Romitelli's Compositional Process through Sketch Studies of *Professor Bad Trip: Lesson I*

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INTRODUCTION

Recent studies of Fausto Romitelli's sketches have garnered new analytical insights into his music's underlying compositional processes.[1] This article continues in a similar vein by presenting an analysis that incorporates sketch studies of parts of *Lesson I*, the first movement of the *Professor Bad Trip* trilogy (henceforth *PBT)*, composed between 1998 and 2000, and scored for an amplified ensemble of ten players and electronics. This article empirically explains three key technical features of Romitelli's music: firstly, his idiosyncratic syncretic compositional practice that combines spectralist and post-serial thinking; secondly, his writing process, from plan to sketch to score; and thirdly, his use of particular sonic models.

The sketch materials now available in the Fondo Fausto Romitelli (henceforth FFR) at the Fondazione Giorgio Cini in Venice amply show the amalgamation of apparently motley or even antithetical techniques. While Romitelli's syncretic aesthetic is widely appreciated,[2] the technical details of his syncretic compositional practice have only recently begun to be explained. Concerning Romitelli's compositional process, in *Lesson I* we can discern three broad stages through

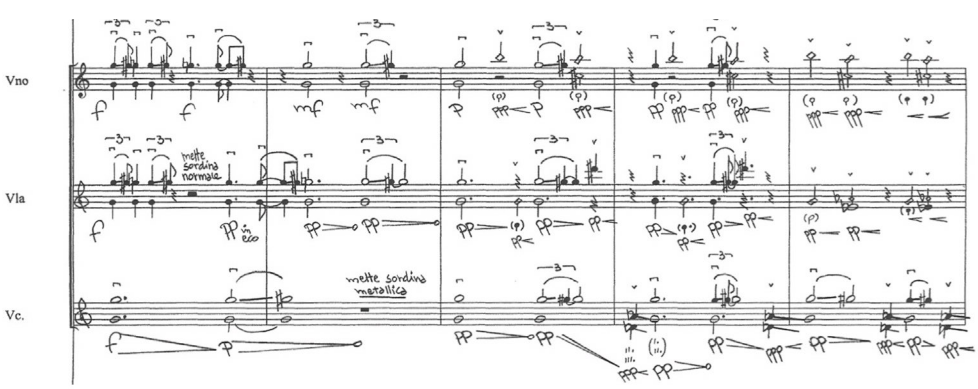
ARCHIVAL NOTES
Sources and Research from the Institute of Music, No. 5 (2020)

ISSN 2499-832X

comparative sketch studies: schematisation, intermediate sketching, and first draft full score. Sketches and recent studies of other works held at the FFR corroborate this general pattern. Sketches also show how Romitelli used sonic models (hereafter SMs) or what Donin terms 'sonic imprints': the instrumental *resynthesis* of found sounds.[3] While this feature strongly aligns Romitelli to first-generation spectralists like Gérard Grisey and Tristan Murail, who used SMs to create both micro and macro structures, Romitelli used SMs only on small-scale or quasi-thematic entities. Romitelli's SMs consist of a variety of sounds that refer to either generic biomorphic types (e.g. breathing), or sounds and gestures from the domains of electronic and popular music. In *PBT* the electric guitar plays a leading role as both a protagonist (and sometimes antagonist) within the ensemble, and generally as a reservoir of melodic, gestural, and timbral SMs for composition.

FIGURE 1 shows the opening string trio material of *Lesson I*. This presents the trilogy's primary SM and idée fixe. The octave glissando gesture is an unmistakable evocation of the electric guitar, specifically, a style of soloing with expressive glissandi and portamenti obtained by bending the strings, which originated in blues and rock music (e.g. see the solo in Jimi Hendrix's *Purple Haze*), and proliferated in many later sub-genres (e.g. Prog, Metal, Grunge). While *Lesson I*'s opening pitch-bend motif immediately presents a figurative manifestation of the electric guitar, another influence of the instrument on the structure of *PBT* is the use of the guitar's open strings as prominent harmonic tones, especially the low e-string (E_2) and g-string (G_3), which often appear as pedal tones throughout the cycle. Furthermore, the SM of the guitar is also prominent in the electroacoustic part (only in *Lesson I*), which primarily consists of digitally synthesised and cross-synthesised sounds of the electric guitar's distorted timbres.[4]

FIGURE 1. Fausto Romitelli, *Professor Bad Trip: Lesson I*: opening string trio material in bb. 1–5. © 1998, by Ricordi, Milano, 06773.



Romitelli's practice not only integrates contrasting techniques of modernist instrumental music as with the spectralisms of Murail and Grisey, and the combinatorics of Donatoni, but also gathers and incorporates, or in Romitelli's words, *metabolises* an extensive hinterland of sounds and musical ideas from various different popular music genres. This heterogeneous approach resonates with many other post-spectral composers such as Patricia Alessandrini, Philippe Hurel, Mauro Lanza, and Enno Poppe, however what distinguishes Romitelli's musical idiolect is how in his amalgamation of particular musical materials and techniques he attempted to augment the ostensibly formalist and culturally insular paradigm that he saw as predominant in European modernist music of his time. Ultimately, however, he does so without transgressing the essential modernistic features of stylistic and material cogency. Whereas many figures in experimental music had long abandoned such frameworks (e.g. Cage and Fluxus), for Romitelli they remained foundational to his own polemic:

> I think that the talent of a composer is gauged by their capacity to compose while integrating different materials, often heterogeneous, without renouncing conceptual rigour but still defining a 'style' capable of 'metabolising' different influences and creating new sound images.[5]

Thus, in this article I present analyses of four sections from *Lesson I* where sketch studies empirically demonstrate exactly how Romitelli dealt with the apparent tension between 'conceptual rigour' on the one hand, and a flexible and creative 'style' on the other.

OVERVIEW OF THE TRILOGY

Romitelli's trilogy borrows its name from the pseudonym of Italian punk musician and graphic artist Gianluca Lerici, AKA (the original) *Professor Bad Trip*.[6] The three movements of the work, or as Romitelli names them, *Lessons*, each rework a recurring underlying structure, inspired by Francis Bacon's *Three Studies for a Self-Portrait* from the 1970s. In addition, the writings and drawings of Henri Michaux form another important influence:

> I found correlations between the 'depraved perspectives' of mescaline and the territories of sound that have always fascinated me: the mechanics of emergence, of transformation, of disappearance, and visions of colour are very close to the forms of my auditory imagination. Therefore it seemed necessary to work on the musical aspects related in the most direct way to the perception of phenomena as described by Michaux. The investigation of the perceptual mechanisms of hallucinatory states was

> an instrument to penetrate a universe that could not be reduced to the claustrophobic formalisms of contemporary art music.[7]

The trilogy's aesthetic is founded on the musical representation of violence, illusion, hallucination, and altered states of consciousness, which Romitelli sees as a way to challenge the prevalent dichotomy between so-called high and low art (*musique savante et musique populaire*). The programme note to *PBT* confirms his agenda:

> I think popular music has changed our perception of sound and has established new forms of communication. […] The formalism and the a priori of the avant-garde concerning the purity of musical material has neutralised, 'castrated' sound. Today, the necessity for musicians of my generation to reject gratuitous abstraction and seek a new perceptual efficacy has convinced some of us to tap into the sonic inventiveness, especially in the electroacoustic field, of popular music.[8]

In other words, Romitelli calls into question the grand narratives of modernism – the rationalising culture of the institutionalised avant-garde, in Born's words[9] – and instead seeks a more materially and experientially orientated approach. Yet despite his anti-establishment polemics Romitelli's music remained throughout his life utterly concordant with the notion of 'The Work', as well as the associated Composer-Performer-Listener hierarchy of musical production and experience that underpinned the European musical modernist establishment in the late twentieth century, as epitomised by institution such as IRCAM. While many scholarly and promotional writers have revelled in Romitelli's self-styled 'bad boy' image, fewer have explained the workings of his music's internal mechanisms and how these relate to the broader tensions within his compositional practice.

Romitelli's works since the early 1990s are typically formed on the macro-level as sequences of contrasting *sections* and on the micro-level as repetitive sequences of *cells* that contain one or several musical objects, such as melodies, gestures, textures. The repetition of cells often evokes the various forms of loops and riffs as found in a variety of popular music genres. Indeed, other writers use the term 'loop' as an analytical term, I however opt for 'cell' as it offers a little more flexibility to describe larger-scale and ambiguous repetition.[10] Romitelli's musical cells almost always grow progressively; each iteration develops the material over the course of a section up to a climax, which is then followed by either a recession, disintegration, or sudden cut to a new section. Smaller static sections also frequently punctuate the musical flow to create moments of repose, for example in the coda sections of *PBT*. Overall, Romitelli's musical forms are predominantly teleological, or what he described as a kind of 'viral growth'. *PBT* exemplifies such large-scale teleological

features in terms of *sections*, *cells*, *accumulation*, *climax*, *disjuncture*, and *stasis*. The sketches help explain specifically how Romitelli used schemes to organise sections according to a predetermined sequence of cells and parameterised rhythmic and dynamic values.

FIGURE 2. Formal schematisation of the *Professor Bad Trip* trilogy.

Lesson I				Lesson II				Lesson III			
Section		Bars	Tag	Section		Bars	Tag	Section		Bars	Tag
A	1.1	1-6		A	2.1.1	1-22		A	3.1	1-5	
	1.2	7-32	“ß”		2.1.2	23-73			3.2	6-61	
	1.3	33-67	“ß”		2.1.3	n/a	cello		3.3	62-100	
	1.4	68-105	“γ”	B	2.2.1	1-5		B	3.4	101-140	
	1.5	106-111			2.2.2	6-31			3.5	141-167	
B	1.6	112-130	“A”		2.2.3	31-40			3.6	168-184	
	1.7	131-135	x		2.2.4	40-56		C	3.7	185-215	
	1.8	136-193	“A”		2.2.5	56-60	x		3.8	216-223	x
	1.9	194-198	y		2.2.6	61-81			3.9	224-228	
	1.10	199-218	“B” / z		2.2.7	82-101	z				
	1.11	219-229	“H"		2.2.8	102-125					
C	1.12	230-240			2.2.9	n/a	cello				
	1.13	241		C	2.3.1	1-14					

FIGURE 3. Waveform representations of each *Lesson* from the Ensemble ICTUS recording.

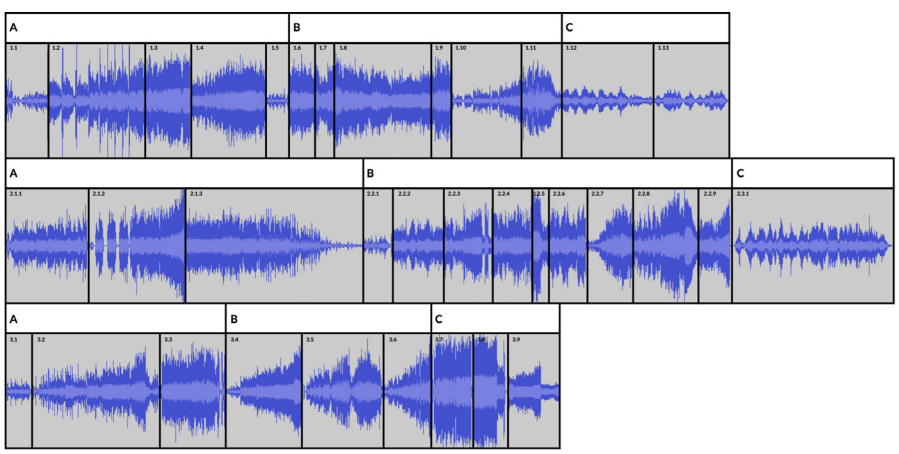


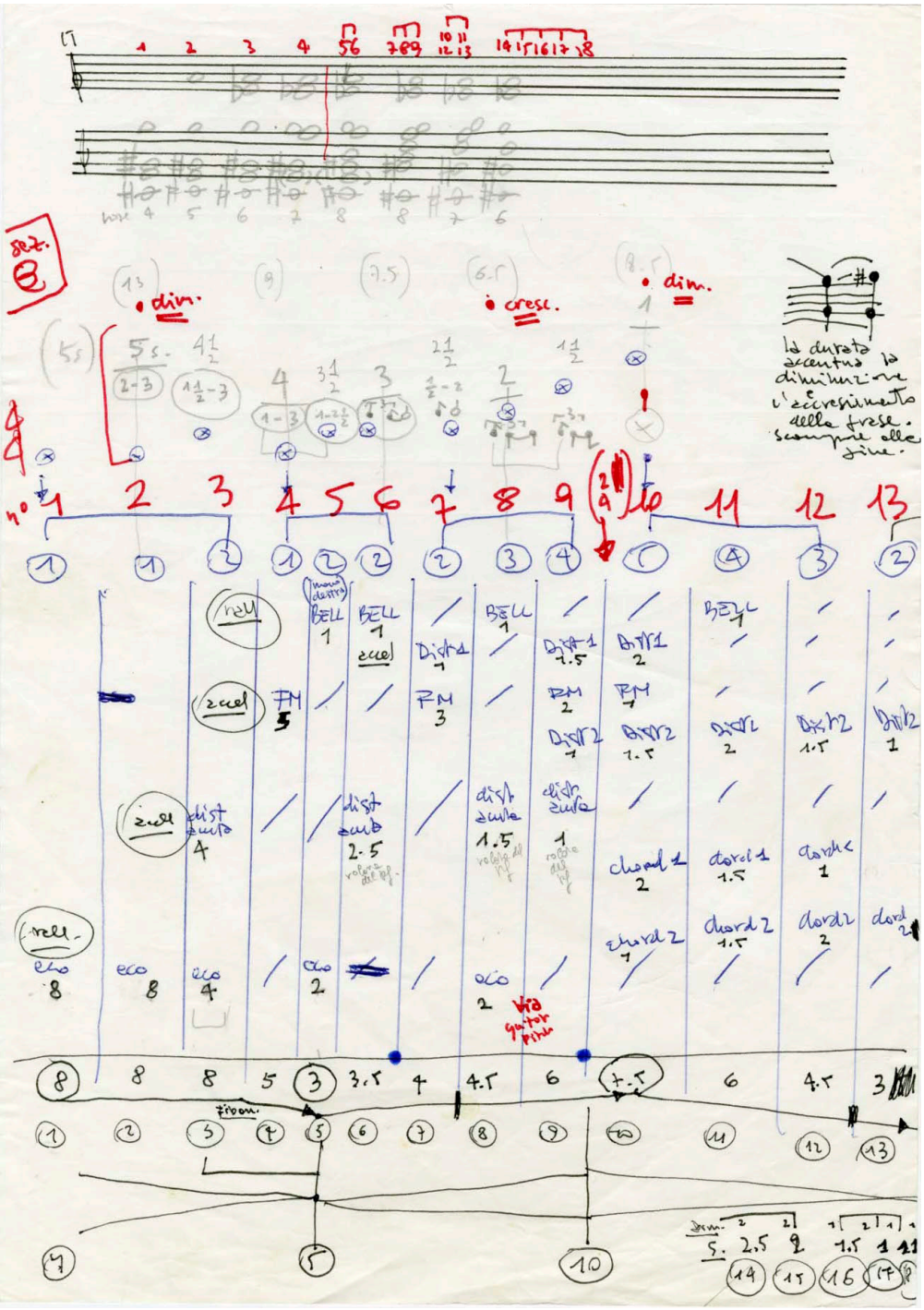
FIGURE 2 presents my own segmentation of the entire trilogy. Owing to the above-described clear-cut formal processes in Romitelli's music, the sectional segmentation of *PBT* is an uncomplicated task. We see that – indeed as Romitelli describes – each *Lesson* consists of three large parts (A, B, C), which further divide into sections. I notate these according to *Lesson* and *section* number (e.g. 1.1),[11] with the corresponding bar numbers. The 'Tag' column shows in double quotation marks the symbol that Romitelli used to name each section in the sketch materials. For example, in *Lesson I* he consistently refers to the sections of Part A with Greek letters (β and γ), and switches to Latin for Part B.[12] Tags without quotation marks are my own, and these simply show either the 'x' material type, which recurs throughout the trilogy, or the location of the cello cadenzas in *Lesson II*.[13] As well as the tripartite or 'perturbed' symmetrical structures that recur in each *Lesson* (parts A, B, C), distinctive exposition and coda sections also form important recurring features. The expositions (1.1, 2.1.1, 3.1) consist of cells that progressively shrink, whereas the codas (1.14, 2.3.1, 3.9) consist of slow chord sequences that expand the music into umbral stasis.[14]

An alternative view of the structure of *PBT* can be seen in FIGURE 3, which shows the waveforms of each *Lesson* from the 2003 Ensemble ICTUS recording with my structural analysis superimposed. The waveforms show the actual temporal proportions of the above structural analysis to reveal the recurring tripartite structure and perhaps more strikingly the teleological features of growth, climax, disjuncture, and stasis, as evident in the growing wedge shapes of the waveforms and sudden drop outs whenever new sections begin. It is even possible to see some microlevel detail in the waveforms, for example the outline of individual cells in the beginning of *Lesson I*, where the sudden peaks in the waveform show the loud bass clarinet slap tongue that initiates each cell in section 1.2.

PART A: SECTIONS 1.2 AND 1.3

FIGURE 4 shows the key sketch to begin understanding Romitelli's compositional practice, as it not only explains the techniques that form sections 1.2 and 1.3, but it also unlocks the meaning of several otherwise dissociated sketches. FIGURE 4 shows a kind of architectonic pre-compositional schematisation which again strongly allies Romitelli to Grisey, who also devised similar quasi-algorithmic schematics for his compositions from the mid 1980s onwards, for example *Talea* (1986) or *Vortex Temporum* (1994–1996).[15] While the sketches suggest that Romitelli saw what I call sections 1.2 and 1.3 as one – 'sezione β' – I nonetheless continue to distinguish between the two because I find that during listening section 1.3 marks

FIGURE 4. Beta-scheme: sketch for sections 1.2 and 1.3. Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.



a significant change or disjunction from the consistently shrinking cells of section 1.2. I continue to refer to this sketch as the *beta-scheme*.

The numbers 1–13 in red felt pen above the columns give each cell number (also reproduced at the bottom, circled in black pen). In cells 1 and 10 also in red are the correct time signatures as found in the score: 4:4 at b. 7 and 2:4 at b. 33. Beneath the red cell number we see circled in blue pen the total number of musical objects per cell. In each column in blue pen are the names of the objects present in each cell, and beneath this in black pen, the duration of each object (in crotchet beats). Beneath each column in black pen is the duration of each cell (in crotchet beats). Although the main plot seems to end at cell 13, in the bottom-right corner we see circled in black pen cells 14–18, as well as their durations in crotchet beats and the total number of objects per cell. We can see how the sequence of durations of the cells creates a contraction from cells 1–5, an expansion in 5–10, and another contraction in 10–18, as illustrated by his envelope drawing. The numbers and equations in pencil above the plan seem to relate to rhythmical subdivisions of the cells. The top of the sketch shows a sequence of eight chords that correspond to the 18 cells (with the total number of pitches within each chord written beneath). Along the right-hand side we see the G–G# gesture from the very opening section 1.1 with the annotation 'la durata accentua la diminuzione e l'accrescimento della frase [the duration accentuates the diminution and growth of the phrase]'. By comparing this sketch with the score we can determine the identity of the eight objects in the beta-scheme. In order of appearance they are: 'eco', 'dist acuto [high distortion]', 'FM [frequency modulation spectrum]', 'bell', 'dist 1 [distorted spectrum 1]', 'dist 2 [distorted spectrum 2]', 'chord 1', and 'chord 2'. Each object is shown in FIGURE 5 along with the bar number where they first appear.

FIGURE 6 shows my transcription of the scheme and reformats it so that cells 1–18 appear within one table. Although only the rhythmic information for cells 14–18 is shown in the original scheme, the relevant harmonic objects were found written out in another sketch and confirmed by score analysis.

FIGURE 5. Harmonic reduction of the musical objects present in the beta-scheme.

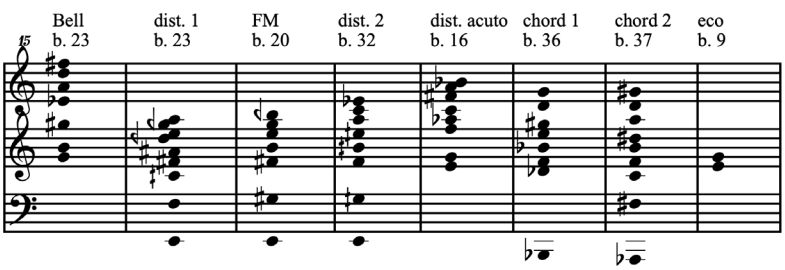


FIGURE 6. Transcription of the beta-scheme.

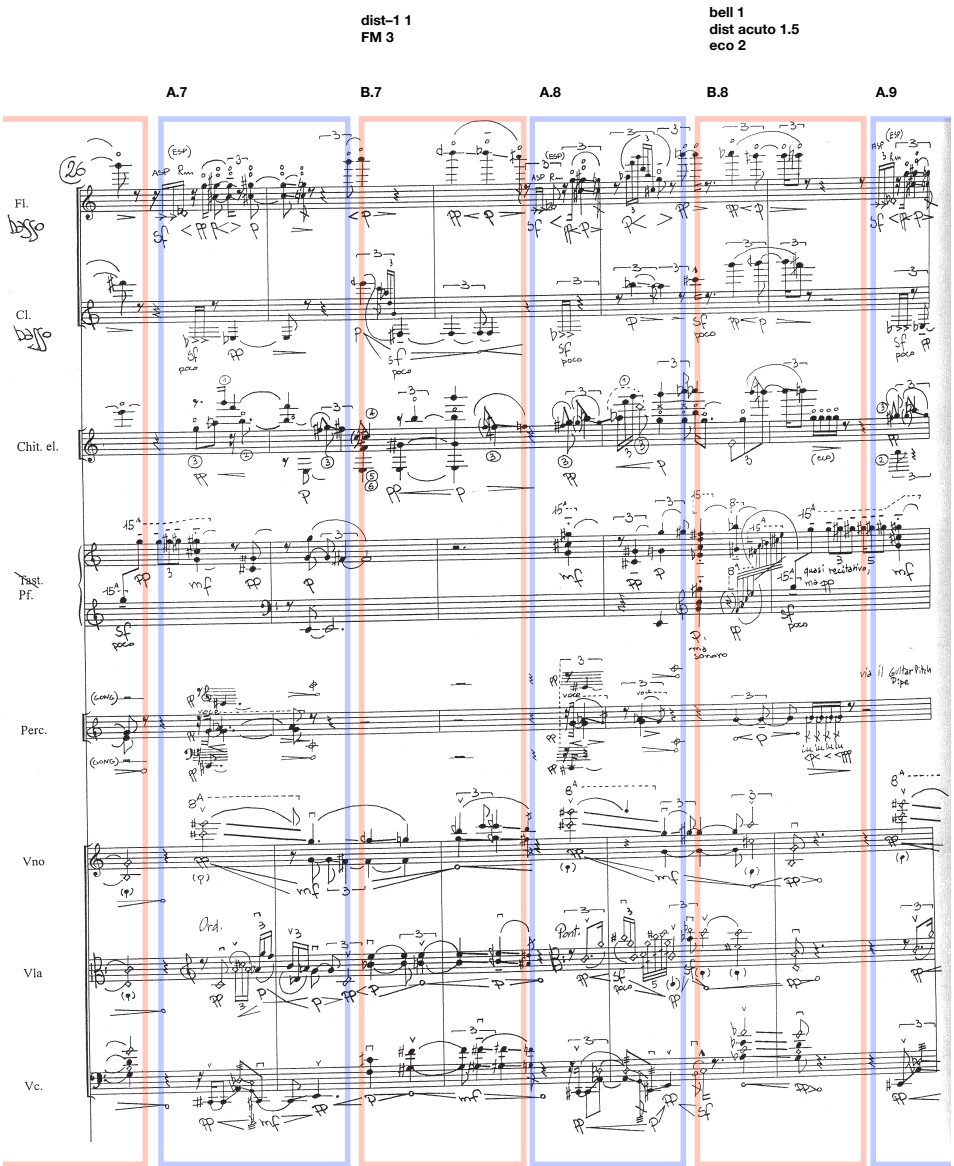
Section	1.2									1.3								
Cell	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Bell					1	1		1			1							
Dist 1							1		1.5	2				1	1	0.5	0.5	0.5
FM				5			3		2	1								
Dist 2									1	1.5	2	1.5	1					
D. acuto			4			2.5		1.5	1									
Chord 1										2	1.5	1						
Chord 2										1	1.5	2	2	1.5	1	1	0.5	0.5
Eco	8	8	4		2			2										
No. of Objects	1	1	2	1	2	2	2	3	4	5	4	3	2	2	2	1	2	1
Beats	8	8	8	5	3	3.5	4	4.5	6	7.5	6	4.5	3	2.5	2	1.5	1	1
Metre	4 4									2 4								

Not shown here, another sketch marked 'β' most likely preceded the above beta-scheme. Slightly messier in appearance, it also includes fragmentary sketches for the instrumental parts of cells 1–9 in section 1.2, namely the distinctive bass flute flutter-tongue breath tone, bass clarinet tongue slaps, and violin and cello glissandi, which we find at the start of each cell from b. 7 and which suggest biomorphic SMs of breathing and mouth sounds. Although not indicated explicitly in the sketches, the way in which Romitelli sketched out this material separately from the above beta-scheme objects, as well as how these materials appear in the score leads me to infer that Romitelli conceptualised the cells of section 1.2 as consisting of two separate parts: an 'A' part identified by the recurring instrumental gestures that develop progressively with each cell, and a 'B' part, the contents of which are determined by the beta-scheme. To demonstrate this, FIGURE 7 shows bb. 26–30 from the score with annotations showing the cell number with the A and B subdivisions, as well as the object names.

In section 1.3 at b. 33, the A–B cell subdivision ends. Although the low C#–E bass line in the cello and double-harmonic glissando in the violin persist from before, the cells proceed as a chain of beta-scheme objects, beginning with five in the first cell from bb. 33–37 and reducing to just two ('dist. 1' and 'Chord 2') in cell 14 at b. 59. Thus, in section 1.3 the duration of cells progressively diminishes as the musical texture intensifies. It reaches a violent climax at bb. 64–66 where the cells compress into a single crotchet beat in duration, and the texture becomes

fully saturated with clangorous stabs from the string trio, marked *estremamente distorto*. The music suddenly drops out and cuts to section 1.4, thereby presenting the first instance of the above described distinguishing structural feature of the trilogy: sudden formal disjunction as juxtaposition from the climax of one section to the calmer beginning of another.

FIGURE 7. Fausto Romitelli, *Professor Bad Trip: Lesson I*, bb. 26–30, annotated with cell numbers and musical object names. © 1998, by Ricordi, Milano, 06773.



By examining each object in the beta-scheme we can begin to understand how spectral and combinatorial thinking interact in Romitelli's compositional practice. While I found no reference to the 'bell', 'dist. acuto', and 'eco' objects among the sketches that I had access to during my studies, I nonetheless found other sketches pertaining to the distorted harmonic spectra from the beta-scheme as well as the 'chord 2' object. I confirmed the parameters for the 'FM' object by using IRCAM's OpenMusic algorithmic music software, the successor programme to PatchWork, which Romitelli used throughout the 1990s. FIGURE 9 shows a sketch annotated '*z*' which shows several distorted spectra with different distortion rates (approximated to quarter-tones and semitones). Distorted spectra were used by Romitelli at least as early as 1995 in his work *EnTrance*, as shown by Laurent Pottier and Alessandro Olto.[17] The harmonic technique originates from the practices of preceding spectral composers, in particular Murail, who used the technique in his ensemble work *Désintégrations* (1982),[18] as well as Grisey, who used distorted spectra in his works from the 1990s including *Vortex Temporum* and *Quatre chants pour franchir le seuil* (1997–1998).[19] A distorted spectrum can be created by hand or with a computer by multiplying a fundamental frequency by a sequence of overtone indices, where each index is raised to the power of an exponent, or a *distortion factor*. When the factor is larger than one it creates an expanded spectrum, and when smaller than one it creates a compressed spectrum (and when equal to one it creates a harmonic series). For example, compare the two sequences shown below in FIGURE 8. The first is a normal number series, and the second shows the same series where each index is raised to the power of 1.075 (the distortion factor of the first spectrum in FIGURE 9).

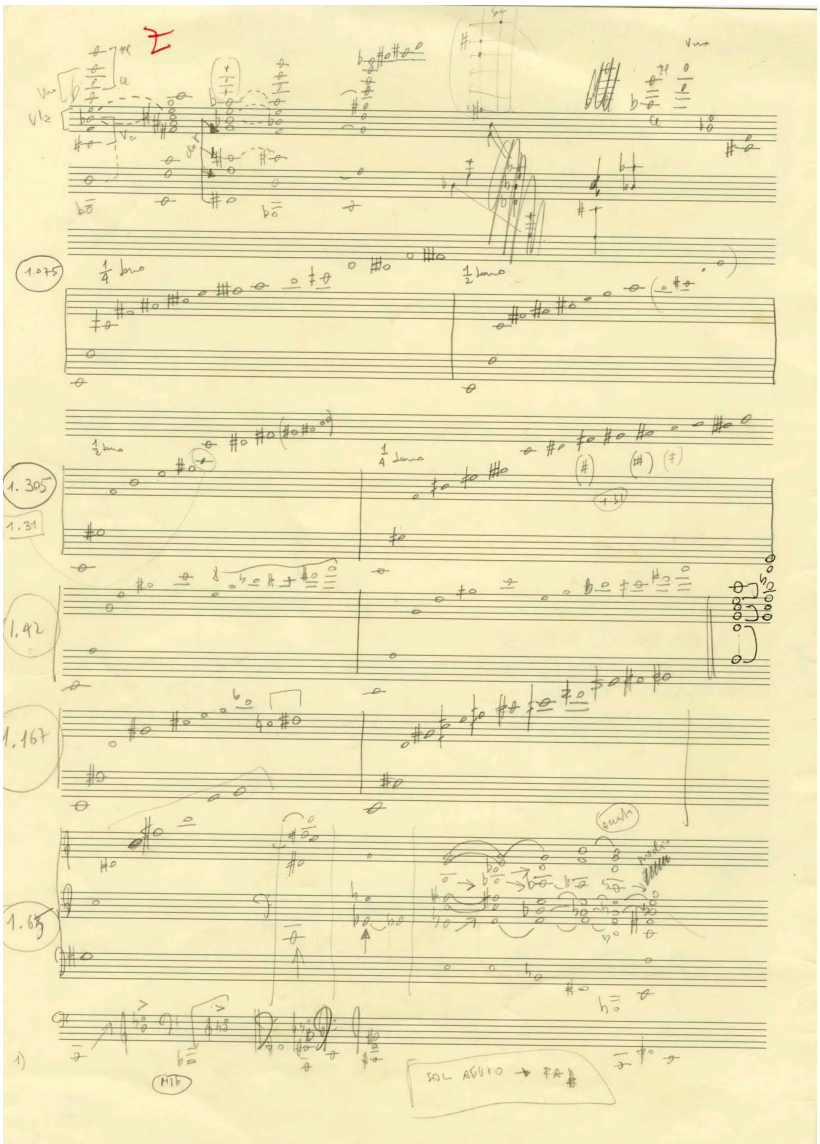
By comparing the sketch in FIGURE 9 with the score of sections 1.2 and 1.3 we see that the beta-scheme object 'dist 1' is the spectrum from the top of the sketch with the distortion factor of 1.075, and that 'dist 2' is the second spectrum with the factor of 1.305. Note that Romitelli includes in the 1.305 spectrum some pitches from the spectrum using 1.31 as a distortion factor, perhaps because he prefers them harmonically.

Next among the beta-scheme objects is the Frequency Modulation (FM) synthesis chord. FM is a digital synthesis technique that creates complex timbres without excessive computation. It was developed by John Chowning throughout the 1960s and 1970s,[20] and was popularised in the 1980s after its commercial implementation, in particular by Yamaha's famed DX-7 synthesiser. Explained simply, FM synthesis creates a spectrum by multiplying a fundamental or carrier frequency by positive and negative integer multiples of a modulator frequency. The depth of the modulation is expressed as the modulation index, whereby a higher index value gives more overtones or a brighter sound. The technique can

FIGURE 8. Comparison of an ascending series of partial ranks with corresponding values with distortion factor of 1.075.

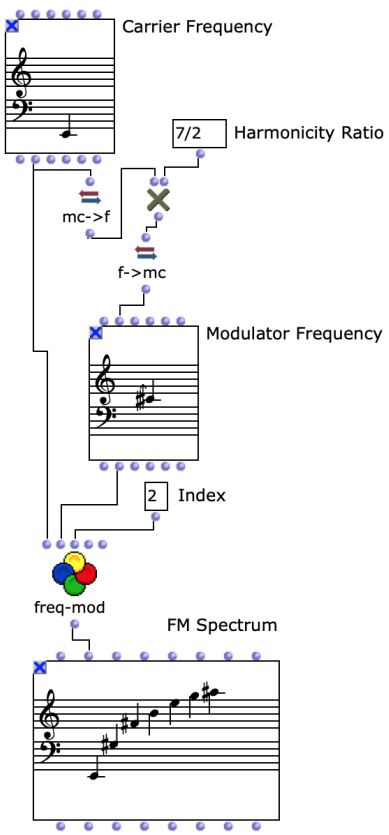
1	2	3	4	5	6	7	8	6	7	8	9	10
1	2.107	3.258	4.438	5.641	6.863	8.1	9.35	6.863	8.1	9.350	10.612	11.885

FIGURE 9. Sketch with distorted spectra for sections 1.2 and 1.3. Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.



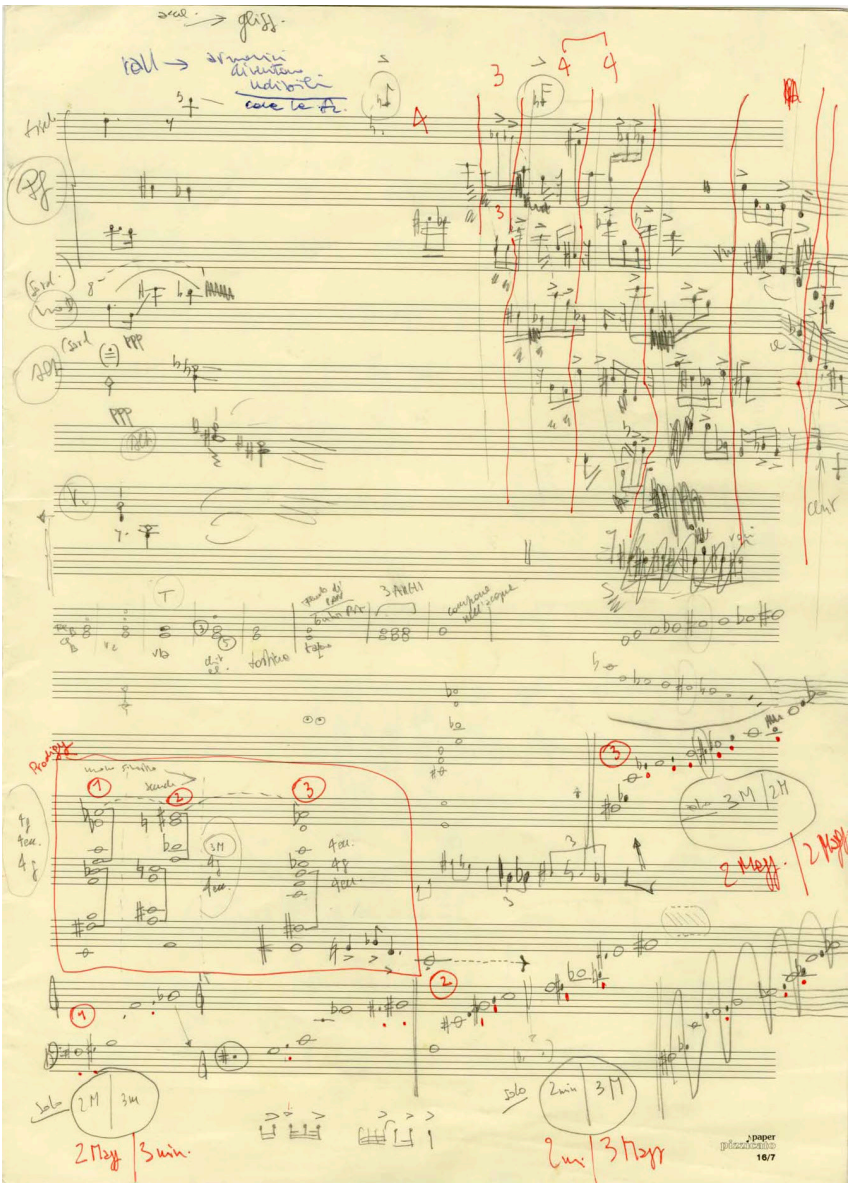
create a vast range of consonant and dissonant complex sounds depending on the harmonicity ratio between the carrier and modulator frequencies. In general, simple ratios like 2:1 or 5:4 create consonant spectra, whereas more complex ratios like 7:13 create more dissonant spectra. Murail first adapted the technique for acoustic music by scoring synthesised spectra for orchestra in his 1984 work *Gondwana*.[21] Romitelli first used FM spectra in his first overtly spectralist work, *Nell'alto dei giorni immobili* (1990), for sextet. The 'FM' object from the beta-scheme uses the guitar's low E-string as the carrier frequency, and the harmonicity ratio of 1.4 or 7/2 with an index of 2. FIGURE 10 shows a simple OpenMusic patch that replicates the kind of Patchwork patch that Romitelli may have used. Future studies into Romitelli's work with PatchWork is perhaps one of the most exciting areas of research now possible at the FFR, which houses Romitelli's laptop and PatchWork files on floppy disks.

FIGURE 10. OpenMusic patch for frequency modulation synthesis spectrum generation.



Turning to the 'chord 1' and 'chord 2' objects, see the sketch in FIGURE 11. At the bottom-left inside a red box with the annotation 'prodigy' are three chords marked 1–3. To the lower-right we see each chord arpeggiated with open note-heads, and additional pitches with smaller black note-heads.[22] For each arpeggiated chord we see annotations that allow us to infer a combinatorial technique at work:

FIGURE 11. Sketch with combinatorial harmonies for sections 1.2 and 1.3. Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.



chord 1 has 'solo 2M / 3m [only major seconds and minor thirds]', chord 2 'solo 2m / 3M [only minor seconds and major thirds]', and chord 3 has 'solo 3M / 2M [only major thirds and major seconds]'. FIGURE 12 shows a transcription of the arpeggi, with the semitone interval sequence annotated beneath. We see that while Romitelli did not stick to two interval classes for each chord (chords 2 and 3 use three), he still sets the sequence of intervals into symmetrical groups. FIGURE 13 shows a transcription of the three chords from the red box, annotated with their interval structures.

FIGURE 12. Annotated transcription of arpeggi of chords 1, 2, and 3.

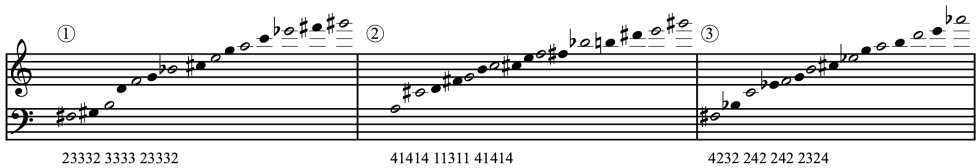
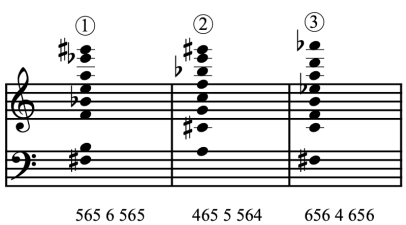


FIGURE 13. Annotated transcription of chords 1, 2, and 3.



In comparing FIGURES 12 and 13 we can see what might be termed a 'combine and filter' technique at work: firstly, Romitelli creates a symmetrical sequence of pitches from combinations of two or three small intervals (1–4 semitones), secondly, he filters out certain pitches to create a new symmetrical sequence of larger intervals (4–6 semitones). It is not clear why the first stage is necessary, since one could easily obtain the given chords by combining larger intervals in the first place. Romitelli also adds bass notes to each chord. It is also not clear whether these derive from the above technique or whether he adds them 'by ear'. We might speculate that the relatively consonant choice for each bass note could be understood as a kind of *virtual fundamental* for each chord, a technique that Romitelli used in other works, as a subtle way to intertwine this combinatorial technique with other spectral sonorities in *PBT*.[23] Many composers preceding Romitelli used symmetrical interval structures, for example, the Second Viennese composers, Messiaen, Lutosławski, Carter, Feldman, Xenakis, and Donatoni.

Further research could help clarify how Romitelli adopted this technique, most likely during his studies with Donatoni. For comparison, FIGURES 14 and 15 show the score and a harmonic analysis for an extract of Donatoni's work *Arpège* (1986), which consists of pairs of complimentary ascending and descending melodies/arpeggi that feature combinatorial structures, as shown in the annotations.[24]

Returning to the beta-scheme, we see that chord 3 from FIGURES 11 and 13 is the same as 'chord 2' in FIGURE 5. Although I did not find 'chord 1' among the sketches of the FFR, we can still see in FIGURE 16 that it also exhibits a symmetrical arrangement of intervals plus an added bass note, although it also has an anomalous interval (4) at the bottom of the chord.

FIGURE 14. Franco Donatoni, *Arpège* (1986), bb. 43–45. © 1986, by Ricordi, Milano, 01572.

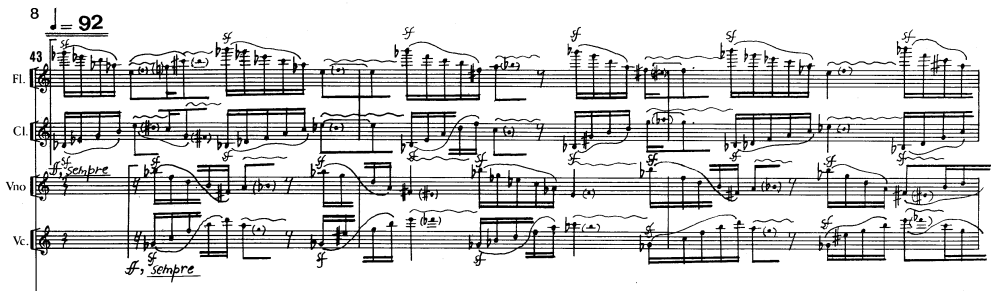


FIGURE 15. Harmonic analysis showing the combination of melodic intervals.

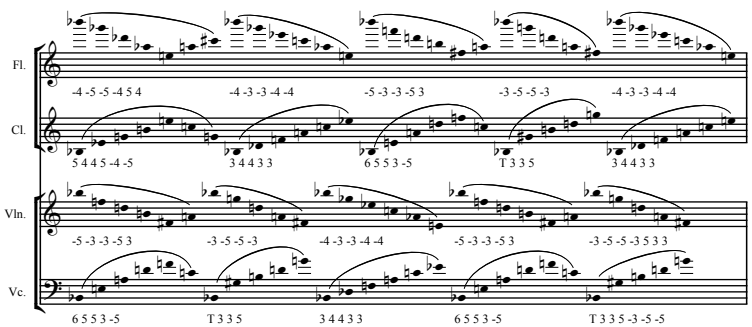
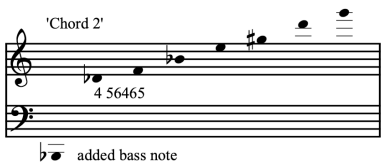


FIGURE 16. Chord 2 from beta-scheme annotated with interval sequence.



PART A: SECTION 1.4

Where the sketches for the previous sections show how Romitelli begins composing with schematisation, the sketches for section 1.4 help explain the next phase, namely, the sketching out of fragments of instrumental parts according to the schemes and sequences of cells. Like the preceding sections, section 1.4 involves yet another process of acceleration via the durational contraction of cells simultaneous with overall intensification. The harmonic content of the section consists of a series of five chords, shown in FIGURE 17. While I found no sketches for these chords, we might again speculate that given their asymmetrical intervallic structure, they are likely to derive from spectral processes. In my analysis I take each chord series to define a cell.

The piano plays a prominent role in this section. FIGURE 18 shows all 17 iterations of the piano cells for section 1.4. By presenting the part in this exposed form we can clearly see the simultaneous processes of figural elaboration and durational contraction with each iteration of the cells; viral growth from an almost Mozartian melodic fragment to a ferocious cascade of descending scales. In a sketch marked as 'γ' (not reproduced here), the rhythms for each cell of the piano part were found sketched out along with those for the violin part in section 1.4. The isolation of the rhythmic layers without pitch information further clarifies that Romitelli's compositional process began by developing the different musical dimensions separately before combining them in the next stage of sketching, and, as shown previously, with reference to a combinatorial scheme.

PART B: SECTIONS 1.6 AND 1.8

The tags in FIGURE 2 show that part B has three main material types: 'A' in section 1.6 and 1.8, 'B' in section 1.10, and 'H' in section 1.11. The brief sections 1.7 and 1.9 appear to function as disruptive inserts. Section 1.7 presents an interjection by the electric guitar with the rest of the ensemble eventually joining in a bruising *pesante* homophony that launches back into the 'A' material of section 1.8. The three chords repeated by the guitar and later reinforced by the ensemble are precisely the same as those labelled 'prodigy' in the sketch of FIGURE 11. In fact, the material in this section returns in *Lessons II* and *III* in the interjection of section 2.2.3 and the explosive climax of 3.8. We might see this as Romitelli's evocation of a kind of Grunge Rock or Noise Rock texture as with the music of Nirvana or Sonic Youth.

FIGURE 17. Chord cycle for section 1.4.

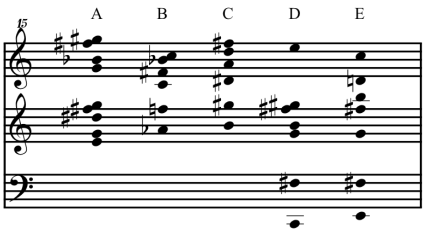
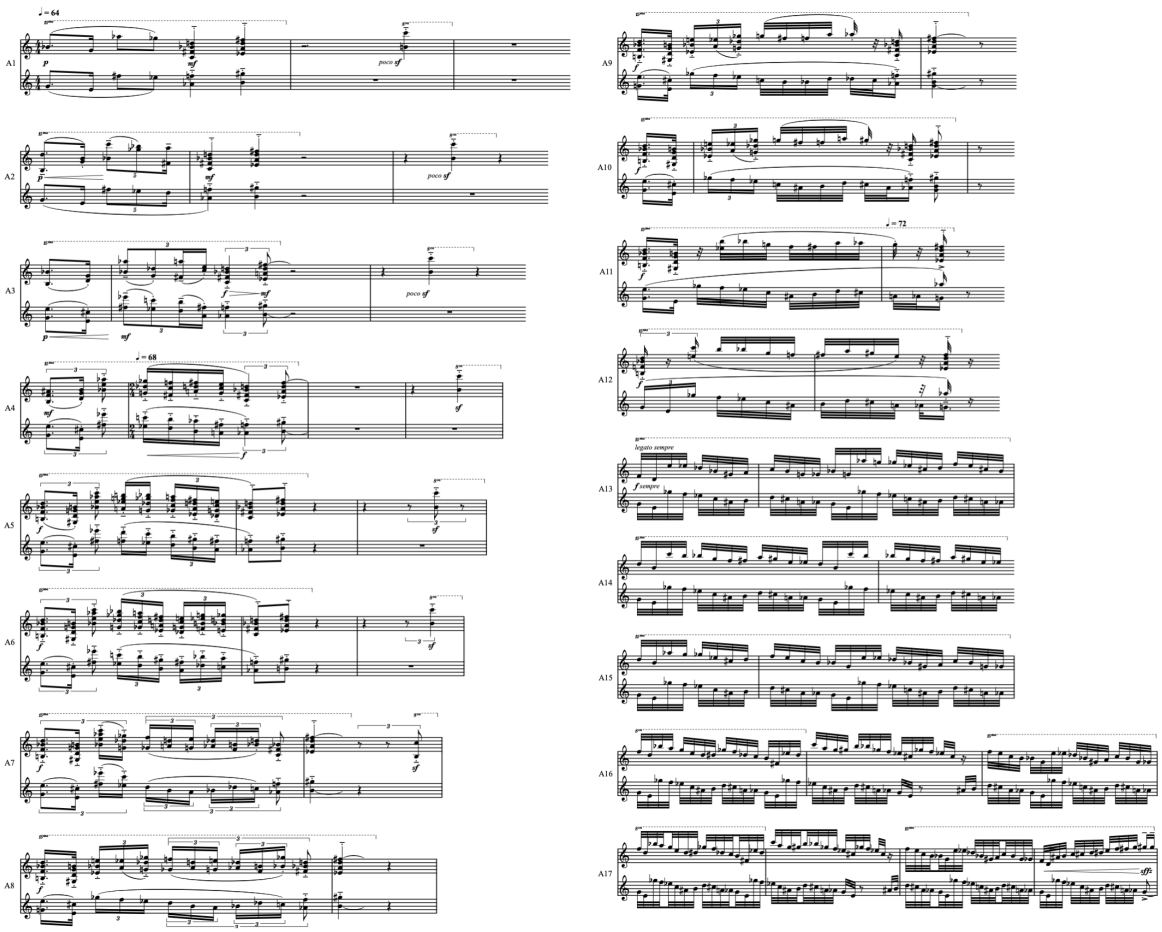


FIGURE 18. Transcription of the piano part for section 1.4, subdivided by individual cells.



Section 1.9 presents a similar homophonic texture to 1.7, though led by the piano and with a more triumphant affect. The piano part features several chords, most of which have already appeared in *Lesson I*. It thereby functions as a quasi recapitulation or sectional coda before the music cuts to section 1.10. While sections 1.10–13 are not covered in this paper for want of space, it is important to mention that the chord sequence in section 1.10 – eight distorted spectra – is the same as in the concluding section 1.13, where the second time it appears as transposed down by two octaves and a minor third. Also notable from a technical standpoint in section 1.11 is Romitelli's use of parallel transpositions to double the strident distorted guitar chords at increasingly dissonant transposition levels, ranging from one octave to one octave plus 1, 7, and 11 quarter-tones. This can be seen as an instrumental model of a guitar's harmoniser effect pedal.

Returning to the 'A' material in sections 1.6 and 1.8, we see in both a cycle of four chords, shown in FIGURE 19. As in other sections, I take each cycle of chords to define a cell. In another sketch (not shown here) I found that chords A, B, and D were generated using the same combinatorial technique as in part A, however in this case the results are not symmetrical. The generating scales are reproduced in FIGURE 20. Although chord C does not appear here nor in other sketches, we still might speculate that it derives from a spectral technique owing to its asymmetrical interval structure, and the feature of octaves. Whereas the harmonic organisation of preceding sections is usually denser, featuring both a greater number of harmonic objects and a faster harmonic rhythm, with the 'A' material each chord becomes a

FIGURE 19. Chord cycle for sections 1.6 and 1.8.

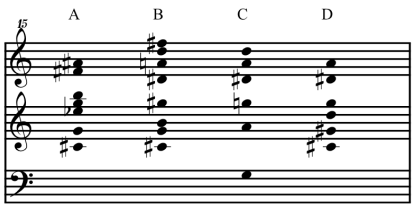
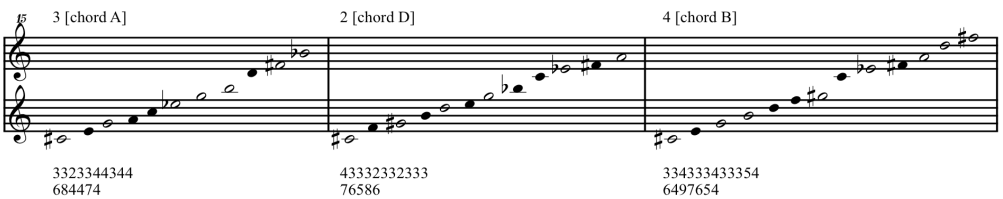


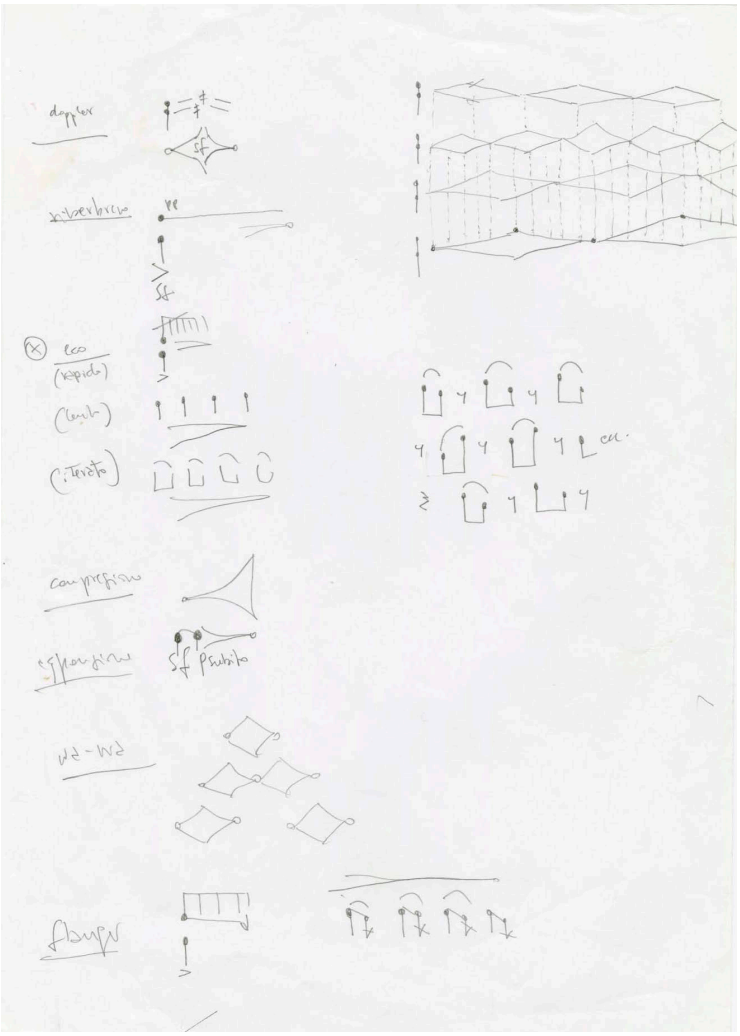
FIGURE 20. Combinatorial scales for chords A-D of sections 1.6 and 1.8.



kind of expanded harmonic zone packed with timbral and melodic objects. This brings us to the third main feature to be discussed: Romitelli's use of SMs.

Sketches for the 'A' material explain how Romitelli modelled instrumental figures on the sounds and gestures of the electric guitar and guitar effects pedals. FIGURE 21 shows a sketch in which Romitelli lists and sketches several acoustical phenomena and common guitar effects. From top to bottom there are (in English): doppler, reverberation, echo (fast, slow and iterative), compression, expansion, wa-wa, and flanger. In other sketches I found similarly numbered lists of SMs. Thus, given the apparent significance of matrix-like combinatorial assembly of

FIGURE 21. Sketch with list of sonic models based on electric guitar effects. Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.



materials in Romitelli's practice, as exemplified in the beta-scheme, we might speculate that there are other schemes that organise collections of several SMs in other sections of *PBT* as well as other works. The sketch in FIGURE 22 helps to explain how Romitelli sketched and assembled these SMs as individual elements within each structural cell.

FIGURE 22. Sketch with string trio material of section 1.8. Fondazione Giorgio Cini (Venezia), Fondo Fausto Romitelli.

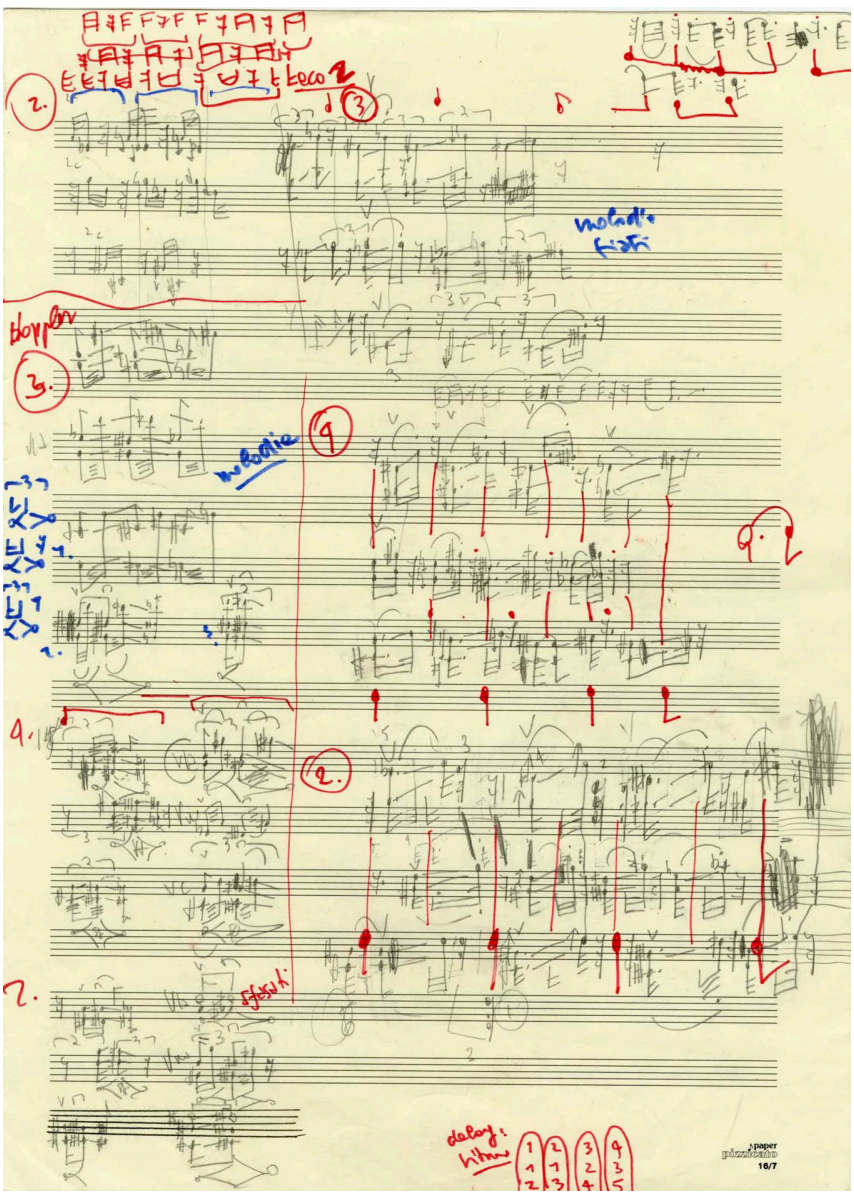


FIGURE 22 shows a sketch for the string trio material for section 1.8. In comparing the sketch with the score extract in FIGURE 23 we see exactly the same 'doppler' objects numbered 3, 4, and 2 from the sketch (although the violin part is an octave lower). The doppler object is modelled on the doppler-shift phenomenon whereby a sound is perceived to increase in pitch when the source moves towards the listener, and decrease when moving away. Here Romitelli evokes the phenomenon in the rapid slippery glissando-tremolo string gestures that narrowly rise and fall by a quarter-tone, rendered more volatile by the sudden dynamic swells with trumpet crescendi and diminuendi.

FIGURE 23. 'Doppler' sonic model in the string trio material from bb. 116–118 of *Lesson I*. © 1998, by Ricordi, Milano, 06773.

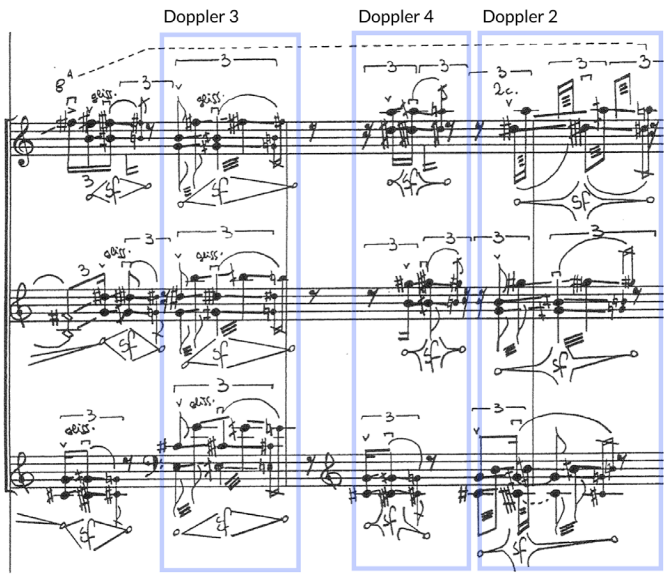
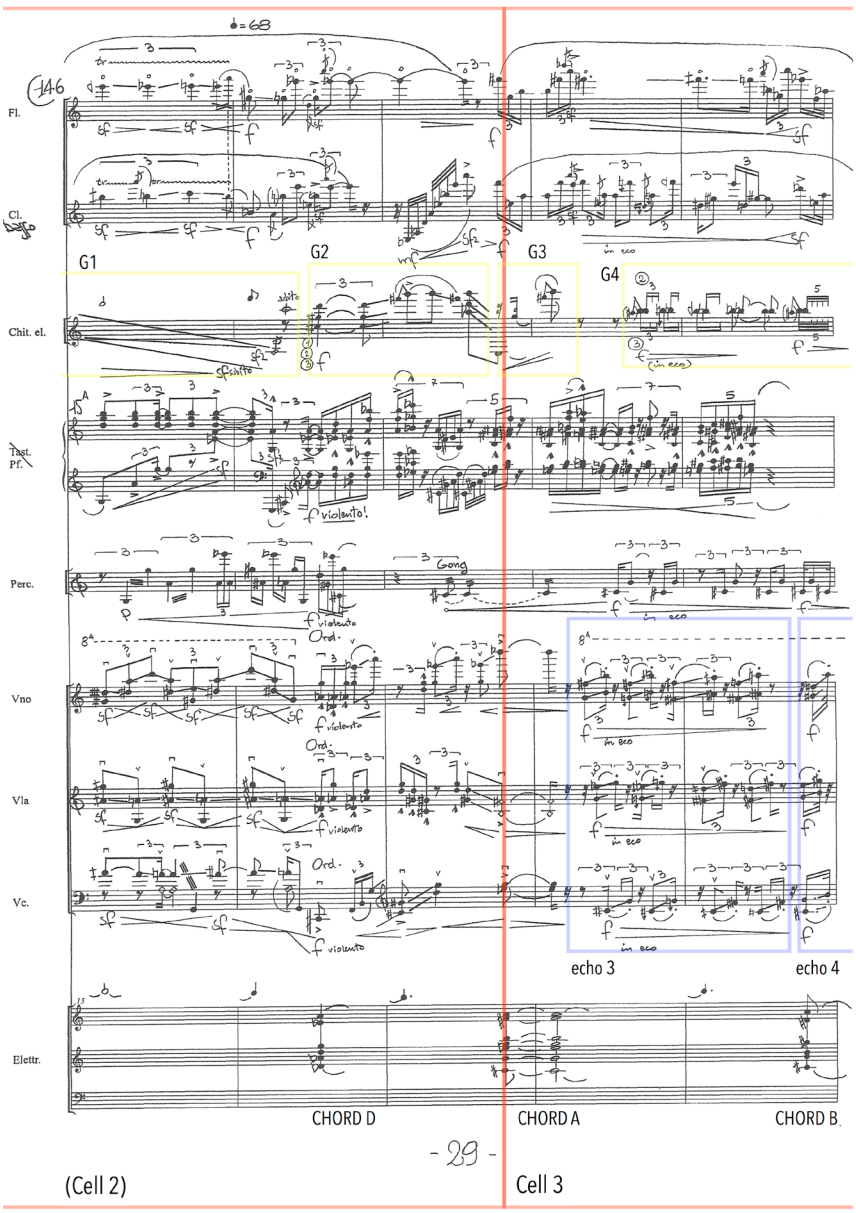


FIGURE 24 presents an annotated score extract from bb. 146–150 of section 1.8. This illustrates how the instrumental parts and SMs work in the context of the overall ensemble. The annotations show firstly the cell numbers and chord names in red boxes, then the string trio's echo objects 3, 4 and 2 from FIGURE 22 outlined in blue boxes, and a series of four electric guitar gestures (G_1–G_4) shown in yellow boxes. The echo objects in this extract appear similar to the iterative echo type as shown in FIGURE 21: the chords played by the string trio are articulated with minute offsets between each instrument, creating a rapid syncopated effect. With each iteration, the chord descends in pitch microtonally, sometimes by as little as an eighth-tone, creating a sense of falling movement and blurred harmony. Perhaps

it is in the fusing of phenomenologically-inspired objects such as 'doppler' and 'eco' as shown in this section that we can most clearly see Romitelli's musical evocation of, as he describes it, 'the perception of phenomena as described by Michaux', and the 'perceptual mechanisms of hallucinatory states'. Turning to the

FIGURE 24. Fausto Romitelli, *Professor Bad Trip: Lesson I,* bb. 146–150, annotated with cell numbers and musical object names. © 1998, by Ricordi, Milano, 06773.



guitar part, FIGURE 24 shows the four main gestures that the guitar cycles through: G_1 is a pick slide, dragging the pick perpendicularly across the low E-string from the top of the neck to the bottom, creating a coruscating granular white noise; G_2 features chords sliding up and down the neck; G_3 is the sustained low E-string pedal note with a natural harmonic and topped with a melodic note bent upwards microtonally; G_4 is a double-stopped string-bend figure where the lower string clashes microtonally with the upper one to create an intense pang (a typical Rock guitar solo technique), like a pained vocalisation. Thus, Romitelli's writing shows an adept understanding of the electric guitar's idiomatic playing styles, and yet what is arguably more impressive is how such writing is integrated within a broader modernist compositional process to express his dark poetic vision.[25]

Section 1.8 seems anomalous in *Lesson I* because it lacks the unambiguous momentum and clearly articulated formal processes of acceleration and growth that typify other sections. Texturally, whereas in other parts of *Lesson I* most objects retain their positions within the cells and throughout each section (e.g. sections 1.2 and 1.3), in this section the music constantly flings the objects between foreground, middle-ground, and background, creating a sense of excess and disorientation. These key differences suggest an interpretation of section 1.8 as the ominous core of the piece; a thrashing hallucinatory abyss. Through its dense and fluid textures yet protracted and ateleological temporality the music seems both static yet also in constant flux; Romitelli's own *explosante-fixe*.

In closing I wish to suggest three areas of particular interest that seem the most exciting in terms of research potential with the FFR: 1) the search for schemes for other sections of *PBT* similar to the beta-scheme that help develop a more complete picture of Romitelli's compositional process, 2) the examination of Romitelli's algorithmic compositional work with the PatchWork and C-Sound programmes, and 3) the development and integration of Romitelli's combinatorial and spectral techniques in the apparently critical period from the late 1980s to early 1990s, when his music suddenly and drastically shifted from a style close to that of Donatoni to that of Grisey or Murail (simply compare the first pages of the scores of *Kû* (1989) and *Nell'alto dei giorni immobili* (1990) to see the striking 'spectral turn' that occurs in the space between just two works), but which he gradually reconciled and synthesised throughout the 1990s, as epitomised in *PBT*.

Notes

1 See Alessandro Olto, 'Between spectrum and musical discourse. Computer Assisted Composition and new musical thoughts in *EnTrance* by Fausto Romitelli', in: *Sounds, Voices and Codes from the Twentieth Century*, ed. by Luca Cossettini and Angelo Orcalli, Udine: Mirage, 2017, pp. 419–452; 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; Ingrid Pustijanac, 'Spectral Morphology and Space in Fausto Romitelli's *Natura morta con fiamme*', *Archival Notes. Sources and Research from the Institute of Music*, III, 2018, pp. 119–135.

2 Marco Mazzolini, 'Lesson IV. *Bad Trip* autour du style', in: *Le Corps Électrique. Voyage dans le son de Fausto Romitelli*, textes réunis par Alessandro Arbo, Paris: L'Harmattan, 2005, pp. 79–88.

3 Nicolas Donin, 'Sonic Imprints: Instrumental Resynthesis in Contemporary Music', in: *Musical Listening in the Age of Technological Reproduction*, ed. by Gianmario Borio, Ashgate: Routledge, 2015, pp. 323–341.

4 I did not find materials related to the electronics of *PBT* during my visit. For the electronics in Romitelli's works from the mid 1990s onwards see Laurent Pottier, 'Exemple d'utilisation des outils de CAO pour la synthèse sonore "En Trance" de Fausto Romitelli pour soprano, ensemble et dispositif électronique', in: *Actes de Journées d'Informatique Musicale*, Lyon: Grame (JIM 97), 1997, pp. 22–29; Pierluca Lanzilotta, 'L'«elettronica» dans l'œuvre de Romitelli. *Professor Bad Trip*, *Audiodrome* et *An Index of Metals*', in: *Anamorphoses. Études sur l'œuvre de Fausto Romitelli*, sous la direction d'Alessandro Arbo, Paris: Hermann, 2015, pp. 189–203; and Olto, 'Between spectrum and musical discourse. Computer Assisted Composition and new musical thoughts in *EnTrance* by Fausto Romitelli'.

5 Fausto Romitelli, 'Le compositeur comme une virus', in: *Le Corps Électrique. Voyage dans le son de Fausto Romitelli*, p. 132.

6 I found one sketch with the inscription 'Nowhere I, II, II', which may have been a working title.

7 Fausto Romitelli, 'Professor Bad Trip: Présentation', in: *Le Corps Électrique. Voyage dans le son de Fausto Romitelli*, pp. 136–137.

8 Fausto Romitelli, 'Professor Bad Trip: Présentation', in: *Le Corps Électrique. Voyage dans le son de Fausto Romitelli*, p. 137.

9 Georgina Born, *Rationalizing Culture: IRCAM, Boulez, and the Institutionalization of the Avant-Garde*, London: University of California Press Ltd, 1995.

10 Pierre Slinckx, *La musique de Fausto Romitelli: Influences, techniques et style*, Masters Thesis in Écriture et théorie musicale, Arts². École Supérieure des Arts, Mons, 2013, 50 pp. Available: http://pierre.slinckx.net/romitelli.pdf [10 January 2017]; Luigi Manfrin, 'Répétition et déformation chez Fausto Romitelli. Notes sur *Dead City Radio: Audiodrome*', in: *Anamorphoses. Études sur l'œuvre de Fausto Romitelli*, pp. 203–266.

11 As *Lesson II* is written in three separate movements there is an extra level of notation (e.g. Section 2.2.1).

12 There are no tags for *Lessons II* and *III* in the table because there were none among the sketches available to me at the time of my research. However, such structural notations were found in sketches for several other works such as *EnTrance.* See Pottier, 'Exemple d'utilisation des outils de CAO pour la synthèse sonore "En Trance" de Fausto Romitelli pour soprano, ensemble et dispositif électronique'.

13 For alternative albeit lower resolution segmentation see Pierre Michel, 'Professor Bad Trip, Lesson I, II, III', in: *Le Corps Électrique. Voyage dans le son de Fausto Romitelli*, pp. 51–78.

14 I have analysed all of *Lesson I* in terms of individual cells, a table of which can be found on my website: http://www.nicholas-moroz.com/professor-bad-trip.

15 Jérôme Baillet, *Gérard Grisey. Fondements d'une écriture*, Paris: L'Harmattan, 2000.

16 See Pottier, 'Exemple d'utilisation des outils de CAO pour la synthèse sonore "En Trance" de Fausto Romitelli pour soprano, ensemble et dispositif électronique', and Olto, 'Between spectrum and musical discourse. Computer Assisted Composition and new musical thoughts in *En Trance* by Fausto Romitelli'.

17 Rozalie Hirs, 'Frequency-based compositional techniques in the music of Tristan Murail', in: *Contemporary Compositional Techniques and OpenMusic*, ed. by Bob Gilmore and Rozalie Hirs, Paris: Editions Delatour/IRCAM, 2009, pp. 93–196.

18 See Baillet, *Gérard Grisey. Fondements d'une écriture*.

19 John Chowning, 'The Synthesis of Complex Audio Spectra by Means of Frequency Modulation', *Journal of the Audio Engineering Society*, XXI/7, 1973, pp. 526–534.

20 Julian Anderson, 'In Harmony. Julian Anderson Introduces the Music and Ideas of Tristan Murail', *The Musical Times*, 134, 1993, pp. 321–323.

21 The other notes in red pen seem inconsequential.

22 See Olto, 'Between spectrum and musical discourse. Computer Assisted Composition and new musical thoughts in *En Trance* by Fausto Romitelli'.

23 Concerning Donatoni's late style see Bradley B. Decker 'Preserving the Fragment: Franco Donatoni's Late Chamber Music', *Perspectives of New Music*, XLVI/2, 2008, pp. 159–189.

24 For an in-depth study of Romitelli's electric guitar writing see Jacopo Conti, 'Un bruit assourdissant de musique métallique. La guitare électrique comme modèle', in: *Anamorphoses. Études sur l'œuvre de Fausto Romitelli*, pp. 43–66.