Fingers to Sounds, Sounds to Fingers: Creative Interaction with Giacinto Scelsi's Archival Materials as Means to Devise Performance Practices of His Music

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1. INSPIRATION

The creative life of Giacinto Scelsi (La Spezia 1905, Rome 1988) traces an unusual and distinctive trajectory within 20th century Italian music. In his artistic journey elements from the western art music tradition are blended with extra-European artistic concepts and spiritual traditions resulting in a peculiar musical output which straddles the 'line of demarcation between East and West'.[1] Scelsi distances his artistic figure from the traditional concept of composer – 'I'm not a composer, composing means putting one thing with another. I don't do that'[2] – and identifies himself as a medium, an intermediary that develops a connection with higher spiritual entities and allows sonic phenomena to manifest in the world. For Scelsi, the artist is one who reaches a 'cognitive contact [with] creative forces';[3] his task is to 'perceive, receive and then manifest […] a part, even the smallest, of that sound force, which is at the basis of everything, which creates and often transforms human beings'.[4] In order to establish this contact and to let creative forces express

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themselves, through the act of meditation Scelsi reaches 'a state of inspiration [...] that needs nothing else'.[5] In this state, he sits in front of his Ondiola and freely improvises, his hands guided by these superior entities, in a trance-like state of 'passive lucidity',[6] possessed by sounds, his fingertips constantly forced to move – 'It's not me playing… when I play it's not me playing'.[7] With the exhaustion and the recovery that follows these improvisatory trances, Scelsi considers his role to be fulfilled; the godly vibrations are delivered to this reality and his task is completed. Scelsi devises his creative role by means of this process of innovation, documenting it through the practice of tape-recording all sessions. Subsequently, in order to enable the reception, performance and dissemination of this music by the community, Scelsi defines an instrumental destination for each improvisation and seeks the assistance of collaborators who act as transcribers, writing down the recordings in a conventional notational system.

2. SOUNDS TO PAPER

Scelsi considers the transcription of his improvisations on paper to be a purely practical job, with no influence upon the musical substance expressed through his creative act. However, as is extensively attested by the documentation in our possession, in the course of this process the transcribers are constantly called upon to make decisions, each of which contributes to determining the specific characteristics of the final score, and has a significant impact on the perception of the piece by future performers. Through examination of the written materials available at the Fondazione Scelsi, we can safety assume that the act of transcribing audio material recorded on the Ondiola and assigning it to a different instrument of destination involves two distinct processes: in a first step, transcribers identify and write down, to the best of their abilities, the essential information contained in the recording – pitches, durations, and loudness. By fitting the Scelsian tapes into the traditional western notational system, the transcribers operate multiple processes of quantisation over the original sound data, particularly with regard to the three aspects mentioned above. The real pitch of the Ondiola, which is richly microtonal, gets simplified in order to be represented within the traditional twelve-tone equal temperament; the real duration of each sound is approximated to the notational possibilities of our rhythmic structure, thus contributing to the definition of an underlying metrical articulation; and the loudness of the tape, gets outlined through the possibilities offered by conventional markings, i.e. the dynamic range between *ppp* and *fff*. The decisions that transcribers must take at each step of this first phase are prompted by the practical necessity of rendering the tapes within a

traditional notational system, fitting it within a representational code that is shared within the tradition of western art music, and thus making it intelligible to a population of performers educated within this tradition. Unavoidably, conforming the content of the tapes to a traditional notational system leads to a significant simplification and trivialisation of their substance. Microvariations in pitch are flattened, rhythmic flexibility is equalised, and the original dynamic continuum is shattered. As observed by Jaecker 'the transcription does not leave the substance of the music untouched. [it] suggests certain patterns of interpretation'.[8]

The materials transcribed in this way are still without instrumental destination; after Scelsi settled on a specific instrumental assignment, the assistants would rework their transcriptions to match the technical features of the chosen instrument, and thus the transcription would become playable instrumentally. It is during this phase that, for example, in the case of the violin, indications of bow strokes, double strings, *pizzicati* and harmonics would be applied, with the purpose of rendering the final score more instrument-specific. In the process of adapting a transcription to a specific instrument, however, a further process of quantisation takes place. It takes place this time at a conceptual level: the score is adapted to the technical and expressive possibilities of the instrument *as conceived* by the transcriber, through their personal aesthetic and historical vision of the instrument itself. In the scores thus produced, the process of quantised transcription of the durations, pitches and dynamics, mixes and blurs with the process of conceptual adaptation of the written material to the target instrument, making it complex to identify the exact contribution of the transcriber's artistic vision and the extent of its impact over the final result. The composer Vieri Tosatti produced the transcriptions of all the *divertimenti* for violin.[9] Tosatti's own compositions display his profound connection with a traditional, late romantic conception of instrumental possibilities. This educated understanding of what an instrument can and should do, leaks from his own compositional practice into his Scelsian transcriptions. To the performer's eyes, Tosatti's transcriptions of Scelsi's improvisations imply a traditional approach to violin techniques such as vibrato, intonation and sound production. Such historicised instrumental conception is rather opposite to Scelsi's sonic research. As Menke points out, rather than transcribing 'one should speak of a "reworking" of the tape recordings, in which the personal style of the transcriber plays a major role, not only in the literal sense, but also in the conceptual form'.[10]

3. PAPER TO SOUNDS

The accounts of the musicians who collaborated with Scelsi extensively attest that his conception of interpretation was different from the predominant understanding

of performance as an accurate and faithful reproduction of the work as embodied in a score. Expressing his disappointment with the limitations inherent to the transcriptions of his improvisations, Scelsi went so far as to question the actual usefulness of the scores; 'unfortunately, the scores will remain. They will be played. Most of the time, they will be played poorly. In fact, I should never have written that [...] to each his own truth'.[11] Scelsi's efforts were constantly aimed at providing performers with a deep understanding of the sonic substance of his works, at bringing them closer to the generative essence of his improvisations. As noted by Colangelo, most performers with whom Scelsi collaborated identify themselves as *musical creators*, performers active in contemporary music and sonic experimentation, whose artistic trajectory blends composition and performance.[12] Scelsi interacts extensively with these musical creators, living in close contact with them for long periods of time and encouraging the development of their improvisational skills. Specifically, Scelsi's aim was to foster solo improvisation. 'Giacinto always encouraged me to improvise, which I often did [...] but he suggested I do it alone, and not with other people'.[13] Scelsi wanted his performers to approach the act of improvisation 'as a discourse with God, a solitary discourse that proceeds vertically, a profound discourse, not a chat with a friend'.[14] When engaging with scores of his own music, Scelsi encourages performers to develop their ability to go 'beyond the score, [to] get the energy and direction of the sound' and experience 'this immediacy, this power, this other thing that takes us beyond reflection'.[15] In his working sessions with Scelsi, cellist Frances-Marie Uitti found herself 'stretching the rhythms until they almost became something different than what was written…', realising that 'Giacinto was almost as happy if you went off a bit, off the score'.[16] Today, a new generation of interpreters are approaching Scelsi's oeuvre without the opportunity to receive performance instructions from the composer himself. As Scelsi himself accurately predicted, the contemporary music scene is normalising his creative production within the canon of western art music, identifying the scores he published as the main vehicle for the dissemination of his creative output, thus demanding that performers adhere to the traditional concept of *Werktreue*, and neglecting the artistic value of the creative synergies that were created between Scelsi and the musicians with whom he collaborated.

Luckily, the documentary resources available at the Isabella Scelsi Foundation of Rome offer researchers and performers the possibility to develop comprehensive knowledge of Scelsi's poetics. An in-depth confrontation with his artefacts enables us to understand and reconstruct his compositional process, carry out exhaustive analyses of his recordings, investigate the process of transcription in all its peculiarities, and develop empirical and perceptual insights into the musical instruments used in his improvisations, which have been restored and are accessible to scholars.

In this way, researchers and performers can engage with the complexities of his creative process and identify the resources they can draw on to conceive and pursue new research trajectories and develop innovative interpretative approaches. The digitised versions of Scelsi's original magnetic tapes are preserved and accessible at the Isabella Scelsi Foundation. These tapes, containing hundreds of hours of audio material recorded and elaborated by Scelsi, constitute a precious resource to directly experience his instrumental and improvisational skills. Moreover, for Scelsi, the tapes represent a sort of sonic sketchbook; listening to them allows us to penetrate his daily creative practice, observing its development. Many scholars and musicians attest to the value of listening to the tapes for a deeper understanding of Scelsi's creativity. 'Listening to these tracks was an impressive experience that strongly modified, even before submitting those materials to a more detailed analysis, my ideas about Scelsi's creative process, leading above all to a necessary rethinking about the role of improvisation'.[17] According to Jaecker, 'even if Vieri Tosatti's transcriptions are admirable feats, listening to Scelsi's original improvisations is an invaluable corrective for today's interpreters'.[18] Indeed, listening to the original tapes and observing the discrepancies between them and their transcriptions, offers a valuable source of reflection for performers. In the course of my Scelsian research, the development of these considerations has resulted in a growing dissatisfaction with the existing scores, prompting the need to develop a new strategy for my performance practice. The performance practice I developed by interacting with Scelsi' artefacts is based on the design of alternative notation systems and draws on my instrumental expertise and artistic creativity.

Within Scelsi's production for solo violin and viola, the most significant differences between the tapes and the transcriptions can be perceived in works from around the mid 1950s. The majority of his works for violin and viola solo, that is the three *divertimenti* for violin, *Coelocanth* and the *Three studies* for viola belong to this period. In the case of the three *divertimenti* for violin, published for the first time in the mid-sixties by the author and subsequently by Salabert from 1985–1987, the impact of the transcriber is such that it completely obscures the expressive richness of the tapes. Tosatti's late-romantic violin conception in the printed scores inspires a violin style linked to the most traditional of instrumental techniques, drawing the interpretation towards a strongly historicised violin tradition, completely extraneous to Scelsi's aesthetic and musical ideas. By listening to the original tapes, I perceived with great clarity the aesthetic and instrumental limitations of the scores. Dissatisfied with the limitations of this material, I decided to undertake a process of re-transcription, drawing on the computational potential that today's technology offers to scholars and performers. By means of computer software, it is now possible to refine the quantisation

thresholds for pitch and rhythm parameters, and thus to increase the descriptive accuracy of the transcription of the tapes' contents. Through this computer assisted process of transcription, it became possible to generate scores that had a satisfactory descriptive accuracy with respect to the main parameters of the tape, presenting performers with a version that is free from unwanted quantisation and modifications for instrumental adaptation. From this material, devoid of the aesthetic and instrumental influences implicit in Tosatti's version, I was able to creatively develop a variety of violin techniques, in dialogue with the performative possibilities of the Ondiola, and informed by my experience of the extended performance practices developed in contemporary music. In the course of this research, I focused my attention on the *Divertimento nº 4 pour violon solo*, examining its original recordings, comparing existing transcriptions of these tapes, and conceiving and implementing a technological strategy aimed at producing a new computer assisted transcription of the audio material in order to develop a researched instrumental performance practice.

4. SOUNDS TO PAPER, AGAIN

According to Jaecker's research on the cataloguing of Scelsi's tapes, the movements of the *Divertimento nº 4* for solo violin appear in the following instances:

I and II movements:
NMGS0077-32B, Riv@9,5_01.L-56.mp3, 4.19 – 19.14

I, II and IV movements:
NMGS0143-637, Riv@19_02.R-56.mp3, 0.11 – 17.57;
NMGS0157-448, Riv@9,5_01.L-56_stretched_to_19.MP3, 27.08 – 47.49;
NMGS0207-258, Riv@9,5_01.L-56.mp3, 0.43 – 19.05.

I and IV movements:
NMGS0007-01B , Riv@19.L-56.mp3, 14.56 – 23.36

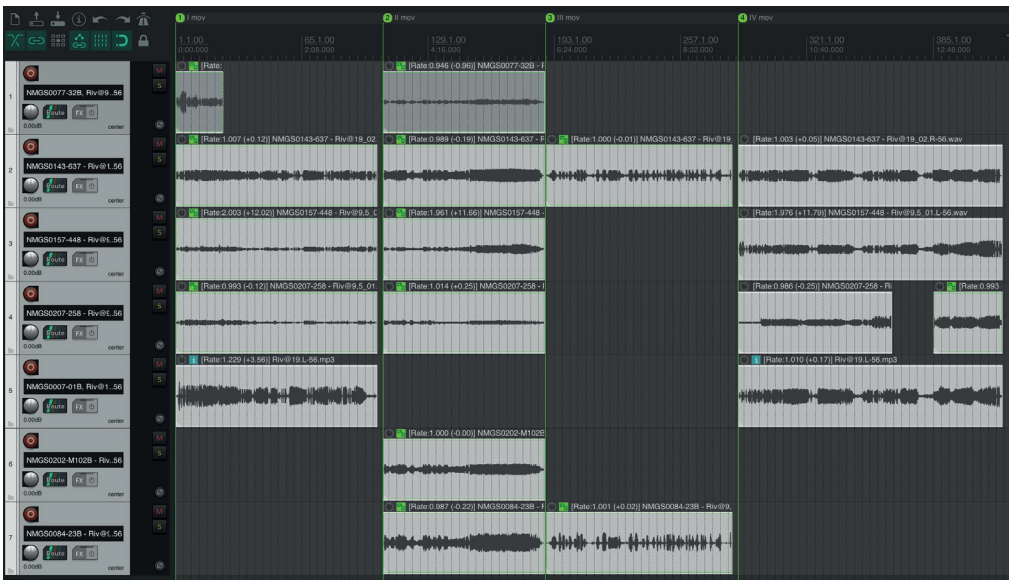
II movement:
NMGS0202-M102B, Riv@19_03.L-56.mp3, 11.34 – 14.17

II and III movements:
NMGS0084-23B, Riv@9,5_01.L-56.mp3, 8.19 – 14.12;
NMGS0084-23B, Riv@9,5-RVRS_01.R-56.mp3, 4.03 – 5.13

IV movement:
NMGS0065-112, Riv@9,5-RVRS_01.R-56.mp3, 0.34 – 4.11 (incomplete)
NMGS0086-25B, Riv@9,5-RVRS_01.R-56.mp3, 0.15 – 4.42 (incomplete).[19]

Listening to and comparing the fragments of tape indicated by Jaecker reveals how all the instances of each movement are in fact successive transfers of a first version. Scelsi seems to operate these transfers through an analogue strategy, physically playing and recording the tapes again. During this process, the sound content of the tapes undergoes small transpositions of the pitch parameter, due to the peculiarities and technical limitations of the recorders used, whose playback speed appears to be slightly irregular (see information on time stretch and pitch transposition for each tape source in FIGURE 1).[20]

FIGURE 1. Comparison of the existing audio sources for each movement of *Divertimento nº 4*.



The material contained in these tapes, which form the basis of *Divertimento nº 4*, is also the source of two other works for solo instrument, *Ixion* and *Ixor*, both works for solo clarinet. According to Jaecker's reconstruction, Scelsi first conceived *Ixion*, a work for clarinet in five movements, which was self-published in 1959 and later withdrawn from the composer's catalogue.[21] Out of the five movements that constitute *Ixion*, three of them were later reworked and adapted for violin, becoming the I, II, and IV movements of *Divertimento nº 4*. Instead, the fourth movement of *Ixion* was later incorporated into a piece for 'clarinet or other reed instruments', comprised of four movements called *Ixor*. [22] At present, only the second movement of *Ixor* has been published by Salabert.[23] In examining the subsequent adaptations of the scores of these works, it is notable that when

compared to the tape recordings pitch transpositions occur in both the clarinet and the violin transcriptions. As remarked by Jaecker, these transpositions seem to respond to a logic of instrumental destination, allowing for the exploitation of specific technical resources, such as the use of open strings in the case of the violin. The following table shows the opening notes of the recordings and the score versions:

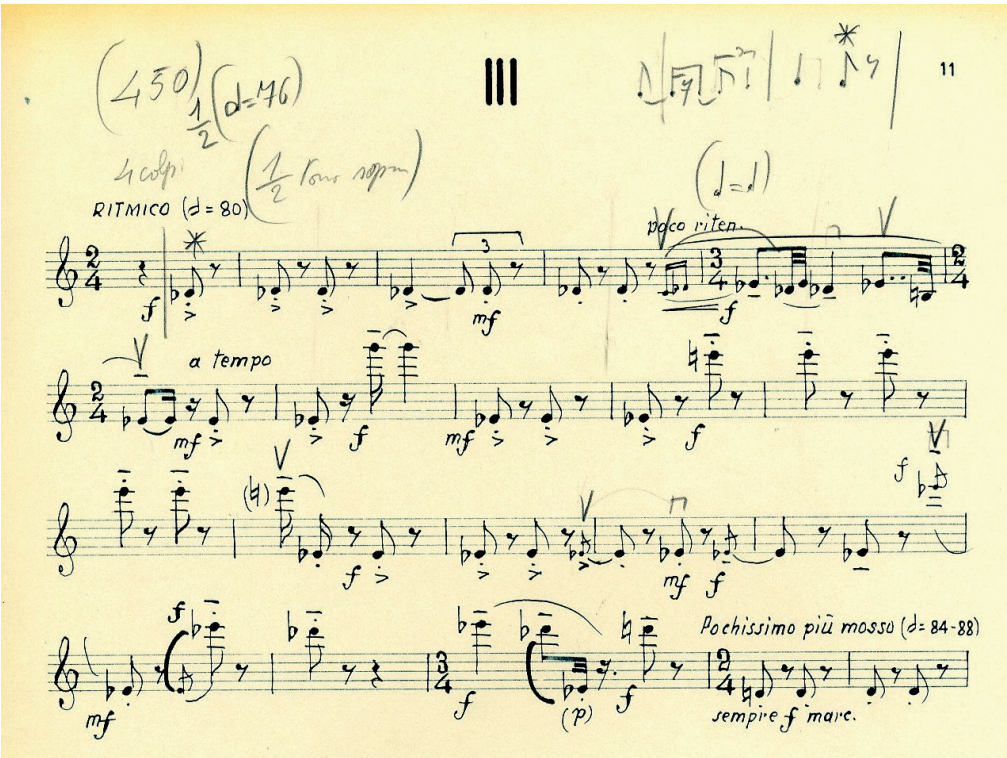
FIGURE 2. Comparison of tapes and transcriptions pitches.

Tape first note	Transposed by	*Ixion*		Transposed by	*Divertimento No. 4*	
B ♭	Minor third lower	I	G ♮	–	I	G ♮
C ♮	Minor third lower	II	A ♭		–	
B ♮	Major second higher	III	D ♭	Minor second higher	II	D ♮
F ♯	Minor third higher	IV	A ♮	(it becomes *Ixor*, IV)		
F ♯	Minor third higher	–			III	A ♮
E ♮	Minor third lower	V	C ♯	–	IV	C ♯

At the Scelsi Archives a copy of *Ixion* is preserved which bears some annotations and directions that testify to the process of reworking into its subsequent version for violin. Of particular significance are the indications given at the beginning of *Ixion*'s third movement (later becoming the second movement of *Divertimento nº 4*), indicating amendments which are applied in the violin version concerning the metric structure, the metronomic indications and the pitch transposition, one semitone higher. There is also the addition of handwritten bowing indications, which can be found faithfully reproduced in the final version of *Divertimento nº 4*.

Apart from the aforementioned transpositions of entire movements, which are briefly indicated at the beginning of each movement, and, in fact, maintain the intervallic structure of the piece without altering it, the aspects which undergo extensive restructuring by the transcriber are the metric and rhythmic parameters.

FIGURE 3. Third movement of *Ixion* bearing annotations for the violin adaptation. Archivio Fondazione Isabella Scelsi (Rome), *GS.1.3.1.52 / GS - IXION per cl solo_011*. © Fondazione Isabella Scelsi.



The rhythmic modifications appear functional to increasing the concordance between the tape and the transcription; a better way of representing the irregularities and asymmetries found in Scelsi's recordings is introduced through irrational rhythms and groups of grace notes. At a metrical level, the transcriber dismantles the regularity of *Ixion* (initially conceived completely in 3/4 time), by frequently modifying the number and unit of pulsations, as well as introducing expressive verbal indications (*appena esitando*, *ritenuto*, *marcato*) to encourage an elastic and *rubato* interpretation of the given rhythmic structures. These modifications display a conscious use of metrical restructuring, intended to inform the interpretation by suggesting, through grouping in measures and verbal indications, a phrasing of the music. As noted by Jaecker, in Tosatti's transcriptions 'the rhythmic notation and the division in bars (or the lack thereof) form a notation that suggests certain patterns of interpretation'.[24]

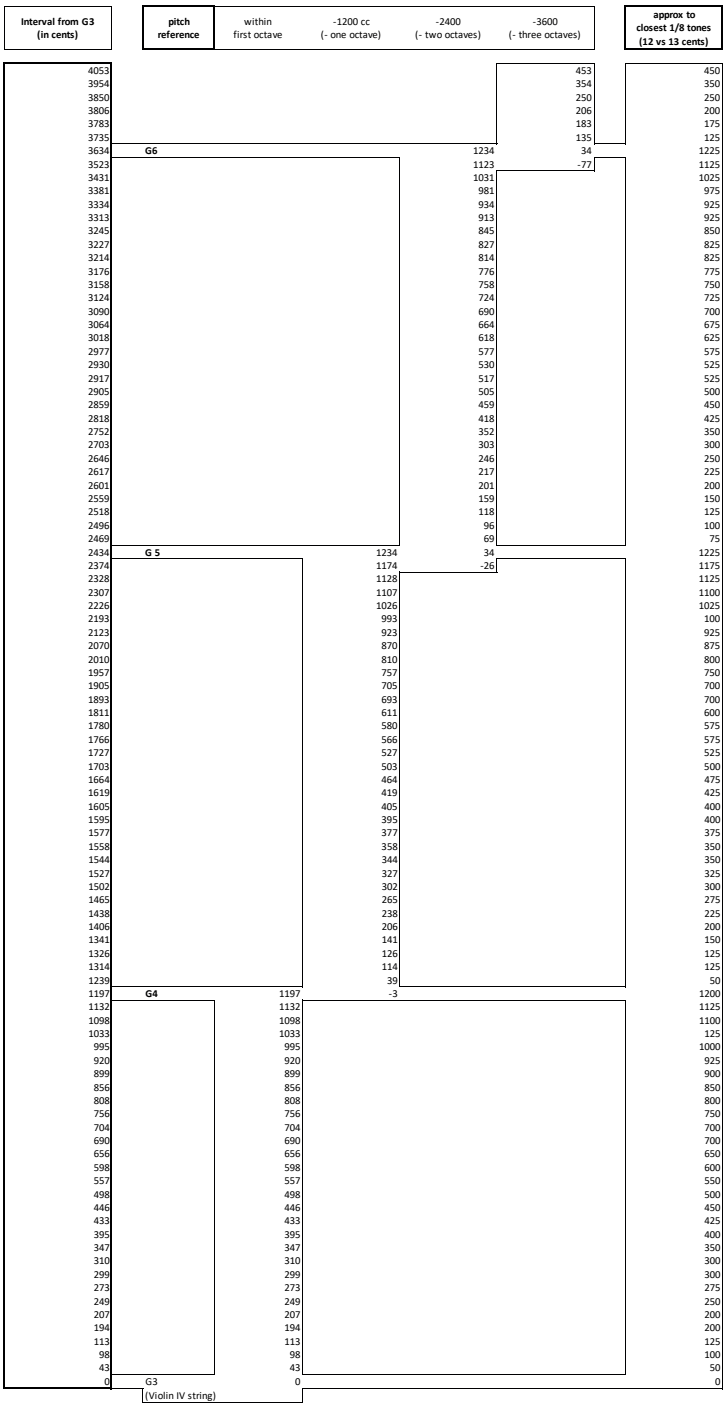
If, on the one hand, the comparison between these two versions indicates the intention to bring the rhythmic notation closer to the source, through specific

modifications and corrections, on the other hand, it also introduces an element which has considerable impact on the interpretation, by reworking of the metrical structure. Despite the modifications and adjustments of this second edition, the distance between the rhythmic freedom and the improvisational impetus perceivable in Scelsi's recordings, and the rigid schematisation of the transcription remains unbridgeable. The result of Tosatti's reworking of *Ixior*, collected in its final version as *Divertimento nº 4*, maintains a high degree of rhythmic stiffness and undesirable phraseological suggestions. The pitch parameter is narrowly limited to the twelve-tone equal temperament, despite the rich microtonal variety offered in the recordings. Finally, the dynamic indications also contribute to suggest the intention of late-romantic interpretative choices and phraseological approaches (*morendo*, *f non troppo*, *appena cresc*).

Unsatisfied by the material in my possession, with the support of the Scelsi Archive, I gained access to a digital version of the tapes, from which I was able to develop a new transcription strategy. The tape in my possession was analysed to identify the actual intonation of the Ondiola over the course of the recording with the software *Melodyne 5 Studio*.[25] By observing the recurrence of certain frequencies within the recording, as noted by the software, I was able to measure the size of each interval produced by the Ondiola against a fundamental sound (in this case G3, the lowest sound contained in the tape – see FIGURE 4 first column). When examining the configuration of these intervals, I observed a relative proximity of the majority of the pitches to an equal tempered system based on the subdivision of the tone into eight equal parts (forty-eight tone equal temperament – see FIGURE 4, last column). Considering the performative objective of my research, I considered this quantisation in eights of tones sufficiently accurate, and therefore I adopted it throughout the subsequent transcription. FIGURE 4 shows all the intervals found in the first movement of *Divertimento nº 4*, measured against the lowest note on the tape. The proximity of each pitch to the closest eighth of tone is also indicated.[26]

Once a satisfactory quantisation of pitches had been identified, the definition of the durations was addressed. Using IRCAM AudioSculpt software,[27] the transient attack of each note was identified through a combined analysis of loudness and instant variations in the acoustic spectrum. Markers were generated with AudioSculpt and embedded within the audio file at the onset of each new frequency. Thus, each marker indicates the onset of a sound and, consequently, the distance between two markers represents the exact distance between two sounds. The accurate definition of each sound duration enables the rhythmic parameter to be displayed through spatial notation, by distributing each sound at a distance that is exactly proportional to its length, within a system in which each line of the score has a constant duration (each line is equivalent to five seconds of audio

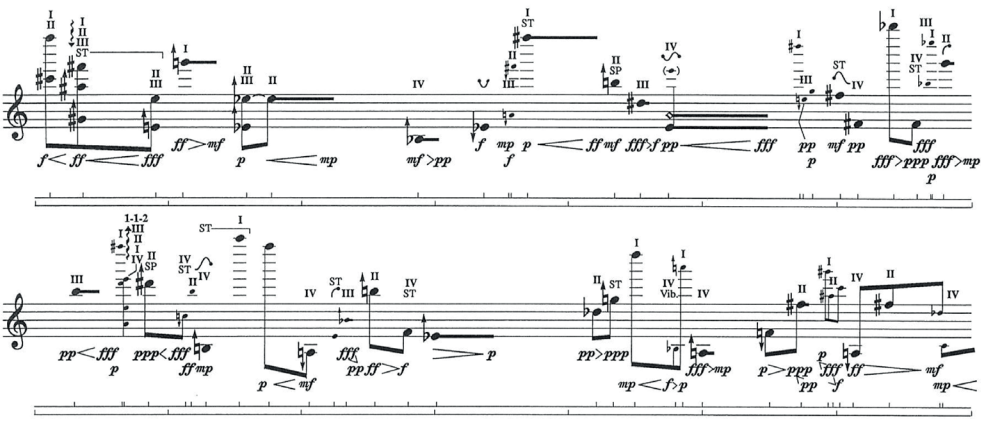
FIGURE 4. Intervals found in the first movement of *Divertimento nº 4*. Column 1: measured from the lowest pitch (G3); columns 3 to 6: measured within the relative octave; column 7: approximation of specific frequencies to the nearest 48tet pitch.



Interval from G3 (in cents)	pitch reference	within first octave	-1200 cc (- one octave)	-2400 (- two octaves)	-3600 (- three octaves)	approx to closest 1/8 tones (12 vs 13 cents)
4053					453	450
3954					354	350
3850					250	250
3806					206	200
3783					183	175
3735					135	125
3634	G6			1234	34	1225
3523				1123	-77	1125
3431				1031		1025
3381				981		975
3334				934		925
3313				913		925
3245				845		850
3227				827		825
3214				814		825
3176				776		775
3158				758		750
3124				724		725
3090				690		700
3064				664		675
3018				618		625
2977				577		575
2930				530		525
2917				517		525
2905				505		500
2859				459		450
2818				418		425
2752				352		350
2703				303		300
2646				246		250
2617				217		225
2601				201		200
2559				159		150
2518				118		125
2496				96		100
2469				69		75
2434	G 5		1234	34		1225
2374			1174	-26		1175
2328			1128			1125
2307			1107			1100
2226			1026			1025
2193			993			100
2123			923			925
2070			870			875
2010			810			800
1957			757			750
1905			705			700
1893			693			700
1811			611			600
1780			580			575
1766			566			575
1727			527			525
1703			503			500
1664			464			475
1619			419			425
1605			405			400
1595			395			400
1577			377			375
1558			358			350
1544			344			350
1527			327			325
1502			302			300
1465			265			275
1438			238			225
1406			206			200
1341			141			150
1326			126			125
1314			114			125
1239			39			50
1197	G4	1197	-3			1200
1132		1132				1125
1098		1098				1100
1033		1033				125
995		995				1000
920		920				925
899		899				900
856		856				850
808		808				800
756		756				750
704		704				700
690		690				700
656		656				650
598		598				600
557		557				550
498		498				500
446		446				450
433		433				425
395		395				400
347		347				350
310		310				300
299		299				300
273		273				275
249		249				250
207		207				200
194		194				200
113		113				125
98		98				100
43		43				50
0	G3 (Violin IV string)	0				0

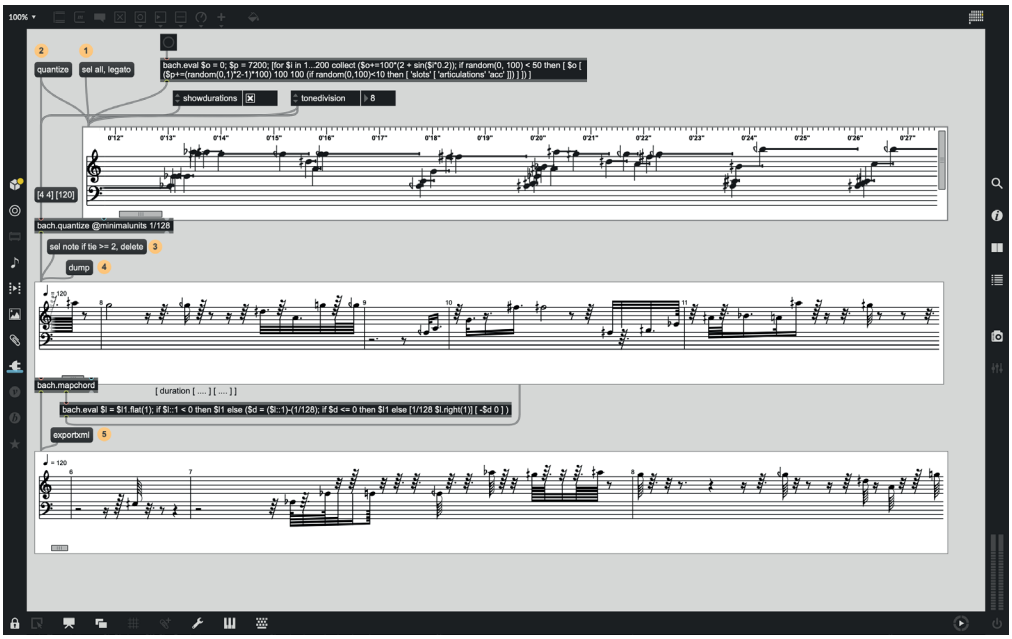
tape). Such proportional spatial notation, commonly adopted in the contemporary repertoire, notably by John Cage in his *Freeman Etudes*, is chosen here because of its remarkable descriptive precision (FIGURE 5). This notational technique does not present traditional rhythmic structures and does not imply any form of regularity. It presents an intrinsic absence of recurrent beats and predefined metric structures, so that they may be independently conceived by the performers. Performers navigate the score at a constant speed using a stopwatch, identifying phraseological structures and devising interpretive patterns according to their individual and unadulterated experience.

FIGURE 5. **John Cage: *Freeman Etudes*, excerpt from étude XXIX. © 1981 by Henmar Press Inc., New York. Reproduced by permission of Peters Edition Limited, London. All rights reserved.**



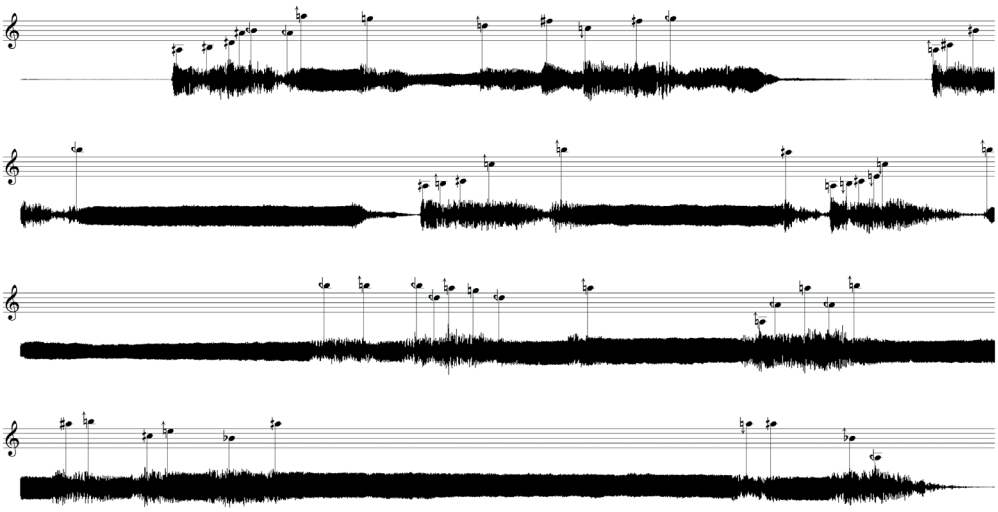
After the durations have been determined through AudioSculpt, the audio file is processed through a Max/MSP patch running the BACH library, as illustrated in FIGURE 6.[28] Thanks to the computational possibilities available in BACH, it is possible to identify the main frequency between each pair of markers, thus establishing the accurate pitch of every note and subsequently introducing quantisation according to the chosen temperament (forty-eight tone equal temperament, in my case). Each pitch is subsequently displayed on a pentagram with microtonal accidents, maintaining the spatial proportions that correspond to the duration of each sound.[29] Through this process, information about the exact pitch and duration of each sound event is collected. This information is represented through an extended notational system, which offers a high degree of microtonal definition and a precise visual representation of the duration parameter without implicit metrical and phraseological indications.

FIGURE 6. Max/MSP patch for pitch identification, quantised to 48tet.



The third parameter identified as essential for a depiction of the original tapes is loudness. In traditional transcriptions, this parameter is roughly indicated through classic indications contained in the dynamic palette between *fff* and *ppp,* and outlining increasing and decreasing volume through crescendo and diminuendo. In my opinion, the unavoidable degree of approximation offered by these indications, together with their strong connotation in classical performance practice, creates a problematic connection with a traditional technical and instrumental approach. In my transcriptions, in order to represent loudness in a clear and objective way, I employed the visual representation of the original waveform. A waveform describes the instantaneous loudness of each sound event and dynamic curve in a strictly proportional way, thus offering a precise and faithful representation of its variations. Due to the widespread availability of technologies for audio visualization (Sonic Visualiser, AudioSculpt, Audacity) and audio-editing (ProTools, Reaper) tech-savvy performers are increasingly familiar with this mode of representation. In my own experience as an observer, the information in a waveform provides considerably more detail about loudness than traditional indications, while retaining a similar degree of immediacy in reading and performing. The corresponding portion of the waveform from the original tape is presented directly below the staff for each audio fragment, providing a graphic representation of the instantaneous dynamic intensity (**FIGURE 7**).

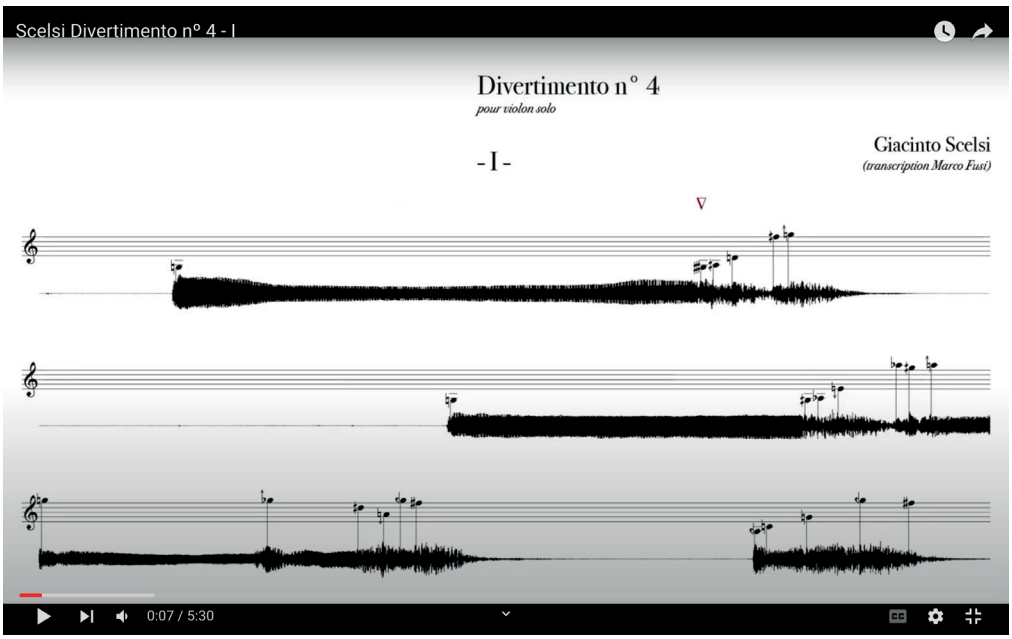
FIGURE 7. *Divertimento nº 4*, first movement from 00'15'.000 to 00'34.999.



Finally, to facilitate the practice and performance of these transcriptions, the scores have been processed by animation software and transformed into a video (link in FIGURE 8), where a cursor, running at a constant speed through each system, provides an indication of the performance speed. Through playback speed control, these video scores can be slowed down and accelerated evenly, offering performers an effective tool for reading and practicing them, without altering the relationship of the durations between sounds.

My intent, through this computer assisted process, is to define a strategy for transcription that is as descriptive as possible. The goal is to provide performers with performance materials that are consistent with Scelsian improvisations, from which an ad-hoc performance strategy can be conceived creatively by each performer on the basis of their technical and instrumental imagination. During this process it was essential for me to strike a balance between my pursuit of an 'exact' transcription, in which each parameter was exhaustively represented, and the intended practical use of this material, the purpose of which was to allow for performance on the instrument. In this sense, my decision to quantise the pitches within the microtonal temperament 48tet represents a case of deviation from absolute correctness in favour of the playability of the result. My direct experience conceiving and carrying out a transcription strategy for Scelsi's tapes allowed me to understand the challenges involved with this process first-hand, and to observe how much the development of my notation in practice inevitably implied practical and artistic decisions that influenced the final result.

FIGURE 8. Complete animated score of *Divertimento nº 4*, first movement. See https://youtu.be/Bza34vM9d74



5. THROUGH THE FINGERS

By analysing the acoustic parameters of these recordings (pitch, duration, loudness), to develop what, to my eyes, appears to be a descriptive transcription of Scelsi's original material, I was naturally led to develop a very musical and even aesthetic appreciation of his creative act. Specifically, it soon became evident to me how the technical peculiarities of the Ondiola were of fundamental importance in inspiring his sessions. With the support of the Scelsi Foundation, I was given access to his original instruments, and I could explore their expressive possibilities, carry out improvisation sessions myself and, ultimately, gain direct and personal experience of how this instrument could have influenced Scelsi's improvisational experience and thus the genesis of the tapes. The Ondiola, 'this dinosaur of the computer music era',[30] becomes the receptive vehicle of the improvisational act, producing an extraordinary impact upon Scelsi's artistic trajectory. In this 'precursor of the synthesiser, Giacinto Scelsi found an instrument that enabled him to take a fundamentally new musical path',[31] and 'a tool for far more radical musical thought'.[32] The technical and musical possibilities offered by this new keyboard drastically changed his improvisational techniques and their results,

presenting him with a completely new sonic palette, dynamic possibilities, and microtonal tuning to experience and explore. His encounter with this instrument was certainly one of the turning points in his creative trajectory. In order to understand the significance of such an encounter, I spent significant time sampling and improvising on his original Ondiolas, developing my technical understating and experiential knowledge of its potential. Drawing on an extensive analysis of the tapes, Jaecker affirms that Scelsi began to elaborate his improvisations with the Ondiola in the mid-1950s. The instrument in Scelsi's possession is substantially identical to the Clavioline 'a portable keyboard invented in 1947 by Constant Martin'[33] and distributed in Italy under the name Ondiola.

FIGURE 9. Giacinto Scelsi's Ondiola keyboard module. Author's personal photo.

'The Ondiola is essentially made up of a monophonic keyboard with three octaves of extension (that can be expanded up [to five octaves] thanks to a switch that acts as a linear octave transmitter, allowing the performer to play an octave lower or an octave higher), an oscillator, condensers inserted in a circuit, an amplifier and a series of filters that act on the harmonics of the fundamental sound, modifying the timbre'.[34] The intonation of the Ondiola is delightfully precarious and unstable; its out-of-tune qualities offer a sonic environment radically different from that of a well-tempered piano. While playing the instrument, the performer's attention is naturally drawn to these microtonal inflections; in my explorative improvisations, I discovered the fascination of such pitch divergencies and, to my imagination,

they quickly became one of the distinctive features of the instrument. While listening to Scelsi's tapes, I recognised in his improvisations a similar interest and curiosity towards this precarious aspect of intonation. I came to understand how the exploration of this microtonal environment was a primary source of creative inspiration for him.

FIGURE 10. Sampling of Ondiola range and intonation. Author's personal video, recorded with permission of the Fondazione Isabella Scelsi.
See https://youtu.be/apRzUcruDsk

In addition to an octave transposer, timbre on the Ondiola can be modified through a series of switches that operate in a similar manner to the registers of an organ; and the volume of the instrument can be controlled with a lever situated under the body of the instrument, operated by the player through a lateral movement of the knee.

Furthermore, the instrument enables the user to alter the pitch of every tone. Pitch control and alteration is achieved by operating two different interfaces: the *vibrato* controllers and the *glissato* controllers. The *vibrato* controller set is composed of four switches located on the front of the instrument, underneath the keyboard. The first three of these switches activate three different types of *vibrato* (I = slow, II = medium, III = fast), while the fourth switch controls the overall amplitude of these three vibratos (off = ⅛ tone circa vibrato, on = ¼ tone circa vibrato). For string players, the concept of *vibrato* has been shaped into an expressive tool by centuries of traditional repertoire. Within the main Classic and

Romantic repertoires, the continual shaping of *vibrato* is understood as one of the main strategies for suggesting musical direction and phraseological structure. In an intuitive and almost instinctive manner, classically trained players have learnt to discretely adapt their *vibrato* to the emotional content of the music they are performing, constantly modifying the parameters of speed and amplitude.

FIGURE 11. Sampling of Ondiola octave transposer, registers and volume controls. Author's personal video, recorded with permission of the Fondazione Isabella Scelsi. See https://youtu.be/f4xl8weTdTo

Instead, in Scelsi's case, vibrato has a considerably small range of predetermined possibilities; its employment is not subtly attuned to the performance, but it is a conscious feature that is triggered through the switches. Scelsi's vibrato is not a hidden feature of the sound; it is conceived as a decisive modification of it, that directly and perceivably affects the pitch parameter. The understanding of Scelsi's conscious use of the *vibrato* switches suggests that performers should restrain from a traditional broad utilisation of *vibrato*. In my research on the Ondiola, I came to realise how its *vibrato* is profoundly different acoustically from the technique of the same name commonly adopted by string players. The existing transcriptions of Scelsi's tapes are unfortunately misleading performers into embracing a style of performance inspired by late Romantic aesthetics, incorporating traditional *vibrato* while performing most of Scelsi's works. The awareness of how Scelsi's technical resources developed into conscious aesthetic choices formed a major turning

point in my research: it has allowed me to distance my playing from a traditional concept of sound quality. According to this premise, I proceeded to investigate new timbrical possibilities, I explored innovative bow techniques to support static sustained sounds without vibrato, and conceived new strategies and fingerings for the left hand to support my sonic research.

FIGURE 12. Sampling of Ondiola vibrato controls. Author's personal video, recorded with permission of the Fondazione Isabella Scelsi.
See https://youtu.be/nZcjg2n657c

The second pitch domain controller, the *glissato* interface, allows the pitch to be shifted in real-time: two wheels, placed on both sides of the instrument able to be reached by the player using one hand for each wheel, instantaneously modify the overall intonation of the instrument, causing a shift of approximately one semitone (right wheel) and one tone (left wheel). Reasons for the development of Scelsi's investigation into the microtonal universe become clearly understandable after experiencing the *glissando* possibilities of the Ondiola. A combined action over the *vibrato* controls and the *glissando* wheels is his main technical resource to explore the third dimension of sounds; it becomes one of the distinctive features of his improvisations, resulting in some of his most famous works, such as *Xnoybis* for solo violin. The extent of Scelsi's control over the modifications of pitch, afforded by such a precise mechanism, is an important piece of information when performers encounter *glissandi* in his music. Traditionally, string players conceive

glissandi as movements between two pitches, representing the starting and ending points of the *glissando*; their attention is mainly focused on these two points, and the *glissando* between them is often considered an ephemeral feature, a musical embellishment. For Scelsi instead, *glissando* is a paramount feature of his sonic world, and its significance is expressed in each instant by the continual, changing relation between moving and static pitches. Inspired by my experience playing Scelsi's Ondiola, my appreciation for such an extreme approach to pitch-shift has stimulated me to develop a profound attention towards the expressive and technical use of *glissandi* in Scelsi's works, enhancing my sensitivity to microtonality.

FIGURE 13. Sampling of Ondiola *glissato* controls. Author's personal video, recorded with permission of the Fondazione Isabella Scelsi.
See https://youtu.be/tjc28ceM470

Another distinctive feature of the Ondiola, which plays a major role within Scelsi's third phase improvisations, is its monodic nature. The Ondiola's design specifications, like those of early synthesizers, allow for the production and manipulation of only one frequency, which must be elicited by the depression of a single keyboard key. The instrument is not capable of generating a second frequency simultaneously to the first one. On the Ondiola, pressing a second key while holding a first key can produce two different results: if the second pressed key corresponds to a lower frequency the instrument will have no response, and the higher note will continue to play without modification; if instead the second pressed key corresponds to a higher frequency, the instrument will produce the frequency of the second key, while

simultaneously interrupting the previous frequency. In this second case, when the second key (higher frequency) is released, the first key (lower frequency) will resume playing. This technical feature, known as a high-note-stealer, further promotes Scelsi's development of virtuosic improvisations. Thanks to this instrumental possibility, it becomes feasible to produce sound not only when pressing a key, but also when releasing it, therefore allowing for an even faster articulation of notes.

FIGURE 14. Sampling of Ondiola note-stealer mechanism and short explorative improvisation. Author's personal video, recorded with permission of the Fondazione Isabella Scelsi. See https://youtu.be/Tijgbi_o8Qs

With the Ondiola, Scelsi developed 'a remarkable variety of techniques. [he] explored the limits of extreme velocity, dynamics, range, and duration. Many improvisations were centred on sudden variations in the dynamic texture, giving a sense of great power and vitality. There were also a number of monodic works, some highly ornamented around a basic melodic line. Others used extreme speeds of oscillating repeated figures, and still others incorporated dramatically pulsating dynamics in the low register'.[35]

6. PAPER TO SOUNDS, AGAIN

Throughout my career as a performer of experimental music, I have frequently encountered technical and instrumental demands that push me to explore and

expand the recognised limits of my instruments. In approaching these unusual and extreme performances, I have developed a pragmatic understanding of the expressive possibilities that arise from the employment of innovative instrumental strategies. In reconstructing Scelsi's creative process, I observed his eminent interest in the exploration of new performative approaches towards his instruments; his tapes attest to the extent to which his improvisations were driven not only by a mental and spiritual state, but also by a profound sensitivity and reactivity to the sonic and sensorial input he received from his Ondiola. Scelsi was an excellent performer, intimately attuned to and in constant dialogue with his instruments. The Ondiola symbolised a field of exploration, where his intuition, his spirituality, and his fingertips met and inspired one another. In the final phase of my research process, I approached my transcriptions in a similar manner, exploring the expressive possibilities and the instrumental potential they contained. I explored specific instrumental strategies, including unusual and complex fingerings, elaborate and non-traditional bow strokes, and the production of surprising sonorities at the limits of the possibilities for stringed instruments. Distancing myself from the conventional tradition of violin playing, I went on to explore new sounds, which I perceived to be close to the soundscape emanating from Scelsi's fingers on the Ondiola. The culmination of this exploration is eminently artistic and personal in nature. It is informed and inspired by my familiarity with Scelsi's artefacts, and by the desire to explore the most extreme instrumental possibilities through performative instincts. By moving away from familiar performance practices and modes of expression, distancing myself from instrumental habits, my mindset approached a state of instinctual reactivity which is most often experienced in improvisation sessions. The performance is thus brought closer to its original nature, triggering in the mind and body of the performer a state of frantic passivity, possessed by sounds, trapped in fingertips that are constantly forced to move.[36]

Notes

1 Scelsi's letter quoted in Michela Mollia, Autobiografia della musica contemporanea, Roma and Cosenza: Edizioni Lerici, 1979.
2 Giacinto Scelsi, *Les anges sont ailleurs...*, ed. by Sharon Kanach. Arles: Actes Sud, 2006.
3 Giacinto Scelsi, *Il sogno 101*, Macerata: Quodlibet, 2010.
4 Scelsi, *Il sogno*, p. 6.
5 Scelsi, *Les anges*, p. 69.
6 Scelsi, *Les anges*, p. 142.
7 Scelsi, *Les anges*, audio cd annex to the book, track 1.

8 Friedrich Jaecker, *Die Tonbänder von Giacinto Scelsi / Giacinto Scelsi's Tape Archive*, Cologne: privately published, 2008.

9 For an exhaustive analysis of the collaboration between Scelsi and Tosatti, see Sandro Marrocu, 'il Regista e il Demiurgo. Giacinto Scelsi e Vieri Tosatti: una singolare sinergia creativa', PhD thesis, Università degli Studi di Roma-Tor Vergata, 2014.

10 Johannes Menke, 'Der Morgenlandfahrer und der tonale Abenteurer. Neues über Scelsi und Tosatti', in: *Musik & Ästhetik*, ed. by Herausgegeben Von Ludwig Holtmeier, Richard Klein und Claus - Steffen Mahnkopf, Stuttgart: Klett-Cotta, 2015, pp. 89–95.

11 Scelsi, *Les anges*, p. 70.

12 William Colangelo, 'The Composer-Performer Paradigm in Giacinto Scelsi's Solo Works', PhD thesis, New York University, 1996.

13 Frances-Marie Uitti, 'Intervista di Stefania Gianni alla violoncellista France-Marie Uitti', *i suoni, le onde…*, 1, 1990, pp. 7–10.

14 Uitti, *Intervista.*

15 Carol Robinson, 'Nel suono', *i suoni, le onde…*, 1, 2010, pp. 3–5.

16 Colangelo, *The Composer-Performer*.

17 Gabriele Garrilli, 'Isole in un mare di nastri', *Filigrane. Musique, esthétique, sciences, société*, 15, 2012.

18 Jaecker, *Die Tonbänder*.

19 From Jaecker, *Die Tonbänder*.

20 For a comprehensive analysis of the technical features of Scelsi's recording devices, see Jaecker, *Die Tonbänder*.

21 'Edizioni dell'autore, copyright 1959 by G. Scelsi'. Varie copie della partitura di IXION sono conservate presso l'Archivio Scelsi, sotto la segnatura GS.1.3.1.52.

22 As described by Robinson, *Nel suono*, p. 6.

23 The complete version in four movements of *Ixor* can be consulted at the Scelsi Archives under the signature GS.1.III.1.53, 1.54, 1.55 and 1.56.

24 Jaecker, *Die Tonbänder*, p. 19.

25 https://www.celemony.com/en/melodyne/what-is-melodyne.

26 In all the following examples, the first movement of *Divertimento nº 4* is chosen as case study: to facilitate comparison with the existing score (and instrumental performance), the original tape has been transported to the low end of a minor third, while maintaining unchanged the intervals, durations and loudness of the tape.

27 https://forum.ircam.fr/projects/detail/audiosculpt.

28 https://www.bachproject.net.

29 The elaboration of this process of transcription has been carried on in collaboration with Dr. Christopher Trapani.

30 Kanach in Scelsi, *Les anges*, p. 17.

31 Jaecker, *Tonbänder*, p. 29.

32 Frances–Marie Uitti, 'Preserving the Scelsi Improvisations', *Tempo*, 194, 1995, pp. 12–14.

33 Fabio Carboni, 'Abitare il suono: Giacinto Scelsi e l'ondiola', *i suoni, le onde…* 13, 2004, pp. 14–15.

34 Carboni, *Abitare il suono*.

35 Uitti, 'Preserving the Scelsi improvisations'.

36 Like most research of artistic nature, the most direct way for me to share and transfer knowledge is through the act of performance. I have therefore gathered the results of my Scelsian research in an album, featuring my recordings of Scelsi's *Works for violin and viola*, including the *Divertimento nº 4*. Commercially available, this recording is accessible online through digital distribution, such as Spotify. For the digital album see https://open.spotify.com/album/5d3576KsXcvmDIQugEA5k0.