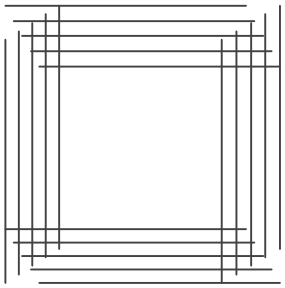


An Interview with Marco Stroppa

Francisco Castillo Trigueros, Rodrigo Tascón

"Only a long apprenticeship will give the composer the knowledge to be really free with regards to a machine."

Composer's Notebook Quarterly (CNQ): Maestro Stroppa, first of all, let us thank you for sharing your thoughts in our publication. We hope you enjoy this interview as we will enjoy reading your answers.

About Karlheinz Stockhausen

CNQ: The topic-in-focus of this issue of CNQ is dedicated to the figure of Karlheinz Stockhausen, so we would like to ask you a few questions in regard to his influence in composition, and his contributions to electronic music.

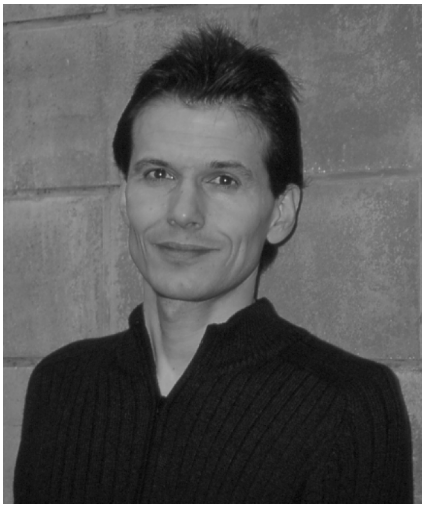
How would you describe the relation between Stockhausen's musical theory and the practical realization of the music?

Marco Stroppa (MS): There is no doubt for me, that both the theoretical work of Karlheinz Stockhausen, and his practical outcome, already since his first pieces in the 1950's, are the most interesting, innovative and creative piece of work conceived by a composer in the second half of the twentieth century. The depth of his musical thought, the quality of so many pieces, the originality with which he delved into unusual topics - from time to space, from pitch to the Momentform, from *Mikrophonie*, where the microphone is an instrument, to *Mixtur*, composed in 1964, where he was already using live electronics - show an amazing mind, a fantastic creator and a great music.

As an example, I had the pleasure of playing the electronics of *Kontakte* during a concert in Paris on February 18, 2008, with Jean-François Heisser, piano, and Florent Jodelet, percussion. This implies not only to supervise the dynamic balance during the performance, but also to coach the interpreters during the rehearsals. One has to really know the electronics and the instrumental parts very well. Fifty years after its premiere, I was still "shocked" by the extraordinary impact of this music on the performers, including me, as well as on the audience. I believe, that such a utopic work, with this kind of strong, dialectical relationship between the electronic sounds and the instrumental figures, nowadays no longer exists. But it is this type of works, to my opinion, that makes music worth being listened to!

CNQ: Which do you think are the most valuable elements of Stockhausen's music in relation with their influence and impact on contemporary composition?

MS: It is hard to reply, since there are so many important elements in the music of Stockhausen, and most of them still have a great impact on the current composers. Perhaps, however, his "dream" of being able to compose not only with sounds, but sound itself, a dream he could not entirely pursue, due to the limitations of the technology he was using at that time, seems to me still extremely important. It is by changing the nature of the sound material, that one can imagine to conceive other forms, and to explore other expressive worlds. And nowadays that the technology has become so powerful, we have the tools to continue the path he started over half a century ago. Unfortunately, many young composers tend to loose the patience and the time needed to delve into this matter at the required depth, a patience Stockhausen had, reinforced by his exceptional talent.



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CNQ: In general terms of music perception and cognition, what would you consider to be Stockhausen's essential influence upon the emancipation of cognition and perception in music composition?

MS: These concepts are relatively new (say, about 30-40 years old), especially if applied to the musical domain (see, for instance, the issue of the Contemporary Music Revue published in 1989 and dedicated to Music and the Cognitive Sciences). I do not have the impression they are really part of Stockhausen's theoretical background. He studied, beside music, at first musicology, philosophy and Germanics, and then phonetics, acoustics, and information theory. Of course, retrospectively, one might analyse some of his concepts or techniques from this standpoint, but I am not sure this was really a very important conceptual realm for him. His visionary output lies in other domains.

CNQ: Concerning the development of technology, to what extent do you think Stockhausen's electronic music techniques were determined or bounded by the technology available in the time?

MS: The techniques available at a given time always both determine and bound what a composer can do with them, even if he is as innovative and creative as Stockhausen was. I already mentioned that his "utopia" of composing sound, and not only with sounds, could only be realised later, when the digital technology became powerful enough, let's say in the early 80s. But he was incredibly creative in finding the most appropriate ways to fully exploit the potential of the technology he had at his avail. The realisation score of *Kontakte* is, from this perspective, a masterpiece of documentation of his work, his struggles, and, finally, his pragmatic choices.

I believe that no other composer of that time went so deeply into this matter. Works like *Gesange der Jünglinge*, *Kontakte*, *Mikrophonie*, *Hymnen*, *Mantra*, *Mixtur*, just to mention few of them, are so innovative in their approach of the technology, so interesting in the

relationship between the material being used and the form it gives rise to, that I believe they will always remain landmark pieces in their own domain. I have always been very impressed to see how far he could go in so little time: each piece explores a new domain, thus opening totally unsuspected worlds of expression and formal design.

CNQ: Which of his techniques would you say are still in practice?

MS: The technology nowadays has changed a lot. From one side, it has become much easier to use, and therefore more widespread and accessible: everybody can purchase a laptop computer for a relatively small amount of money (and much less than the money needed to buy any professional instruments). With the right software one can "do" electronic music at home, whereas between the 50s and the 80s one had to struggle to have access to machines in large computer centres.

However, on the other side and perhaps because of this change, it seems to me that young composers have now become more pragmatic, and therefore less interested in visionary works, which are, of course, more difficult to perform. I am not at all criticising this attitude, I am just trying to observe it.

Stockhausen's radical, approach of the electronics, his stubbornness in pursuing his ideas, without compromises or accepting the "rules" of the "trend of the day", his relationship between the technology, the compositional techniques and the form they produced still remain for me a wonderful lesson of coherence and musical courage. I wish we had more examples like his nowadays!

About “Chamber Electronics”

CNQ: You worked for some time in IRCAM doing research in the field of acoustics. How did this experience contribute to your approach to composition?

MS: I have had a continuous relationship with IRCAM since 1982, when I was enrolled as a student at a summer course for composers. Over the 26 years of cooperation, I participated in many kinds of projects, not only related to acoustics. Some were mere productions of electronic works, with or without acoustical instruments (such as two "radio operas"), some were more linked to research. This two-way relation between music and research, which is the real "heart" of IRCAM - and has since then been unique in the world at this degree of intensity and engagement - has always tremendously inspired my music, with or without electronics, to the point that I cannot tell now, what influenced what.

My "classical" education (piano, composition, choir conducting) gave me a very exacting attitude about what to accept from a computer and how to develop it in the research domain. On the other side, my "computer" education (mainly courses in artificial intelligence and cognitive psychology at MIT between 1984 and 86) inspired my musical concepts, and made me think about the instrumental music in another way. Finally, my work on sound synthesis provided me with the right concepts to address "sound" as a lively "entity" a composer can shape, a very "Stockhausenian" idea.

Two years ago I gave a course at the University of Stuttgart, where I teach composition and computer music, called "Sound Synthesis as Orchestration, Orchestration as Sound Synthesis". Perhaps, this title represents at best this kind of permanent, rich, lively interaction between these different domains.

Last year I composed at IRCAM "*...of Silence*", a piece for saxophone and chamber electronics, premiere by Claude Delangle in November 2007 in Shizuoka (Japan). In this work I worked with Arshia Cont, a young and extremely brilliant researcher, on the issue of score and tempo following (see http://cosmal.ucsd.edu/arshia/). He designed a very interesting, reliable and powerful score and tempo follower (called Antescofo), and we tried to see how this information can be used to improve the quality of the musical relationship between a human player and a machine playing with him (see my text "Live Electronics or... Live Music: towards a Critique of Interaction", http://www.ears.dmu.ac.uk/spip.php?page=artBiblio&id_article=631). It is a totally new domain, in which I believe very much. This was the first piece where the pitch and tempo of a performer were constantly and closely monitored, and where this information was used to vary the parameters of the interaction between the machine and a performer, using an audio (not MIDI) and contemporary context. In writing the score, I did not make any compromises as far as the music and complexity of my language are concerned. A thrilling experience I would like to pursue.

This year, I am doing research in the domain of the high-level control of sound synthesis (see, for instance, the paper at http://profs.sci.univr.it/~dafx/FinalPapers/pdf/Stroppa.pdf, or also http://mediatheque.ircam.fr/articles/textes/Bresson05a/). I am studying how a graphical environment originally designed for computer-assisted instrumental composition (called Open Music) can be extended to include different paradigms of control for the composition of sound, again a very "Stockhausenian" concern, isn't it? But we managed to separate the level of control, from the level of the synthesizer, which has become a kind of "virtual synthesizer", able to map the control information onto different "real" synthesizer (as csound, Msp, or Chant).

This has to do with issues of representation and efficiency (in the control of sound synthesis one deals with data that are 100 to 10000 times more numerous and complex, than those used for instrumental music), as well as of expressivity (how can one represent this complexity in a meaningful way? how can one embed some kind of "intelligence" at different moments of the computation, so as to give them the "autonomy" they need at their own level of competence?). I believe we have been progressing a lot in the last years.

Next year, I will compose a piece for violin and chamber electronics, where I would like to continue the cooperation with Arshia Cont in the domain of the symbolic writing of interactive systems.

Finally, in spite of different musical productions and research done in several domains, there is a constant interest that is unifying my various activities: I have always been interested in exploring a dialectic relationship between the electronics and the realm of instrumental sounds, so as to find a kind of symbiosis where each realm has both its acoustic autonomy and its points of contact with the other realm. It seems to me, that this is leading to very interesting forms, and to the exploration of an expressive

dimension that none of the realms can explore if they are alone (purely instrumental or purely electronic music).

CNQ: You often use electronics as an “expansion” of the capabilities of a given instrument, affecting some of its acoustic qualities, like attack or resonance, but this is done in a quite subtle way. An example of this is your work for amplified piano *Traiettoria* where you mix synthetic sounds with the resonance of the piano, creating a new outcome, expanding the possibilities of the instrument. Could you tell us more about this approach to the use of electronics in music?

MS: *Traiettoria* is a good example of what I have just mentioned above. On one side there is a piano that sounds relatively traditional, not in the musical language, but in the way it is used: no preparation, no playing inside the strings or on the body, "just" 88 keys and three pedals! On the other side, the electronics has its own totally independent world (technically speaking, it uses additive synthesis and "formantic" frequency modulation, as shown by John Chowning in his work *Phoné*). Nothing in the electronics is trying to simulate the sounds of the piano; I have not analysed them, in this piece, so as to extract some control models for the electronics.

Yet, as you mentioned, these two, apparently incompatible realms, manage to meet and influence each other in very subtle ways. Sometimes, it is the electronics that is expanding the world of the piano (as at the beginning of *Traiettoria...deviata*), sometimes it is the piano that is developing the world of the electronics (see for instance, the two "cadenzas" that open *Contrasti*, the first one purely electronic, the second one only for the piano). What makes these two realms meet, in spite of their different acoustical reality? I believe it is the force of the musical ideas (what I call a "musical information organism", a kind of structured morphology, see my "Musical Information Organisms: An approach to composition", http://www.ingentaconnect.com/content/routledg/gcmr/1989/00000004/00000001/art00011). The piano and the electronics "meet" because they share some common musical morphologies (which I call "organisms"), not the same sound. Although I have also composed pieces with recorded or processed sounds, with or without live electronics, this fundamental "quest" of a dialectical relationship, where each realm remains what it is, yet, interacts with the others, has never changed.

CNQ: You have used the term “Chamber Electronics” to describe the concept that inspires the use of electronics in this and a few other of your works. Does this refer to the relation of the electronics to the instrument, or does it refer to the intimacy often suggested by chamber music?

MS: This is a relatively new concept I invented in 1994. I am still developing it. It started with *Auras*, a piece for percussion and "chamber electronics", and has since produced some other works for solo instrument and electronics (flute, trombone, saxophone).

It has both meanings you mentioned. From a technological point of view, it means that the radiation characteristics of each instrument are taken into account and influence the way the electronics is projected. For instance, the trombone is a very directional instrument. The sound projection can then highlight this directivity, by giving, sometimes,

the impression that the instrument is, say, ten meters long!

It also means, that the sound projection is only frontal: a modest amount of loudspeakers (for the time being between 2 and 5) is placed in specific places of the stage (each piece has a different setup) and determines the "spatial framework" that the electronics will employ.

Typically divided into a few movements, a piece for "chamber electronics" also implies that in each movement the player occupies a different position on the stage, so as to generate a different spatial configuration comprising the acoustical radiation (where he or she stands and how loud the music is), the amplification (in the same place, or more or less dissociated from the acoustical radiation), and the electronic setup (where the loudspeakers are placed, which ones are active at a given time, and how the space is dealt with, continuously, or punctually, for instance). And the music, both the instrumental part, as well as the electronics, is composed so as to "exploit" these spatial configurations. There is a real development of the "spatial form" of each piece.

Musically speaking, "chamber electronics" also means that I am looking for a sort of changeable "chamber-music" atmosphere during the whole piece. This means that one has the impression that there are "several" players, of which only one is visible. Each player has its own acoustic, spatial and formal plan, and all of them (the number is variable, of course, during the evolution of a piece) try to achieve the kind of intimate, delicate, multifarious relationship one finds in chamber music. There will be pieces for each instrument exploring this domain, except the piano, for which I already wrote a large work, *Traiettoria*.

CNQ: Another approach that you've taken is your electro-acoustic music, is to play with the resonance of the hall. In your work *Spirali* for String Quartet, for example, you work thoroughly with spatialization. Sometimes the listener gets the impression to be very far from the quartet and other times (s)he is submerged in the midst of the String Quartet, as if sitting between the instruments. Could you tell us more about the realization of this idea?

MS: I have always thought that the composition of space is as important as the composition of the other dimensions of music one is, perhaps, more familiar with. Each piece, however, explores this potential in different ways. *Traiettoria* was playing with two volumes, a small volume (centred around the piano and influenced also by the electronics through a loudspeaker placed under the instrument and setting the strings into vibration), and a large volume, only used by the electronics, which is acousmatic (i.e., ideally, to be played by a Acousmonium, an "orchestra" of loudspeakers developed long time ago at the GRM in Paris).

Spirali is a different experience, and, for the time being, the only one using this approach of space and electronics. Here all the controls are performed by a musician at the mixing board, in real time, during the performance. He or she is therefore as important as each member of the string quartet.

The original idea was to explore the movement of sound across the instruments, as

several other instrumental pieces already did (from the Gabrielis at San Marco, to *Gruppen* by Stockhausen). To achieve this, one has to write the same musical material (for instance, a pitch, a figure, a rhythm, a chord, and the like) to several instruments while delaying it: it is a sort of imitation at the unison! When the timing is correct, one has the impression that the sound has moved from one place to another. In fact, it is not the sound itself that moves (as when projecting something from one loudspeaker and then from another one), but musical material, a cognitive concept.

For instance, if the first violin plays a jeté, then the viola plays the same jeté a little later, then the cello, and so on, if the delay is regular, not too short or long, and if the context is all right, one has the impression that the "jeté" has moved across the instruments. It is not the same sound, but the same gesture, that has created this effect.

During the preliminary sketches I studied different sort of figures, more or less long, that might yield an impression of movement when distributed across different instruments. Of course, this was only perceptible when sitting in the middle of the quartet, and I could not pretend to "squeeze" the audience, prior to the concert, so as to fit them in so little place! The first solution then was to "project" the quartet around the audience: each instrument is sent to a different loudspeaker, and only one. Four loudspeakers in a square correspond to the string quartet - since normally concert halls are rather rectangular, than squared, this configuration has often to be repeated, so as to divide the hall the into two or three squares, but this does not change the concept. This version of the string quartet was premiered in Milan in 1989 by the Giovane Quartetto Italiano.

However, when composing, each modification of the space has consequences that should be developed. I realised that it was not enough to project the string quartet around the audience: something was missing, a more profound reflection on the nature of sound projection, and its relationship with the musical materials being diffused in this quartet.

After some research, I defined three kinds of "spatial images": points (each instrument is coming from a clear, narrow point in the space), surfaces (each instrument is coming from a more or less wide region of the space), and diffused space (each instrument is coming from all over). During the performance, the musician in charge of the electronics is constantly shaping these three images, sometimes superposing them in a kind of spatial polyphony, sometimes alternating between them. The distance of each instrument is also controlled: far away, close, mid-way. It is by combining a circular motion with a change of distance that one obtains a "spiral".

The choice of which space(s) to activate depends on the spatial form of the piece, which is related to the nature of the musical material. For instance, short notes tend to sound better in a space of points, rather than in a diffused space, while long, low, soft sounds in the cello may be used in all sorts of spaces, although, naturally, they are better suited to a diffused space. There is a continuous interaction between the nature of the material and of its development, and the nature of the space into which it is projected.
I finally wrote a score where all this is clearly indicated, both the parts of the instruments, and the control of the three main spatial images, as well as the transitions between one and the other.
Metaphorically, I would say that for the audience this yields the impression that not only

the string quartet is projected around them, but also that each source changes of nature (from a small and directional to a large and diffused one) and gets closer or further away from them. Finally, the hall itself also changes in size and material. Something only an electronic system could achieve.

Regarding Structure

CNQ: It is evident from the pieces that we have discussed that you're strongly concerned with the acoustic materials that you're working with and with the perceptual experience of the listener.
How do these two aspects affect the structure of your compositions?

MS: I cannot imagine that music is pure abstraction that does not take into account its acoustic reality, as I cannot imagine that music is pure sound, without an architecture that gives it a form in time. From this point of view, the definition of Varèse of music as organised sound is still very modern, although the whole issue is how to organise sound.

I am also relative far from the conception of music as a direct perceptual experience. In the latter case, it seems to me that something is missing, that there is the risk of little mystery and surprise, especially after listening to a piece several times.

What I am trying to investigate in my work, is a dialectical relationship between abstract forms that man cannot directly perceive, and their indirect influence on the perception, which I take in a more complex meaning than in other composers, who directly refer to it. It does not only mean what one can immediately hear, but also what one can recognise, after some time and several hearings. As a matter of fact, it is something closer to cognition than to sheer perception.

Let me explain this concept with a metaphor: the way a human being looks like strongly depends on the way her or his skeleton is made, although nobody can see it directly. An invisible structure (the skeleton) has a strong influence on the direct appearance of a human body (its "perception"), although there are also other factors that finally give it its final appearance. My work with the form is similar: I am interested in forms that have the same kind of invisible, but strong influence on perception. I think this adds to the richness of the musical experience, since, each time, there is something new to listen to or to be surprised by. And I would like, as much as I can manage to do it, to be always genuinely surprised by my own work, even after having been familiar with it for years and years!

CNQ: You have also mentioned your interest in "Polyphonic" forms. Could you please tell us where this interest comes from?

MS: This is a relative new domain of research for me. I cannot still say a lot about it, I am still working on it. This term does not mean, obviously, that a musical form is polyphonic (that is, has several voices in it), but "the" form itself is made of a "several simultaneous forms", that is a "polyphony" of formal plans superposed or juxtaposed with each other.
Let's make a simple example: when analysing the form of a piece, often, one

decomposes it into parts (called sections, movements, parts, or whichever term is appropriate), that correspond to moments of formal articulation, where the form changes. It was the same with classical forms, such as, for instance, the passage between the exposition and the development section in a classical sonata. This decomposition is often "vertical", that is it cuts the time of the form at a given moment, with a more or less large cross-fade, and creates a rupture.

Now, I would like to experiment other formal processes, where the cut is not "vertical", but "horizontal", thus dividing different parallel forms coexisting at the same time, and mutually influencing each other. I tried this formal scheme, almost by accident, in the first part of *Dialoghi* (the second piece of *Traiettoria*): three parallel forms, one for the piano alone, one for the electronics alone, and one for both instruments, are unfolded and cross each other after approximately three minutes from the beginning. At that time, I was not at all aware of what I was doing, but I recently came back to this idea and am trying to develop it more radically, for instance in several *Miniature Estrose*, for piano, or *Ay, there's the rub*, for cello. I still do not know how far I can push it: will there be, then, a sort of "meta-form" resulting from the interaction of several forms together within a piece?

Regarding New Technology

CNQ: You have been involved in projects concerning computer-aided composition. In your experience how do the technological resources of the time affect your approach to music composition?

MS: I had the chance of studying computer music in the early 80's in Venice, with Alvise Vidolin, an electronic engineer very interested in music and whose lessons were very inspiring for me. He was teaching us a lot of digital signal processing, structured programming, and sound synthesis. At the same time, I was also studying composition, which, in Italy, meant a huge deal of classical training (tonal composition, counterpoint and fugue), before really being able to compose in one own's style (things has changed since then!).

This meant that I naturally became "bilingual" as far as instrumental and electronic music are concerned. It is hard to say which aspect of one domain influenced which aspect of the other domain. I have the impression that a complete synergy was created thanks to these simultaneous studies, at a time where my compositional language was still looking for himself and my electronic skills were growing.

CNQ: It is quite obvious that the developments of technology have lead to new aesthetic visions in contemporary music and especially in electro-acoustic music. In Stockhausen's words: "New means change the method; new methods change the experience; and new experiences change man."
In your opinion has music affected technology? (For example: Man changes the idea; ideas change the experience; experience changes the method; methods change the means.)

MS: Stockhausen is perfectly right: technology and music are affecting each other and all this interaction is finally affecting the human experience.

Nowadays, the sensibility of the composers, and therefore their demands, has developed a lot. Generally speaking, over the last 25 years two extremely big developments have taken place: live performance has become possible and rich enough, so as to give a computer performing on stage during a concert the status of a kind of semi-intelligent performer. I mean with this, that it can take some decisions alone (as, for instance, following a score or a tempo, or performing processing depending on data collected from the gesture of the performer). The other development is the proliferation of graphical environments, which allow a certain degree of programming without having to learn the syntax of a computer language. Of course, an advanced composer will always have to recur to the expressive richness of a computer language, but for the huge amount of those who have neither the time, nor the wish to spend so much time learning the intricacies of a computer language, this has permitted to work with a machine at a certain degree of depth. And this produced many musically interesting results which would have been impossible to achieve in so little time, say, 40 years ago.

I am however personally convinced that only a long apprenticeship will give the composer the knowledge to be really free with regards to a machine, but I must acknowledge, that nowadays few institutions and composers are willing to dedicate as much time to electronic music as they dedicate to learning instrumental music.

CNQ: To wrap up the interview could you tell us what your current projects are?

MS: I am often working on cycles of pieces. Each cycle explores a different aspect of some musical ideas. Just to mention a few of them: a cycle of concerti for solo instrument and ensemble or orchestra (already composed: trombone and 11 instruments, piano and large orchestra; planned: three accordions and 3 orchestral groups, cello and orchestra, piccolo and string orchestra, basset horn and orchestra), the second book of the Miniature Estrose for piano, and new works for solo instrument and chamber electronics (the next is for violin, as I mentioned above). There are also pieces not related to a cycle, such as a work for a cappella choir based on the idea of a "cry", and, last but not least, a piece for the music theatre on a text from Arrigo Boito (not before 2011).

I should also mention the ongoing research at IRCAM in the domain of high-level control of sound synthesis and of symbolic writing of interaction, and, of course, my activity as a professor at the University of Stuttgart.

I know, it is a lot of projects for the next time, but it is only with this kind of pressure that I can progress on my own path and at my own speed. After all, each piece of music does have to have its own right "tempo", doesn't it? I simply do not even try to think what "my" right "metronome" is...!