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Nicolas Donin in 2020 (Photograph by Pauline Donin).

Creative processes in collaborative musical performance: interview with Nicolas Donin¹

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Nicolas Donin was in Brazil for the first time in 2019, visiting UNICAMP and UFRJ as guest of several events that left marks on the Brazilian academic community. Brazil also left marks on Donin, as he always nurtured an admiration and a particular interest in Brazilian culture and music. On that occasion, we were delighted to meet him in person in Campinas, São Paulo, and soon after again in Rio de Janeiro. Over the course of many conversations, we became even more motivated to delve into the research projects and publications of this unique French musicologist. When invited to organize the thematic dossier included in this edition of the *Revista Brasileira de Música (Brazilian Journal of Music)* by editors-in-chief João Vicente Vidal and Pauxy Gentil-Nunes, we were given *carte blanche* to choose an interviewee for the volume as well. We had no hesitation in inviting Nicolas Donin, given his convergent approach to collaborative musical practices and their analysis.

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A member of the French Society of Musicology, Donin surely is one of the most distinguished musicologists on the international academic scene. Due to Donin's interdisciplinary training, his research group "Analysis of Musical Practices" at IRCAM bring together researchers from different areas, contributing to the diversification of their research and areas of expertise. This particular approach provided a high degree of innovation with regard to the analysis of performance practices, its

¹ The editors would like to thank Jonathan Goldman (University of Montreal) for the revision of the English version of this interview.

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reflective processes, and to 20th- and 21st-century theories of composition and genetic criticism, without neglecting listening as a practice in itself.

Donin specialized in the history, creative processes, and aesthetics of 20th and 21st century music. As the leader of his IRCAM team, Donin supervises master's and doctoral dissertations at the School of Higher Studies in Social Sciences (EHESS). He was the chief scholar of the collaborative research projects "MUTEC" (Musicology of contemporary composition techniques, 2009-11) and "GEMME" (Musical gesture: models and experiences, 2012-16), both funded by the French National Research Agency (CNRS). From 2011 on, Donin has organized the international conference "Tracking the Creative Process in Music" (TCPM), which takes place every two years. He is the author and co-author of over 100 articles, editor and co-editor of 19 books, multimedia listening guides and documentaries, in addition to being editor-in-chief of a book series dedicated to different aspects of contemporary music.

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The following interview with Nicolas Donin was conducted remotely, by video conference, in October 2020. On that occasion many topics were tackled, among which his intellectual path as a researcher and musicologist and (in more detail) aspects of his methodologies as applied to music analysis, with a focus on collaborative practices in music – performance, improvisation and composition. Another important aspect of the interview is his stance towards music analysis: Donin conceives of it first and foremost as a collaborative practice, in the sense that two or more researchers, when working together on a musical piece or a certain composer, bring different backgrounds that enrich analytical approaches and discussions. Therefore the research points towards results and conclusions much more diversified and intelligible.

It is our sincere hope that this stimulating interview will inspire musicians, music students, musicologists and other professionals to further reflect on the issues addressed therein. To Nicolas Donin, we endorse our sincere appreciation and warmest acknowledgments for his kind attention and professional camaraderie.

PEDRO S. BITTENCOURT: We would like to start by asking about your background in music history and ethnography. How did you come to work towards an empirical and technological musicology, and was this integrated into a broader musicological framework?

NICOLAS DONIN: Basically, I started as a scholar in the history of Western Music in the 20th century. I did my PhD at the *École des Hautes Études en Sciences Sociales* (EHESS) and I was a student in the Music History class of the *Conservatoire de Paris*. Both of these programs were very much oriented towards history. At the same time, I was immersed in new music as a concert-goer and listener. As a matter of fact, my life has always been filled with contemporary art more than anything else. Since childhood, my own artistic practice included music, painting, and photography, and writing about art seemed to me a natural development. My first published articles focused on Arnold Schoenberg. I was particularly interested in the structures that allow new music to be disseminated, performed and appreciated. I did a detailed comparison of Boulez's *Domaine Musical* and Schoenberg's Society for Private Musical Performances, contrasting their concepts of the audience and the aesthetic experience. This also raised questions about the present, as I wondered how much the new music scene of my own time was indebted to the precedents of the pre- and post-World War II periods. I felt like a privileged observer of current music-making and used to discuss these issues with my friends and young colleagues. Some of them were already very active in the field: among my classmates at the *Conservatoire* was Bruno Mantovani, for example. There were obviously lineages and genealogies, with respect not only to musical ensembles and institutions, but also to aesthetics concepts and compositional techniques. One has only to think of the valorisation of innovation and the ambition to create music for future audiences. These manners of thinking music were very much ingrained in the early 20th century.

P.B. So, you were a music historian focused on contemporary music, reflecting on the present time of music and how it developed.

N.D. Actually, those strands only came together when I was hired by IRCAM (*Institut de Recherche et Coordination Acoustique/Musique*), because its new director, philosopher Bernard Stiegler, was looking for fresh insights into music making and theorizing. Bernard just passed away last summer (in August 2020) and I'm feeling very reflective these days about the effervescence he brought in around that time (2002-2006). When he interviewed me, I expressed how unsatisfied I was with the state of discourse about new music. There was a growing effort of critical thinking on the postwar avant-garde (cf. the work of Borio, Danuser, Decroupet, Morag Grant etc.) but much less so with respect to new music after the 1960s. Virtually every scholar took at face value the words of those living composers who had crafted an aesthetic discourse about their own work and incited musicologists to uncritically repeat and refine it. How could we possibly avoid that? Only once enough time had passed could we have the kind of critical distance I hoped for. So, I tried to find another way of constructing a scientific, critical perspective on new

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music that would make the best of the available sources. One can gather much more data about living musicians than about Beethoven, and at the same time, we must find new ways to maintain a critical point of view. I had the good fortune to meet Jacques Theureau, a researcher in cognitive

ergonomics, close to the blend of social and cultural anthropologies that arose in California in the 1980s in the work of Edwin Hutchins, Jean Lave or Lucy Suchman, for example. Together, we wanted to investigate the complexity and the inner dynamics of the activity of composition, in a way somehow similar to the way other activities had been studied in work- and workplace studies – from industrial design management to factory work to professional sport training strategies, among many other settings. Beyond anthropology and ergonomics, I had been fascinated by genetic criticism (*critique génétique*) since my time as a student in liter-

ature and the humanities, prior to graduating in music history. I was aware of the huge body of research available with respect to literary drafts and sketches. I noticed a rather similar trend in music analysis based on sketches. But there was a kind of missing link: how could one apply this to very recent music with the same rigor and subtlety that you find in studies of Flaubert, Proust, or 19th-century music? My answer was to weave together methods from genetic criticism (usually applied to primary sources from the past) and the study of human activities (usually based on data jointly produced by the worker and the analyst). Both approaches have something important in common. They address cognition over the course of a process of production, and they understand work as a situated, dynamic, complex human activity that embeds tools, objects, rules, know-how etc.: in short, a variety of concrete as well as mental stuff, in part pre-existing to the activity, and in part resulting from it. This stuff is indeed a helpful trigger for the worker to recall the memory and emotions associated with their actions. Theureau and I devised a methodology that allowed musicians to get back to the very unfolding of their creative activity based on its traces and would nurture both our research perspective and the musician's.

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P.B. As an example of this methodology, could we cite your analysis of Philippe Leroux's music?

N.D. Yes, the Leroux study was our springboard to really developing and refining this methodology. We embarked on a reconstruction of his writing process for *Voi(rex)*'s score, which at the time was a very recent piece. It was premiered in 2002 and we started our work in 2003. We did eleven in-depth interviews with Leroux using this particular technique of recreating the workshop of the composer and recalling virtually every significant compositional step. Then, we were able to do a fairly precise reconstruction of the creative process over a comprehensive timespan but also to

pinpoint some particularly salient features of Leroux' way of composing. Many dimensions of his activity were implicit in the composer's mind, and he only became conscious of them over the course of the interviews or when he read our analyses after the fact. He took advantage of this awareness later on, as a tool to understand and monitor his own work, with an eye on perhaps reusing something that had come to light. In the case of Leroux, he actually composed another piece called *Apocalypse* (2011) that was partly nurtured by the thoughts and knowledge that emerged from our conversations.

P.B. So, in a way you participated in the creative process by analyzing *Voi(rex)*, and then *Apocalypse* developed out of this collaboration between your analysis and the composer's activity. How do you view that?

N.D. We were actually very cautious about not intervening, or not interfering too much, in the creative process, because our aim obviously was to get as close as possible to the creative process as it unfolded without us, especially in the case of *Apocalypse*, where our data collection

occurred over the course of the compositional process. Yet, we knew that such an in-depth dialogue between individuals might have effects on both the composer's and the analysts' work. As for *Apocalypse*, as it happens, Philippe Leroux had already had in mind to write a piece that would explore the roads not taken in a previous piece, based on the assumption that any good

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musical idea occurring over one given compositional process bears many potentialities that are left untouched when the score writing is finished, and should be exploited and magnified in subsequent works. But he never had the opportunity to develop that project, so it's probably one condition that made both our seminal study and his new compo-

sitional project possible at the very outset. Leroux is someone who is interested in human activity beyond art, into the question of the possible, the virtual, the real and because he had this sensibility, probably he was particularly keen on participating in such an experiment. He may have thought: I have this idea of work in which I would explore these different paths, and now these guys offer me a lot of material and documentation about my own process, so I will be able to undertake such a compositional project really seriously. So, by the end of the day, our intervention was not as intrusive as one would perhaps imagine.

DANILO ROSSETTI. I would like to ask something on this subject. How do you see this turning point in musicology, the difference between musicology focused on analyzing the score and the method you propose, aiming to analyze the creative process of a musical work: the piece approached

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as a collaborative process between the composer, performers and, if it is an electroacoustic piece, the collaboration with electronic music producers, and all these people who work together?

N.D. I would say that it has a lot to do with understanding music composition (and music more generally) as a practice rather than a text, as a cultural phenomenon rather than an artistic product. At the beginning of my career, I devoted a good deal of work to the epistemology of musicology, reflecting on the history of the discipline itself – how it developed, what were its fundamental assumptions, which ideological frameworks made musicology possible. What was very striking to me was the “notational centrality”, as Philip Tagg would say, of musicology: the tendency to reduce music to scores, and scores to abstract texts. Musicology, in Western Europe at least, developed out of philology. Being able to decipher past notations and almost illegible scores was so rewarding that this really became the gold standard for musicology. By keeping

in line with that for decades, musicology favored all music whose notation was rich and challenging in one way or another. This philological way of thinking, though rooted in the 19th century, proved to be also very much in tune with the complexity of new music after World War II. I wanted to build up an alternative: to recognize the importance of notation, but surround it with a lot of other things that are as prevalent and important as the score – be it the fabric of scores, reading and annotation techniques, and the diverse ways of listening and inner listening that

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are attached to them. Some of these leave no traces in general but can be documented to some extent, as much as any oral tradition and its relationship to writing can be. For example, it is very clear that computer music relies very heavily on orality and is best understood as a community of practice involving programmers,

engineers and computer music designers interacting with specific material cultures of studios and labs. Written scores and instructions are only the tip of the iceberg there.

D.R. How do you see the act of listening in this process? In your writings, you have employed terms such as “attentive listening” or the “instrumentalization of listening”. I don’t think you’re talking about a phenomenological listening, like Schaeffer’s “reduced listening”. How could you explain to us the role of listening in your analysis?

N.D. I see listening as a musical practice *per se*, as much as performance or composition. In fact, when the time came to find a name for the research group I cofounded with Jacques Theureau and other colleagues, I ended up with *Analysis of Musical Practices*. Why? Not only because I wanted to signal a departure from text-obsessed musicology, but also to suggest that there is a diversity of practices worth investigating: while composition was an obvious object of study within IRCAM, that was not yet the

case for the practice of performance, improvisation, or listening. Listening was an exciting research object because it is difficult to grasp, symbolize and convey. Moreover, music is a very subtle cultural practice that can differ drastically from one person to the next. Even if most listening acts leave no trace at all, there is a phenomenon here, there is an object to study. The GRM (*Groupe de Recherches Musicales*) has been home to several important projects with respect to listening. Following in the wake of Pierre Schaeffer, François Delalande undertook a pioneering investigation into what he termed “listening behavior” or “ways of listening” (*conduites d’écoute*). Encouraged by his work as well as Stiegler’s dream of software for “computer-aided listening”, my colleagues and I developed a project called *Signed Listening* (*Écoutes Signées*). Its challenge was to somehow represent the singular way one listens to different kinds of music, and make it understandable and transferable to virtually anybody else. We started with a few case studies and tried to offer an interactive rendering of each given listening practice, with the help of multimedia engineer Samuel Goldszmidt. For example, I worked with Italian composer Andrea Cera on his listening of electronic and electropop music, and we selected a short Aphex Twin loop as typical of the kind of thing that caught his attention. He had a percussionist’s ear; he was able to “demix” many superimposed rhythmic complexities on the fly, and we could help “normal” listeners to grasp this through a sequencer-inspired multimedia animation.

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D.R. Did you apply this method to your own listening practice?

N.D. I did a multi-layered annotation of an audio file for a piece by Mauro Lanza that I liked very much, and I tried just to annotate in the heat of the moment a number of salient elements or features. I was able to do that on different layers that piled one on top of the other and, suddenly, the layers took on a meaning of their own, and it was a very clear representa-

tion of what is important to me when I listen to this piece. It was also an interesting representation of how stratified listening could be. We listen both emotionally with very global responses to a particular moment, and as a structure. And, for my part, I tend to listen much more attentively to the transitions between sections of sound or silence than to large sections or groups of things. That's one way of listening: my own personal one. I cannot completely convey this experience, but I can communicate to someone else some aspects and some of my strategies. And this is not

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completely inaccessible to research and to understanding. For example, with this project, I ended up transforming my listening to the fourth movement of *Voi(r)ex* (which we also used as a test-case). I could listen to it a bit like the way Philippe Leroux did, because we asked him to do his own signed-listening of his piece. He was clearly focusing in his listening to a very particular moment of silence within the movement that he was particularly fond of. He had spent time constructing this part as a composer, but no one of my team was actually able to notice it. Though it was his personal acme in listening, this short silence was not relevant to us at all, and barely perceptible indeed. It only became obvious to us after we designed a multimedia animation showing how the musical form builds up, according to the composer's endogenous categories, and how this makes this silence sound so special. Now that this is expressed as an animated "signed listening",⁴ anyone is able to make sense of this way of listening. So, for me, this is a very cultural issue, in the sense that only through repetition of the listening, and then sharing your listening test with other people can you start stabilizing your listening. I remember a very enjoyable article by the French ethnomusicologist Bernard Lortat-Jacob called "The jazz ear: essay of ethnomusicology" (*L'oreille*

⁴ See an updated, HTML5 version freely accessible on IRCAM's website: <https://www.ircam.fr/projects/demo/philippe-leroux-mouvement-4-blocs-gigognes>

jazz: essai d'ethnomusicologie"). He simply played the same passage of a Chet Baker recording for two different people, one with a classical music background and the other from the jazz world. They listened to so many different things in terms of intonation, rhythm etc., that it was as if they were hearing two different pieces, two different musical moments. And that clearly demonstrates, in my opinion, that listening is a practice – a cultural practice – and it always has a creative element.

P.B. So, the signed listening can become a sort of a guide, a listening guide.

N.D. We did in fact thought about signed listening as “open-ended” listening guides. At the same time, I also undertook historical research (in collaboration with Rémy Campos) on the emergence of listening guides in the 19th century. We noticed how normative these guides were in the first place. They aimed at having you to listen the “right” way – “this is motive A”, “this is motive B” – you have to notice every motive and the nature of its transformations. Stiegler, who was the driving force behind this project, dreamed of a more flexible and transactional guiding, one open to how any music lover, any layperson, listens. For instance, a given piece along the lines of the peculiar listening practice ‘signed’ by the Italian composer Andrea Cera: anyone should be able to take the same tools and materials, and use them in their own way, as a way to develop his/her own listening practice that may differ substantially from the latter in many ways, and then one might go on to address it to someone else. In fact, anyone can become the author of a new “signed listening”, and so forth.

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D.R. We would like to ask you something about your visit to Brazil in 2019.⁵ These activities offered to the Brazilian academic community an overview of your musicological approaches on the analysis of musical

⁵ In this visit, Nicolas Donin gave a conference at NICS-UNICAMP entitled “Analysis of the Creative Process in Contemporary Music – Methods and Challenges” and a lecture at the Music School of Federal University of Rio de Janeiro (EM-UFRJ) entitled “Berio-Holliger Collaboration on the *Sequenza VII* (1969) by Luciano Berio: Case Study and Reflexions”. Before that, in 2015 Donin had some texts published in *OPUS Journal*, translated by Michelle Agnes Magalhães.

practices. Have you met Brazilian researchers working with similar issues and orientations in musicology? Do you have connections or ongoing projects here with other musicologists?

N.D. First of all, your question offers to me a perfect opportunity to warmly thank my colleagues in Brazil who were involved in my visit, including both of you and Stéphan Schaub (researcher at NICS-UNICAMP). Secondly, I have to say that I don't currently have any ongoing projects with Brazilian researchers. But I have a strong intuition that there are connections to be made. That indeed was a happy outcome of my travel to Brazil: to realize the existence of a very specific energy, with tight networks of people in many different cities, within a country that itself assembles a diversity of musical cultures. They are all closely connected to each other, much more so than in France, for instance. And that's very interesting for thinking about music as a practice and sharing views and comparing repertoires and ways of thinking, of listening, and so on. And it's also true about connecting disciplines. While in Brazil I was lucky enough to have conversations with composers like Silvio Ferraz (professor at USP) as well as scholars in genetic criticism applied to literature and the arts, such as Cecilia Almeida Salles (professor at PUC-SP), the author of many studies of sketches and a book about the creative process called *Unaccomplished Gesture (Gesto inacabado)*. There are also people from Brazil whom I met in conferences elsewhere, such as composers/musicologists Celso Loureiro Chaves (professor at UFRGS) and Lauro Pecktor de Oliveira (PhD student at University of Calgary). And many others I've heard of and not yet met in person. I'm sure that all of these people have something in common, even if no one follows the same rules and methods. So, I think there's a good context for doing musicology in a very open manner in Brazil, in connection with other disciplines and arts. What I did for the French and English-speaking contexts, i.e. connecting historical and empirical musicologies with the study of the creative process in the arts, could probably be done in a different way, very rich as well, in Brazil. And perhaps, improvisation, certainly one of the most promis-

ing fields for creative process analysis, could be studied more effectively in Brazil than anywhere else. My own work was focused on score-based contemporary music in the Paris-Cologne-New York way, but if I were to do it again today, I probably would start from another angle. A colleague of mine at APM-IRCAM, Clément Canonne, has done incredible work on improvisation in this spirit – he was one of the keynote speakers at EITAM 5, the International Meeting on Music Theory and Analysis, held in 2019, at UNICAMP. I'm sure that new ways to connect improvisation studies and creative process studies could be developed.

D.R. Ok, so you came to these realisations only after having studied historical musicology. And, after all that, you realized that you could have studied improvisation from the start...

N.D. Not exactly. Actually, I've never been very focused on improvisation as a researcher, it's not my speciality. But when we started the Leroux project, I had already begun thinking about other possibly extensions, and one of them was improvisation. At the time, I couldn't find anyone to work on it. Another area to explore was film scoring, and this is also still to be developed, I think. A younger generation of researchers has made attempts in that direction over the last five or six years, but there's still a lot of work to be done, and very interesting archives and artists to study.

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P.B. Improvisation is a creative practice by itself, by nature, let's say. It is very different to analyze a creative process of oral tradition, and maybe that's what struck you about Brazil's culture, when you saw so many people playing and having a very strong oral culture, if you see what I mean.

N.D. You may see improvisation as creative process *per se*, but some people would say exactly the opposite. They would say, "Improvisation is the least creative process because it relies on a lot of pre-constructed elements that must be stabilized to be shared between improvisers".

On top of that, there's the little "extra" that is the creative part of the live performance. So, there are actually two opposite ways of thinking about improvisation, and probably the truth is in the middle... In any case, I think we have something to explore with regards to the balance between the written and the oral in every musical creative practice, and sometimes the equilibrium does not lie where we think it does. I had this conversation with Clément Canonne several times, because some of our research interests are very close. It doesn't make much sense to contrast composition/writing/invention with improvisation/orality/variation as has often been the case in musicology. We've explored this issue together with guest musicians and researchers in a joint seminar that Clément and I gave at the EHESS called "Improvisation and Composition: beyond the opposition between notation and action".

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D.R. This reminds me our fourth question about your research team at IRCAM, *Analysis of Musical Practices*. You assemble different musicologists, and they work with different networks. So, what I mean is that your

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team is very open in terms of subjects of analysis. You mentioned Clément Canonne, who is studying improvisation, Laurent Feneyrou, whose approach is more historical, Vincent Tiffon (music with electronics), Laura

Zattra (computer music, soundtracks and sound studies). Normally, in my opinion, musicologists mostly study one subject or one composer, i.e., they are more specialized in a specific area. How do you manage to work with different people and different subjects?

N.D. For me there's no meaningful advance in research if it is not an integral part of a broader, unstable context. I can dive into only one topic, one composer, one question, but I'll do that fruitfully only if at some point I can get away from it, look at it from a larger perspective, compare it with another one, and have it be discussed within the broader framework. As a matter of fact, my research group is designed to make this possible.

We have these complementary views on what music is, on what musicology must be. Something we did very often in the 2000s was to work in pairs. We were only three people at the beginning: Samuel Goldszmidt, Jacques Theureau and I. I had some projects with Samuel, some others with Jacques, some with both of them, plus a few “duets” with external colleagues, like 20th-century music analyst Jonathan Goldman, or anthropologist Frédéric Keck. So, that’s how this research group functions. There’s also another idea in these multiple disciplines: since each of us is the specialist or the representative of one trend in musicology, we are able to connect the team, and IRCAM in general, to a variety of ongoing research worldwide. So when we would get together, we would have these polyphonic discussions in which perspectives would be imported from the outside.

P.B. I’m thinking about what Nicolas just said about this multi-layered research team, and how to articulate the specific knowledge of each one. What were the paths taken by the research group APM-IRCAM to study the creative process in music? What are the main constraints, developing methods, and tools to analyze these dynamical creative processes in music? And there’s also a third question which is more specific: do you think that there are special constraints in electroacoustic music with instruments (mixed music)?

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N.D. For me there are several technical infrastructures to music composition. One infrastructure is *solfeggio* and notation, and the world of inner listening of musical phrases, written in traditional Western notation. This is the key to traditional musicology centered on Beethoven in the 19th century, and Schoenberg, Bartók, and the 20th century new music. But there’s another infrastructure that is the electroacoustic one, this world in which you work with parameters, with machines, with knobs, with people such as sound engineers. And eventually there’s coding, the computer writing of synthesis. All these elements convey different temporalities of creation, different webs of collaborations, and different social roles of what it is to compose. Think of what it takes

to be a composer in electroacoustic music vs. to write your score in a solitary apartment. I consider this very interesting in the composers I worked with (Phillipe Leroux, Florence Baschet, Stefano Gervasoni...) that they weave together these different cultures. These are people who have worked in different environments, with these different infrastructures. And, when they approached mixed music, they managed all this together. They must adjust themselves to the musical think-

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ing of sampler/sequencer, the world of score writing on paper, etc. And it's precisely that complexity that I find very specific. Getting into the minute detail of their workshop was as if I were able to do a travel within time. If you take Leroux, he learned most of his electroacoustic skills at the GRM, in the early 1980s, while his ties to spectral music came a few

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years later, when he was close to Hurel and Grisey. Plus, the Beethoven model he reveres, not to mention the world of orthodox chant, etc. These different worlds really merge into a singular practice. One can observe all of these and see if the way they are documented in the literature is still relevant when it gets mixed up with other ones. So, for me, if there's any specificity of mixed music, it's about the cognitive load of this kind of music, in which you have to coalesce divergent forces from several historical and cultural layers of music.

P.B. With composer Florence Baschet you also worked extensively on string quartets with electronics. Was it the same type of analysis?

N.D. Yes, actually I also did research on her compositional process – the solitary part of her work – but I didn't publish much about that. What has been mostly published is the work that we did collectively, to grasp the overall design of the “augmented string quartet”. This was not only Florence Baschet's creative process, but the creative process of a multi-

disciplinary team. They designed the devices to play the music, as well as the electroacoustic part of the music. So, it was a multi-folded object of creation: it was technical, scientific and artistic at the same time. It was very interesting to me because until then I'd been interested in solitary compositional processes only. I was now trying to get a broader picture of what the creative process could be. I had attempted at that earlier on a theoretical plane, by comparing with other arts and having conversations with scholars of different art domains, like music design and object design. But, in this case, everything was happening all together in the same place and time. So, it was very ambitious because we had to be able to study that. We had to form a multidisciplinary research group, just to study the multidisciplinary object. This was complicated and overwhelming, I must say!

P.B. How collective can creating music together be? And how is to be inside this process?

N.D. In this particular project, the performers were the famous Danel String Quartet, who already had a successful career in the world of classical music. They were not very familiar with contemporary music. They had played one Lachenmann quartet, one Harvey quartet and a new piece by Fedele, but that was not their main specialty. They were really specialists of the classical repertoire of quartets, from Mozart to Bartók. And that was precisely what was interesting to the composer because she wanted to extend, to augment their playing based on their original sound as a classical string quartet. That would be the gestural material that she would augment and use as a controller for the electronic processing and sound transformation. The only way to successfully get there for Florence and the Ircam people involved, was to have regular meetings with the string quartet and have them discover this world of electroacoustics and the way their smallest gestures could control the audio processing. So, it created a very intense rhythm of work over the course of more than one year. Performers, the composer, the sound engineer, and everyone else would be in the same room for one day per

month, experimenting with the different versions of the technical development of the score, and so on. So, it was very interesting for us, as a research group, because we could see the knowledge acquisition. We could see some skills that were emerging, and we could track them by documenting the verbal and visual interactions, the visual cues, the attitude of the people involved. As these small events piled up, meeting after meeting, they influenced the shape of the final project.

P.B. Did new gestures emerged out of this process?

N.D. Yes, new gestures, and also new skills.



PEDRO S. BITTENCOURT

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DANILO ROSSETTI

Composer and researcher with focus in the use of technology and interdisciplinary research in creative processes and musical analyses performances, Danilo Rossetti is author of musical works for different formations (solo or ensembles), acousmatic, live electronics and multi-modal (audiovisual installations, music and dance, networked and telematic music), and author and coauthor of several articles concerning creative processes in music and musical analyses. Assistant Professor at the Department of Arts of the Federal University of Mato Grosso (UFMT), and collaborator professor at the Graduate Music Studies Program of the Institute of Arts at the State University of Campinas (UNICAMP). Having earned his PhD in Music Composition at the State University of Campinas (UNICAMP), with a research sojourn at the Centre de Recherche en Informatique et Création Musicale (CICM), Paris 8 University, he completed a postdoctoral research at the Interdisciplinary Nucleus for Sound Communication at UNICAMP, with funding by the São Paulo Research Foundation (FAPESP). His compositions have been played in many events and festivals such as ICMC, CMMR, NYCEMF, NIME, CICTEM, NowNet Arts, BIMESP, SBCM, FILE Hipersônica, ANPPOM, and FUNARTE Contemporary Music Biennial. ORCID ID: <https://orcid.org/0000-0001-7690-8048> E-mail: d.a.a.rossetti@gmail.com