

DYNAMICS OF CONSTRAINTS

Essays on Notation, Editing and Performance

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PREFACE BY PAULO DE ASSIS

This volume is a collection of three essays that express some of the fundamental issues addressed by the research group 'the musician's relation to notation' in the framework of the Orpheus Research Centre in Music (ORCiM). Considering 'notation' as the totality of words, signs and symbols supporting the road towards a real performance of music, this research endeavour aims to embrace different styles, eras and conceptions, going far beyond any form of static (or 'demiurgical') authority, in order to assert the permanent need of critical thinking.

In *Beyond Urtext: a dynamic conception of musical editing* Paulo de Assis places the concept of 'music editing' in the realm of History, underlining its fundamental function as a meeting point between the *fixed time* of the composer and the *movable time* of the performer. Closer scrutiny of the concept of *Urtext* reveals that it has become an 'epistemological obstacle', a type of edition that creates diverse 'commodities' rather than inspiring the performer to critical thinking. Arguing that critical editions should generate critical users, this paper advocates for a new kind of editor and performer, asserting them both new authority over the works they handle.

In *Input Gesture, Output Sound: Violin and Electronics*, Mieko Kanno considers two types of relationship: between the violin and electronics, and between 'fixed parameters' and dynamic content. The material under discussion is derived from the experience of creating works for the combination of violin and electronics in collaboration with three contemporary composers. Reflecting the rapid expansion of the use of electronics in contemporary music, 'fixed parameters' in electronics are here considered comparable to notational signs. Three works are examined: James Wood's *Autumn Voices* for violin and electronics (2001), Sam Hayden's *schismatics* for Violectra and live computer processing (2007) and Juan Parra Cancino's *PLP_I* for electric violin and computer (2009). Each work creates an original compositional environment involving electronics, where the performer's movement-sound co-ordination is given a new significance.

In *PLP_I: Redefining Musicianship in Computer Music* Juan Parra Cancino gives insight in the compositional process of PLP-I for electric violin and computer (2009), a piece conceived in close collaboration with the violinist Mieko Kanno. After exposing his concept of 'timbre networks' Parra Cancino stresses the urge for a new kind of performer, the 'computer music performer'. Such a performer, working together with an instrumental performer, defines the computational 'set-

up' of the piece anew, and this at every single moment of the work. Going from straight forward frequency-based (range) distributions to multi-parametric articulation gestures and to more precisely defined musical units and durations *PLP_I* points to a performing and listening experience that doesn't aim to achieve a 'final' version—an entity that might (and probably should not) ever manifest. I would like to seize the opportunity to thank Michael Daly for his proofreading, as well as all those who made this publication possible.

Paulo de Assis

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Beyond Urtext: a dynamic conception of musical editing

PAULO DE ASSIS

1. ON NOTATION AND TIME

When considering the musician's relation to notation in the Western music tradition a fundamental distinction between two strongly connected but indeed different approaches should be made. On the one hand, there is the composer, who engenders a structure, which he encodes according to the codes of his own time/space; on the other hand, there is the performer, who decodes the message of the composer, rendering the structure that was given to him. The first approach deals mainly with *writing*, the second with *reading*. The first creates the bases for *future* performances; the second—while keeping the piece alive through different time/spaces—refers to, and relies on *past* compositions. The composer lives and works in a given historical time; the performer (and the listener) lives in a different environment, being surrounded by different rules and codes, which include specific 'performing codes' as well as changeable 'listening expectations'.

The time/space of the composition (time A) is historically *fixed*; the time/space of the performance/reception (time B) is *movable*, consequently time continuously expands between the two points. 'Time B' tries to hold 'time A' in its hands, but the unappealable wind of History pushes it forward, creating a steady growing gap between them both. 'Time A' and 'Time B' are connected by two chains. One is not notated; it's called 'Tradition', and aspires to guarantee a correct transmission of performance codes through dozens of generations, pretending to ignore not only that different times have different codes, but also that any form of oral transmission unavoidably infects the original information with codes and perspectives inherent to its current time. The other chain is based on the composer's notation(s). This chain tries to make the original signs and symbols understandable for the notational system of the performer, and it is called 'edition'. It constitutes the element in which both times converge (A and B), making that the most decisive communication between composer and performer happens via the score. 'Time A' is fixed and 'Time B' is movable, so that the score—in order to adequately fulfil the demands of 'Time B'—must also be movable (i.e. changeable), thus

surpassing the once dominating illusion of a definitive, perennial, exempt from doubts and unquestionable musical text.

The present essay aims to bring into the foreground the complex issue of music editing, emphasizing and deconstructing its historical rooted essence, and placing it in the realm of History. Before considering such immaterial and/or subjective elements such as 'tradition', 'analysis', 'intuition', 'mimesis' or even 'performance', a thorough discussion on the 'edition' of music is of primary importance for a deeper understanding of our musical heritage. Arguing that no edition—existing, projected or future—can pretend to be definitive, this article points toward a dynamic conception of musical editing. A conception very much inspired by the writings of James Grier (1996) and Peter Gülke (2006), and where the editor and the performer are invested with an unavoidable authority over musical texts of the past, an authority they share with the composer and that they should assume without complexes. 'Editing consists of series of choices, educated, critically informed choices; in short, the act of interpretation. Editing, moreover, consists of the interaction between the authority of the composer and the authority of the editor.' (Grier 1996, p. 2). Each musical sign carries a significance dependent on context and convention. When the historical moment of writing has passed, the specific context and ensemble of conventions at work at that time will change; new observers (editors, performers, and listeners) will use their own conventions to interpreting signs and symbols. Moreover, as Adorno suggests, the score needs 'to be read as memorial signs for past sounds, not as the fixation of enduring meaning' (Adorno 2001, p. 13, translation Max Paddison).

Beyond the concept of *Urtext*—meanwhile transformed in a commercial hallmark or label—another model is increasingly imposing itself: that of transitory historical-critical editions, where the editor and, moreover, the performer himself has to make choices and take decisions. Such editions are simultaneously witness and makers of a new attitude towards music from the past, an attitude that creatively considers the historical relationship between composer and performer, and where diligent performers and philologists converge and work together. In this perspective, the innumerable editions of past music—originary from different times and spaces—might now be seen as a fascinating 'pile of debris', historical documents not any more in use, obviously dated, but containing precious information on the entangled history of a given piece. A creative wandering through different sources, sketches, autographs, first prints, but also through diverse pre-existing editions might be a very enriching path in order to achieve

new editions and new, challenging interpretations of 'old' works. At this point, the surpassed but still active concept of *Urtext* should be briefly addressed.

2. THE URTEXT ERA

The first musical editions carrying the label *Urtext* date back to 1895, when the Königliche Akademie der Künste Berlin published its *Urtext-Ausgaben Classischer Musikwerke*. Those editions—inspired by nineteenth century editions of literary, philosophical or biblical texts—claimed to present a musical text free of editorial intervention, a 'clean' text, with no performance instructions added by editors (as opposed to former musical editions, particularly of the second half of that century). Their original aim was praiseworthy, since they intended to present the composer's notation in 'crude' state, letting it speak for itself, and allowing performers, especially students, to build up their own interpretation, free of pre-determined aesthetical directions. However, two basic objections soon troubled this idyllic vision, indicating that *Urtext*-editions could not achieve what they purported to do. Gustav Henle himself noted in 1954—on his statement on the term 'Urtext' (Henle 1954, pp. 377-380)—that sometimes an autograph and a first edition differ considerably in which case the editor must decide what to print (*ibid.*, p. 379); such a text ceases to be an *Urtext* and becomes the editor's interpretation of the available sources. On the other hand, Georg Feder stated in 1959 (Feder and Unverricht 1959, pp. 432-454) that *Urtext* editions must be critical editions, thus underlining the necessity of source studies and broader research, opening the door to future developments. But when an *Urtext*-edition is superseded by subsequent scholarship it is no longer an *Urtext*. All these observations, among many others, underline the conclusion that *Urtext*-editions are not what they pretend to be. They do not present "the composer's written text, but the editor's reconstruction of it." (Grier 1996, p. 11). Other difficult areas for the concept of *Urtext* are music previous to late eighteenth century (where there is no evidence that a composer was concerned that the autograph should be followed exactly or only in one specific way), and the theory of the 'Fassung letzter Hand' (which involves complex questions about when a composer considers a work to be complete). Moreover, few sources—even from the nineteenth century—can be transcribed into a modern notational system without editorial intervention. Therefore, the use of the word 'Urtext' in the context of musical edition is highly problematical, and its wide

spread usage during the twentieth century should be primarily seen as a time bounded editorial response to the abuses of several 'interpretative editions' from late nineteenth century.

3. URTEXT-EDITIONS: AN EPISTEMOLOGICAL OBSTACLE

In spite of the fact that *Urtext*-editions have commonly been criticized by scholars for decades, they kept an aura of authenticity and legitimacy among music pedagogues and performers—an aspect that goes far beyond a mere phenomenon of marketing. Not always aware of the aesthetic or philosophical implications of their choices and decisions, many performers undergo the mimetic illusion of an 'intuitive' understanding of the score—ignoring that intuition is historically (and educationally) moulded. Considering *Urtext*-editions as a valid counterweight to the interpretative editions of late romanticism, music pedagogues and performing artists persist in ignoring the possibilities more recently offered by critical editions. Therefore, *Urtext*-editions became *de facto*—and using the concept of Gaston Bachelard—an 'epistemological obstacle': a thoughtless, unconscious, or simply comfortable structure, wherein a community recognised important elements of identity, without noticing that such a structure no longer applies to the environment around them. According to Bachelard the history of science consisted in the formation and establishment of such 'epistemological obstacles', and then the subsequent tearing down of the obstacles. This latter stage is an 'epistemological rupture'—where an unconscious obstacle to scientific thought is thoroughly ruptured or broken away from. If among scholars, such a rupture with the idea of 'Urtext' is consolidated (cf. Grier 1996, Fellerer 1980, Feder 1987, a.o.), there are few practitioners doing the same (important exceptions are Peter Gülke, Robert Levin, Roger Norrington or Andràs Schiff, a.o.). Apparently, the majority of musicians accept, uncritically, what they believe to be a 'scientifically' thoroughly worked edition. *Urtext*-editions supposedly responded both to a utilitarian conception (for performers, who wanted an easily readable text) as well as to scientific demands (where musicologists imposed high standards on critical apparatus and comments). These critical tools were useful and trustful, ensuring performers a reliable text, where 'everything' was notated. The double task of, on the one hand, making appear reasonable the unavoidable provisional character of any given edition (apparently contradicting the

scientific tenet of all the critical project) and, on the other hand, to stimulate performers to think and take decisions on their own is a difficult endeavour—a true fight against ‘opinion’ and ‘common places’. *Urtext*-editions do in many different ways create a ‘commodity’ for the user: if the written musical text is ‘scientifically’ correct, the performer does not need to make deeper considerations on it; if the fingerings are, at least to a certain extent, original from the composer (or suggested by an experienced editor), the reader trusts them, without exploring diverse fingerings; if there are double readings, but the editor decided on which to print in the main text, why read the critical notes and enter a world of doubt? To put it into a nutshell: the survival of *Urtext*-editions might be understood as being related to a commodity, to an aesthetical and technical security of traditional performers, who don’t want to revisit their aesthetical categories, nor reconsider their ‘universal’ instrumental technique. The interest on new forms of editions, and its acceptance by the performer are, therefore, related to a curiosity and a mental disposition to face newness that not all practitioners have. In this sense, the ‘epistemological rupture’ from *Urtext*-editions to *Post-Urtext*-editions implies a political tenet, touching the sphere of being open to the unknown. Finally, the process of getting rid of the *Urtext* concept implies critical thinking, something that is not necessarily considered a quality by everybody.

4. CRITICAL EDITING OF MUSIC AND DIFFERENT TYPES OF EDITIONS

The present editorial landscape offers both the scholar as well as the performer a wide range of editions, from facsimile prints to complex and exhaustive critical editions. In modern practice, some basic assumptions have become fundamental for any serious edition. The first of such conceptions states that editing is a critical activity. Therefore, editions constitute ‘interpretative’ endeavours, and cannot claim to be definitive. According to this, no edition—existing, projected or future—can pretend to be definitive. Different editors, working on the same basic materials will unavoidably produce different editions; the same editor, working at different times will also achieve different texts. As Philipp Brett observed: ‘(...) editing is principally a critical act; moreover, it is one (like musical analysis) that begins from critically based assumptions and perceptions that usually go unacknowledged. If these assumptions were to be openly stated, if we began to recognize and allow for legitimate differences in editorial orientation, and if we ceased

to use the word 'definitive' in relation to any edited text, then much of the polemics surrounding editing might subside.' (Brett 1988, p. 111).

Moreover, different repertoires require different editorial methods, leading to the evidence that no universal method is applicable to every piece of music. Given the fact that an edition always reproduces the historical relationship between composer, editor and performer, the editor should immerse himself in the stylistic, technical, and performing features of the composer's time/space. Such an 'immersion' could (and should, I believe) include real performance as an interpret.

Currently, four basic types of editions are to be found:

- The photographic facsimile;
- The printed edition that replicates the original notation;
- The interpretative edition;
- The critical edition (including the so-called 'Commented New Urtext Edition').

The photographic facsimile is, in rigour, not an edition. It depicts one of the major sources of a given piece, allowing for immediate visual information and, therefore, enhancing a strong link to the composer's gesture of writing. Many nuances of the manual graphical representation that an edited text could not represent become directly visible. In addition, facsimiles are generally easier to use than the manuscripts and autographs of the composer. On the other hand, however, facsimiles are very often unsuitable for general reading, since the handwriting might be legible only to a few specialists, as it is the case with Beethoven, just to name an example.

Printed replicas of the original notation are a form of facsimile, using printed fonts rather than photographs. Keeping in mind the case of Beethoven, such editions make the composer's sketches and autographs into legible sheets of music. Moreover, the editor has the opportunity to incorporate some of his critical findings, including revisions and corrections of the text, making such editions a first form of 'critical edition'. Therefore, editors include some kind of critical apparatus, explaining and giving insight into some of the decisions made.

The interpretative edition records aspects of the performing style of important performers. They transmit a kind of oral tradition and have an inevitable self-referential (and self-legitimizing) character—the editor (normally a famous performer) prints his own interpretative options and establishes them as a canon. Such interpretative editions—particularly those of late nineteenth centu-

ry—motivated, in reaction, *Urtext* editions. During the twentieth century (especially in its second half) interpretative editions were reduced to a small number, but recent developments in the *Urtext* concept are giving them a new breath, even if limited to fingerings, bowings and explicitly assumed personal opinions. This type of editions will probably always exist, since they record in written form significant aspects of the performing style of a given era. By doing so, they produce a complex artifact where inherited ‘tradition’ and critical ‘edition’ somehow melt together: ‘Great performers study with great teachers, who pass on insights into the meaning of the work from previous generations’ (Grier 1996, p. 151). Given the fact that increasingly more performers have a solid academic training (enabling them to become artist-researchers, who understand how to critically tackle with different kinds of sources), such interpretative editions could very well regain a certain importance—**particularly among young students and performative colleagues.**

The critical edition is defined by its basic intention of transmitting a text that more closely represents the historical evidence of the sources. This evidence is, however, open to interpretation and discussion, leading to different editions based upon the same sources. This aspect should not be understood as a problem, but rather as an enriching element in the fabric of music editing—an activity that finally remains in the field of human sciences. Such editions should look for clarity of presentation, allowing immediate comprehension and coordination of the many disparate elements that are being communicated through the score. If too much information is given on the face printed text the performer will be confused and, eventually, limited in his mimetic response to the score. Therefore a balance between fidelity to the substance of the music and ease of comprehension is of the utmost relevance. Furthermore, a detailed critical apparatus and individual readings or commentaries are highly desirable, for only they allow the performer to make informed choices. Finally, such editions should open a window to the faculty of judgement of the performer, not exempting users from thinking and taking decisions for themselves. An aspect that, once again, points towards performers that ought to be adventurous and open to novelty: ‘Critical editions should generate critical users.’(Grier 1996, p. 181). That not all practitioners have or intend to have such qualities is another example of the political dimension of music editing and of the use of diverse editions in musical practice.

5. MUSIC EDITING AND PERFORMANCE PRACTICE: A DYNAMIC CONCEPTION

The ideas on music editing exposed so far seem to unveil the process of liberating the score from a static-fixed state into a state of permanent changeability. This conceptual shifting leads to a new understanding of the roles of both the editor as well as the performer. If, according to Jerome McGann's theory of the work of art as a social phenomenon (cf. McGann 1983), every work is a social and historical artifact, this would also include every edition of music. If a final authorial intention (the composer as 'demiurge') is not to be asserted anymore than the process of editing changes from a psychological activity (where the editor ought to establish the author's intentions) into a historical endeavour. At this point the authority of the composer makes the acquaintance with two other authorities, even if of diverse hierarchical value: the authority of the editor and that of the performer.

The authority of the editor has traditionally been underestimated, neglected, or even considered as illegitimate. 'Music editors are often reluctant to assume authority over texts they print, wishing to give the appearance that they present only the text of the composer. Thus they rely, or appear to rely, on the sources themselves, instead of acknowledging their own critical initiative. Nowhere is this tendency more transparent than in the Urtext industry, whose products purport to reproduce the "original" text.' (Grier 1996, p. 4). Different from the composer's text, the final edited text inevitably reflects the editor's conception of the piece as it existed in its ecological (historical and social) environment.

The authority of the performer involves more complex issues, particularly related to the concept of 'style', a category which directly influences the effect (and the judgment) of a given performance. Style, however, is not completely extractable from the score, depending much more on the diversity of performing options each work generates. 'It is essential to incorporate the intermediary stage of performance into the concept of style because of the semiotic nature of musical notation.' (Grier 1996, p. 29). But the authority of the performer resides not only here; by placing the concept of music editing in the realm of History, the role of the performer becomes that of a meta-reader of the musical text, facing and studying continuously changing visions of one single work. An image taken from Walter Benjamin's *Thesis on the Philosophy of History* might help us clarifying this point.

In his ninth thesis on the Philosophy of History, Walter Benjamin expresses his concept of history with the help of imagery. An angel—it is the *Angelus Novus* by Paul Klee—looks staring to the past, while a strong wind pushes him irremediably towards the future, which he, however, cannot see. He gazes into the past, terrified: »Where *we* see the appearance of a chain of events, *he* sees one single catastrophe, which unceasingly piles rubble on top of rubble and hurls it before his feet«. He longs for piecing together what has been smashed, but the storm blowing from Paradise is so strong that the angel can no longer close his wings.

This *Angelus Novus* is the performer. It is the meta-reader of an infinity of musical texts. He is looking into the 'past' where uncountable pieces of music smile to him, hoping to be saved from oblivion. In addition to the documents—written down by the composers—he faces another 'pile of debris'—the innumerable musical editions originary from different times and spaces. In the impossibility of looking at (predicting) the future or of going back to (incarnating) the past, he has no better choice than to creatively wander through all those ruins of the past, studying autographs and first prints, consulting other sources, comparing editions, playing period instruments and, finally, taking decisions. Such decisions will in one way or another inevitably depict the historical relationship between the time of the performer and the time of the composer, *as it is understood in the time of the performer*. That some of these decisions may contribute to new editions of a given piece is the logical and ineluctable consequence of this model of thought. 'This succession of events demonstrates that editing music, far from being an exact science, presents, in fact, a moving target. As our knowledge of repertoires and their sources deepens, and our critical appraisal of that knowledge continues, new editions are needed to keep pace with, and reflect, the latest developments.' (Grier 1996, p. 9) Such a dynamic conception—emphasizing the process through which a musical work comes to being, instead of rigidly insisting on the reification of a particular state of that work (cf. Grier 1996, p. 13)—requests creative performers, whose intelligence and sensibility could contribute to a permanent renewal of the editorial landscape. Editions represent, therefore, nodal points on the continually changing path of musical scholarship *and* performance. 'Performers and editors constantly make decisions in response to the same stimuli (notation) on the basis of the same criteria (knowledge of the piece and aesthetic taste). Only the results differ: performers produce sound while editors generate the written or printed page.' (Grier 1996, p. 6). The historically observed variations and differences in the written and performing traditions of a given piece make

visible the limits of indeterminacy, without fixing them. Such limits will never be fixed because new performers will continue to challenge and redefine them. In this sense, the act of communicating a piece to an audience becomes a fully relevant part of the creative process, entering a dialogue where the context impinges on the final form and meaning of a work. Through all uncertainty and un-verbalized options, the performer conveys the invisible in the form of the invisible, never betraying it with signs and symbols. That is the paradox function of the editor—to rend visible what, in substance, is unutterable. If the editor is the *daimon* that imposes the tie of the ‘thing’ to the ‘thing’, the performer (the Angel) is the hermeneut of the opposite movement: the one that leads to the outside of the sign and symbol, the one that does not go from the idea to the thing, from the sign to the represented objects, but directly from the thing to the invisible. While referring to a written artifact the performer contests its apparent fixity by proposing other systems, other syntaxes, other rules. The contribution of the performer is that of an ‘absent guest’, someone in permanent movement and quest through the different times of our musical heritage, wandering and travelling through the diverse nodal points of the editorial universe. By doing so, he creates a *heterotopy*, a suspended region where the intangible essence of music making finds its deepest realization. It is this author's aspiration that present and future editions of musical works contribute to the growth of such suspended and infinite universes.

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Input Gesture, Output Sound: Violin and Electronics

MIEKO KANNO

INTRODUCTION

The craft of playing the violin entails that you know exactly what you are producing, be it a tone-colour, volume or musical gesture. Being in control of the instrument allows you to respond expressively to both the music you are playing and the immediacy of the musical moment. In order to be in command of the sound being produced, one must first learn to regulate one's movement. Listening plays a critical part in judging whether one is producing the desired sound, and to adjust your one's movements accordingly. The acquisition of a sufficient number of movement-sound coordinations, both as knowledge and skills, is the foundation of any instrument playing.

In this article I reflect on the changing nature of the movement-sound relationship on the violin as I experienced it over the last ten years through the deployment of electronics, including the electric violin. Integral to this topic is my experience as a player coordinating movement and sound, but I will also consider the presence of external mediating agents, namely notation and electronic sound-processing.

For the performer, notation plays an instructive function in creating the movement-sound relationship. 'Good' notation indicates clearly either the movement or sound that should take place. In other words, it specifies the input or output in the production of sounds. Although electronics are used primarily as a musical instrument in the context of performance, they also function as a transformer of the input sound. Here, I am interested in the case where the electronics' sound and that of the live instrument are the same or similar in origin. How does the electronically processed sound interact with the live sound in order to articulate an overall sonic form? It may be suggested that computer's sound-processing has the power to transform the established scheme of the movement-sound relationship for the playing of a musical instrument, much as extended techniques have reinvented the expressive vocabulary of the movement-sound relationship. I shall provide observations to support my claim that changes in the movement-

sound relationship may be caused by changes in the operational modes of these external agents.

The three works under discussion are all commissions from different composers. *Autumn Voices* for violin and electronics by James Wood was first performed at the 2001 Huddersfield International Contemporary Music Festival; *schismatics* for Violectra and live computer processing by Sam Hayden was first performed in Groningen in 2007; and *PLP_I* for electric violin and live computer performer by Juan Parra Cancino is currently work-in-progress. The three works have some things in common: a) the use of the violin or electric violin, b) the use of computer program Max/MSP c) the presence of notation. This article presents the experiences I have had in collaborative music-making with the composers, and is therefore not necessarily comprehensive. Rather, it aims to report on each composition with reference to the following issues: 1) the role of the violin; 2) the role of electronics; 3) their relationship; 4) how the relationship is articulated; 5) the role of notation; 6) the role of the electronic sound processing; 7) what the combination of the live performer and electronics achieves, and 8) the effect of the synthesis between the violin and electronics on the movement-sound co-ordination on the violin.

WOOD'S AUTUMN VOICES FOR VIOLIN AND ELECTRONICS (2001)

Autumn Voices is composed for the acoustic violin (slightly amplified using a pick-up microphone attached to the violin) and electronics. The work requires an 'operator', who manually triggers a series of sounds in the computer using a Max/MSP patch. The violinist and eight speakers are positioned to surround the audience, with the violinist in the centre-front. A light-box is used for a click-track. All the electronic sound materials are pre-composed using transformed sampled violin sounds. The duration of the work is approximately 15 minutes.

The role of the live violin sound in the work is perhaps best described in the composer's performance notes:

The violin should be amplified, and carefully balanced so it is completely integrated with the electronic sounds. Care should be taken to find a satisfactory overall level—the violin amplification should not be consciously excessive, and so the general

level should not be too loud, whilst still providing the audience with a certain presence and close involvement with the spatialised sounds and the violin (Wood, 2001).

Although the description is phrased in such a way that it may vary from context to context, the composition's material and structure emphasises the role of the live violin as protagonist. The mix between the live violin sound and electronic sounds is of paramount importance to a successful realisation of this work, because the electronic sounds provide a perspective on those of the live violin, and the appropriate synthesis of the two gives meaningful expression to each. The majority of the materials played on the live violin are birdsongs. They conjure up a woodland soundscape where the live violin sound mixes with sampled violin sounds that are composed and transformed to resemble ocarina-derived voices, birdsong melodies and wood-derived sounds. The work begins with the solo violin, electronic sounds enter gradually in response to it, the two types of sounds overlap increasingly and the work ends with the tranquillity of the opening but with the electronic sounds accompanied by the live violin sound. The role of the electronic sounds is therefore to broaden and complement the live violin by adding similar and related materials, creating an environment where the live and electronic sounds mingle seamlessly, even exchanging roles towards the end. The critical value of mutual relevance between the live violin and electronics in the expressive scheme of the piece is demonstrated by the fact that the composition of the electronic materials continued alongside my practising the live violin materials. The composer would listen to my playing of the latter, then chose or modify the former. Sometimes the electronic materials were realised before the live violin materials. The composing took place section by section, and when it was finished, so did my practising. It was a simultaneous process of collaborative music-making.

The electronic sounds are spatialised to create an impression of a space where the sound sources are changing or moving. The only sound that does not move is the live violin's, which reinforces the violinist's position as the protagonist in the piece's narrative. Despite the effort to integrate the live and electronic sounds, and despite the electronically amplified live violin sound, a level of distinctness between the two is maintained throughout. In fact, the subtle distinctness of the live violin sound becomes a powerful medium of the work's expressive structure: the perceived change in the relationship between the two types of sound is one of its most expressive features.

The score presents the violin part and three groups of electronic materials ('birdsong-derived melodies', 'ocarina-derived voices', and 'wood-derived sounds'), together with trigger signs for the operator. The electronic materials are sometimes written out in full, sometimes given as rhythmically unspecified series of pitches. Thus the score represents the outcome of the mix, as in an orchestral score. The Max/MSP patch opens soundfiles and distributes them in a spatially configured manner, and does not involve processing of the live violin sound. The importance of the operator's musical sensitivity is gauged by the composer's insistence that s/he be a musician, and not merely a computer-operator, who 'responds to and leads the soloist in a similar way to an accompanist or as in chamber music' (Wood, 2007). The performance is therefore metrically restrictive to some extent, somewhat similar to following a conductor in a concerto performance.

I have mentioned that the violinist acts like a protagonist in the narrative of the piece. *Autumn Voices* plays with perspectives of sound through the combination of the live performer and electronics. Although the live violin sound is not transformed, it is as though its electronic shadows take on a life of their own; and, in turn, the perception of the live violin sound is redefined throughout the piece. The violinist is aware that her own movement-sound co-ordination does not change, but the context in which this co-ordination is perceived changes. Although the violinist does not move, she travels far in the expressive scheme of the work.

HAYDEN'S *SCHISMATICS* FOR VIOLECTRA AND LIVE COMPUTER PROCESSING (2007)

Sam Hayden's *schismatics* was written for Violectra and live computer processing (duration approximately 17 minutes). The Violectra is built by Dave Johnson, an American luthier based in Birmingham. The instrument has a piezoelectric pickup with no MIDI pickups. A Max/MSP patch performs the computer processing of the live input from the Violectra, the only source from which all the computer's sounds are generated. The performance normally requires the composer on the computer to oversee the electronics and overall sound, though it may be and has been done without him. Both the Violectra's live sound and computer's processed sounds are distributed in stereo. The work is currently awaiting revision, and the piece I discuss in this article is its 2007 version.

The live electric violin plays its own notated material as direct output and, at the same time, provides material for the computer processing. The electronics are reactive in the sense that they are inactive in the absence of input from the violin. The relationship of the two is complex: there is no clear boundary between the live Violectra sound and the computer-processed sounds because of their identical source. Unless the performance is live, there is no way of distinguishing between them. The resulting ambiguity is an interesting issue for the music-making, and I shall discuss it in detail shortly.

The composer summarises the main compositional material for the work as follows:

The piece consists of seven sections, each of which focuses on a particular rhythmical subdivision and articulation class (arco, pizzicato, col legno, flautando, jeté, scrape, tremolo). The middle (4th) movement is the quickest in tempo and shortest in duration, the other movements being progressively longer| slower, in a symmetrical structure, either side of it. ... there is also a focus on very quiet sounds that become audible through amplification and compression, such as hammer-on in the left hand. The music is transformed live by a Max|MSP patch using processes such as live sampling and playback, granulation, delay, spectral filtering, ring modulation and panning. Each section involves a different and particular combination of these modules (Hayden, 2007).

One characteristic of the Violectra (and many others too) is that the amplitude range is small because the instrument, unlike the acoustic violin, does not have an amplifying box attached to it. Without the assistance of any amplifying electronics, the electric violin sounds like a violin with a very heavy practice mute. Distinctions between loud and soft must be created by means of a range of timbral characters, rather than by distinct degrees of loudness. In *schismatics* this is reflected by the work's particular focus on quiet sounds. However, these do not necessarily remain so when they are processed. *schismatics* often features sounds produced by the bouncing bow because the Violectra captures the pitched sounds and harmonics better than the acoustic violin does (the latter produces more 'noise'). The Violectra responds more to the strings' vibration than to that of

the wood; consequently, the bow-bounces produce ethereal and light musical gestures, not only through note-separations but also through the instrument's particular mode of resonance. This characteristic of the Violectra is taken up as the main expressive device in Part Four (the central movement): the lightness of the input sound imparts a disembodied character to the overall mix, a lightness itself inflected by the computer-processing.

The challenge for the computer, and for the composer, is to respond *musically* to the disposition of the input sound. The challenge for the violinist is to counter-respond to the disposition of the processing algorithms. The computer reacts to a set level of attack of the electric violin input and this triggers the computer to record fragments of my playing. The computer then processes these through a gamut of delays and effects that complement and transform the characteristic sound and behaviour of the electric violin. Due to the responsiveness of the signal processing to very soft and minute actions on my part, the electric violin is allowed to lower the normal level of articulation so that the relationship between the two is more tactile than acoustic. Part Four is removed from the normal orientation of violin playing in this sense. The softer gestures are so quiet as to be almost inaudible. But clear audibility is not necessarily a requirement in this context, particularly when the actions on the instrument are picked up by the computer for processing and can bring on sounds on the computer's part. The violinist's focus may shift from producing her own sounds to triggering an event on the computer. This shift can be described as a critical change in the function of the violinist, whose role is to 'act' upon the strings rather than 'play' on them. Part Four introduces this change for the first time within the narrative of *schismatics*.

This shift—from 'playing' to 'action' on the instrument—may be considered an effect of the concept that the substance of the work is knowable by the work's constituent ideas and actions, rather than its sounds. Leaving the computer's part aside, the electric violin part alone shows that the notation can be read as a tablature—a series of actions to be executed rather than a series of audible gestures—and the resultant 'music' of the electric violin is part and parcel of real-time processing of the input sound that is not necessarily acoustically present. The content of the music *schismatics* has become more volatile at this point, in flux; not simply because the piece makes use of randomisation process, but because composition and performance strategies, rather than their output, having become central to the work.

Here the functions of notation and computer program become central in con-

structuring strategies for the work. Neither notation nor computer program makes sounds by itself, but they both mediate sounds. Writing codes and creating modules on the computer can have the same effect as composing music using notation. Equally, notation can be understood as one of a vast array of modules within the patch, which transforms input actions into output sounds, the function of which is more exploratory than deterministic. The notation is no longer an object that merely describes the outcome. It describes the sounds you *may* hear, but it also describes the character of the impetus that generates processed sounds on the computer. Thus, conceptually, the notation configures the generative structure for the work rather than the work itself.

Related to this issue is the notion of interpretation. Looking for interpretations assumes that the object being interpreted has some fixed properties in its outcome. On the contrary, I suggest *schismatics* is a work that maintains the conceptual distance between the piece and performance. This is despite the fact that the piece could be viewed as a fixed object as it is and there is much to commend in it as a piece to be interpreted. It could be argued that, without this fluidity of content, without its constant microscopic changes, *schismatics* would be a less interesting piece.

The combination of the live electric violin and live computer processing thus opens up a dimension that blurs the boundary of activities known as movement-sound co-ordination on the violin. Nevertheless, what interests the composer, and what is at the core of *schismatics*, is the irreconcilable qualities in the synthesis between the two:

The title historically refers to breakaway, possibly heretical, religious sects that "split off" from the authority of a larger institutionalised religious group in order to define themselves as the new truth. This was an interesting metaphor for the piece, in particular the relationship between the played and digitally processed material. All the electronic sounds have their origins in the live played sounds yet become split off from them, perhaps with a certain autonomy. My intention was that the played and processed materials are not seamlessly integrated but the schism between them remains (Hayden, 2007).

the piece. It often requires manipulation of the given elements in ways that are not presented to her in an obvious manner. It may be a simple re-organisation of priorities. I have shown with Part Four of *schismatics* how this section departs from the usual utilisation of the movement-sound co-ordination. Part Four is exactly midway through *schismatics*, and a gradual shift in the nature of the relationship between the electric violin and electronics becomes pronounced in Parts Six and Seven. Part Seven is not only the most fragmentary of all the sections, but also has a markedly different effect from the fragmentation seen in the earlier sections including Part Four: where pauses in the earlier sections created a hiatus, giving room to focus on a new entry or adding punctuation for repetitive or contrasting material, those in Part Seven seem not to function in the same way. There are pauses with little influence on the subsequent phrases, creating an impression of wandering: the music in Part Seven does not go anywhere. Meanwhile, this section is also the longest by a considerable margin. The violinist wishes the computer to do something, to take an initiative in order to sustain the music, but by definition the computer cannot. As a result, there is until the very end a sense of stasis and tension, as everyone is waiting for someone else to make a decisive move. For this reason, Part Seven can be seen as structurally fragile. A counter-strategy is to make the most of the movement's meandering nature.

As in Part Four, Section Seven is predominantly quiet, and there are many gestures whose purpose appears to be to trigger something other than sound. The computer part is fairly quiet—most actions by the violinist do not trigger a response. Nevertheless, there is an expectancy of an event about to take place. The music performed and heard up to this point has established an expectation in the performer and listener, whereby the input-output functions become familiar, as when reading movements of the undercurrent in sailing. The surprise is that while some inputs do not lead to the expected output, some of the computer processing produces an unexpected, intriguing series of sounds. It encourages both performer and listener to probe connections between the said, unsaid, heard and unheard, in all their combinations. The music becomes not about what is said and heard, but more about intentions and non-intentions for which actions and randomisation take the central role in characterising the work. In my view, what makes the composition and performance of Part Seven (and *schismatics* as a whole) successful is the way in which the performer's and listener's attention is directed to the intricacies and nuances of as-yet-unformed music.

**PARRA CANCINO'S *PLP_I* FOR ELECTRIC VIOLIN AND COMPUTER
(2009)**

This work uses graphic notation and allows the performers to decide, to a large extent, how it is read and which sound materials are to be used (see page XXX). The work is for two performers, myself on the electric violin and the composer on his own electronic controller-instrument. It comes with a Max/MSP patch for each of the two performers. The work has an approximate duration of 6-12 minutes, depending on the choices made in the material/process domains by the performers.

The piece requires a considerable degree of creativity/intervention in realising a performance; or rather, *PLP_I* defines a group of diverse possibilities as its realisations. The process of realising the piece takes place on three levels: 1) constructing 'instruments', 2) constructing a 'score', and 3) constructing a performance.

The composer's 'instrument' is a custom-made, electronic sound-controller. It uses hand-gestures to manipulate pre-configured parameters of the chosen sound materials. Sounds (synthetic noise), processes (mainly granular synthesis), and controllable parameters are determined according to the potential for musical articulation of notated materials. It follows from this that the main part of the 'instrument construction' is in the composition of a patch: the actual, physical instrument exists only to allow gestural control; the real instrument is the algorithmic design of the computer program that processes the sounds. The same can be said of the electric violin, which uses its own input as the sound material for processing. While the input sound also comes through unprocessed, it is coupled throughout with its live-processed counterpart (through four distinct combinations of different values in phase vocoder and bin-shift objects). Thus, the electric violin functions both as a sound *generating* instrument and as a sound *controlling* instrument. The patch's parameters must be fine-tuned to respond optimally to the input sound, while the input sound must be adjusted to suit the characteristics of the processing objects. The movement-sound co-ordination must be created by each performer. The work is a duo for the electronic-violinist-controller and electronic-instrument-controller, each having live processing tools as their own, extended instruments.

The role of paper-notation is perhaps reminiscent of graphic scores from 1960s. A grid indicates proportional divisions of the overall duration, and the notation is

to be read from left to right. It comprises five distinct graphic object-forms (solid black bars, white diamond shapes, etc.) that appear in different sizes. Co-ordination between the different object-forms is sometimes indicated by dotted lines. The performers assign a sound material to each object-form; for each chosen sound material, parameters are determined that represent a particular size, shape and position. These must be sufficiently distinct that either performer may recognize which graphic material the other is playing. The articulation of the graphic object-forms in sound, regardless of whether they relate to the character of the input gesture or that of the output sound, tests the responsiveness and appropriateness of the constructed instruments. The instruments and source-sounds may be subject to revision at this stage in order to improve the musical articulation of the graphic object-forms; alternatively, a new way of reading the graphic notation may have to be devised in order to take full advantage of the range of sounds, processes and controls available on the instruments. Viewed another way, the graphic notation provides a conceptual grid against which a score—a notation that relates to sound in a more direct manner—may be created. But the score's existence is dependant on performance: it can only be articulated through the presence of the latter.

The performance emerges as the outcome of constructing a score and instruments. The presence of performance considerations throughout the construction process ensures that the performance is not only the outcome of the music-making, but also the reason for which the score and instruments are created. However, the expressive aim of the work is not about prioritising performance above the rest: rather, the work deliberately undermines the boundaries between the instrument-maker, composer and performer and, in doing so, it seeks a new paradigm. Parra Cancino's concern is to find a framework in which these separate disciplines become a single dynamic entity.

For composers to think of the electronic media as something rich and complex in terms of timbre ... is almost a given. An equal truth is that composers think of a traditional instrument and its performer as an indivisible entity. But for the same composers to think of electronic media as material to be enriched by the nuances and personality, pacing and intention, in short, the interpretive musicianship of a human performer, it is necessary to conceive a strategy from both ends. For example,

to set organizational rules that determine the intention and the extent of the interpretive influence on the material, and to discover efficient and artistically meaningful ways of delivering this control in a performance situation. This does not mean that composers should think of the electronic media as 'traditional' instruments. In the same way, an electronic performer should not aim to emulate gestures and performance conventions that are a product of hundreds of years of tradition. By revising some of the constraints of traditional instruments and performance, it is possible to aim for a successful interaction between composers and interpreters of this media. (Parra, 2009b)

Furthermore, Parra Cancino considers that collaboration between composer and performer, between composition and performance in the act of music-making is a key to the development of an expressive range for electronics:

By focussing on the importance of the generation of timbre and its manipulation over time as the key aspects in electroacoustic music, and by using these as the driving force to generate not only musical instruments but also its inherent performance techniques, I aim to create an original outcome in terms of flexibility and coherence that would contribute to the development of electroacoustic music by recovering, for both composers and audience, the fragility and surprise that presenting music on stage is about. (Parra, 2009b)

LOOKING AHEAD

These three examples are juxtaposed to show distinct ways in which similar 'ingredients' are directed towards very different purposes. Each composer utilizes fixed aspects of compositional thinking in order to maximize dynamic qualities in the performance of his music. One such fixed aspect is notation; another, very closely related, is computer algorithm; the traditional movement-sound coordination is fixed too. The construction of fixed quantities and qualities is crucial to Western classical music because these act as mediating agents in the produc-

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PLP_I: Redefining Musicianship in Computer Music

JUAN PARRA CANCINO

The history of electroacoustic music has evolved together with the technology that produces it. Sadly, the emphasis when discussing it is usually centered on the tools and technology that make it possible, leaving out of the scope of analysis and research some of its more important components: the humans involved in the production and performance of this music, and the specific issues that arise with them. When we talk about performance practice in electroacoustic music, we tend to focus our attention on the interpreter of traditional instruments and his/her interaction with an electronic 'system'. Most of the "historical" approaches to human/electronic interaction in contemporary music reinforce this perception. Pieces for instruments and tape such as Stockhausen's *Kontakte*, for piano, percussion and 'electronic sounds' (1959-60) or Luigi Nono's *La fabbrica illuminata*, for soprano and tape (1964) have been created since the beginning of the electroacoustic composition era and even today remain as one of the most commonly used compositional formats. Late examples of this format are the composers Ton Bruynèl, Horacio Vaggione and Ake Parmerud. Whereas the new possibilities of digital sound synthesis and transformation are being extensively explored, the 'reliability' of fixed media has never been abandoned. The development of technology and the possibility of real time processing, analysis and synthesis of sounds have opened the door to the possible emergence of a new kind of music production where both the traditional *and* the electronic sound elements of a piece can be controlled, on stage, by a human performer.

Early works exploring the use of live electronics to enhance the timbre qualities of an instrumental setup are: Stockhausen's *Mikrofonie* for large tam-tam, two sound-exciter, two microphonists, and two filters in addition to control operators (1964); and Luigi Nono's body of works in collaboration with the Experimental Studio of Freiburg—*Das atmende Klarsein* for bass fl. Choir and Live Electronics (1981) and *Prometeo* (1984-85), among others. These approaches, while bringing new sonorities in real time to the musical world (ring modulation and filtering or the extensions in time and space by means of reverberation and spatialization), have the limitation of being dependent on the original sounds of the tra-

ditional instruments involved in the piece, leaving us with the impression that, in order to gain real-time generation qualities, the role of the electronics would have to compromise its potential in timbre complexity.

One of the main interests of the IRCAM institute in Paris for the last 25 years has been the search for ways to use technology to achieve real-time interaction between the instrumental and electronic elements of a musical system, having as a main goal 'to liberate' the performer from the rigidity of a pre-recorded electronic material and providing him/her with the means to control a more complex and timbre-independent electronic material. Examples of this approach are Pierre Boulez' *Repons*, for six soloists, ensemble and Electronics (1981-88), Phillippe Manoury's *Jupiter* for flute and computer (1987-1992), and Cort Lippe's *Music for sextet and ISPW* (1993). While reaching great levels of flexibility and timbre complexity, this approach still maintains the master-slave relationship between instrumentalist and electronics, making the musical gestures and nuances of the electronic material dependent to the articulations of the instrumental part. A departure from this approach would involve a dedicated performer for the electronic elements of a piece, someone that could have the freedom to articulate the predefined parameters of the synthetic sounds and/or of the instrumental sound manipulation.

THE COMPUTER MUSIC PERFORMER

To this day, the role of the computer performer tends to be confused with the one of the sound technician, the man behind the mixing desk that is in charge of keeping the balance between the electronics and the traditional instrument levels. But that role requires for the person in charge to be in an "ideal" audience location, far from the stage and far from other performers that might require some additional cue to follow a specific passage of the electronic part. In the case of a live processing system, where accurate notation for the traditional performer is less relevant for the piece than the exploration of a number of gestures that the computer system is able to identify and react to, the musicians on stage might need indications of *when* a particular kind of input is needed, (for example, if the computer system requires the incoming signal to be *senza vibrato* for a period of time in order to react as expected). These quasi conductor-like actions and other more closely related actions to the ones of a traditional instrumentalist make up

the role of what I call the “computer performer”. Some of the characteristics of this new performer are:

- Capacity to solve a number of technical challenges during a performance, dividing the logistical responsibilities between him/her and a sound engineer.
- Contribution to the music as an instrumentalist in his/her own right with a sound-print and articulations, interacting both at the timbre (*sound*) and gestural (*control*) level with other performers in a piece.

We can already find some examples of music creators that have taken on their shoulders the development of such a performance. This individual development has been greatly enhanced thanks to the broadening of access to computer technology during the last years, spawning a whole generation of “laptop artists” and other, more complex, human-gestured controlled systems. Examples of the latter are Michel Waisvisz’ “hands” and the “LiSa” system, both developed at the STEIM institute in Amsterdam, and Atau Tanaka’s ‘BioSensors’. The undeniable contribution of these new artists/creators, immersed in finding ways of controlling complex electronic music systems in a performance situation, presents us with a key question:

- Is it possible to divide the roles of the composer, performer and instrument maker when creating and using these complex systems?

The ‘quest for beauty’ in electroacoustic music forces us to generate first as composers an imaginary cosmogony of sound elements and later justify—by means of creative structuralism— how this cosmogony works, mutates and exposes a *musical meaning*. The computer performer faces similar challenges. In a way, the alchemic role often connected to the work of composers or extremely innovative improvisers (often tagged as *real time composers*), must be adopted by this new interpreter to create not only the instrument that he or she will perform, with its possibilities *and* limitations, but also to generate a consistent set of performance skills that will allow a creative interaction between him, composers and fellow interpreters. The task of defining means of production and performance for this electronic voice, where musical aspects like material exchange, gestures interlocking, layer density control, etc. both challenge and give the interpretative freedom that this new performer should demand as well as ask for a revision and redefinition of the elements, roles and responsibilities of each component of the musical system.

The score, the musical work as tangible product, is one of the elements to be revised. Traditionally, the score represented a tangible referential for performers. It is an object that both challenges and frames the creative endeavors of the (absent) composer in addition to the doubts and certainties of the (present) performer. But to think of a score as a solid reference in a medium where even the definition of 'musical instrument' is open to interpretative decisions seems like an arbitrary restriction that not only does not help the creative process towards the production of new music, but stops the potential development of a true exchange between the actors involved in creating this new music.

TIMBRE NETWORKS: DEFINITION

If we can describe any network as "*the developing of contacts or exchanging of information*" or "*the description of asymmetric relations between discreet objects*", then we can describe *Timbre Networks* as a way of organizing the threads between the different elements that play a role in live electronic music, aiming for a systematic organization of the possible relationships between computer, musical instrument(s) and performer(s).

By focusing on timbre both as a representative of an individual component, as well as a mutable entity conformed and transformed by such units and using it as the driving force of these relationships, the aim is to achieve a system where the sound source and its manipulation towards musical material through performance becomes part of a single entity, in ways more concrete than a mere conceptual definition. In other words, to define a compositional structure that, rather than being focused on time, is focused on the sound objects and their potential interdependence.

Structurally, a *Timbre Network* can be defined as a complex of sound objects, their interdependent relationships and the behavioral changes over time that can be induced by means of performance. The core of *Timbre Networks* as a compositional procedure lies in defining:

- the elements of the network
- the threads between them and
- how those nodes and threads are malleable over time, by means of either the real-time manipulation of a performer or by predefined interdependent variables.

Timbre Networks aims to be a compositional procedure to generate 'outside-time' structures, by means of focusing on composing predefined initial states of a musical system that can (and should) evolve in time by means of performance. In this respect, it is possible to understand the results of this procedure as a hybrid that is closer to the structure of a meta-instrument where *Timbre Networks* are seen as a way of applying compositional thoughts to mapping procedures. The principal reason for aiming to separate the time structure composition from the structural composition of the *Timbre network*, is to enhance the importance of having a performer actively contributing to the musical structure, leaving him/her with the responsibility of its manipulation and evolution over time. This is possible by considering and implementing a compositional strategy that is intended for the creation of 'initial-states' music, something like 'creating music from before it sounds'.

I judge that an interesting set of relationships for one system (the timbre network and its sound-interdependent variations) does not necessarily have an intrinsic time structure for its development, and if we define this development as a piece of music, we must accept the constrain that music is something that occurs over time, and therefore, it requires a different set of rules than those used to define fixed relationships. It is the aim that those 'rules' will be understood as the musical contribution of the performers involved in such system. In other words, what defines a sphere as a recognizable shape is not quite the same as what defines that shape as a ball. To kick it and see it roll is what gives a ball its identity.

COMPOSITION OF THE NETWORK: PLP-I FOR ELECTRIC VIOLIN AND COMPUTER

The creative proposal behind PLP_I, for electric violin and computer, started as a way of exploring the grey area between the roles of composer, performer and instrument builder in computer music, and how the *devenir* between these roles could, first, be understood as the unique quality that a computer performer should both acknowledge *and* develop and second, be transferred to traditional instrumentalists as a way of converging—conceptually *and* logistically—the approaches towards sound production and performance of both traditional and electronic musicians.

PLP_I focused its attention on the score, or rather, on the departure-from the score to dive into a collaborative process that both adopted and rejected elements rooted in traditional composition. The traditional music notation was replaced by the definition of a determined number of events, represented by graphics symbols on paper, and distributed over time. How was his different from a conventional score? The difference lies in that each symbol, time frame and suggested gesture, is reinterpreted on every lecture of the initial sketches. By doing so, we deprive the score of its rooting role in composition, encouraging the performer to put her/his interpretative skills in play in a way that a traditional setup would not encourage. This opens the possibility of reaching a mindset where the exploration of very well known sets of tools (like the mechanical skills required to play her/his instrument) could be reassessed again and again, and in doing so, it influences and pushes forward the skills of the computer performer, subjected to the same set of symbols, and therefore, to an analogue *interpretative* challenge. Although *PLP_I* was conceived as a process piece, where what was defined was the departure point(s) but not the destination, this conceptual ideal was rapidly challenged by traditional music conventions. Music is, after all, an art form that evolves over time, or better yet, over different sets of *times*: the time of composing, the time of interpreting and the time frame where the music unfolds in front of an audience.

The interpretative freedom that a piece like *PLP_I* claims to have in almost every aspect of music tradition creates a new challenge. This is to define a structural constrain that is consistent enough to call this piece “a piece”, and that such constrain will not jeopardize the results achieved through the exploratory process that signified the primary driving force of the piece to begin with. And this is how the never defined, always mutating, grey-area centered piece acquired its back bone.

PLP_I presents itself as a practical implementation of both the technical and conceptual principles proposed by *Timbre Networks*, addressing and demanding from its performers not only a flexible approach, which creates and interprets live computer music, but also requires an understanding of the final set of parameters and interrelations as the new form of a ‘score’, and as the reference point to go back to, revise and improve the final outcome of the piece. The process of fixing the backbone of *PLP_I* started by defining the behavioral limits of our sound objects/sources (the initial nodes of our network) and later, to focus on the inner complexities of these nodes and how they can be streamed within the complex of

the network as either:

- control information for another fixed node (a thread between two sources)
- intrinsic richness of the node by itself (still subject to variations through performance)

The elements of a network can be divided in *nodes* and *threads*. The *nodes* would be the instruments (or sound sources) that are responsive to the physical control of a human performer. These can be either traditional instruments or electronic sound sources, (like a computer, or part of the computer system). In our network, the *threads* can be described as the predefined interdependent elements between each sound object /source. They can be seen as the constraint of the system, but also as its intrinsic characteristics. Most elements of sound transformation of a source can be described as a thread, as well as being the translation of changes of the "inner characteristics" of a source (induced by a performer) into changes in the sound print of a different source.

PLP_I uses two computer systems that can (and do) act in several different roles: As independent sound sources, with or without the ability of being influenced by a performer, turning into a static or active *node*. They also serve as dedicated signal processors for other nodes, or as signal-to-control translators, working as threads between elements of the network. The use of an electric violin facilitated the process of defining parameters that were ubiquitous for both performers, given the relative independence between sound production and perception. The next step was to create consistent identities as sound sources and as generators of control information for both instruments, and later, to define and refine the possible transitional paths between these identities.

The current version of *PLP_I* is the result of several interpretations of parameter interdependencies, going from straight forward frequency-based (range) distributions to multi-parametric articulation gestures and to more precisely defined musical units and durations. And although each performance contributes to stabilize the expansive nature of the piece, it seems clear when both performing in and listening to *PLP_I*, the 'final' version is an entity that might (and should not) ever manifest. For if there was a 'final' result attached to starting this process, it was to raise questions about how to recover, for both composers and audience, the fragility, surprise and unexpectancy that presenting music on stage is all about. Hopefully this aim has been fulfilled.

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PERSONALIA

PAULO DE ASSIS studied Piano with Vitaly Margulis, Michel Béroff and Alexis Weissenberg, having been distinguished by the Fondation des Prix Européens (1994) and at the International Competition Maria Canals, Barcelona (1997). Subsequently he made a PhD in Musicology on the piano works of Luigi Nono, under the guidance of Jürg Stenzl, André Richard and Wolfgang Motz. 2002-2003, following a command made by the Foudation Giorgio Cini (Venice) he completed the Piano concerto by Camillo Togni—a piece that remained unfinished at the composer's death. 2005-2009 he enrolled a Post-Doc program embracing the complete work of Luigi Nono. He is Head of the research area *Acoustical Arts & Artifacts* at Centro de Estudos de Sociologia e Estética Musical CESEM (University of Lisbon) and Research Fellow at the Orpheus Research Centre in Music (ORCiM).

After having won prizes at a number of international competitions including the Carl Flesch (1986), Queen Elisabeth, Belgium (1989) and Hannover (1991), Mieko Kanno came to international attention as a performer of contemporary music when she won the Kranichsteiner Musikpreis at the Darmstadt New Music Institute in 1994. As a prime exponent of today's music she has collaborated with leading European composers including James Dillon, Brian Ferneyhough, Rebecca Saunders, Salvatore Sciarrino and James Wood, and has given many first performances. She is Head of Performance at the Department of Music, Durham University, Director of the University's Research Centre for Contemporary Music (CCM), and Research Fellow at the Orpheus Research Centre in Music (ORCiM).

JUAN PARRA CANCINO studied Composition in the Catholic University of Chile and Sonology at The Royal Conservatory of The Hague (NL). His compositions have been widely performed in Europe, The Americas and Japan and have received awards at the Bourges Electroacoustic Music Competitions of 2003 and 2004. He collaborates regularly with artists like Frances Marie Uitti, Richard Craig, KLANG and Insomnio Ensemble; and he is a founder and active member of *The Electronic Hammer*, a Computer and Per-

cussion Music Ensemble devoted to the creation and promotion of the music of the XXI century, and also of *Wiregriot*, a voice and electronics duo that seeks to reconstruct the repertoire for this format.

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