Networked Music Improvisation: A Common Rhythm for Art and Science

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Abstract

In a context of isolation and juxtapositions of different knowledge, simultaneous online music improvisation brings a sense of justice synthesising equanimous "points of view" in a unique experience called the "moment of hearing". This is the outcome of intending to hear and perform in a common pulse that replaces the sense of touch in technologically mediated communication. The ethical-aesthetic meaning of online improvisation is finding a way of a planetary play-together; of "having tact" to follow one another's rhythm, being "just" with distant heartbeat of the city.

Online improvisation resembles neuronal networks in their way of incorporating the outside world as a game whose only rule is to build up synchronisation having tact of a self reflexion that is given in the rhythm of another. This resembles Aristotle's idea of transcendental intelligence.

"And thought thinks on itself because it shares the object of thought; for it becomes an object of thought in coming into contact with and thinking its object, so that thought and the object of thought are the same" (Metaphysics, Lambda 7).

Networked music improvisation contributes to justice providing this "sameness" from the opposite side of what is foreseen, the providence of the law that is planed. This simultaneous bidirectional relationship of subject and object opens an ineludible necessity of interaction of art and sciences towards embodiment, a communion of knowledge.

Keywords: media art practices, online art, inter-discipline, improvisation.

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Citygram

Citygram was an artistic presentation in 2015 in a networked audio-visually improvised environment. During the show a streaming of sound data was captured from remote sensors in public places in Manhattan, NY, were converted to musical pitches and superposed to a real time improvisation between musical groups remotely connected in Cordova, Argentina and Santiago, Chile.

Citygram borrows the name from a "large-scale interactive environmental-sensing project" started in 2011 at NYU, that "focuses on capturing, mapping, and exploring invisible environmental energies that turn spaces into places". The original project invites "citizen-scientists, artists, educators, and the general public to help in the creation of detailed *soundmaps* that will enable us to better understand our environment."[1].

NYU *Citygram* builds a platform of interdisciplinary access to sound data from urban noise. Our artistic version aims to build an environment for scientific, humanistic and artistic approaches to *big data* interpretation through online improvisation. As first result, two of our collaborating faculties are preparing a paper for the International Society of Digital Graphics (SiGraDi) and a doctoral thesis in aesthetic and ethic problem of online improvisation its been written.

Urban noise and the problem of otherness, freedom and origin.

Contemporary music puts ambient noise in its scope of interest in the heritage of John Cage who lends ears to the city's *soundscape* as an exercise towards its open musical appreciation (Pritchett, 1994). Unlike fixed musical genres where the city is evoked in determined artistic proposition; in this distant musical improvisation there is an open and multiple time and space interaction with *soundscape* itself leading to unexplored meanings.

Nature noises are increasingly more tolerated as they recall origination while civilisation rumor – although it may be musical – brings the presence of the other. Kant complained (2007, 158) about "lack of urbanity" in "music that deprives others, outside the musical circle, of their freedom", something that arts that "address themselves to the eye do not do". This connects sound to the value of freedom in respect to others and with origination according to what Gary Peters says of improvisation:

"Presented and promoted throughout as an exemplary form, free- improvisation is approached via two different but interlinked conceptual routes: freedom and origin (the beginning)" (Peters, loc. 40)

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[1] Quoted as in http://citygram.smusic.nyu.edu and

http://steinhardt.nyu.edu/marl/research/citygram June 25 2016.

Imposition of pulse and urban noise: thought and object of thought

Previous process in *Citygram's* NYU project supposes building a streaming database of stamped time correlation of sound data which means to attach a quality to a regular pulse. Science is built on this subject to object imposition, since Modernity "the elementary conceptions of the understanding" are built on "our representations of space and time" (Kant, 2001, loc. 342). The inner rhythmic structure of this quality may acquire a meaning presented but not on the "thought and object of thought" basis but on what Merleau-Ponty denotes as a *style*. The following citation of the editors foreword to *The visible and the invisible* brings a new way to understand presence that serves as introduction to the hypothesis of a body of knowledge supported in this article by means of online art improvisation:

"And the things too come into presence, come to command a field of presence, by their style. They hold together like the body holds together. Their unity is neither the unity of pure assemblage nor the unity of a law; it is produced and reproduced as the 'bringing of a style of being wherever there is a fragment of being' (p. 139). The style is that interior animation of the color, that interior rhythm that assembles the forms and shadows of the rose (p. 174), that organised fluctuation that makes the thing arise as a relief upon a depth of being. The thing is borne into presence by a scheme of contrasts that commands a constellation, that modulates a trajectory of time, and that makes it leave its place to come reverberate in the receptive sensitive flesh that perceives it. Its way of being is verbal, it is transcendence, its style is 'nothing else than a brief, peremptory manner of giving in one sole something, in one sole tone of being, visions past, visions to come, by whole clusters.' The presence of the sensible thing is a presence by allusion (p. 200, 214, 229), and all perception is tele-perception (p. 258, 273). (Merleau-Ponty, 1963, *xlix*)

Touch as common sense

Network artistic improvisation is mediated by a binary alternation allowing to encode, transmit and decode what is sensitive to eye and ear but not to touch. Binary alternation is an opposition and, as such, appeal to the eye and the ear as senses that respond by not having the thing which they are sensitive to (Chretien, 1997, 112). Different is the sense of touch whose sensitivity to pressure and temperature is compared to a corporeal medium sensing itself. That gives touch a mediator character that possesses a reference of what causes its affection. Chretien says it is a "common sense". It invites the whole body to participate of affection because "touch potential, unlike other sensory faculties, is not restricted to a particular part of the body, but covers most of the body, in any case all flesh." (1997,113)

Touch connects hearing and vision through rhythm.

How does vision and hearing "touch" in distant artistic improvisation if tact is absent? That is through rhythm as "the most adherent touching is always groping made of approaches and retreats. If this muscular to and forth does not take place it would be impossible to apprehend the least resistance and relief. " (1997, 109)

Muscular swing as condition of touch experience introduces the body in rhythm that "tactilizes" vision and hearing. Etymologic neighbourhood of touch, tact and *Takt*, in German meaning musical measure (Harper, 2015) , reinforces that this is a sway that connects touch to hearing. If vision "is palpation through the eyes" according to Chretien (1997,120), then touch invites both vision and hearing in the rhythm of tension and repose to an attempt that is not unidirectional but a to and forth between "a self" and a "out of a self" (Nancy, 2014, 7) that responds and corresponds to the wave of a continuum more than a division of opposed states. In music and dance touch registers swing as an explicit or evoked contact of a corporeality - of an air column or string- that is broken but remains whole under a fundamental resonance.

Telematic art as a way to communion.

Sharing what remains one is associated with knowledge and also a universal character that gives "that pleasure (that) comes fully from touch" (Chretien, 1997, 130): eating and caressing. Preserving life supported by tactile pleasure brings associations with Santana's (2013) network art improvisation project *Embodied in Varios* as it quotes Oswald de Andrade's Anthropophagy Manifest to affirm that "the process of collaborative and distributed telematic art, opens new ways to 'eat us' one another: another cannibalism is possible." Derrida also addresses this issue in cultures that "practice symbolic cannibalism and from the same build the most elevated of their *socius*, even the sublimity of their morals, their policy and their right over this cannibalism (Derrida, 2005, 22)." He admits the universality of embodiment as he says "We never eat entirely alone, here is the rule of having to eat well."

Lacoue-Labarthe connects this primal pleasures of touch with the "question of tact" which is the problem of "how to touch" in musical rhythm and in the relation between human beings:

"In music, it is a matter of course that questions of "tact" are treated from the standpoint of time. For *Takt* means time as counted and consolidated in units. The transference of this metrical term from music to social life shows that here, too, temporal factors come into play. And here, moreover, sexual life may claim to have typical significance. The society of two may be taken to represent society in general. The temporal factor, as seen in the seasonable beginning and ending of sexual prelude and in the final ecstasy, is decisive in character. A poet has spoken of the ideal of love as "two hearts in one beat". Even those who are accustomed to regard sexual attraction as a matter of instinct, in accordance to its dominant element, cannot escape the conviction that happy love is largely dependent upon the temporal concordance of the individual rhythm of two human

beings" (Lacoue-Labarthe, 1969, 198).

The soul is a "rhythmic knot", says Lacoue-Labarthe (1969, 202). It holds emotions and tact of a basic node in an embodiment, a communion that originates civic life becoming the most public act. In its most profound mode of having tact, the play of touch freely opens to "a third one" that is also a rhythmic improvisation.

"The psychological data from the period preceding birth, in which the infant discovers nothing from his own impressions but the regular rhythm of the mother's heart and his own, illuminate the means used by nature to inculcate in man a musical feeling. […] It is understandable that the child's equilibrium in the mothers body comes into play when rhythm and measure appear. A much further-teaching consideration is connected to the statement that the musical has its origin before birth: the musical is an indestructible inheritance of human being. It inhabits every human being since Adam and Eve because —and this is the core of my proposition— music might make use of noise, but is just as often mute. It can be heard but it can also be seen. It is essentially rhythm and measure and as such is deeply anchored in the human being." (Lacoue-Labarthe, 1969, 206)

Woman as original improvisation of speech, touch and wisdom.

There is an interesting point in Kant's relation of the most sublime, touch and women when he quotes an inscription at the entrance of the temple of Isis: "I am all that is, all that was and all that will be, and my veil has not raised any mortal" (2007, 405) This goddess is untouchable and silent as her mysterious inscription. This impossibility of touch gathers woman and wisdom in a silent language. Her unveiled body is a wisdom that is sublime like art and science.

In the Book of Genesis we also have this problem of touch, wisdom and woman in relation to speech. In the *yahwist* version of the Creation, God fashions from soil "all the wild animals and all the birds of heaven. These he brought to the man to see what he would call them; each one was to bear the name the man would give it." (Genesis 2:19). God sees that names invisibly connect man and animals by means of words. This seeing how things are named brings an archetypical connection between eyes and words. Words establish a "point of view".

As in Genesis, this subject-object relation in knowledge did not satisfied man's loneliness. In his recognition of nature there is a viewable but untouchable body of knowledge found in words that build theories – from greek *theoria,* to look at – "But no helper suitable for the man was found for him." in this corresponding of words and things that is unidirectionally counselled by sight. There is a void in man that is not satisfied in the objective world whose embodiment of truth is perceived by a sense that is not reflective but only active in the Cartesian *cogito*, thinking as a way of seeing and being. This void is filled not by this objetive image taken from matter, but from a subjectivity, by something that is taken from a self.

The first human utterance in Genesis inaugurates a way of knowing that is touchable in the rhythm of the mythic inauguration of human language, and the deep contact operated in his body. "This one at last is bone of my bones and flesh of my flesh! She is to be called Woman, because she was taken from Man." The name received is as she is "taken from" a self originated in the touch of another. The body of knowledge that builds up upon this naming is touchable through a third one and in this way builds sameness and otherness in one body. Sameness as expressed in the first part of this first human word, and otherness because it also taken by others. Just as touch requires what is sensing recognising the other, as other, needs his presence in the flesh that is taken.

This flesh imposed upon a void near Adams heart enables him to think on something that is part of him and taken, a passive *cogito*, a passion called woman. Also just as touch is not a sense linked to a particular organ, but is spread all over the flesh, this recognition compromises all the flesh that is to "become one flesh", human intersubjective corporeality as touchable body of knowledge.

In this becoming one flesh something is abandoned as in Genesis 2:24 "man leaves father and mother". This leaving for otherness in woman responds not only to a primal anthropological law intended for the growth of society precluding endogamy, but also to extend the resonance of an ancestral rhythm of words and embodiment —"this one at last…because she was taken" — that gains distance from an originating body to extend in its geographical and historical dimensions.

Networked improvisation shares common senses with art and science.

How does is this relation of networked art improvisation as common rhythm for art and science articulated around the problem of mythical human corporeality? Distant art improvisation –understood as a sort of embodiment – has several things that are relevant for art as well as for science that makes it an ideal frame for communion of knowledge.

The first time and the most favourite:

The first thing is its sense of "the first time" and the "most favourite"; a sense of something circled by the admiration for an inaugural being that deserves the "most attention". Improvisation is always unique because, among art practises, it brings forward something that has never been before and will never be repeated the same as it was originally. But like in other arts practises, the uniqueness of its creation lies in a way to do; a "how to touch" a musical instrument, the words of a song or poem, certain space in dance or in visualities that projects body itself in sound and image of emotions. The addressee of art – may it also be a rivalry– is also "the most favourite". To this point, art and science share a "how to touch the most favourite". This is done with and for others that are distant.

Rhythm

A second thing common to art and sciences is rhythm which are the bones of artistic construction and periodicities, regularities and correspondences in laws of science. Through rhythm, the void between distance in time and space is filled with flesh that has touch of others and the self. Rhythm filling the gap of time and space occur not only within a work of art but also within the surrounding witness. This too and forth of rhythm is a distant communion with something that is within a flow of unity –like time and space– appealing to the root of the word (Harper, 2016).

Lacoue-Labarthe's expression "the soul is a rhythmic knot" (1969, 202) is associated with threads of intrauterine rhythms knotted in orality; in the drive of sucking and swallowing nurture from mother's breast, and the rhythm of utterance of first words which, in its human primal significance are knot to the recognition of otherness and sameness in woman according to Genesis. Thus, language, as the Kantian *modus logicus*, (2007, 147) is related to rhythm and woman as poets know its power of rhythmical coherence.

Also seen from the neurobiological point of view, language is not an untouchable metaphysical construction to visible knowledge. As Kravchenko says:

"The word as a typical linguistic sign possesses physical substance at every single moment of its existence" […], "it stands in a spatio-temporal relation to various other physical entities that shape the context of the word's being, or its environmental medium; it is, therefore, natural that changes in this context should result in changes in the nature and number of relations which a word enters." (Kravchenko, 2005)

Rhythm of words have spacio-temporal existence as conformation of neuronal synchronies. They resonate with intrauterine rhythms, with the pulsing of nurturing. Rhythm and woman forms an asymmetrical centre of a symmetrical embodiment of an intersubjective communion, a mutual membership founded to nurture others.

Providence, improvisation and freedom:

There is a another thing in art a science that makes this networked improvised environment suitable in their relation, and that is the tension between providence and improvisation. Science cares for a "point of view" and methodically looks ahead to proof an hypothesis. In that sense, there is a *pro-vidence* to prepare things according to finality. Improvisation, on the other hand, does not count on this preparation as it happens in fixed work of art, where parts are disposed in such a way to presume coherence between conception and form (Schönberg, 1950). There is a degree of improvisation in a conceived art work as for in music, it means a way of touching and playing a piece which allows to distinguish interpretations. But in written music the way how to fill with touch the time-space dimension is far more determined by something foreseen in a score or a recording and thus, by a providence.

Improvisation as term is a lack of providence, it is absence of looking ahead and been prepared for what is to be presented. It is interesting to observe that precisely this lack of foresight serves to prepare a presence. In certain Baroque written classical Western

music, preparation is achieved by means of improvising within a loosely drafted form called the *prelude* (Michels, 1977, 141)*,* a practise that also served to bring fingers in appropriate dexterity for what was to be presented as a more rhythmically fixed playing. Paradoxically, through this blind grope of touch, determinations in music open themselves to greater freedom. By means of preluding, touch is prepared for the intension of a rhythmically firm structured music, to cope technical challenges of a musical providence of a composer, thus gaining space of freedom for originality in interpretation in spite of its determination. This originality consist in a rhythm of intensions within embodiment, how and when musical gestures may slide back and forth with certain elasticity in relation to a fixed pulse. In this originality there is something unforeseen within a musical score, a way of playing that brings freedom to determined succession of sounds stablished by writing, what is improvised within providence.

Latency: a prelude to a manner of justice
As sustained here, in an interdisciplinary art-science dialogue, networked art improvisation may act as a *pre-lude*, as preparation to ludical "how to touch", a blind groping to the fixed pulse of providence. But how does this musical preluding connects itself to other things but music? Historically seen, the later Romantic musical practise of the *prelude* deals with an independent form (Michels, 1977, 141) that is not followed by another music but prepares a mood to what is undetermined. Distant online improvisation is to fill an emptiness   with "how to touch", to approach the problem of freedom in relation to providence, of to how to be just in rhythm with a distant other. This is not an irrelevant issue when making music remotely. The graphic representation below helps to make clear that, from the stand point of absolute or *real time* – that exist ideally– in fact, each player improvises in a past "moment of hearing" of the other, and of himself for an ideal omnipresence that is a latency.

A_0	A_L	A_{2L}	A_{3L}	A_{4L}
	B_0	B_L	B_{2L}	B_{3L}
		A_0	A_L	A_{2L}
			B_0	B_L
B_0	B_L	B_{2L}	B_{3L}	B_{4L}
	A_0	A_L	A_{2L}	A_{3L}
		B_0	B_L	B_{2L}
			A_0	A_L

Two players, A and B in coloured rows, improvising online in five equal moments representing the width of their columns which is latency. Below each player moment stays its correspondent delayed "moment of hearing" in which they improvise. Due to echoing this "moments" are fed back a certain number of times –2 in this case– into the system.

As Chretien says along with Aristotle and Heidegger "things don't touch themselves, only to a third one they are at a small distance" and "the interval (…) between things is never deleted, but only forgotten" (1997, 106). Latency is a temporal gap that is easily forgotten in live face to face playing but in online distant improvisation it becomes relevant enough to pay attention on its meaning. Online improvisation, as case study of latency, offers an artistic way to a philosophical approach. Merleau-Ponty says: "To see is as a matter of principle to see further than one sees, to reach a being in latency." (1963, *lii*).

As schematically represented in the columns of the table, Merleau-Ponty sustains that latency bears a "vertical past" and "it is necessary to take up again and develop the *fungierende* [functioning] or latent intentionality which is the intentionality within being." (1963, 244) This "latent intentionality" of playing according to a distant rhythm brings into presence, as earlier explained, reminiscence of embodiment, not a summation of knowledges but a latent consummation of them:

"The facts and the essences are abstractions: what there is are worlds and a world and a Being, not a sum of facts or a system of ideas, but the impossibility of meaninglessness or ontological void, since space and time are not the sum of local and temporal individuals, but the presence and latency behind each of all the others, and behind those of still others— and what they are we do not know, but we do know at least that they are determinable in principle." (1963, 117)

Justice to a woman *civitas*

Symbols of this bodily consummation of knowledge and touch are given in the use of the same word for loving and knowing in Genesis original language: "Adam knew Eve his wife, and she conceived and bore.." (Genesis 4:1) These are natural determinations needing what happens during sleep, during dreams, during free improvisation "with an imaginary body without weight" (Merleau-Ponty, 262), where spontaneous first true word springs in its rhythmic elasticity and geographic-historical resonance, when man, in turn, gives birth from his side to exercise justice to an asymmetry, doing justice to a latency that is woman of "bones and flesh" and of a scatological "this is at last…".

This scatology is of a woman that is also a city: "I saw the holy city, the new Jerusalem, coming down out of heaven from God, prepared as a bride dressed for her husband" (Revelation 21:1) It is vision surrounded by both metaphysical distance and concrete touch of feminine attributes: "Rejoice with Jerusalem, be glad for her, all you who love her! Rejoice, rejoice with her, all you who mourned her! So that you may be suckled and

satisfied from her consoling breast, so that you may drink deep with delight from her generous nipple." (Isaiah 66:10-11)

This utopian city is in our middle as an ideal and also as the place for agonistic rivalry, a competition sometimes necessary for progress. As Deleuze says "the friend or the lover implies rivals." "If philosophy has some greek origins, to the extent that one is willing to speak so, it is because the city unlike empires or states, invents the agon as a norm of a society of 'friends', the community of free men as far as rivals (citizens)" (1993, 15)

What relation is here to find in the reality of competition and this idealistic feminine prefiguration of the city?

In context of this rival citizenship, a city or world that is also a body brings elasticity making possible athletic and other type of competitions since elasticity is also "to fail 'gracefully' — as Gary Peters points — which "is to fail successfully" (loc. 799). This intension to produce a continuity, a to and forth in the dichotomy win/loose is, to some extent, to gain elasticity.

If we return to the Genesis origin of woman, elasticity takes place over binary alternates: "Then, Yahweh God made the man fall into a deep sleep. And, while he was asleep, he took one of his ribs and closed the flesh up again forthwith. Yahweh God fashioned the rib he had taken from the man into a woman, and brought her to the man" (Genesis 2:21-22). Through this deep touch operation the void in the man's side is not filled on a structural principle of cause and effect, like firm bones, or names given to creatures presented to sight. The gap between mind and matter, presence and representation, is filled with flesh, the flesh that God used to fashion a rib into a woman, flesh that nourishes and is life in its ephemeral organisation. That enables us to think that, as we speak of feminine attributes to nourish, brought explicitly in the prophetic vision of a woman *civitas,* this motherhood are not exclusively provided by womanhood but also, in a complementary way, by manhood; not necessarily by his causal body but reflective aspects of it, by "this is at last …because she was taken" put in the middle of man's flesh as a metaphysical woman intimacy that bring a swing to stiff rivalries as expressed in their greek archetypical representation in Western culture.

Like a *prelude* that does not have an objet but a mood, distant artistic improvisation dimensioning *big data* streaming is doing justice to the irrelevant in the city, by means of spontaneous words, music and images that are rhythmical objectless combinations of chaos and order. It is sameness bound to otherness in the flow of tones and noises, chaos and order, vowels and consonants resonating in "this is at last…" behind every scientific and artistic discovery remaining objectless but as a prelude to sameness bound to otherness in fellow citizens, in what is public and at the same time untouched, accessible to all and always unique as Heidegger's *Dasein*; to be in the middle of. (Heidegger 1994, 30)

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