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Paper: Rhythm in Generative Art



Abstract:

homage to Rimbaud

Topic: generative art

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The linearity of our time is yet finishing.

No more *black* hours for discussions about **future**:

We are just lost in our *gray* present.

Without any doubt, presidents go ahead

For combining lives only at their red best price.

But on human shoulders is still alive the blue infancy dream,

Able to generate the splendor sound of visions.

Generative art is an imagining rhythm of mind,

Just a smile on a lovely face, a yellow instant....

Mixed between darkness and rainbow,

In silence, just a terrific frame in touch.

In the lighting eyes is forever hidden

The eternal beauty of resonance.

Generative art is a performing rhythm of life beat.

Only the east wind generates the white smell of an emerald spring.

future; dream; spring, in over press as spreading

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GA is a performing process by discovering resonance between our own singular rhythm and the eternal universal rhythm. The main historical representation of this generative process is labyrinth/garden/book, as expression of a natural/artificial site.

The process is performed between two entities in walking. Initiate and magister, as two aspects of the same generative rhythm in transformation; because they enter step by step, from stain to tree, in resonance. The resonance generates memory, as active part of knowledge. Through our artwoks, If we are able to generate memory activities in people, we cross the borderline of art. The sound of resonance is activated... we gain the centre of labyrinth. Investigations about Renaissance: Leonardo, Alberti, Michelangelo; and about resonance tools and technologies. Crossing dimensions: Picasso; Pollock; Roth. Hypnerotomachia Poliphili. Nostalghia and incompiuto: Michelangelo - Bach - Puccini; Tolstoj last station



The ship of Cupid, from Hypnerotomachia Poliphili

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Keywords:

Generative art, rhythm, resonance, labyrinth, *metamorphosis*.

Rhythm in Generative Art

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Abstract:

homage to Rimbaud

The linearity of our time is yet finishing. No more *black* hours for discussions about **future**: We are just lost in our gray present. Without any doubt, presidents go ahead For combining lives only at their *red* best price. But on human shoulders is still alive the *blue* infancy **dream**, Able to generate the splendor sound of visions. Generative art is an imagining rhythm of mind, Just a smile on a lovely face, a vellow instant.... Mixed between darkness and rainbow, In silence, just a terrific frame in touch. In the lighting eyes is forever hidden The eternal beauty of resonance. Generative art is a performing rhythm of life beat. Only the east wind generates the *white* smell of an *emerald* **spring**. future; dream; spring, in over press as spreading

Following my investigation about *numbering in resonant silence* [1], as a moment in a generative process able to identify a performed bivocal art (math+poetry) [2], the focus of this paper is rhythm in its ability to generate *resonance* for gaining complexity in generative artworks. Resonance between a past (moment 1) and a present/future (moment 2),

as the biologic beat heart between *first* the *generation* of electrical impulses and second their **spreading** across the heart. This process is performed between two

second their **spreading** across the heart. This process is performed between two entities in walking. Initiate and magister as two aspects of the same generative rhythm *in transformation*. because they enter step by step in resonance. Resonance needs the time of memory, as a labyrinth topology. It works in endless human experiences. So resonance is generated from memory, as an active part of knowledge. If we are able to generate memory activities in public through our artworks, we cross the borderline of art. The sound of resonance is activate. We gain the centre of labyrinth, by discovering the resonance between our own singular rhythm and the eternal universal rhythm.

The main historical representation of this process is in Renaissance, in the theory of Ficino, experimented by Leon Battista Alberti, Leonardo, Michelangelo. Resonance in crossing dimensions, from 1, 2, 3 and more and in reverse way. Labyrinth; Picasso, Guernica; Pollock, Pasiphae; P. Roth, *"The Human stain"*. Actual scientific resonance experimentations in natural sites. The last station of Tolstoj He made his last fugue, stopping for health problems at the station of Astàpovo for dying in loneliness, as an *elephant*, following the resonance of Anna Karenina voice. She at the station of Moscow met her love Vronskij and at the same station killed herself going under a goods train. Until the extreme conscience of resonance in *"incompiuto"* (unfinished): Michelangelo – Bach – Puccini.



The ship of Cupid, from Poliphilus

Over the well known definitions of resonance in scientific disciplines, focus of this paper is the rhythm able to generate resonance between 2 different boundaries.

1 - Discovering resonance: music in Renaissance

In Renaissance the vision performed by Ficino was that all human activities have the tendency to celebrate the ineffable beauty that reigns in the universe, all arts contemplate to the superior harmony that must be called "music": its first degree is in *the reason*, the second one in *the imagination*, comes subsequently the discourse, the song, and more *the sound of the instruments*, and at the end the movements of *the rhythmic dance*.

""The music of the mind from degree in degree comes down and it conducts to all parts of the body. Which also orators, poets, painters, sculptors, architects in their works go imitating"

This idea of music represented therefore a perfect symbol of the artistic activity with its three aspects: the music instrumentalis is only **the first** degree, the internal music (humana) of soul is **its second one** and the cosmic music (mundana) the higher degree.

Music comes so to be connected to all the degrees of the being, touches both the inferior conscience, tied up to the physical nature, both the *illuminated conscience* that enjoys *the numbering beauty* and the superior conscience that gathers a *transfigured* universe.

The "the lira of Orpheus" means the access to the happy intuitions; it is a remedy to the hidden pains of the soul and in first place to the **melancholy**.

As it was justly observed, the practice and the theory of the music knows, around 1500, thanks to the increase of the octaves and of the enrichment of the families of instruments, the same amplification that *permutes the conception of cosmos*, which expansion is clear in Ficino, as in Nicola Cusano, *before* Copernico: octave draws a sort of perfect circle, the musical accord is in certain way the prototype of the pure beauty.

It is interesting to focus as the call to the music is successful in that we could call the art criticism in '400. In the instructions given to Matteo de' Pasti, **Alberti** insists on the *measures* and *proportions* of the pillars for which to modify would mean to destroy in them **the accord of the whole music**. We have here an analogy very meditated, founded upon the pure value of number, and together one of those "*metaphors of value*" able to reveal a new orientation of the sensibility.

1 – 2 Hypothesis:

Thanks to the hidden musical harmony inside the ancient Italian buildings, able to generate resonance, we can gain pleasure still to-day in visiting them, as contemporaneous *flaneur*. They are for young generations as open books to

discover, for learning the incredible art of architecture. The hope is that teachers love to indicate structure and tools.

Going back to Florence in Renaissance. about this process of musical harmony, Ficino felt the need to give a **philosophical interpretation** of it. Leonardo would have assembled his attention on the relationships among painting and music that it is sister but it not at the same height of painting.

In fact the "unfortunate music" for Leonardo ("unfortunate" because destined to dissolve itself in the air) becomes at the end to be inferior to the painting in the same measure in which the hearing is inferior metaphysically to the sight, so the harmony that develops in its duration is inferior to that is unfolding in the space.

The main focus for Leonardo art is not poetics, bur *enigma in painting*. When you observe his artworks you have the deep impression of staying in front of a something to resolve by interpreting. When you arrive in solving the enigma, following a possible your interpretation, suddenly you enter in resonance with his artwork, perceiving not a solution, but mainly the entity of mystery. Not in random way Leonardo wrote tales, but following exactly this process of encoding the mystery of life, as the ancient oral tradition performed. About the code of tales see my paper Mater matuta [3].

For condemning the *sentimental* painting of Flemish artists, that it seems him detestable, Michelangelo will resort to the same formula of Alberti:"... *this bad painting is made for pleasing to women, to monks and "to some gentleman deprived of the musical sense of the true harmony"*

This sentence induces to think that the reference to the music had been already for long time current element of the language of arts. The tradition narrates that in the bottega of Verrocchio was held a lot to the music; **Leonardo in his youth is known as chorister and performer of lira**: a miniature represents him with this tool in his hand.

2 - Rhythm and words resonance

In our digital times, punctuation is perhaps totally disappearing; so we losing one of the main tools able to perform a rhythm inside a text. Or better it had lost its identity as the structural part of a text, as the hierarchy of the text syntax, by performing the pauses, the connections and the discontinuances. Today the unfledged writer tends to second, with the punctuation, the rhythms of the speech, trying to reproduce its pauses. The punctuation is therefore often modulated on the times of the respiration, losing its principal function that is that syntactic, as intervention on the sense of the sentence. So we can delineate with the tool of punctuation an order in which each part enters in resonance with the others performing a rhythm in our mind when we read and in the voice when, following the punctuation rhythm, as able readers we modulate our voice for other people. After a lot of discussions on "Is the semicolon worth saving?" (from D'Alembert to Orwell) in her recent best seller English book "Eats, shoots &leaves: The zero Tolerance Approach to Punctuation" Lynne Truss says that it is time to look at our commas and semicolons and see them as the wonderful and necessary things they are. This seems to open a new front for preserving these tools, necessary for indentify a text rhythm.

"Per un punto Martin perse la cappa" (For a dot Martin lost his hood"); Martin wrote on the top of the convent door:

Porta patens esto nulli. Claudatur honesto ("The door doesn't stay opened for

anybody. It is closed to the honest man", instead of:" Porta patens esto. Nulli claudatur honesto" ("The door stays opened. It is not closed to any honest man") This ancient popular sentence says in a dot more than with a lot of words.

2.1 Hemingway in 6 words resonance

Ernest Hemingway made this story in 6 words:

"For sale: baby shoes, never worn."

When he finished it, he said that it was his best opera.[4]

In internet there are 329 replies to the call for the imitation of this story in 6 words in http://www.sixwordstories.net/2008/12/for-sale-baby-shoes-never-used-ernest-hem-mingway/

But computers are only tools!

You can read a lot of results in 6 words in internet, but no one is literature.

They have not made any attention to the structure of the text that is really very ancient: it is a trilogy.

1 An antecedent, defining the main condition

2 an acting in an object

3 a character

Inside this dynamic structure you can discover a lot of different interpretations, all belonged to the same text, connecting the sequences for performing a story. This is poetic literature, the ability of Hemingway to generate inside the text endless interpretations, all congruous to the text system.

2 – 1a Six principles

In 550 AD Xie He, an art historian and critic, wrote: "Six principles of Chinese painting":

- 1- "Spirit Resonance," or vitality, and seems to translate to the nervous energy transmitted from the artist into the work. The overall energy of a work of art. Xie He said that without Spirit Resonance, there was no need to look further.
- 2- "Bone Method," or the way of using the brush. This refers not only to texture and brush stroke, but to the close link between handwriting and personality. In his day, the art of calligraphy was inseparable from painting.
- 3- "Correspondence to the Object," or the depicting of form, which would include shape and line.
- 4- "Suitability to Type," or the application of color, including layers, value and tone.
- 5- "Division and Planning," or placing and arrangement, corresponding to composition, space and depth.
- 6- "Transmission by Copying," or the copying of models, not only from life but also the works of antiquity.

In Chinese art the main aim is to reveal artist as a custodian of the past, for the recognition given to a master. The overall effect of the gentle and peaceful art of Chinese brush painting, which are sometimes known as **voiceless poems**, should be one of freshness and spontaneity. The qualities sought are vitality of spirit, intensity of realization and freshness of perception. Such is the nature of the painting materials that before setting brush to paper the

artist must hold a well conceived draft *in the mind's eye*, as once the painting is started it is not normally possible to alter a wrong stroke.

3 . Discovering resonance in painting About emergence

"perché dalle cose confuse l'ingegno si desta a nove invenzioni"/ "because from the chaotic things the talent arouses itself to new inventions"

"Oh don't see you, that the eye embraces the beauty of the whole world? It is the head of the astrology, it delineates the Cosmography, it all human arts recommends and corrects... it is prince of mathematics... it has generated architecture and perspective, and the divine painting... Oh, it is the best excellent over all the other things created by God! Which of praises were those able to express your nobility?"

Leonardo, "Essay of Painting"

In a famous chapter of the Essay of Painting (Lu-66, McM76) Leonardo comes down from the casual stain on **a wall to the figuration as in an hermeneutic procedure**: the stain is the text and the figures, that there are imagined, are the interpretation of it. As modern painters we have also learned **the inverse procedure to translate the figures in stains**. But this going and return *from the text to the interpretation and from the interpretation to the text* it was not quite extraneous to Leonardo [6]

In this process Andrè Chastel [7] recognizes a Neoplatonic attitude. This contemplation of *the mobile stains*, that in nature are seen for a curious coincidence, takes back a practice of **the Chinese painters**. The dreams, at open eyes, increase the receptiveness of the subject and guide the active imagination, exactly as the vacatio animi (the soul void), as **the state of distraction** that Ficino recommended because the spirit could be the true speculum of the hidden reality.

A similar procedure we can find in Alberti and in the landscapes from him "*intenzionati*" (designed with intention); these are lived as they are, through the scientific analysis of his *aerial* perspective that is, in fact, **perspective of memory.**

4 - Resonance between stain and mind

Justinus Kerner [8] was a romantic poet of '800, on his texts Robert Schumann wrote 12 poems by J. Kerner op. 35, and we was a doctor too. He discovered Botox toxin and he was a pioneer on the psychic research. Going ahead with age he observed that his trembling hands allowed to fall drops of ink on the pages that went writing. Instead of putting away those sheets of paper, he got to systematically study the forms of the stains and the images able to evoke them in his mind back, inspiring him sometimes also some poetries. To his work on this matter, **Klexographien**, published in 1857 and mixed to artistic and poetic considerations, sixty years later Swiss psychiatrist Hermann Rorschach would be inspired for conceiving the psychological test, today called with his name.



Klecksographie with autograph poetry

J. Kerner, *Klecksographie* "... very slim / to rise the beautiful butterfly. / To such transformation | confide / to God my soul......"

5 - Resonance by crossing dimension: labyrinth



Daedalus and Pasiphae fresco, 60-79 A.D. Pompei, House of Vetti

"Las calles de Buenos Aires / ya son mi entraña" Borges, Les calles

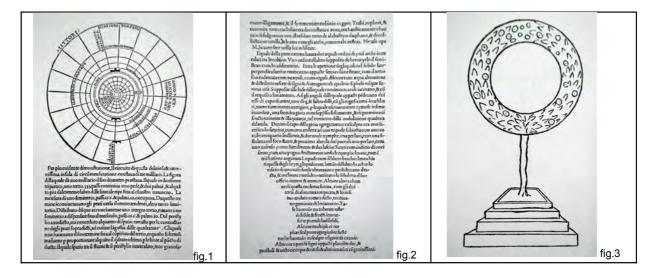
For defining a generative art process we can use the metaphor of the voice of the cantor de tango, that crosses the city in a quartering process through two perspectives possible: one vertical and second horizontal, as a labyrinth This double direction generates the shape of result, as memory, vertically it sinks in the wells of the past, in reactivating to give it a configuration in the present time, that becomes intimate since *introjected*. In this part of the generative process the abduction from reality becomes open to a process continually doubled. In which from a remote antecedent, as a past soaked of narrations and of omissions, every result expressly or potentially - is able to delineate a performing resonance more and more. This generative result is realized stratified, founded upon a series of temporal overlaps that is able to extend, retrospectively, toward endless. So in this first direction the song proposes itself as an *analogon* of memory, to it tightly connected. As memory the GA process turns back and returns in fragments of departed things; as memory, it comes to flashes, appearing in moments - and in places - that it is not possible entirely to foresee; as memory, finally, the song not always knows with precision what it will make to resurface, also unfolding itself in first appeal as a precise and deliberate operation, from the abysses of the past.

The memory is therefore part constitutive of the process foundations, and in this vertical direction it is gathered all of its importance: without a definite action that turns to generate and to conclude certain portions of past, the same present would be somehow more precarious, leaning on fragile legs. This vertical generative process reminds to the vision of *Angelus Novus*, *by W. Beniajmin*. It is animated by the wind of history, but with the turned eyes firmly back, to what precedent has been. **As it is the survive in labyrinth.**

The horizontal direction more directly brings back instead the generative process to the understood data as concrete configurations: the itinerary is drawn among the process paths. It is *the voice* to unravel the thread that ties between them the various steps, and to determine the crossed as a compass. In first place it is clearly made reference to voice, able to evoke the memoirs of the past and contemporarily to affirm its actual presence, making to detach, *in the iter of process*, **the island** that it touches.

6 - Hypnerotomachia Poliphili - The island - garden of Citèra

Hypnerotomachia Poliphili is a book designed as garden, published in Venice in 1499 by Aldo Manuzio, and written by Alberti or Giovanni Pico della Mirandola, or by Francesco Colonna, following an acrostic from the 38 chapters of the book. This is able to express deeply the culture and ideals of Humanism, reflecting the principia of neo-platonic philosophy. The book is a metaphor of the initiated travel made by Polifilo, hero of "the battle of love in dream". It was a font of interest for all researchers for the ideal garden, that is configured by the island of Citèra. (fig.1)



Citèra is the synthetic representation of all principles of **an humanistic garden**, as a labyrinth. Polifilo talks about his love for Polia, first lost and then met again after a travel made in dream during the ruins of antiquities. This is the travel of a visionary man in a circular island with in center an amphitheatre where they assist to Cupid triumph. In the amphitheater center there is a fractal circular temple. Polifilo cross the veil on the door and they can see **Mater Amoris**, the sacred font as symbol of the tree of life. Then **Polia** talks about the origin of her people. **Two parts**, each one in resonance with the protagonist. The circular topology is emphasized by drawings, ascribed to Andrea Mantegna, with scripts that fellow a predefined form (fig.2).

Image run in the book in **an order totally free** by text . *Polifilo and Polia* are expression also in their names of the plurality significance, that starts from a visionary process. The book is made as a symmetrical connection inside the singular parts. The trees (fig.3) are represented in their uniqueness by the same logics of the island. In few words all these creative logics of representation are connected in a topological circle, but each one reveals itself autonomous in the plurality, This is really a representation of a GA process!

7 - Rhythm and painting resonance



As a labyrinth Pablo Picasso painted *Guerniga* ((after 45 draft schemes) in 1937. In this incredible artworks the 2 directions vertical (y) and horizontal (x) coexist but never squared. The *artificium* elaborated by Picasso was to perform x as in axonometric perspective, given to x the limit of a function inverted of x toward 0, that has the result of infinite. In this way all the horizontal are absorbed by the shadows, that become an hidden *stain* full of resonance. So he gained an accurate 4D, able to generate impressive emotions over all times.

Guernica evokes Benjamin definition about labyrinth as a synthesis of the twin terrors "monotonous wandering". It points out a sort of "country of the hesitation", where are not privileged connections but only broken lines, reversing and interrupted, that intersect themselves, that find again together for then diverge. There it is hidden "the correct street for who that will reach the destination in time however."



Pollock, Pasiphae, 1944

In my hypothesis this picture was elaborated by Pollock, using as catalyst Guerniga.

But with spatial intention totally inverted, not for gaining 4D but **starting in simplifying** the vertical direction in a random sequence for platting any deepness, Pollock arrived to bring to maximum power *the dripping*, the surrealist technique of psychic automatism. This becomes like a shout for the lost center. After "*God is dead* " by Nietzsche, man performs his metamorphic process in Minotaur. He discovers his animal nature as a destructive power; he becomes his fool run toward darkness, loosing in first any concept of space and time, becoming a whole with reality through his own metamorphosis in object. Man becomes a surface, a deep tragic song full of stain in a strong ruinous noise, **wasting any resonance**. This was a first step with the emblematic title Pasiphae, the Minotaur mother. Pollock preferred to call his artworks in this way instead Moby Dick, the first title. He run toward the progressive trip following the *flat vision* of a chaotic world, going back from an order without any feeling toward a disorder full of *explosive fragments*. In his last days Pollock turned back to *forms in black* for his artworks.

8 - Literature resonance

In 2000 Philip Roth wrote "The human stain" [9], set in summer of1998, considered "one of the most provocative explorations of race and rage in American literature." A classics professor at Athena College, Professor Silk made this question to his students about some absent students: "Do they exist or are they spooks?" This question opened a fractal process of discovering the bounders between truth and falsehood, past and present, perception and reality, and offered a moving meditation on the limits of what we can really know about each other. The Human Stain ends with Zuckerman finding Les Farley ice fishing in the middle of a secluded lake. Les says: "And now you know my secret spot. . . . You know everything. . . . But you won't tell nobody, will you? It's nice to have a secret spot. You don't tell anybody about 'em. You learn not to say anything" And the fractal process turns back in circle, again.

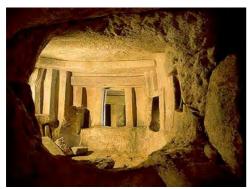
9 - Technology for resonance

The most beautiful thing we can experience is the mysterious.

It is the source of all true art and science.

Albert Einstein, Mein Weltbild (1931)

Archaeoacoustics: is the Science of Ancient Megalithic Structures. It is a science as yet in its infancy that is growing over all the world [10]. Its main aim is in investigating and measuring the acoustic parameters of ancient places by use of electronic devices. In the islands of **Malta** and **Gozo** are discovered megalithic structures that were created by a highly developed people more than a thousand years ahead of Stonehenge and the pyramids. **Malta's Hal Saflieni Hypogeum** is an extraordinary example. It is performed by a multi-leveled complex of caves and ritual chambers, architecturally intact after five thousand years, in which was discovered that: "There is a small niche in what we call 'The Oracle Chamber', and if someone with a deep voice speaks inside, the voice echoes all over the hypogeum. **The resonance in the ancient temple is something exceptional**. You can hear the voice rumbling all over."



Malta's Hal Saflieni Hypogeum

This is an example very significant and fascinating also for its underground architecture uniqueness. There are a lot of investigated sites over all the world: Newgrange, Ireland (constructed c.3200 BC); Emain Macha (Navan Fort), Northern Ireland; Orkney's Chambered Cairns, Scotland; Stonehenge, England; Chichen Itza, Mexico; Chavín de Huántar, Peru. Across Europe there are thousands of tunnels – from the north in Scotland down to the Mediterranean[11]. "Lithophones" in Spain and france; "Palaeoacoustic" ringing rock sites on the shores of Lake Onega in Russia, studied by Russian and Finnish researchers; the United States have identified "ringing rocks". More recent work in the USA, Australia and elsewhere by American acoustic researcher, Steven Waller, indicates that some prehistoric rock art panels produce echoes that act like "soundtracks" to paintings of animals, simulating the rumble of depicted animal herds, for instance, or the roar of a lion or sabre-toothed tiger.

In Canada, the mighty cliff known as **Mazinaw Rock** rises out of Mazinaw Lake in the aptly-named Bon Echo Provincial Park, Ontario, produces exceptional echo phenomena. Along the bottom of the cliff face, just above the waterline, there are many dozens of red ochre rock paintings, produced about a thousand years ago by the ancestral **Algonquin people**. The echoes are particularly noticeable where these rock art panels cluster.



Pictographs-Mazinaw Rock

There are also many experimentations about discovering sound and resonance, as Orkney's chambered cairn [12]; in Bosnia the "voice" of *the Pyramid of the Sun*[13] and in 2005 Astronomer Scott Hyman of Sweet Briar College in Virginia has detected an unusual, powerful burst of intermittent radio waves emanating from the direction of the center of the *Milky Way*, through radio telescopes set at various wavelengths. [14]

In China Longyou Grotto's, (Hand-Carved Caves) were only discovered late in the 20th century. They are considered by Chinese to be the 'Ninth Wonder of the Ancient World'

10 - Rhythm and silence

Antefatto:

My vision about data of Tolstoj death is that, over all the congruous interpretations, narrated in books and movies too [15], his soul was oppressed by nostalghia. Nostalghia, a greek word, (nostos) home return and (Algos) pain, was a wonderful film by Tarkovskij, that defined this word in this way: "For us Russian, nostalghia is not a light feeling, but a deadly illness that it pushes to travel, without any possibility to stop". You say but nostalghia is a feeling for people that are out of their country. Tolstoj was In Russia, at his home, with his wife, with his family, with his doctor, it is absurd to affirm that he was in pain for nostalghia, almost before his death. But especially for artists that went in deep investigation in their art, it happens to feel nostalghia of their own imaginative world. In proximity to death they have a great conscience of their end toward their artworks too. It was not enough for Tolstoj to leave for free the rights of all his opera.

So with a tragedy action - almost surreal or romantic -, the Russian writer goes to die in the station of Astàpovo, run after from emissaries, reporters, curious, relatives, as an animal, an elephant (taking back the appellative by Proust). For me the explication is in his need and reaching of hearing again Ann Karènina voice, as unbreakable resonance of his art.

Ann Karènina met for the first time the love of her life Vronskij at Moscow station and in a station she decided to kill herself, by throwing herself under a goods train. Ann's end in reality is only the shadow that reflects a light of hope: the last resonance in Tolstoj at the Astàpovo, that now is called Lev Tolstoj station.

"From some part in the uncompleted" R. M. Rilke in V. Jankélévitch, [16]

Following this particular feeling connected to the death of Tolstoj in a station of a small city, suddenly the unfinished artworks by Bach, The art of fugue, Michelangelo Pietas Rondanini, and Puccini, Turandot, were illuminated in my mind all by the same binomial expression of nostalghia/resonance. Also if they are expressed in their so great differences. They are able to connect us through their resonance art toward the silence of the tree of life. We can discover:

In Bach," The art of fugue": an immediate resonance: a catastrophic silence. In Michelangelo, "Pietas Rondanini": a metamorphic resonance: his self portrait in Nicodemo.

In Puccini," Turandot ": his last music page: resonant embryos, as a stain.

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