A Few Possible Resolutions of the Ontological Equation at Xenakis. Epiphanies and Projections in the Polytopes *of Persepolis* (1970), *of Cluny* (1972-74), *of Mycenae* (1978)

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Abstract: *I. Xenakis thought and created within a cosmos of non-Euclidean geometries, he imagined historical-political interworlds squashed against the wall of time. As an architect he set on to project shapes from the meta-dimensionality into the space of the three dimensions that are immediately accessible – Euclidian – through which the real can be perceived. He translated the vision of this projective experience into his poly-medial performances, each of which has the clothing of an integrated (circuit). When analysing the functional properties of the polytopes of Persepolis, Cluny, Mycenae we are talking about a time-activating matrix that controls a multitude of levels of human knowledge. History, the political, social psychology which is bustling, consuming a plurality of connotative (sub)codes (Radu 1989, 156), are represented by a limitless time, of being another and being myself. Intransigent, critical, leaned on the luring vastness of supertechnological contribution, this time overviews the way in which getting close to the traces of the past puts a break to time, then lets it breathe (like in a palimpsest); and how the codes profile, maintain a cosmogony, a theatre, a complex artistic expression through abstraction and essentialisation. Xenakis sends a programme to the receiving being, in a temporal synthesis, „and the process in itself assumes both birth and perishing as a return of things to the place they started from"(Vlăduţescu 1962, 269) – shows it, through his art, how it can learn the process.*

Key-words**:** *polytopes, intertextuality, projective geometry, palimpsest*

1. Introduction

Inside the being of Xenakis, webs have been woven which emanate the traces he retained in his cultural memory, rich with oppositions, terrifying visions, and enigmatic symbol-shaping. The composer's work to set into order and dominate a

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doubly structured cosmos – towards the inside and the outside – has steps in stages of intensifying (or losing) the manifestation that characterises the elements of a universe for which "time is [...] the means offered to all that will be, so that it no longer is" (Ghideanu 1979, 113). All are *traces* able to bring back a space of adaptions, until melting with the archetype, to a present of reception, to privilege the testing process of a retarded time, reduced to a historical slot – but remaining still active –, the one which will interrogate the globalising, industrialised time, which confuses itself with the limit of the irresolvable today, embracing the infinite. These traces that de-obscure the time cycles – in the case of the *Persepolis*, the *Cluny* or the *Mycenae* polytopes – from the torrent of historical becoming lay yet another layer to the depth of knowledge, to the Xenakian 'atheist darkness`, also predicting his skills, his spiritual becoming enabled by "the original organisation of the forms of [his] ego" (Lynch 2008, 209), discovering the ground on which he will sow "the source of all [his] lived unities of experience"(Reeder 2010, 92). In a timeline of civilisational launchings, the vision and bundle of artistic virtues have led Xenakis to synthesise eternity through a total mediality, to grasp the immortality of the mind, to imprint, through his composing strategy, the encompassing of the ek-stasis (Heidegger) of the human spirit. His intuition required him to rethink a time of roots and an expanding, moving time, which gets closer to or further away from us, from the HUMAN. In this plurality he penetrated, through which temporality is expressed – the traces of which speak through the grammatological mark of the *glissando*, elevated up to a *Gesamtkunstwerk* –, and which implies that primeval spring which consecrates, that is a time of psychological mutation – enabling to penetrate the traces on an archetypical channel in order to meet the thinking state; then to infinitely prolong the time of open windows – as an intimate time of the composer, apparently suspended. The comment that sneaks between the windows as 'meta-stasic' cycles of memory = "different perceptual glimpses" (Reeder 2010, 92) represents the intentional manifestation of the Xenakian expression.

2. Reaction and Competition in the Dizziness of History. *Persepolis* and *Homo algorithmicus*

We cannot leave in the underground the instinct that pointed Xenakis toward fulfilling the *Persepolis* project, offered as a tribute to the ancient past of the

Persian Empire. Tributary to the idea that "man is the future of man"[1], the history of the Persian Empire from the time of the reign of Kings Darius 1st [2], Cyrus 2nd [3], Cambyses 2nd [4], Xerxes[5], Darius 2nd [6] and Darius 3rd [7] absorbed the artistic vision of Xenakis, who displaces it through a huge jump to the present time. Quoting Herodotus, Heraclites, Parmenides the Great, and being solidary with the Hellenistic concept on the univocality of being, the visionary-composer un-petrified historical time through the symbolic touches of the performance. Without separating from the cyclic repetition of history, he commented through the audio-visual system (cyberspace), together with the theatre, the mystery of the torch with its sacred structure, which "[...] shapes a unique and sole time along the years and centuries" (Eliade 1992, 358). Like the conscience, the torch spiritualises, lifts on the vertical, remains a symbol of unblemished.

Xenakis discovered from the start the source of some historical facts that unleashed dramatically in the ancient world, perceiving this source as an embodiment of the origin of human flaws, fed by military and political power, but also as a projection into his inner history; thus, the parallelism of two moments, crucial for the destiny of Ancient Greece and of the Middle East, with the Persian Empire as its centrepiece, obsessed him: the destruction through fire of the Athenian citadel Acropolis done by Xerxes (480 BC) and – 150 years later – the conquest, also through fire, of the residential Persian citadel of Persepolis by Alexander the Great (330 BC). Through a super-sensory eye, Xenakis enlivens the fibre of the virtual which evokes shards of the light of the symbol-fire, appealing the feeling with which he himself took part in political acts, sometimes with the tactics needed to defend a territory, other times opposing oppression or even out of fear, getting thus to the heroic destiny of his ancestors[8]. Led by the coexistence of inter-worlds of social interaction with which he intersected – among which the

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[1] The words belong to the poet and essayist Francis Ponge (1899-1988). Cf. Ghideanu Tudor, quoted work, p. 216 (apud. Savin Bratu, *De la Saint-Beuve la Noua critică*. Univers Publishing House, Bucharest, 1974, p. 458-461)

[2] He established the capital city of the Persian Empire at Persepolis. He ran the empire between 522 – 486 BC.

[3] He reigned between 559-529 BC.

[4] He reigned between 530-522 BC.

[5] He reigned between 486-465 BC.

[6] He reigned between 424-405 BC.

[7] He reigned between 336-330 BC. Also called <king of kings>. Last Persian king of the Ancient Age, with whom the Achaemenid dynasty closes. He was the king under whose reign his empire was conquered by Alexander the Great.

[8] The *Polytope of Mycenae* (1978) also allows the interweaving of comments of the experiences in the history of Ancient Greece with the thorny path of the history lived by the composer during World War II.

military and political ones[9] made a strong mark on him –, the composer alchemised the revolutionary spirit of ancient man, transmuting his aura and installing it as a perception on the face of modern man. Because "between me and the others there is an inter-world we belong to <<together>> and in which we partially continue what <<began without us>>" (Descamps 2000, 255-256), the layering in inter-worlds was generated through an *a priori* mediated intentionality. His fight with the effect, amplified by the ill-omened, harsh interaction of these inter-worlds[10] he sanctions, the way he gives an answer to the expansion and oppression existing in each one at the establishment of a state power, represent the quintessence of his artistic communication.

The inter-worlds obtain degrees of hardness and supremacy in the social layering, as they are activated hierarchically; the first gets a sceptre priority; it is the military power; it will prevail; next in rank is the political power, to which the economic and cultural power of the state are added, by descending to lower levels[11]. The inauspicious impact springing from the interaction of the inter-worlds organised on the lower levels starting from the upper level cannot always be optimised. In the bold vision of Xenakis, the directing that should uniformise the interaction of the mentioned inter-worlds until reaching the <zero> degree of offensiveness – and which should tame them, in order to configure the social-political discourse *differently* – will become consistent through the ability to place the experiences of human existence into a universal cyberworld, an unattackable model of post-modern cultural power, a *Homo algorithmicus* who will retell the history of man by ,unformulated' answers *beyond* the ground of the practice accepted by state and society, levelling any dialectic asperity through the single voice of information technology.

2.1. *Polytope de Persepolis* – an untamed confession of the composer

The *Persepolis* polytope emerges as a composition delegated to displace the *military, political, economic, cultural* inter-worlds like pieces of ice through the cyberworld paradigm; the displacement will involve their deconstruction up to the point where history is pushed to its end – as a row of psychological acts that reverberate through all of these. Equipped with multimedia subvarieties, this performance-synthesis of curves and accolades, of attitudes, of pluri-medial

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[9] *In extenso* references on this topic will also be made in this chapter, as well.
[10] suppressed by restraining the action of each inter-world in itself or by their excessive polarisation
[11] Still, it seems we talk of the only organisation capable of avoiding the fogginess of the trajectories of the being that partakes in the existential theatre

networks – inscribes the rhythmicity of hurting through military, political, religious voices in the pool of stochastic distributions, and its message is centred on a visual symbolism[12] meant to mix them together, to annihilate them.

Pondering on the imaginary horizon of the composer, who lit the flame of his conscience looking at the history lived by himself in Athens, we may assume that the political-military experience, overtly offending, which made its mark on him, was the Greek-Italian war, and also the subversive meaning it highlighted. The conflict which broke out then started with an ultimatum (Patelakis 2017, 30)[13] that "constituted, in fact, a declaration of war from the Italian government, which wanted a quick victory in order to enhance its prestige at international level." (Patelakis 2017, 30) Attributing to itself the right to violate the rights of the Greek state, "the Italian fascist dictator Benito Mussolini demanded, abusively, from a neutral country, which had a political regime similar to the Italian one, to give up certain strategic points in Greece without any fight and without negotiation (the islands Korfu and Crete, the harbour Piraeus, as well as the area from the Greek-Albanian border in the region of Epirus)" (Patelakis 2017, 30). The political and military laws of this lawgiver made Xenakis understand, when he was 19, that defending the borders of his country from invaders is the mission that does not make his hope fade away (the impulse of Prime Minister Metaxas (Patelakis 2017, 31)[14] to oppose this, addressed to the people, impressed him a lot); the composer will come back later with an answer, of his conscience, by enlisting into the Communist Party[15] and into the communist Resistance[16].

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[12] Cf. movie *Polytope de Persépolis* (www.youtube.com/results?search_query=Polytope+de +Persepolis)

[13] Who did not take into account that the hostile actions of the Italians, started ever since 1939 against the Greeks, were ungrounded; thus, "on October 28th 1940, at 3.00 am, the ambassador of Italy, count Emanuele Grazzi, handed the prime minister Ioannis Metaxas a humiliating ultimatum that was to expire within three hours, at his residence in Athens. Greece was unjustly accused that British military ships were stationed in its territorial waters and that it undertook a series of acts of provocation against Albania, now part of the "Italian empire". For these reasons, the Italian fascist government asked for the Greek government's approval to occupy some strategic points within the Greek territory, as a guarantee of Greece's neutrality and as a warranty of Italy's security."

[14] "To the absurd demands of Italy, the Greek people responded with a strong and decided "OHI", that is "NO". In his message to the people, Metaxas mentioned […]: "Greeks, now we shall prove if we are worthy of our forefathers who ensured our freedom... fight for your homeland, for your wives and children, and for our sacred traditions."

[15] The Greek Communist Party (GCP) was established in 1937, having Ioannis Ioannidis and Vasilis Bartziotas as political leaders. The core of Stalinist communists formed around Ioannidis, persons who will constitute the trusted people of the Party in the following years

[16] Hardened by the conspirative context, the Communists will create Resistance groups, gather weapons, undertake various sabotage actions ("they blow up a bridge, attack cars of the Germans and capture weapons, blow up some warehouses, cut cables etc.") seeking to get into contact with their leaders.

In the following years, Xenakis will encounter new political-military experiences[17] – with loss of human lives, famine, and freezing (Patelakis 2017, 41).[18] Since the beginning he made special efforts to make his political apprenticeship by keeping alive the flame of the Resistance (Varga 1995, 23)[19]; he gathered in groups together with his comrades among the Party's partisans, being a fighter by his underground action (Varga 1995, 23) to support the armed battles fought outside Athens)[20].

An experience hard to bear was his injury in 1945, by a bombshell from a Sherman[21] tank, being a step away from losing an eye. In 1947, when the government in Athens set up an army against the communists, very many of these were excluded from military service and sent to the concentration camps on the island of Makronisos. Xenakis enlisted in the army in the hope to be declared unable to combat given his wound. The committee who examined him declared him healthy and sent him to a military camp; after a short while he escaped from there, hid in Athens for three weeks – meanwhile he found out that a martial court had sentenced him to death – and ran off to Italy. In November of the same year 1947, he emigrated to Paris under a false name[22], managing to find help from various friends. A year before, the Greek Civil War[23] had started already, a "life and death confrontation between the anti-communist governmental forces and the supporters of communism in the Greek society, with implications in the entire Balkan Peninsula" (Wolton 2020, 240).

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[17] the conquest of the Greeks by the Germans (April 27th 1941)
   the conquest of the island of Crete by the Germans (May 20th-30th 1941)
   the intent of the three Axis powers – Germany, Italy, Bulgaria – to put Greece under triple occupation (1941-44)

[18] "The winter of 1941-1942 was a national disaster. According to the statistics, around 40-50,000 people died of famine and freezing in Athens and in the harbour of Piraeus only. The two towns were part of the German occupation zone, which proves that the Germans were not concerned by supplying the inhabitants with basics for living, and the consequences were tragic."

[19] "Am Widerstand habe ich mich anfänglich zusammen mit meinen beiden Brüdern beteiligt, später allein." ["In the beginning, I participated in the Resistance together with my two brothers, and later alone"].

[20] which lasted until 1944

[21] American battle tank model, with which the Allied forces won World War II against the German army

[22] His false name was Konstantin Kastrounis.

[23] "For the Greeks, the human balance of this three-year civil war is grave: 69,000 dead, 1,2 million people remained homeless. Tens of thousands of fighters find their refuge in Eastern countries. Beyond the Iron Curtain, these survivors will not have a better fate than that of the Spanish exiles in the USSR a decade before."

The confession in *Polytope de Persepolis* unleashes ascendingly, explaining history[24] as it was psychologically absorbed by Xenakis, who re-memorated in a *perpetuum mobile* the vastness he crossed by the knowledge of the great epics. The inter-worlds of military and political power we referred to still harbour another inter-world, as we mentioned: the one defined by the power of culture. Rising to its higher steps, Xenakis, a lucid mind fed by mathematic formalism, by the development of science, technology, and in the milieu of *philosophia mirabilis* – will see to it that all his sound arrangements be unique, monumental.

The heterogenous environment of the *Persepolis* polytope, its symbolical resources, the layering of secret meanings, gradually set through the process of immersion into the space of searching the first (clear or unclear) traces found again when experiencing an anamnesis[25], archetypes charged with shadows and surprises of sound that de-structure the receptor's expectation horizon and set it into new shapes, were considered by the diversionist voices who were present at the performance as concealed signs of a propaganda for occidentalisation, the composer being accused of violating the rights and freedom of thought of the Iranian citizens. Foggy interpretations through clergy voices, the 'vicious' and mystifying alteration of the meanings of the Persepolis performance are added to other tools of diversion, poking around and brutalisation of the artistic gestures promoted within the territory. Oriented toward the total annihilation of progress and civilising emulation, these landmark examples rendered the Iranian people's aspiration to condemn the spirit of modernity even more concrete. The assertion of the decline of all multicultural experiences, highlighting their impact and force of opening like a grey spot, once again meant to obey the rule of social command. This talked from the pulpit in Iran, as an institution that will maneuver 'under cover' the cultural inter-world, already active everywhere, declaring itself as a

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[24] Let us not forget that Iran has also had a problematic contemporary history, despite the fact that its representations are somewhat left in a half-shadow ("Through the Hitler-Stalin Pact in 1939, the Soviet influence over ancient Persia had been acknowledged, to Moscow's satisfaction. After the rupture on June 22nd 1941, the new allies, London and Moscow, were afraid Germany would lay hands on the oil riches. The USSR and Great Britain shared Iran among themselves in 1941, mutually promising to retire the latest six months after the ending of the conflict.") (Wolton 2020, 236)

[25] Authors like Freud understand the anamnesis as sending the patient back within his own memory in order to reconnect to his actions.
"The anamnesis would be […] a mental process through which a person tries to reconstitute facts and events from his own past or from an immemorial past (*illo tempore*) by starting along the thread of events, from the present to the source, thanks to intuition […]. This labour would lead to knowledge, since, as Plato is of the opinion, "it is only required to think so that one remembers." He does not forget to remark that: it is "impossible to know anything from that which you don't know." (Petecel-Theodoru 1974, 247).

fitting instrument to enliven the main tools: military and political. Concerned with the institutionalised ways to impose the social command, the sociologist Pierre Bardieu states, however, that these correspond quite 'randomly' to the needs of people to be nourished by culture, even becoming unlikable (Radu 1989, 206).

The simultaneous existence of various ways of expression in art remained the credo of the composer, melting together the surface codes of the historical message through multimedia means. Eight years later, the Iran Revolution[26] overthrew the political system that had ruled and cherished the values of cultural openness, flattening the shahs liberal vision[27]. The reconsolidation of nationalism, fighting the reflexes that had made steps toward occidentalisation and the annihilation of the respect for avantgarde – which the previous rule had insisted upon –, the relentless invocation of the prophet Muhammad who should support, save the Muslim world, immediately overcame. The installed state of mind had to follow the fresh vector of history, forming a new society, which opposed the avantgarde.

2.2. *Persepolis* and Zoroaster's Nimbus[28]

The skill of Xenakis in obtaining an ascending fusion of two hypostases: historical-political and religious in *Persepolis* developed a slimness of expression, becoming solid through the sound metaphor of the mirror and mirroring of the archetype in the meanders of the mimesis[29] (see as an example the space reflected through categories of glided sounds, or the conglomerate of transmitting discontinuous luminous information[30]). The artistic delimitation between archetype and mimesis through sound shall be particularly reflected in the awareness of mimesis as an index of the joining of a subject-instance (= imitator) to an object-instance (= imitated)[31]; and further, this will share the historical-political and religious hypostases to different

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[26] Started on February 11th 1979

[27] Once the Islamic Republic was established.

[28] "The Prophet of Ancient Iran [ZARATHUSHTRA] was proclaiming the Eternal Truth (which has been proclaimed by all the Great Teachers and Saviours of Humanity). He speaks of the Eternal Laws of Life laid down since the Dawn of Creation. His is a message addressed to all mankind of every age and every clime and not merely to the people of Ancient Iran at a particular period of their history." (Taraporewala 1981)

[29] Looking for the meaning of mimesis, Despina Petecel attributes to it characteristics like imitation, representation, image, portrait, significations that the logician Anton Dumitriu also articulates through "the corresponding verb […], I imitate, I represent, I pantomime." (Petecel-Theodoru Despina 2003, 12)

[30] We will have separate discussions about the support of sound (glissando) and the kinetics of the flashes in chapter 3.

[31] "Imitation implies two terms: the *imitator* and the *imitated* […]. But that which *imitates* represents a *diminished* <<image>> […] of what is represented." (Petecel 2003, 12)

extents in the complex discourse. In the performance, the hypostases will sometimes be displaced and re-contextualised; there is no centre between the inter-worlds that produce semantic exchanges at the <preconscious-conscious> borderline; they are mixed, compressed, interwoven in the net of the glissandi texture of the electro-acoustic sound and the production of games of light.

The archetype of <light> existing in the performance launches an audio-visual counterpoint which conjugates at least three tensional units: electroacoustic sound/noise, the ensemble of syncretic images (visual choreography given by the texture of the 150 torches and the black costumes of the children), to which fracturing the spatial continuity through cuts of light is added (rhythmic patterns, synchronised through whippings of laser devices[32]). The outlash of the cuts piercing the sky may be likened to voices that discharge through "genuinely aggressive phantasms or impulses" (Helmut et al. 1999, 192), making us think of that futile (Freudian) attempt to save the pulses of life from death (source and energy give the immanent characteristics of a pulse) (Helmut et al. 1999, 192). To motivate the expression of the explosion of diffuse voices would mean to further interview the Zoroastrian legend and to follow the direction of that symbolism where "the need to radically destroy a degenerated world and humanity in order to be able to re-create them, that is to restore their initial integrity" (Eliade 1992, 177) is discovered.

Maintaining the territory of the permanence of esoteric practices as a ritualic path with a deep foundation through the prophets Zoroaster[33] and Ahura Mazdā[34], the Zoroastrian religion consolidated the nucleus of the myth with the sense of sacrifice as a function of life, the light as a tendency to indicate the direction of Ascension long before the reign of Emperor Darius 3rd. The flame, as a symbol of the illusion (and) vertical state (of mental existence) duality, germinates images and gradates differentiations, leading to a perspective vision (of the ruling tactics – for instance), to a conciliation of the fixed, subconscious symbols with those in metamorphosis (that became conscious), while these combinations already appeared from the times of the 2500 years passed until encountering the virtues of modernity, of particular thematic centres imposed until (and even after) the Pahlavi dynasty.

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[32] We will expand this explanation in chapter 3.

[33] "In his book *Zoroaster and his World* (1947), [Ernst Herzfeld] places Zoroaster in the context of Achaemenian political history, assigning his lifetime to the period from 569 BCE to 492 BCE." (Stauberg 2004, 10)

[34] The most widespread divinity in Iran ever since the 2nd millennium BC (at the time of Indo-Iranians), which finds its corresponding god in Varuna ("as a proto-Indian asura [demon (n.n.)]"). (Eliade, 1981, 334)

The ritualic flame subordinated various meanings, from which, through transfer, we can also recognise those present in Hinduism, where tapas[35] reflects an ascesis practice[36]. The syntagm "We bear the light of the earth" set by Xenakis as a motto and guideline for the movement of the visual performance of the torch-bearing children who hatch shadows may be interpreted as a leitmotif for the breaking through of the trace of a Zoroastrian monotheist hymn with the prophet's teaching, which established that "only break with the old tradition of making tangible offerings to divine beings" (Stauberg 2004, 8) can produce the change; but at the same time it would also be as a kind of initiating introduction into the 'ascetic warmup'.

3. *Polytope de Cluny* between the Roman Bas-relief and the Baroque Experimental Installation

"The baroque state likewise reveals identical traits existing as constants within the most diverse environments and periods of time. Baroque was not reserved

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[35] In Sanskrit it has the connotation of warmth, ritualic warmup (tap = to warm up, to boil). (Eliade, 1981, 244)

[36] "Ascetic <warmup> has a model, or a counterpart, in the images, symbols, and myths related to the warmth that <ripens> the harvests and hatches the eggs, ensuring the chicken come out of the shell, related to sexual arousal, particularly to the ardour of orgasm, and to lighting a fire by rubbing two thin wooden sticks. The tapas is a <creator> at several levels: cosmogonic, religious, metaphysical." (Eliade, 1981, 245)

exclusively for the Europe of the last three centuries any more than classicism was the unique privilege of Mediterranean culture. In the life of forms, baroque is indeed but a moment, but it is certainly the freest and the most emancipated one. Baroque forms have either abandoned or denatured the principle of intimate propriety, an essential aspect of which is a careful respect for the limits of the frame, especially in architecture." (Focillon 1992, 58)

Collection de Famille Iannis Xenakis - via Internet

Xenakis started to group his composing ideas around stochastic calculus ever since 1954, when he proposed – in *Pithoprakta* – reflections on the hallucinatory whirl of the I, overwrought by populations of stimuli which either amplified their rhythms, provoking elementary or complex sensations, or sunk into a levelling colour in

order to numb sensitivity. The *cloud* of sounds as a metaphor for the masses of 'small people' seen from afar, and the image of rememorating their concerns, filled with trifles – which attenuate their presence, like gas molecules[37] – was a concern for the composer; altering the molecules' movement – as a consequence of thermic fluctuation and, as such, recreating their position thanks to the mechanism of their chaotic clashing – enlivened the reproduction of the portrait of "political crowds of dozens or hundreds of thousands of people" (Luque 2009, 77). The theory of Maxwell, who defines the displacement current (generating a magnetic field) of electrons moving back and forth, to which the abstraction power of Boltzmann's vision regarding the kinetic theory of gases (described by the probability distribution) is added, called Xenakis's attention. Associations of scientific results, set – like these – in the most favorable light, generated referential applications like those involved in the *Polytope de Cluny,* where, in the *Musee National du Moyen Age* of Paris, light was projected *again* – through the stochastic distributions of the lines generated by laser beams and other optical equipment – on the cold marble of the bas-reliefs[38] of the Roman Baths. Fracturing the darkness through "the most advanced technologies of the time [which] were employed to imagine a new synergy between music, space and light" (Carré 2022, 454) overthrew the concentric perspective over the contemplated object, sending out oppositions against the dogmatism of the spirit and the locked-up citadel of ancient art. Travelling through several spaces, their crossing through multimedia work, changing the obscurity formulated by the certainty of history for the *blinding* of the beings[39] – of the choir of unmoving faces (= negating the museum which guards them) – makes a new pattern of reception take shape, which will retain a stellar vision of the world; thus, the rigid bas-reliefs withdraw to a background, making way for a new Olympus. Here, the shapes no longer address the inert eye; the composer tensions the space through controllers of the direction of light ("tourelles")[40], two "2W argon lasers (appearing blue and green)" (Carré 2022, 455), creating the sensation of the travel, restarted through dissipation (here the "ion technology" is present) (Carré 2022, 455). As he is aware that "the eye of the primitive being, gradually becoming clearer, turned into crystal, and, becoming a living mirror, started to reproduce images" (Carré 2022, 455) – Xenakis enhanced the obtaining of effects; he used small mirrors, "mounted on micrometric screws", mobile "Omega"[41] mirrors, deflectors, then "compte-gouttes" (Carré 2022, 455) droppers.

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[37] We can define the <gas> as an "empty space filled with molecules". (Presură 2014, 65)
[38] Dating back to the 3rd century AD
[39] See further on
[40] which "were made by Jean Colmant and its team under the control of Xenakis". (Carré 2022, 455)
[41] That is how Xenakis named them.

Joining these ensembles of optical equipment with the system of sounds[42] surrounding the entire display reached a force of transmission able to blow up the bridge of conciliation between the museum paradigm (the architecture of the Roman Baths, living in oblivion) and that of the new, cybernetic space. The automatised installation of the polytope challenges the conformist medieval Roman style and the *experiment as a universal value* (= excrescence of the Gothic style with Baroque, flamboyant reflexes) to a duel, establishing an order the value of which never ceases, and which, far beyond the graph of time, establishes what H. Focillon has called "the expanse of skyline". (Focillon 1992, 54)

4. Reliving the myth of Electra. The Polymedia palimpsest in the *Polytope of Mycenae*

Coming back with flinches and crises where the political predominantly consumes the position of superiority, the landmarks involved in the *Polytope of Mycenae*[43] opened parentheses after parentheses, giving one to understand that the legendary time of ancient Greek culture never grows old, and its phases of staggering decline, of barbary or transformation, of impetus and progress correspond to the idea of "centrality of the network (Faulkner)", capable of renewing "the modelling properties of the relational network" (Sanchez 2014, 50). In this palimpsest-polytope, Xenakis is concerned with the space of listening, which recombines and keeps, like in a seashell, "the historical and mythological story of the Bronze age civilisation by referencing various literary genres spanning three historical periods of ancient Greece: Mycenian (approximately 1800-1100 BC), Archaic (800-500 BC), and Classical (500-323 BC)" (Slavíček 2022, 472). We find again points of incandescence in its structuring, beside an evolution that collects and integrates alternating elements into the discipline of the composition. The independent works of Xenakis *Persephassa*[44] (1969), *Psappha*[45] (1975), *Oresteïa*[46]

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[42] In this amplified theatre, a "[…] sound system consisted of twelve loudspeakers, distributed over two interlocking horizontal rings" is remarked (one at a height of about 3 meters, the second at about 8 meters). The vision of Xenakis regarding the encompassing of the sound-producing system in the performance space involved the idea of asymmetry at a large scale, which also includes the voice of stochastic distribution.

[43] With its premiere in 1978, in the "Festival of lights, movement, and music in the surrounding area of the Mycenae Acropolis in Greece. French premiere in 1978 in the "Homage to Messiaen" concert, – part of the festival "Cycle Olivier Messiaen" in Paris. (Xenakis 1987, 12-15)

[44] for six percussionists

[45] for one percussionist

(1966), *À Hélène*[47] (1977), *À Colone*[48] (1977) are synthetically present in the performance, aligning themselves through various different morphological hypostases to the electroacoustic piece *Mycènes alpha* (1978) (Slavíček 2022, 467-468). Xenakis unites the projections of a grandiose, almost planetary mythology through multiplied echoes, accomplishing in the *Polytope of Mycenae* a labyrinth of intertextuality nuclei[49], of inter-mediality and of poly-mediality[50]. The libretto, involving a palimpsest of cosmologies, integrates circuits of ideas, of mentalities, which reflect entrance gates to self-knowledge and give answers to the great existential issues. The matrix archetype (*Ursatz*) does not appear explicitly in the sources with which Xenakis opens his polymedia discussion; this is, in fact, the myth of Electra[51] in an ancient vision; he collects characters (Agamemnon, Clitemnestra, Aegisthus, Orestes, Oedipus), existential signals, behavioural leitmotifs, which we generically call *ancient tragedy*, in an intertextual melting pot. It is interesting to analyse precisely this gravitational "beyond" starting from Electra's epiphany[52], so that one then understands the fretting of the ancient

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[46] Hybrid oratory-opera and ballet for children choir, mixed choir and ensemble on texts existing in ancient Greece

[47] a capella chorus on texts by Euripides

[48] Vocal work for men's choir (or women's choir), horns, tenor trombone, celli, and contrabass

[49] A differentiation (demarcation) between the concepts *intertextuality* and *inter-mediality* emerges. Thus, "the notion of <u>intertextuality</u>, going back to Roland Barthes and Julia Kristeva in the science of literature, is to be understood here as follows: texts of any kind, so also in any code (writing, image, music) constitute themselves from and become intelligible on the background of earlier and parallel texts. Thus, a close intertwining of relations emerges between the texts, in which meanings are crystallised, changed, influencing and eliminating each other" while the "notion of <u>inter-mediality</u> adds an additional level to all of this" […]. "Inter-mediality should […] be understood as such that between the two codes language and music [and other media] there occurs a dialogue, a fruitful competition, through which both are mutually lighting up each other in their meaning, describe, comment the other code with their own means, and also make this rapport the topic of their declarations, again […]." (Pantel 2010, 14-15)

[50] "On the plane of composition, polymediality involves the factor of space – indoor and outdoor – in the musical and dramaturgical concept. The technical characteristics of the performance space are considered during the compositional phase and influence the construction of the work." […] "Within the framework of staging, the music or, more precisely, the holistic nature of musical synthesis, interacts dynamically with other art forms and media." (Elia 2017, 21)

[51] which "does not represent a figure of ancient mythology and neither one of the pre-classical epic, but merely an *apparition* within the ancient myth of the Atreus family, literarised in Aeschylus' work (*Oresteïa*)" and in the other two great tragedies with the same title: "Electra", by Sophokles and Euripides. (Golban 2005, 5)

[52] The myth of Electra "originates within an already consecrated ethno-religious myth, that of the damned Atreus family, spun around the symbolical life experience of Agamemnon, Clitemnestra, Aegystus, Orestes, Electra, this myth being literarised in the Ancient Epoch and in the following

characters which depend on the mythical interaction with her archetype (power, attraction-repulsion, lawlessness, justice, equality, democracy etc.).

Xenakis builds this theatre 'with several eyes', of the laws of destiny, in which the society of Homer (*Ilias*, volume XII – evoked in the Homeric language) is prepared to associate itself in language with parts from the drama *Helen* by Euripides (rendered in the Mycenian language), absorbing for a few moments the myth of the Atreus family, the life of Oedipus, of Persephassa, of Agamemnon, of the Eumenides. Interpolations of the faces of the muses, of the legends of Zeus, Poseidon, Ares and Diomedes, Apollo, Hector and Patroclus are also existing in the polytope; then, the symbol-effect of the fall of Troy is insinuated (Slavíček 2022, 467). Being the most narrative of the polytopes, (Slavíček 2022, 472) that of *Mycenae* is also the richest in semantic branching. The immense number of texts mobilise, through various degrees of intensity, long gone sociologies, societies that managed to imprint their own law (nomos) through the physiology of the artistic – their traces and function being studied at different historical times by important contemporary authors at the time[53]. The fact is revealed that "the myth of Electra seems to be a hybrid of some elements that pertain to the ethno-religious myth [...] and the literary myth, expressing the transition from one mythology to another, from character figure to female hero, from a situation with example power for the collective to another, in the sense that this [meta-narrative] based on Electra's destiny represents a transition process from sacred to profane, and vice versa, [...] from demythization to a new mythization." (Golban 2005, 5)

5. Conclusions

Expanding the spectre of avant-garde artistic productions to Shiraz[54], to the Cluny Museum in Paris or to the Acropolis at the *Mycenae* performance confirmed that the creative mixing of the social, political, scientific knowledge systems, fertilised by Xenakis's post-structuralist thinking, opens windows to a new humanism, since "instead of studying life in closed systems, as the structuralists had done, post-structuralists looked at the openness, excess or instability of systems: the way languages, organisms, cultures and political systems necessarily mutate or become"

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periods, and especially because the character Electra becomes an archetype, destined to suggest certain general human traits" Golban 2005, 5).

[53] We briefly mention Eugene O'Neill, Jean-Paul Sartre, T. S. Eliot

[54] "Iran in the 1970s [...] provided a home for the flowering of electronic music and avant-garde arts." (Gluck 2006, 216)

(Colebrook 2002, 3). Xenakis amplifies the intertextual (polymedial) florilegia of the performance of each polytope through maximal training skills of his culture (included in the universal one), dressing it in a cyclic time which digs at the rock of eternity through deconstruction, symbioses, regenerating the support of its symbols.

From the <time> of the polytopes, through the ramification of media means, three narrative matrices stand out:

1. the first – able to fit and explain a political-social and cultural portrait of times past, which flow along a vector oriented towards the present time, from the perspective of becoming;

2. the second – which should offer a symbolic, archetypal vision of the existing syncretic substance;

3. the third – equipped with properties which should allow to enter the area of technology, piercing through the ground of cybernetic thinking as a vast territory of associations (kinematic, sound, visual/choreographic).

It is very likely that the depth of the composer's, architect's, culture man's thoughts irrigated in an unleashed manner an acute resonance with the imprinted and intertwined traces of war as a relief carving of violence and cruelty. Taking out from the technique of manipulation – inherent at times of war – the indoctrination of human masses who aspire to freedom and who respond through opinions, customs, habits, through reactions to propaganda, the composer conceived in the abstract world the seed, the gene of the whole manifestation process of their action, creating the *masses* (populations) of sounds (*Pithoprakta*).

Xenakis spreads in the polytopes data from several historical times. Finding the possibility to lead the performance both as an *inside observer* and an *outside observer*, he will lift the veils of the palimpsest, "watching the universe from a region of hypertime" (Gardner 1992, 194). The canvases of the scenarios that revive that Lacanian "Mirror Stage"[55] bear fruit through subconscious images, awakening those bridge-functions that will distort the relations of distance and space like in the projective geometries, which he had studied so arduously. In his *Gesamtkunstwerk*, he submits the polytopes by "[…] mixing music, architecture and performance" (Carré 2022, 454) in a space that expands the audio-visual environment. Hence, this archetype of distortion also becomes responsible for the

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[55] Lacan captures the conscious subject in the phase of his getting closer to the previous stages of existence (e.g. returning to childhood). He explains in "The Mirror Stage" the identity and development of the conscious subject (i.e., Ego) "as a function of its projected/reflected image (its other)." (Holm 1992, 24)

untwining, through the same steps of the mirror[56], of another persistent scenario: that of the splitting of the identity ("alienating identity" (Lacan)), to which the branching of the intermodal connections (Troge 2013, 36-39) is added, which are in action inside one's own being. The sum of these connections projects one of the meanings of the composer's I, who "it seems, is not only rigid, but also fragile."[57] As illustrations of architectural and theatrical counterpoint, the polytopes embody classes of similar conceptual descriptions (if we understand their fundamental structure), as the differentiations are projected in the surface structure (= the libretto, the thin coat of optical and sound effects, the ensemble of installations, their layout in space and the media treatment). Their syncretic display evokes projections into the history of the Persian Empire, of ancient Greece, but also into the history of a member of the human species who is all but indifferent, the composer himself, who, by reliving the historical role, strengthened his I, sometimes correcting the social command: that is, that command of constraint which ignores historical facts in order to highlight the "social I of the artist." (Radu 1989, 194)

Infinitely fracturing the lines and points of several projective geometries with *n* dimensions like they are defined by Lobacevsky, Riemann or Klein, XENAKIS was forced – during his entire creation – to come down into the Euclidian space, of the immediately palpable, in order to indicate the access gate to the *Dasein* (being here) (Heidegger) – briefly, to what we have access and can see – but also suggesting what he saw in his "Erzählstruktur" (narrative structure), situated in the proximity of the group of transformations of dimension <n>.

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[56] Understood as existential starting moment: "ego-formation". As Lacan asserts, "the mirror stage marks a critical and determining moment in a subject's psychological development. [It] contributes to "a form of its totality" in the subject's spatial identification of itself [...]". (Carré, 2022, 210)

[57] "The ego [composer's ego], it seems, is not only rigid, but also fragile." (Lynch, 2008, 214)

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