

Xenakis Networked Performance Marathon 2022 Connectivity and the new cosmic¹

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Abstract

Questo articolo esamina il ruolo della connettività nelle performance in rete e propone un approccio critico nei confronti del suo utilizzo nelle arti. Come punto di partenza e caso di studio verrà preso in considerazione il progetto “Xenakis Networked Performance Marathon 2022”, presentato come un festival di performance in rete su larga scala sia online che al Conservatorio Nazionale di Atene (Grecia), e che ha visto il coinvolgimento di numerosi artisti, programmatori, compositori, tecnici e interpreti provenienti da tutto il mondo. Tra gli strumenti teorici qui utilizzati si possono annoverare le teorie di Deleuze e Guattari sul ruolo dell’artista durante il modernismo, nonché le riflessioni più contemporanee sulle reti e sull’onnipotenza della connettività al giorno d’oggi.

Parole chiave: nuovi media, connettività, comunità online, Xenakis, Deleuze.

This paper discusses the role of connectivity in networked performances and attempts a critical approach towards its use in the arts. As a starting point and case study the project “Xenakis Networked Performance Marathon 2022” is used, which was presented as a large-scale online networked performance festival and at the National Conservatory of Athens, Greece, featuring many artists, programmers, composers, technicians and performers from all over the world. Among the theoretical tools used here are Deleuze and Guattari’s theories on the role of the artist during modernism, as well as more contemporary reflections on networks and the omnipotence of connectivity today.

Keywords: new media, connectivity, online community, Xenakis, Deleuze.

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1. Xenakis Networked Performance Marathon 2022

The XNPM22 Xenakis Networked Performance Marathon 2022² took place on December 16th 2022 and was an homage to the Greek pioneer composer and thinker Iannis Xenakis, as an event dedicated to his memory, his work, and his reflections on science and technology. The work was available both on site in Athens Conservatory, and online through live streaming. It is still available online on the Athens Conservatory YouTube channel³, as a whole uncut live streamed archive. The work was created in the framework of the centenary celebrations for the birth of Iannis Xenakis, by the Performative Environments Arts Research Lab (PEARL) at the Department of Audiovisual Arts of the Ionian University, in collaboration with Athens Conservatory and the Meta-Xenakis consortium.

During this marathon, works were performed simultaneously at the Athens Conservatory, as well as in other places worldwide. Control data were transmitted through the Internet, resulting in coordinated sound and dance performances between different locations. It included sound and performance data from live coders, scores, instrumental performers, dancers, installations and other media formats, while the main data format was Open Sound Control (OSC) broadcasting via OscGroups, with parallel video streaming. Participating performers were located in different parts of the world, while performances took place on the stage of Athens Conservatory⁴.

² Xenakis Networked Performance Marathon 2022 would not have been implemented without the invaluable contributions of:

1. The HAL Research Project and Lab PEARL staff, namely Iannis Zannos: Concept and Art Direction - Martin Carlé: Production and Sensor Development - Vasilis Agiomyrghianakis: Sound Design and Production Assistant - Thanasis Epiteidos: Production Assistant - Tania Tsiroidou: Video Production Assistant - Minas Pergantis: Roubini Oikonomidou: Web Presence and Connection to AVARTS Video Streaming on Youtube,

2. The Athens Conservatory, namely Νίκος Αθηναίος: Overall Coordination and Direction at Athens Conservatory, Lila Zafeiropoulou: Choreographic Supervision and Concept, Stella Kourbana: Coordination with Meta-Xenakis Consortium, Katerina Tsioukra: Press and online presence,

3. The MA in Digital Arts, Athens School of Fine Arts, namely Vicky Betsou: Video Production, Nikos Dalezios: Video Production Assistance, and MA in Digital Arts Students: Pericles Andonopoulos, Sofia Damala, Eleftherios Delimbasis, Eleni Dimopoulou, Leda Zacharopoulou, Stella Kavagiou, Ioannis Karalis, Thanasis Kafetzis, Mírto Kokkinou, Panos Mazarakis, Georgia Mandalia, Dimitris Papadopoulos, Isidoros Plakotaris, Evangelia Raftopoulou, Stratos Serafeimidis, Eirini Tambasouli, Valentina Farandouri.

4. Independent collaborators, namely Dimitra Kousteridou, Georgios Diapoulis, Stefano Kalonaris.

³ Athens Conservatoire (2022). Xenakis Networked Performance Marathon 2022. <<https://www.youtube.com>> (last accessed: 15/02/2023).

⁴ Several institutions contributed to Xenakis Networked Performance Marathon 2022: GR - Athens Conservatory, The Contemporary Music Research Center (CMRC), Ionian University, Department of Audio and Visual Arts, HAL Research Project, the Laboratory of Performing Environments in the Arts (PEARL), Athens School of Fine Arts / FR - Centre Iannis Xenakis, Meta-Xenakis Consortium / MEX - Utopía Ship Parque Lineal Periférico Oriente Esquina / JPN - Hokkaido Information University / GER - Robert Schumann Hochschule Düsseldorf / UK - University of Sussex / ISL - Iceland University of the Arts.

All artists performed the works in real time and remotely, with simultaneous participation of other artists on site, connected via the Internet. The performances were streamed worldwide featuring artists from different countries, such as Greece, Italy, Germany, Turkey, Japan, Mexico, England, Ireland, United States. The core team of the work was Iannis Zannos, Dimitra Kousteridou, Lila Zafeiropoulou, Iliia Katsaridou, Roubini Oikonomidou, Martin Carlé, Vasilis Agiomyrgianakis, Iason Svoronos-Kanavas, and many more that participated in the organizing processes.

2. XNPM22 Description - Program Notes

The work was spread throughout 8 hours and lasted from Friday December 16th at 19:00 (local time EEST), to Saturday December 17th, 2022, 3:00 (local time, EEST), although the original plan was to last until December 17th, 2022, 21.00. The works were selected via an open call, and their description was available to the program team via EasyChair. It is worth mentioning here the description of each project individually, even if briefly, as more than 50 performers, technicians, composers and artists participated in the networked marathon, very often with several roles each.

More specifically, choreographer Mariannina Simatou (Athens Conservatoire Professional Dance School Alumna, member of Corporis Miracula Ensemble) explored spatial sense through alternations of basic colors and shapes, and embodied sound sculptures. *Kraanerg Variations 1: Polymorphic Universes* (15') and *Kraanerg Variations II: Route Through Time* (30') were performed with sensor-controlled sound⁵ together with senior students and members of Corporis Miracula Ensemble⁶. The pieces created resounding masses guided by the movement in space and time, creating polymorphic universes of bodies, sounds and territories in space. Simatou also choreographed *Time Warp* (12') for dancer Sabina Mouratidou⁷ and wearable motion sensors, performing a creature that awakens in a malleable space, where the real and the imaginary are intertwined and juxtaposed.

Stelios Giannoulakis and Jiannis Papadakis performed *FeedbackLoopExpansion* (20') for Pure Data, Synthesizer with feedback and OSC, as a performed research into a generalized feedback-based model for structuring variably stable soundscapes and pieces of performative sonic art. They patched Synth100 in the studio of the CMRC (ΚΣΥΜΕ), so as to explore its generative behavior, including a microphone feeding back with the studio speakers, meaning to achieve the generation of real-time analysis data. Serkan Sevilgen performed *Gendy Cloud* (8') with CSound controlled over the

⁵ Sound design: Vasilis Agiomyrgianakis, Sensor design and development: Martin Carlé.

⁶ Athina Kolovou, Andrea Michailidi, Vilemini Kalambratsidou, Giannis Varsos, Dimitra Filippaki, Evgenia Oikonomou, Elektra Smyri, Ioanna Ragia, Katerina Gerali, Artemis Strongylaki, Vasia Koutsilianou, Garyfalia Kontrafouris, Irini Dimojianni, Katerina Psaroudaki, Konstantina Kondyli, Maria Bosda, Nefeli Anthidi.

⁷ Athens Conservatoire Professional Dance School Alumna, member of Corporis Miracula Ensemble.

web via OSC, a work that was inspired by Orestis Karamanlis' outdoors sound happening in the framework of Xenakis22 symposium⁸. A cloud of Gendy sounds were generated around the audience with a multi-spatial, handled via Remote OSC, which is a Node.js library written by Serkan Sevilgen. Julian Scordato presented *Study for a cosmic city* (8') with Pure Data (control), Max/MSP (Sound) and IanniX (Graphics). The performers of Arazzi Laptop Ensemble⁹ generated sounds that emerged from a utopian urban planning proposed by Iannis Xenakis in his essay entitled "La Ville Cosmique" (1965). As an attempt to relate computer graphics to the formalization of sound, the structures that characterize this utopian city were designed using superquadratic curves capable of describing reasonable variations of sound parameters, such as amplitude and pitch. Parameter values extracted from buildings and pathways were sent remotely to an ensemble of electroacoustic performers via OSC messages. In the graphic representation of the score, each building transmitted continuous messages relating to the position of a running cursor, while paths on the ground activated messages at road intersections and defined the macro-formal articulation of the score.

After a short interval Eric Lemmon performed his piece *Politics I* (15') for Python, SuperCollider, Ableton Live, Twilio CLI Interface, ngrok CLI Interface, Postgresql, Redis, and Processing. *Politics I* aimed to overhaul the rigid notion of music-making by breaking down the barriers between composers, performers, and the audience, thus rendering audible the political aspects of aesthetic preference that exists within participatory music settings. Audience members submitted a text which was processed by the system, and generated sound depending on movement, co-creating music together with the composer. The piece was divided into three distinct movements: Digital Discourse, Cybernetic Republic, and Technoautocracy, as an analogy to particular political systems, with the purpose of musically representing how systemic structures influence political decision-making, but can also be subverted through coordinated action. Moreover, Eduardo García performed *Telluric Oscillation* (5') for SuperCollider with live coding, a sonification of data from earthquakes registered in Mexico from 1970 to 2020 by the Servicio Sismológico Nacional of UNAM (Universidad Nacional Autónoma de México). The composer suggested that the measured forms of these natural disasters resemble those of stochastic models and communicates this hypothesis through sound.

As XNPM22 continued, Danae Papadopoulou and Garifalia Kontrafoura choreographed *Sarcophagus*¹⁰ (35') depicting our era's struggles, as everyday life and

⁸ Orestis Karamanlis <<http://orestiskaramanlis.net>>, <<http://soundwalk.music.uoa.gr>> (last accessed: 21/02/2023).

⁹ Giorgio Klauer (Conservatory of Trieste), Nicola Privato (Iceland University of the Arts, Reykjavík), Julian Scordato (Conservatory of Padova), Giovanni Sparano (Conservatory of Reggio Calabria), Paolo Zavagna (Conservatory of Venezia).

¹⁰ Sound design: Vasilis Agiomyrgianakis, Sensor design and development: Martin Carlé, performers: Vasia Koutsilianou, Dimitra Filippaki, Marianinna Simatou, Viki Rondogianni, Evdokia Tzari, Sabina Mouratidou.

friction within society metaphorically devours human flesh. In this performance with wearable motion sensors, flesh was used as a symbol of in-depth, irreversible decomposition in a process of social slow-moving collapse. Dennis Scheiba, Julian Rohrhuber, and members of Algebra Ensemble (Robert Schumann Music University Dusseldorf) performed *Sieve algebra study for groups of unknown size* (15'), a networked Live coding on SuperCollider. This piece departed from the sensitivity of composite formulas and follows the compass of Xenakis' sieve algebras into a combinatory logic of sound. Vilemini Kalabratsidou presented her work *Heartland*¹¹ (5') for a dancer and Supercollider controlled by a wearable EKG / ECG sensor. The sensor captured the dancer's heartbeat which functioned as a vital organ metronome, constantly changing and adapting to the needs of the body movement, questioning the relation between rhythm, music, body and space. Shortly after, Brain Dead Ensemble¹² performed the piece *BDE* (30'), an improvisation based on feedback cellos, a feedback bass and a Threnoscope, acoustically coupled to form a multi-instrument, multi-channel system – an expanded music interface. The Threnoscope is a live coding system created by ixi audio for drones, live coding and microtonal, spatialised composition. All the instruments of this performance were networked acoustically: the seven channels of the threnoscope are diffused to a quadraphonic PA plus the integral speakers of the string instruments, creating a condition where no one is in control, although everyone is playing.

After the second interval of the networked marathon, Thanos Polymeneas, also a member of the Brain Dead Ensemble, performed *Never Feed(back) Gendy after midnight* (20'), a piece with double bass with feedback, using free improvisation, Gendy algorithms and audio/data feedback. To manage the contribution of the feedback in the process and to control the parameters of the Stochastic distributions, Polymeneas used a custom trained multi-layer Perceptron Regressor Neural Network. Next, Michel Soto and Aidé Aspicit presented *hipercuboLab LiveSet* (5') for SuperCollider and TouchDesigner. The piece was an algorithmic system inspired by mathematical techniques described by Iannis Xenakis in his book "Formalized Music". A 3D environment was controlled in real time by the live coded changes made in the generative musical system. Markov chains, weighted random systems, machine learning processes, 3D geometry and real time animation were controlled using SuperCollider and TouchDesigner.

As the marathon continued, the piece *Duel Revisited* (15') composed and performed by Stefano Kalonaris with Python and SuperCollider¹³, which was based on a finite zero-sum game. It is the earliest of the three pieces that Iannis Xenakis composed inspired by game theory, the other two being *Stratégie* (1962) and *Linaiia-*

¹¹ Choreography consultant: Iris Fousteri, Dramaturgy Consultant: Garyfalia Kontrafour, Programming and data sonification: Iannis Zannos, Research consultant: Katerina Elraheb (Athena Research Center).

¹² Alice Eldridge: Feedback Cello, Chris Kiefer: Feedback Cello, Thor Magnusson: Threnoscope, Thanos Polymeneas-Liontiris: Feedback Double Bass.

¹³ Live Coding: Vasilis Agiomyrgianakis, Georgios Diapoulis.

Agon (1972). *Duel Revisited* stylized a conflict between two conductors who direct their respective orchestras in the execution of musical scores (events). Conductors were modeled computationally by means of probabilistic automata. Next, Vasilis Agiomyrgianakis and Haruka Hirayama performed *Acts for backs*¹⁴ (20'), a piece for conductive paint, custom made sensors, Raspberry Pi, and SuperCollider. *Acts for backs* was an interactive - telematic performance which combined traditional art such as painting with real-time sound synthesis and electronics (microcomputers and sensing technology), thus suggesting new relations between senses, subjects and technologies. Lastly, Hidehiro Fujiwara performed *Sound Ping-pong*¹⁵ (5'), a telematic participatory sound installation work using a computer and smartphones, where information from the smartphones' sensors were sent to the computer via OSC communication, while sounds were generated by SuperCollider.

3. If there is a modern era

As it becomes obvious from the themes and technological tools used by the artists, this large scale networked performance paid tribute to Iannis Xenakis' aspirations for technological expansion on the arts, as a digital «hedgehopping [of] sound displacements in cities and over the countryside»¹⁶. Though both Xenakis' visions of raid alarm system speakers resounding the planet and demilitarization of modern economies¹⁷ haven't yet been fulfilled, current Internet, coding and streaming technologies have managed to make art fly «over our planet and soar into the cosmos»¹⁸.

As Deleuze and Guattari frame it «if there is a modern age, it is, of course, the age of the cosmic»¹⁹. In the same way Xenakis' artistic character pertains and refers to the cosmic. His vision of projecting sound to multiple sites, creating actual and real territorialities in our planet and the universe is somehow envisaged in this networked performance. What he couldn't know at his times is that projection and territoriality is not today to be shared with traditional means such as loudspeakers, or analog immersive and simultaneous sounds over the cities, like a resounding international

¹⁴ Acting: Konomi Kaneko (Δrama theater DOMO), Technical Support: Yuto Fukuda (Hokkaido Information University).

¹⁵ Implementation Support: Iannis Zannos, Sound design and live coding: Hidehiro Fujiwara and Iannis Zannos.

¹⁶ I. Xenakis, *Arts/Science: Alloys*, thesis defended before Olivier Messiaen, Michel Ragon, Olivier Revault d'Allonnes, Michel Serres and Bernard Teyssedre, tr. by S. Kanach, Pendragon Press, New York 1985, p. 5.

¹⁷ *Ibidem*.

¹⁸ *Ibidem*.

¹⁹ G. Deleuze, F. Guattari, *Capitalism and Schizophrenia: A thousand plateaus*, tr. and foreword by B. Massumi, University of Minnesota Press, Minneapolis - London 1987, p. 342.

Symphony of Factory Sirens of Arseny Avraamov²⁰. Instead, these traits can occur through coding. Even art is traveling in the universe in digital forms and binary codes, with instructions on how to decode²¹. Although Xenakis couldn't have foreseen this type of abstract territoriality, and the telematic possibilities of our times, XNPM2022 was driven by his efforts to push the boundaries of technology and artistic creation to its cosmic possibilities.

In purely musicological terms, territoriality is absolutely relevant to Xenakis' work, as is the relationship between art and science. His special relationship with architecture, the resounding territorial blocks in his works, the correlation of musical creation with scientific knowledge, these are some of the characteristics of his production and reflection²². Telematic works may not have been within the scope of his interests, due to the unavailability of this technology, but his work is full of events, movements, acoustic densities and intensities, spaces, places and multiple territorializations²³, physical though parallelly virtual.

According to Makis Solomos, space in Xenakis' work is incorporated in four ways: the ontological and philosophical level, the operative level in geometric space (like graphs for composing music), the physical level introduced with the idea of the "composability" of space, and lastly, the level of the "polytope" where space is defined as a place where an event occurs²⁴. Space becomes perceptible across «the infinity of chains of energy transformations»²⁵, a condition which renders movement equal to displacement, as «a more fundamental notion»²⁶ leading to the creation of space through an autogenesis of energy.

This relation to territoriality is reversed in this networked marathon, while it is interspersed with new interpretations: XNPM22's territoriality is literal, at the same time as it is only made possible through virtuality and the deterritorialization of technological media, creating a "polytope" which is actually carried out through many spaces, whilst it becomes an event, a varying condition that autogenerates displacement as its immanent element. It is situated in time and is using space as its prerequisite and preliminary element, which is only being attained through

²⁰ M. Molina et al., *Baku: Symphony of sirens: sound experiments in the Russian avant garde: original documents and reconstructions of 72 key works of music, poetry and agitprop from the Russian avant gardes (1908-1942)*, Music CD, ReR Megacorp, London 2008.

²¹ M. Hann, *The vinyl frontier: why do we keep sending music to outer space?* The Guardian online article 2007, <<https://www.theguardian.com>> (last accessed: 18/02/2023).

²² I. Xenakis, *Music and Architecture*, ed. by S.E. Kanach, Pendragon Press, Hillsdale - New York 2008.

²³ S. Sterken, *Towards a Space-Time Art: Iannis Xenakis's Polytopes*, in «Perspectives of New Music», 39, n. 2, 2001, pp. 262-273.

²⁴ M. Solomos, *The Complexity of Xenakis's Notion of Space*, in M. Brech, R. Paland (ed.), *Komposition für hörbaren Raum. Die frühe elektroakustische Musik und ihre Kontexte [Compositions for Audible Space. The Early Electroacoustic Music and its Contexts]*, Transcript Verlag, Bielefeld 2015, pp. 323-337.

²⁵ I. Xenakis, *Formalized Music, Thought and Mathematics in composition*, ed. by S.E. Kanach, Pendragon Press, Stuyvesant (NY) 1992, p. 257.

²⁶ M. Solomos, *Xenakis' Thought through his Writings*, in «Journal of New Music Research, Routledge», 33, n. 2, 2004, pp. 125-136.

communication and connectivity. In this way, it is made possible only through its technological articulations, by attaching its cosmic property to its non-cosmic characteristics.

On the other hand, we could say that the aspirations of Deleuze's views on the cosmic visions of the modern artist during our own era, have been altered to be not cosmic at all: Societies, actions, organic agents, technology, all enter the «realm of technological mirrors»²⁷ with equal terms, and are interprojected, mirrored and parallaxed as autopoietic systems²⁸. Science and art are intertwined today more than ever, in everyday life and all of its instances. In XNPM22 a very much earthly activity occurred, consisting of microchips, electrical materials and traditional human abstract thought, all of which enlisted to create this telematic performance marathon. The very human artistic technique and virtuosity created the performative connections. The very ordinary audience watched, learned and was affected, whether in front of a computer screen or in the physical space. No giant speakers were used, instead the small but countless speakers on desktops and laptops resounded with the same sounds. This is the power of today's era, not the single large scale, but the innumerable synergies of the many. The disenchantment of the cosmic has occurred: we are alone, perishable and frail, and if we have one power left, that is synchronicity.

4. *Is connectivity enough?*

Though contributing to a broad discussion on the aesthetics of our era, the aforementioned thoughts on the cosmic character of the arts are not statutory, nor are they presented here as a critique of XNPM22. In a sense, the work has achieved something greater than the cosmic: to highlight «the potential of technology to support international collaboration in artistic creation, to create works that are performed live in multiple venues simultaneously regardless of distance, using new experimental media that allow for direct communication and exchange of musical data»²⁹, as the project description on the conservatory's YouTube channel states. But the criticism comes precisely on the basis of these achievements. Is connectivity enough? Is connectivity in itself worth a celebratory stance? Can we rely on its appearance to discern changes and radical imperatives, in an era still searching for its identity in the history of aesthetics?

Following Xenakis' thought, there is a «biological struggle between generations unfurling all over the planet, destroying existing political, social, urban, scientific,

²⁷ A. Nusselder, *Interface Fantasy. A Lacanian Cyborg Ontology*, The MIT Press, Cambridge - London 2009.

²⁸ H. Maturana, Fr. Varela, *Autopoiesis and Cognition: The Realization of the Living*, D. Reidel Publishing Company, Dordrecht - Boston 1980.

²⁹ Description of the networked performance XNPM22, online: <<https://www.youtube.com>> (last accessed: 21/01/2023).

artistic and ideological frameworks on a scale never before attempted by humanity»³⁰. Although XNPM22' description avoids citing the whole quote, erasing the essence of this thought referring both to the destruction and the undermining of existing arrangements, it is impossible to deny the radical essence of the composer's artistic intention, even if it was suppressed in favour of an emphasis on «international collaboration and the role of embodiment and performative practices and contemporary society and the arts»³¹.

In relation to the radical imperatives of Xenakis however, it is worth noting that the possibility of connectivity today is not in itself radical, given that it is extensively used by the worst face of capitalism and the economic policies that are being applied. We cannot be exclusively celebratory about the technical possibilities for widespread connectivity, as the crowdsourcing practices of networks highly contribute to the generalized surveillance of a constant lifelogging³², to anxiety as the dominant reactive affect of contemporary capitalism³³, and to a global digital governance. All of the above are today's epitome of connectivity, functioning as the main strategy of power arrangements. The inclusion of connectivity in the tactics of undermining³⁴ these power arrangements could rest on our ability to choose, critique, and reflect upon the tools and weapons³⁵ we choose for this purpose. We can trace a threat in connectivity, and a weapons system in the network³⁶. Political regimes stand today through their relation to networks, while «networked power is based on a dialectic between two opposing tendencies: one radically distributes control into autonomous locales; the other focuses control into rigidly defined hierarchies»³⁷. Furthermore, continuing on Galloway and Thacker's thought, the very idea of connectivity is «so highly privileged today that it is becoming more and more difficult to locate places or objects that don't, in some way, fit into a networking rubric»³⁸. In

³⁰ J. Haynes, J.F. Archibald (ed.), *The Bulletin. Vol. 110*. Online description 1988, as cited in Kraanerg presentation by L. Zafiropoulou in the Greek National Opera: <<https://www.nationalopera.gr>> (last accessed: 17/02/2023).

³¹ Description of the networked performance: <<https://www.youtube.com>> (last accessed: 21/01/2023).

³² J.K. Puar, *The right to maim*, Duke University Press, Durham - London 2017, p. 4: «Lifelogging refers to forms of emergent technologies, loosely grouped together, that seek to ensure that every event in (your) life is logged. These include surveillance technologies – technologies of pleasure, fun, amusement, and capacity enhancement that wind up surveilling as their by-product – as well as technologies that deliberately surveil for capacity production as their primary task».

³³ Institute for precarious consciousness, *We are all very anxious, Six Theses on Anxiety and Why It is Effectively Preventing Militancy, and One Possible Strategy for Overcoming It*, online 2014: <www.weareplanc.org> and <crimethinc.com> (last accessed: 10/02/2019).

³⁴ M. de Certeau, *The practice of everyday life*, tr. by S. Rendall, University of California Press, Berkeley - Los Angeles - London 1984.

³⁵ G. Deleuze, F. Guattari, *Capitalism and Schizophrenia*, cit., p. 403.

³⁶ A.R. Galloway, E. Thacker, *The Exploit. A theory of networks*, *Electronic Mediations*, vol. 21, University of Minnesota Press, Minneapolis - London 2007, p. 16.

³⁷ Ivi, p. 19.

³⁸ Ivi, p. 26.

short, the “digital logic of combinatorial difference is now used as a tool of governance³⁹”, rendering connectivity a «techno-utopian business strategy that braids the physical with the virtual to create a sociopolitical empire of difference»⁴⁰.

On the other hand, the cooperative intention of XNPM22, cannot be sidelined. The project clearly attempted to link art and technology by using a common line of flight of the weapon and the tool, dispersing expertise and artistic inspiration globally. This shared line of flight of the weapon and the tool amassed «subterranean, aerial, submarine technicians, who belong more or less to the world order, but who involuntarily invent and amass virtual charges of knowledge and action that are usable by others, minute but easily acquired for new assemblages»⁴¹. The project wanted to offer technological knowledge, to create a remote community of artists, to create synergies. And that is not insignificant, nor irrelevant. But only as long as the goal is informed by existing subversive imperatives, evading centralized power structures, and using connectivity «to propose that an understanding of the control mechanisms within networks needs to be as polydimensional as networks are themselves»⁴². This urgency is, at that moment, far more useful than perfecting the quality of connectivity for musical synchronicity sake. There is no objection that connectivity brings together ideas, thinkers, artists and technicians from all over the world, but it does not make a work radical in itself. In other words, connectivity is not sufficient to strengthen subversive practices that would destroy the «existing political, social, urban, scientific, artistic and ideological frameworks», which Xenakis undoubtedly defends in his work, as do many theorists and artists of our time.

Conclusion

To sum up, the project XNPM22 impresses with its scope and technical excellence. It pertains to a larger discussion on contemporary aesthetics and politics, through the work of a composer that thrived during the previous century. Parallel to the performance and sound narratives of its content, a theoretical discussion can unfold, regarding novelty and connectivity. Though technological media have infinite possibility, the objective remains to create collaborative spaces, non-hierarchical and anorganic⁴³. The challenge is not a mere democratization of the media, it is instead an attempt to reclaim the means of production, a social advancement from mere cogs of crowdsourcing ubiquitous lifelogging systems to active agents of co-creation in our own terms.

As traditionally marxist as this sounds, we have not shifted drastically from a perpetual industrialization, an economic fetishism of technology, a constant

³⁹ A. Culp, *A guerilla guide to refusal*, University of Minnesota Press, Minneapolis - London 2022, p. 83.

⁴⁰ *Ibidem*.

⁴¹ G. Deleuze, F. Guattari, *Capitalism and Schizophrenia*, cit., p. 403.

⁴² A.R. Galloway, E. Thacker, *The Exploit*, cit., p. 63.

⁴³ G. Deleuze, F. Guattari, *Capitalism and Schizophrenia*, cit., pp. 278-279.

reinvention of markets and obsolescence of labour, and a never-ending renegotiation with Lernaean Hydras of production and class struggle. Media evolve, but the accumulation of wealth remains as it is reconstituted by different techniques: digitalization, virtuality, even artificial intelligence or machine learning do not necessarily and globally imply a new era. This may require new ways of managing ever new and ubiquitous media, though, apart from novelty and omnipotence, they still operate in unaltered ways socially and economically. In this sense, it is not connectivity that will render a work subversive and radical or attach a political qualification to it – an inalienable prerequisite of Xenakis' art and life narrative. Instead, it is the modes of collective process that will frame it, as well as the ways in which it will be presented and funded. After all, if we insist on seeing art as detached from social processes, a communicator of emotion or a playful experimentation, then we miss an important opportunity to reorganize the field and to make it relevant to society. And, in the end, we fail to engage in theoretical dialogues with pertinent artists, philosophers and theorists throughout the previous century and the one we are currently in.