Twentieth-Century Music 21/2, 164–179 © The Author(s), 2023. Published by Cambridge University Press.
doi: 10.1017/S1478572223000026

Iannis Xenakis in Argentina: Reception, Dialogues, and Exchanges

EDUARDO HERRERA

Indiana University, Bloomington, IN, USA

Abstract

Iannis Xenakis visited Argentina as a professor of the Centro Latinoamericano de Altos Estudios Musicales (CLAEM) of the Torcuato Di Tella Institute in 1966 where he discussed his interdisciplinary interests – mathematics, architecture, and computer-aided composition. Using archival resources and oral history, this article explores three aspects of Xenakis's trip to Argentina. First, the way the media framed the visit of the European composer and the reception of the events organized around it under a modernist discourse. Second, the direct impact that this visit had on some of the composers at CLAEM, particularly Graciela Paraskevaídis. Finally, the exchanges that Xenakis had with engineer Fernando von Reichenbach, who had been working on transforming graphic material into sound, something that crystallized with the development of Reichenbach's *Convertidor Gráfico Analógico* (1969), and Xenakis's *Unité Polyagogique Informatique* CEMAMu (UPIC 1977).

Iannis Xenakis (1922–2001) visited Argentina as a professor of the Centro Latinoamericano de Altos Estudios Musicales (CLAEM, 1962–71) of the Torcuato Di Tella Institute in late August to early September 1966. Under the direction of Alberto Ginastera (1916–83), this centre, by way of competitions, awarded two-year graduate scholarships to young Latin American composers to study in Buenos Aires under the tutelage of full-time local professors led by Ginastera, and in classes taught by visiting professors including – in addition to Xenakis himself – Aaron Copland (1900–90), Olivier Messiaen (1908–92), Bruno Maderna (1920–73), Riccardo Malipiero (1914–2003), and Luigi Nono (1924–90), among others.[1] Using archival resources and a thorough compilation of oral history, this article explores three aspects of Xenakis's trip to Argentina: 1) the way the media framed the visit of the European composer and the reception of the events organized around it under a modernist

Email: herreraeduardo@gmail.com

I am grateful to Rachel Horner for her help translating and editing this article from an earlier Spanish version. I wish to express special thanks to the late Graciela Paraskevaídis for all her help in the creation of this work. Additional thanks to Mary Reichenbach, to Cecilia Castro from the National University of Quilmes, to the staff of the archives at the Torcuato Di Tella Institute, to Erwin Levold at the Rockefeller Archive Center, and to all the fellows and professors of CLAEM with whom I have conversed over the past fifteen years. Thanks also to *Twentieth-Century Music* co-editor Alejandro L. Madrid and the anonymous reviewers for their comments and help. Needless to say, all errors and omissions are my own.

1 For more information about CLAEM in general, see Eduardo Herrera, *Elite Art Worlds: Philanthropy, Americanism, and Avant-garde Music* (New York: Oxford University Press, 2020).

discourse; 2) the direct impact that this visit had on some of the composers at CLAEM, particularly Graciela Paraskevaídis; and 3) the exchanges that Xenakis had with engineer Fernando von Reichenbach.

The Greek composer, born in Brăila, Romania, in 1922, was already known in the Buenos Aires avant-garde music scene when he travelled to Argentina. At that time, Xenakis had already developed a variety of key musical ideas that would brand his compositional style and was moving away from what he referred to as 'the crisis of serial music'.[2] His work *Metastaseis* (*Transformation of States*, 1953–4) explored the notion of composition with sound masses and had received worldwide acclaim. In his next major work, *Phitoprakta* (*Actions through Probability*, 1956), Xenakis discovered his interest in macroform, particularly the transformation of sound clouds, not through graphic means as he had done in *Metastaseis*, but instead utilizing statistical methods. In *Pithoprakta*, the cloud-like behaviours of *glissandi*, *pizzicati*, and *col legno* were calculated using statistical formulas based on Maxwell and Boltzmann's kinetic theory of gases. The third of Xenakis's earlier key works was *Achorripsis* (*Streams of Sound*, 1956–7), which made its world premiere at the Teatro Colón in Buenos Aires in 1958 under the direction of Hermann Scherchen. Argentinean composer Graciela Paraskevaídis (1940–2017) notes that *Achorripsis*, while 'not one of his best . . . caused tumult and restlessness in the conservative audience of the Friends of Music Society'.[3] That same year, Xenakis composed his electronic work *Concrete PH* (1958) to be played in the Philips Pavilion at the World's Fair in Brussels together with Edgar Varèse's *Poème èlectronique* (1958).

In 1962, Xenakis began composing a series of works titled with the prefix *ST-* (STochastic music) in which he explored the challenge of creating macrostructures with as few rules as possible, and utilized probabilistic formulas that allow decisions about individual sounds and macro-level form to be determined simultaneously by a pre-compositional model. For Xenakis, the process involved the creation of a program in which 'we put in some data and receive music at the other end'.[4] The pieces in the *ST-* series are all created from a general pre-compositional model that, with the help of a computer, implements different probability theories.[5] M. F. Gényus and M. J. Barraud programmed the group of algorithms for the *ST-* series in FORTRAN IV, working with an IBM 7090. The program provided parameters such as attacks, instrumental groupings, pitches, durations, dynamics, and different variables for *glissandi*. However, the most important information obtained from

2 Iannis Xenakis, 'La crise de la musique sérielle', *Gravesaner Blätter* 1 (1955), 2.

3 Graciela Paraskevaídis, 'Presencia de Xenakis', *Pauta* 20/77–78 (2001), 175, www.gp-magma.net/pdf/txt_e/sitio-Xenakis-Pauta.pdf. European reception of the work in 1959 was equally scandalous. See Edward Childs, '*Achorripsis*: A Sonification of Probability Distributions', *Proceedings of the 2002 International Conference on Auditory Display* (Kyoto: ICAD and Advanced Telecommunications Research Institute, 2002), 1. www.icad.org/websiteV2.0/Conferences/ICAD2002/proceedings/16_EdwardChilds.pdf.

4 Xenakis cited in Bálint András Varga, *Conversations with Iannis Xenakis* (London: Faber & Faber, 1996), 81.

5 Xenakis's titles in this series – for example, *ST/4–1 080262* for string quartet – indicated a) that the piece was produced with a stochastic music program (*ST/*), b) that this was the first version composed for four performers (*4–1*), and c) the date when the information for the piece was generated, 8 February 1962 (080262). Other pieces in the series include *ST/10–1 080262*.

the program was the density of each section, that is, the number of events that would occur in each part of the work.[6] In 1963, the composer published his most extensive treatise on the subject, titled 'Musiques formelles'.[7] Representative of the composer's increased recognition in the contemporary musical scene was the 1965 Salle Gaveau Festival in Paris, the first dedicated entirely to Xenakis and taking place the year before his visit to CLAEM.

Although Xenakis's ideas were being discussed within composer circles in Buenos Aires, only a few of his works had been heard live by the time of his visit.[8] As we noted previously, *Achorripsis* made its world debut in the city, and in 1963, the State Radio Symphony Orchestra performed *Pithoprakta* in the law school's Thursday series, directed by Maurice le Roux (who also gave talks at CLAEM). Xenakis's first work for tape, *Diamorphoses* (1957), was programmed for the First Contemporary Music Festival organized by CLAEM in a concert on 11 August 1962. The festival was the first public event held by the Centre, even before the arrival of the first group of fellows, and the act of including Xenakis demonstrated a commitment to contemporary music and a valuing of this particular composer's work.[9] Not long after Xenakis's visit, Graciela Paraskevaídis organized a radio presentation for the Argentinean Society of Contemporary Music's municipal radio series on 30 October 1966, in which she programmed *Pollá ta dhiná* (*Many Misfortunes*, 1962) for children's chorus and chamber orchestra and *Atrées* for chamber orchestra (1962).

The local Argentine press announced with anticipation Xenakis's Argentine trip and gave extensive coverage to his stay, including his lecture-recital, 'New Principles of Musical Composition' (31 August 1966). The interdisciplinary character and scientificist language that framed Xenakis's work – mathematics, architecture, and computer-aided composition – stimulated the imagination of the public in Buenos Aires regarding the relationship between art and science. It also resonated with the modernizing discourse of the elites financing the Di Tella Institute, who had been explicit in their desires to establish relationships between artistic production, technology, and Argentina's industrial development. Xenakis's visit was reported in various newspapers, including *La Prensa*, *El Mundo*, and *La Nación*. In *El Mundo*, Pola Suárez Urtubey titled her article 'Xenakis: From IBM to Music', saying that – after having met Xenakis and becoming familiar with his new theories – musicians, journalists, engineers, and architects took to the streets with 'the greatest spirit and the deepest

6 Damián Keller and Brian Ferneyhough, 'Analysis by Modeling: Xenakis's *ST/10–1 080262*', *Journal of New Music Research* 33/2 (2004), 162.

7 Iannis Xenakis, 'Musiques formelles: nouveaux principes formels de composition musicale', *La Revue musicale* 253–4 (1963).

8 In his three books of *Memorias*, Paz only refers to Xenakis a couple of times. In his third book, Paz mentions listening to *Metastaseis* and *Pithoprakta* with friends and alludes to the comments of Nicolás Espiro, who said that Xenakis 'does not create music, but merely exploits contingencies and expects results of mathematical equations, to locate the sound material within these structures'. See Juan Carlos Paz, *Alturas, tensiones, ataques, intensidades (Memorias III)* (Buenos Aires: Ediciones de la Flor, 1994), 46.

9 Graciela Paraskevaídis confirmed for me that according to Pablo Luis Bardín's record in *Tribunal Musical*, the premiere of *Metastaseis* was not until 1970, under the direction of Cristóbal Halffter with the Buenos Aires Philharmonic Orchestra. Graciela Paraskevaídis, personal communication, Montevideo, 28 June 2015.

faith in the values of one man'.[10] The journalist interviewed CLAEM's director and Argentina's most internationally known composer, Alberto Ginastera, in addition to several fellows at CLAEM, and they all expressed uncertainty as to whether they liked Xenakis's music or not, but agreed that he 'has made us think'.[11] The emphasis on Xenakis's multifaceted formation as a philosopher, musician, and scientist was highlighted in quotes from Ginastera, who said that he saw Xenakis as 'the reincarnation of Aristoxenus of Tarentum'. Despite these praises, the reporter also discussed the controversy surrounding the composer and declared that Xenakis had been attacked because he had 'used an IBM to perform his calculations more easily'. Suárez Urtubey concluded that 'the fact that a machine had become his "inspired muse" seemed an affront to those who had not managed to overcome their "Romantic prejudices"'.[12] The newspaper *La Nación* spared no compliments, calling Xenakis 'one of the most original and important figures of the advanced music of our time' and noted that for Xenakis, 'there seemed to be only one way [to approach composition]: the mathematical calculation of probabilities. [For which] his previous studies in the realm of science were a formidable aid'.[13] The composer reportedly expressed being pleasantly surprised by the intense musical activity in Buenos Aires.

Xenakis and CLAEM fellows: the case of Graciela Paraskevaídis and the ghost of Varèse

Xenakis's visit was one of the most anticipated events at CLAEM for 1966. In his visit, the Greek composer worked with the group of CLAEM fellows selected from the 1965–66 cycle: Rafael Aponte-Ledée (Puerto Rico, b. 1938), Jorge Arandia Navarro (Argentina, b. 1929), Gabriel Brnčić (Chile, b. 1942), Mariano Etkin (Argentina, 1943–2016), Benjamín Gutierrez (Costa Rica, b. 1937), Miguel Letelier (Chile, 1939–2016), Eduardo Mazzadi (Argentina, 1935–67), Graciela Paraskevaídis (Argentina, 1940–2017), Enrique Rivera (Chile, b. 1941), and Jorge Sarmientos (Guatemala, 1933–2012) (Figure 1). Additionally, Walter Ross from the United States was also present in 1966, with an Organization of American States (OAS) grant.[14] Their activities centred around an intensive course given between 22 August and 3 September, titled 'Stochastic, Strategic, and Symbolic Music', in which Xenakis shared his experiences with theories of probability and computer-aided composition. The title of the course epitomized Xenakis's main interests since the composition of *Pithoprakta* and his *ST-* series and underlined how the composer connected musical and scientific discourse. For the students, some of the classes were enlightening, others, utterly confusing. Xenakis was interviews by one of the students, Paraskevaídis, who asked him to outline what he meant by each part of his course title. The composer obliged and explained that, in this case, by 'stochastic music' he referred to his interest in probability. 'Stochastic', Xenakis said to Paraskevaídis, 'comes from the

10 Pola Suárez Urtubey, 'Xenakis: De la I.B.M. a la música', *El Mundo,* 8 September 1966, n.p.

11 Suárez Urtubey, 'Xenakis', n.p.

12 Suárez Urtubey, 'Xenakis', n.p.

13 [Unsigned], 'Coloquio musical con el compositor griego Y. Xenakis', *La Nación,* 2 September 1966, n.p.

14 Atiliano Auza León (Bolivia, b. 1928) was a fellow during 1965, but left CLAEM during his second year.

Figure 1 Class of 1966 with Iannis Xenakis. From left to right: Pedro Calderón, Gerardo Gandini, Alberto Ginastera, Rafael Aponte-Ledée, Miguel Letelier (back), Benjamín Gutierrez (back), Jorge Arandia Navarro (back), Jorge Sarmientos, Iannis Xenakis, Josefina Schröder, Graciela Paraskevaídis, Enrique Rivera, Mariano Etkin, Gabriel Brnčić, and Eduardo Mazzadi. Courtesy of Fundación Archivo Aharonián-Paraskevaídis.

mathematical term that equates to probability or probabilistic and derives from the Greek *stochos* (object) . . . I call music stochastic that introduces the theory of probabilities, as an attitude and a thought.'[15] The topic of 'strategic music', he said, discusses 'the use of conflicting situations in composition and the execution of the music, in which case, one wins and the other loses, like in game theory; that is to say, the planning of systems in games of chance . . . Strategy is the means of directing the game to be able to win.'[16] Lastly, Xenakis stated, 'symbolic music' refers to music that utilizes mathematical logic, centred around set theory and Boolean algebra, where 'sounds [are considered] abstract elements, without any conditioning by cultural tradition of any kind'.[17] A good example of this final aspect is the piece *Herma* (*Herm*, 1961), in which Xenakis uses groups of sound as sets with which logical operations are performed: a union of two sets, which uses all the sounds present in both; intersection, which uses only shared sounds between the sets; or negation, in which the result is only the sounds that are unique to each set.

The classes produced mixed results. Gabriel Brnčić remembers that Xenakis 'showed us all of his theories at once . . . Those of us who had read his work, were learning a lot . . . Other students would say "that guy is an alien. He is crazy" and I would stay quiet because I was

15 Graciela Paraskevaídis and Pablo Luis Bardin, 'Entrevista con Iannis Xenakis', *Tribuna Musical* 9 (1966), 38.

16 Paraskevaídis and Bardin, 'Entrevista con Iannis Xenakis', 38.

17 Paraskevaídis and Bardin, 'Entrevista con Iannis Xenakis', 38–9.

happy there.'[18] Mariano Etkin recalls that 'in the first class he filled the board with mathematical formulas. Five minutes in we were lost because nobody understood anything. Xenakis was explaining how he fed a computer with a program, and then the machine would give him a result for aleatoric distribution, and with that, he created a cloud of *glissandi* in musical notation.' A student followed up the presentation asking if he ever modified the results, and Xenakis answered 'Well, yes. I sometimes tweak them.' For Etkin, this was crucial. 'It meant that when it came down to musicality, if he was not interested in something he would modify it.'[19] For others, such as Jorge Arandia Navarro, Xenakis visit meant understanding more about music that 'we had heard but had not understood well. He taught us by filling the board with math, with logarithms. It was a bit like hearing another language . . . I had heard Boulez; I followed *Le Marteau sans Maître* in a score I owned. All that was understandable to me. But Xenakis, it was rough, it was rustic, a crazy Greek with an incredible aptitude for mathematics.'[20] Still, for others, such as César Bolaños, the visit of Xenakis left little to be remembered and turned out to be a small disappointment.[21]

Student interactions with Xenakis went beyond the classroom and included informal discussions, socialization, and time for leisure. The composer's visit even extended to the diplomatic field. In honour of Xenakis's visit, the cultural attaché from the Greek embassy, Alcibíades Lappas, organized a reception at his private residence, attended by Alberto Ginastera and his wife, along with various fellows from CLAEM.[22] Finally, like the vast majority of visiting professors at CLAEM, Xenakis gave a lecture-recital that was open to the general public, entitled 'New Principles of Musical Composition', on 31 August.[23]

Xenakis's ideas and music were a strong influence for several composers at CLAEM. A good example is the compositional approach that Puerto Rican composer Rafael Aponte Ledée took for his *Elejía* (1966) for thirteen strings (later expanded to fifty strings), written during his time of study at CLAEM.[24] The piece, like Xenakis's *Metastaseis*, uses aleatorism and unconventional notation to create masses of sound that, while internally varied, have a

18 Gabriel Brnčić quoted in Nancy Sánchez and Juan Ortiz de Zarate, 'Gabriel Brnčić entrevistado por Nancy Sánchez y Juan Ortiz de Zarate en el Hotel NH Florida, Buenos Aires, el 20 de junio de 2011', in *Conversaciones en torno al CLAEM: Entrevistas a compositores becarios del Centro Latinoamericano de Altos Estudios Musicales*, ed. Hernán Gabriel Vázquez (Buenos Aries: Instituto Nacional de Musicología 'Carlos Vega', 2015), 88.

19 Mariano Etkin cited in Hernán Gabriel Vázquez, 'Mariano Etkin entrevistado por Hernán Gabriel Vázquez en el bar T-Bone, Buenos Aires, el 9 de marzo de 2012', in *Conversaciones en torno al CLAEM*, ed. Vázquez, 107.

20 Jorge Arandia Navarro, personal communication, interview, Buenos Aires, 23 June 2008.

21 On the other hand, Bolaños clearly remembered the visits of Aaron Copland, Luigi Nono, and Riccardo Malipiero. Cesar Bolaños, personal communication, email, Montevideo, 8 November 2008.

22 Graciela Paraskevaídis, personal communication, email, Montevideo, 3 April 2015.

23 The lecture was given at 6:30 pm in the Audiovisual Experimentation Room at the Torcuato Di Tella Institute.

24 The piece appears spelled *Elegía* in many places, most important in the dissertation about Aponte Ledée's early music written by Noel Torres Rivera. I have chosen the spelling *Elejía* because it is how the piece appeared in the programme of its premiere, November 1966. For this and more on the Puerto Rican composer during his time at CLAEM, see Noel Torres Rivera, 'The Making of an Avant-gardist: A Study of Rafael Aponte-Ledée's Early Life and Works (1957–1966)' (PhD diss., City University of New York, 2020), 240–81. For the programme of the premiere, see José Luis Castiñeira de Dios, ed. *La música en el Di Tella: Resonancias de la modernidad* (Buenos Aires: Secretaría de Cultura/Presidencia de la Nación, 2011), 120.

relatively consistent contour. A similar characteristic is noted by Rodolfo A. Córdova Lebrón in Aponte Ledée's *Streptomycine* (1969), which features 'a combination of mobile forms with sound masses (an idea from Iannis Xenakis) and a treatment of texture and instrumentation similar to Earl Brown' who had also taught at CLAEM.[25]

Undoubtedly there was something about Xenakis's ideas that resonated deeply in the musical imagination of many of the composers that met him. In a conversation with Mariano Etkin, the origins of this affinity are clarified a bit:

> At the Di Tella Institute, with the mentors that I mentioned [Xenakis, Nono, Brown], I encountered a world that was incredibly different from the world of serialism, which was the world where we believed that the avant-garde resided exclusively. That is, when I was fifteen years old, Nono, Boulez, and Stockhausen were avant-garde. A few people knew of Varèse, but relatively few . . . Someone in some studio was listening to Varèse, and Ginastera walked by and asked one of us, 'What's that you're listening to?' and someone said to him, 'Varèse, maestro.' 'Bah. . . I knew it sounded like something outside of the great tradition!'[26]

Mentioning Varèse in this group of composers is significant. The sound masses created from independently moving instruments that one hears in *Metastaseis*, *Pithoprakta*, and *Achorripsis*, and, in general, Xenakis's interest in prioritizing timbral and textual parameters over pitch and rhythm stemmed directly from Varèse's influence. 'I love Varèse', stated Xenakis in an interview in 1966, 'and [I] profess the greatest admiration for his music and for the man himself.'[27] I argue that there is an underlying logic that explains the attraction of several CLAEM composers to Xenakis's music – the same one that explains an interest in Varèse and later in Polish composers and in Morton Feldman. The music of these composers exemplified how to produce something avant-garde outside of the common places dominated by central Europe. Also of great importance is that none of these composers resorted to some type of self-exoticization or any hint of an Otherness. It was precisely the opposite; these composers exemplified a way of accessing the transnational avant-garde without falling into the moulds of the dominant composers – represented in Xenakis's era by Darmstadt's courses in the 1950s and early 1960s. The sound worlds that Xenakis proposed, like those of Varèse, abandoned the focus on pitch and rhythmic parameters, fundamental characteristics of the European avant-garde of the early twentieth century.

In Argentina, Varèse had a marked influence on the work of Juan Carlos Paz (1897–1972), one of the most important avant-garde figures in the country who occupied an important place in *Introducción a la música de nuestro tiempo* (1955), a book that was fundamental in the formation of many Argentinean composers during the 1960s, including

25 Rodolfo Córdova Lebrón, 'Grupo Fluxus de Puerto Rico: Una guerrilla musical', *Musiké: Revista del Conservatorio de Música de Puerto Rico* 3/1 (2014), 54.

26 Mariano Etkin, personal communication, interview with the author, Buenos Aires, 1 August 2005.

27 Bois 1966 cited in Paraskevaídis, 'Presencia de Xenakis'.

Paraskevaídis, Etkin, and many other CLAEM fellows.[28] Paz called Varèse the 'latest pioneer and master of the current musical period' and described his music as one in which 'the maximum interest of the developments is maintained through the opposition of planes and the mobility of rhythmic variants: something that could be defined as the conception of spatial music and static development'.[29] Paz himself noted that Varèse's music had motivated and generated the attraction of Xenakis towards 'static development and the use of *bruit organisé*'.[30]

It was precisely this perspective of Xenakis who continued the spirit of Varèse that, I suggest, profoundly impacted Latin American composers who crossed paths with him in Buenos Aires. Perhaps the most evident case was that of Argentinean composer Graciela Paraskevaídis. About his visit to CLAEM, the composer recounted:

> Xenakis's visit in '66 coincided exactly with my involvement as a fellow. The meetings with him were practically for two weeks, daily. [Fifteen days] of confrontations, of discussions, of getting to know the music and the proposals of a composer who interested me very much at the time . . . For me, Gandini, Reichenbach, and Xenakis epitomize the Di Tella, regarding pedagogy . . . Xenakis, in the sense that he introduced me to something that greatly interested me conceptually at the time.[31]

Paraskevaídis connected with the composer musically, and this was reinforced on a more personal level through their common Greek heritage and the friendship that Xenakis formed with the composer's parents. Paraskevaídis narrated:

> In the case of Xenakis, he also brought a very particular history that united us in some way, perhaps familiarly. With my parents, too, whom he befriended. He used to come to the house, we spoke Greek, ate Greek food and all that. It was a surprise for him as well, a little surprise. And in our class too . . . he came and showed me a world of ideas, a different view of the world, different from European things that I had been familiar with until then. The topic was stochastic operations, the use of probability and mathematics in his works, and his first experiences with IBM. He had already done the *ST-* series . . . The whole possibility of dialogue with him was extremely enriching, whether in the classroom, in the halls of the Di Tella, or in [public] presentations. And the more familiar, informal chats. Domestic, almost.[32]

28 Juan Carlos Paz, *Introducción a la música de nuestro tiempo* (Buenos Aires: Editorial Nueva Visión, 1955). For Varèse in Paz, see Omar Corrado, *Vanguardias al Sur: La música de Juan Carlos Paz* (Havana: Fondo Editorial Casa de las Américas, 2010), 214–17. Xenakis is not mentioned in the first edition of Paz's book, published too close to the beginning of the Greek composer's career, but is in the later editions.

29 Juan Carlos Paz, *Alturas, tensiones, ataques, intensidades (Memorias I)* (Buenos Aires: Ediciones de la Flor, 1972), 326 and 323–4.

30 Paz, *Alturas, tensiones, ataques, intensidades (Memorias I)*, 325.

31 Graciela Paraskevaídis, personal communication, interview with the author, Montevideo, 23 July 2005.

32 Paraskevaídis, personal communication, 23 July 2005.

Musically, an interest in giving priority to timbral and textual parameters over pitch and rhythm – which, for Paraskevaídis as well, came from Varèse's work – and common ties to Greece – Paraskevaídis is of Greek descent both paternally and maternally[33] – created a connection between the two composers. Varèse's concrete influence on Paraskevaídis's music has been observed by Solomonoff and by Budón, and especially by the composer herself, who has dedicated various studies to Varèse's relationship with Latin America.[34] With respect to the impact of Varèse on her own work, Paraskevaídis wrote that in 1960 in a short and uncommon moment of self-reflection where she spoke on the third person about herself: 'Three Argentinean composers – Eduardo Bértola [b. 1939], Mariano Etkin, and Graciela Paraskevaídis – shared the juvenile discovery of the prodigious Varèsian world and its creative challenges. Each one of them incorporated and elaborated on them in his or her own way, obviously without Varèse finding out.'[35]

Some of Juan Carlos Paz's descriptions of Varèse's compositions in his book *Alturas, tensiones, ataques, intensidades (Memorias I)* could well have been about Paraskevaídis's music. For example, Paz indicates that in Varèse's works one can find a 'frequent usage of extreme dissonances both high and low in pitch, constantly and violently striking with fanatical conviction . . . extreme registers . . . invariable repetition of a small set of pitches'.[36] When musicologist Marcela Perrone describes Paraskevaídis's work for piano, *un lado, otro lado* (1984), she indicates that Varèse's influence can be observed in:

> [the] concept of musical form as a process and not as an *a priori* model; . . . [in] the experimentation with unconventional sound sources; . . . [in the] importance of spatiality in the textual framework; [in the] use of the concept of sound masses and sound planes to characterize texture; and [in the] hierarchical organization of timbre as a structural element of the composition.[37]

The continuities between the music of Varèse, Xenakis, and Paraskevaídis are evidenced by the similarities that have been described in the context of the Río de la Plata. Analogous to common descriptions of Xenakis's music, Omar Corrado has noted that a general characteristic of Paraskevaídis's work 'consists of basing the act of composing in sound as a point of departure', while Wolfgang Rüdiger points out that Paraskevaídis's music has a 'static

33 Paraskevaídis's father came to Buenos Aires from Greece in 1923, and her mother, whose maiden name is Spiridonidis, was born in 1917 in Buenos Aires to a family that came from the island of Samos some years earlier.

34 See, for example, Graciela Paraskevaídis, 'Edgar Varèse y su relación con músicos e intelectuales latinoamericanos de su tiempo. Algunas historias en redondo', *Revista Musical Chilena* 198 (2002); Natalia Solomonoff '". . .vivir tan hondo. . .": Humanismo y militancia *en* y *por* el sonido. Una interpretación de los recursos compositivos y expresivos en la música de Graciela Paraskevaídis a partir del análisis de cuatro obras con participación de la voz', in *Sonidos y hombres libres: Música nueva de América Latina en los siglos XX y XXI*, ed. Hanns-Werner Heister and Ulrike Mühlschlegel (Madrid: Iberoamericana-Vervuert, 2014); and Osvaldo Budón, 'Materialidad sonora y "desarrollo estático" en *magma VII* de Graciela Paraskevaídis', in *Sonidos y hombres libres*, ed. Heister and Mühlschlegel.

35 Paraskevaídis, 'Edgar Varèse y su relación con músicos e intelectuales latinoamericanos de su tiempo', 18.

36 Paz, *Alturas, tensiones, ataques, intensidades (Memorias I)*, 324.

37 Marcela Perrone, 'La música latinoamericana de vanguardia durante la década de los años setenta y la obra *todavía no* de Graciela Paraskevaídis', *Boletín Música* 33 (2012), 73.

character [that is], nevertheless, in a constant state of change'.[38] As we saw previously, Paz notes that 'Varèse's music stands out for its static development'.[39] In his analysis of Paraskevaídis's work, *magma VII* (1984), Osvaldo Budón utilizes the same words, 'static development', characterizing it as a harmonic statism marked by the 'permanence in time of a limited set of pitches'.[40] Colombian Daniel Añez highlights the relationship between the non-discursiveness of Paraskevaídis's music and the *static-mobile* concept, 'a sound space that at the same time changes, but does not move: the idea of not advancing'.[41]

A clear example is the work *magma I* (1966–7), the first of several works in this series, written during her fellowship at CLAEM. In it, Paraskevaídis adopts characteristics of Xenakis's compositions and simultaneously finds a very personal voice that would recur throughout her works. From the beginning, the piece confronts the listener with an abrasive sound that prioritizes timbre and texture. The high sound density becomes the main impetus of the work. The first ten bars present nine brass instruments at *fff* playing an $F\sharp_3$ that expands microtonally, with one of the trumpets utilizing a vibrato that accentuates the width of the tuning (Example 1). The piece uses sound masses with frequent *glissandi*, creating the impression of sound clouds in which the importance of individual pitch is minimalized, and the perceptual effect is one of a unique sound object created by the contours of the individual sounds with sporadic explosions of melodic cells on a smaller scale. Paraskevaídis's musical language shines here, both in its closeness to Xenakis's own work and in the uniqueness that she was starting to develop at 26 years of age.

Xenakis, Fernando von Reichenbach, and image-to-audio converters

One final aspect of Xenakis's visit worth emphasizing is the way in which the imagination of both the Greek composer and the engineer Fernando von Reichenbach (Argentina, 1931–2005) seem to have been stimulated by the possibility of transforming visual material into audio material. By the time of Xenakis's visit, the Electronic Music Laboratory at CLAEM, one of the first studios in Latin America, had already entered its second phase of existence, now led by the ingenious and inventive Fernando von Reichenbach.[42] Von Reichenbach's

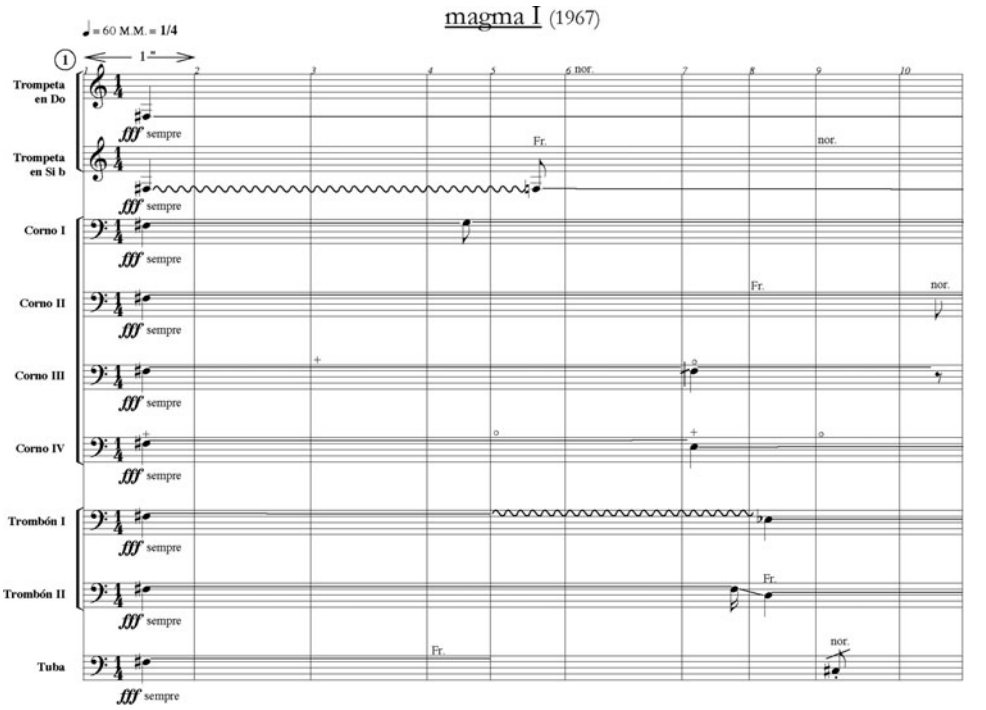
38 Omar Corrado, '. . .*altre voci e risvegli*. . .: Las obras corales de Graciela Paraskevaídis sobre poemas de Cesare Pavese', in *Sonidos y hombres libres*, ed. Heister and Mühlschlegel, 80; and Wolfgang Rüdiger, 'Cutting Paths, Singing. Approaching *sendas* (1992) for Seven Winds and Piano by Graciela Paraskevaídis', in *Sonidos y hombres libres*, ed. Heister and Mühlschlegel, 57.

39 Paz, *Alturas, tensiones, ataques, intensidades (Memorias I)*, 323–4. Revised versions of the texts in *Sonidos y hombres libres* can be found in Omar Corrado, ed., *Estudios sobre la obra musical de Graciela Paraskevaídis* (Buenos Aires: Gourmet Musical, 2014).

40 Budón, 'Materialidad sonora y "desarrollo estático" en *magma VII* de Graciela Paraskevaídis', in *Sonidos y hombres libres*, ed. Heister and Mühlschlegel, 43.

41 Daniel Añez, 'La música para piano de Graciela Paraskevaídis', in *Sonidos y hombres libres*, ed. Heister and Mühlschlegel, 36. Añez also points to studies that examine the static-mobile concept with relation to the music of Mariano Etkin, Eduardo Bértola, and Jacqueline Nova (1935–75).

42 The second fundamental person for the Laboratory was Francisco Kröpfl (Romania, b. 1931). The first official document that mentions Kröpfl as director of the lab dates to 4 April 1967. See Josefina Schröder, letter to Alberto Ginastera, 4 April 1967, CLAEM Archives, Torcuato Di Tella Institute.



Example 1 First ten bars of *magma I* (1967) by Graciela Paraskevaídis. Courtesy of Fundación Archivo Aharonián-Paraskevaídis.

Convertidor Gráfico Analógico (Analogue Graphic Converter) – known affectionately as Catalina, functional since 1969 – has been the source of local speculations about the influence that this could have had on Xenakis's digital graphic converter.

In 1966, Xenakis had created the Equipe de Mathématique et Automatique Musicales (EMAMu) that in 1972 became the Centre d'Etudes de Mathématique et Automatique Musicales (CEMAMu). The objective of these institutions 'making it possible for composers directly to transplant scientific thought and mathematics into music. Directly, that is, without any sound generator or musical instrument.'[43] One of the key projects developed there was the Unité Polyagogique Informatique du CEMAMu (UPIC).[44] The UPIC was a digital image-to-audio converter that utilized a graphic controller that functioned as an input into a computer for the creation and manipulation of sounds. It consisted of a digital graphics tablet connected to a monitor and to a computer that analysed and processed the data introduced via the panel, and generated audio from these.[45] The user could draw on the panel a type of

43 Xenakis, interview in Varga, *Conversations with Iannis Xenakis*, 118.

44 In this title, the word *polyagogique* is a typical Xenakis neologism, using the suffix *-agogie* (training or introduction to a field) and the prefix *poly-* (multiple).

45 Paul Doornbusch, 'Early Hardware and Ideas in Computer Music: Their Development and Their Current Forms', in *The Oxford Handbook of Computer Music*, ed. Roger T. Dean (New York: Oxford University Press, 2009), 61. Notice that Doornbusch does not mention CLAEM or Reichenbach. The edited volume does list CLAEM in its appendix without much explanation.

wave or the components of a timbre and the computer could process certain algorithms to invert, retrograde, transpose, or alter the parameters. Initially this process did not occur in real time. The UPIC became functional in 1977.

Conversely, Fernando von Reichenbach's Catalina was undoubtedly one of the most notable inventions developed at the Di Tella Institute. The machine could convert graphic notation into sound by connecting a closed-circuit television equipment, a paper transport that moved drawn graphics across the lens of the camera, and voltmeters that followed the parameters of a score. The visual signal was turned into black and white, which analogically controlled the fluctuation of voltage. These voltages could be used to trigger generators, filters, and modulators. Three works survive that were composed with Reichenbach's analogue graphic converter: *Analogías paraboloides* by Caryevschi, *Mnemon I* by José Ramón Maranzano, and *La panadería* by Eduardo Kusnir, all written in 1970.[46] Gabriel Brnčić, who had official worked for CLAEM since 1969 but had helped with classes in prior years, remembers that the initial testing took place with a trombonist named Camaleón Rodriguez to create curious sounds and effects. As a tutor in the electronic music studio, Brnčić remembers having first helped Kusnir learn how to use the converter for the composition *La panaderia*, and then helping Caryevschi and Maranzano. Brnčić himself completed all the tape parts for his composition *Dialexis* (1967) for tape and symphonic orchestra, which he still has. However, he remembers that he was 'never able to make the final mix of the tape parts . . . I could not do it in Europe both because I retrieved the tapes many years later, and because I needed a lot of technology so that was just left like that'.[47]

The project to create the machine was mentioned for the first time in documents dated 19 April 1968. Von Reichenbach wrote:

> To read an analogue score on paper, the evident solution is a television camera. The video output of a vidicon camera can activate generators, filters, and modulators. Complex operations can be indicated by a few pencil strokes on common paper (an original Di Tella contribution, if we hurry up) . . . I am pleased to be able to announce a change that is a true mutation and is one we can reproduce.[48]

46 Eliana Mariel Karp lists as compositions made for the analogue graphic converter '*Paraboloides Hiperbólicas* by Pedro Carievschy [*sic*], *Mnemones* and *Mnemon II* by José Maranzano, and *La Panadería* by Eduardo Kuznir [*sic*]'. I believe the first piece she lists is mistaken (Caryevschi does use drawings of hyperbolic paraboloids to create his score, but the piece is called *Analogías paraboloides*). The two pieces by Maranzano are *Mnemon I* and *Mnemon II* (thus the plural Mnemones but there is no one piece called *Mnemones* as far as I have found). Karp also misunderstands the use of the convertor as simply reading the analogue scores and performing them (like a player piano of sorts), but in practice, composers created tape recordings of different lengths resulting from their drawings, and then manipulated them in a typical fashion of studios at that time. See Eliana Mariel Karp, 'Catalina: El Convertidor Gráfico Analógico de Fernando Von Reichenbach', *Revista 4′33″* 12/20 (2021), 67. There might be other compositions that I have not uncovered, including ones that correspond to three unidentified items/analogue scores in the Archivo de Música y Arte Sonor FvR at the Universidad Nacional de Quilmes (see items AB BeUNQ FFVR-ADEP-CAT-02, CAT-33, and CAT-20).

47 Gabriel Brnčić, personal communication, interview with the author, Barcelona, 4 December 2008.

48 Fernando von Reichenbach, internal memo to Enrique Oteiza with copies to Mario Marzana, Alberto Ginastera, and Francisco Kröpfl, 19 April 1968, CLAEM Archives, Torcuato Di Tella Institute.

The materials to build Catalina are listed in an internal memo from August 1968, titled 'Urgent USA purchases' under the subtitle, 'New Project'. The materials include a closed-circuit TV camera (Ampex Vidicon), three Moog units (oscillator, amplifier, and filter controlled by voltage), and two sets of Dixon field-effect transistors.[49] In January 1969, Reichenbach wrote that the converter

> must be put into operation as soon as possible to complete the data for the patent . . . We are at the doorsteps of a dream. To activate something directly with a newly imagined wave and drawn immediately in pencil. I think the experience will be as surprising as when a computer was programmed for the first time or when the first servomechanism was used.[50]

It is plausible but not certain that von Reichenbach's machine influenced Xenakis and his UPIC. The dates demonstrate that the converter did not yet exist at the time of Xenakis's visit. In fact, the Electronic Music Laboratory was likely in the process of being remodelled by von Reichenbach, a process that ended in 1967.[51] However, Xenakis would have been able to see part of the work that the Argentinean engineer was already doing with respect to optic controllers and sound production. By April 1966 an automated audio mixer was already working at the Di Tella Institute. The machine, invented by von Reichenbach used photoresistors to control the volume and dispersion of the audio in multiple loudspeakers. A tape was programmed relatively simply, with pieces of dark plastic, and controlled the intensity of light that reached each photoresistor, thus regulating the volume of each channel. Reichenbach called this machine the 'Sound Level Photoprogrammer' and published an article about it in the journal *Electronic Music Review*.[52]

On the other hand, neither Xenakis's nor von Reichenbach's projects were necessarily unique. The history of thinking about the correspondences of sound and light (whether synaesthesia, ekphrasis, or 'translating' visual sources into sound) certainly date back to antiquity, a more recent history of constructing devices to turn images into music could be traced back to Alexander Scriabin's ideas about a unified sound and light theory.[53] The Russian

49 Fernando von Reichenbach, internal memo to Enrique Oteiza with a copy to Mario Marzana, 23 August 1968, CLAEM Archives, Torcuato Di Tella Institute.

50 Fernando von Reichenbach, internal memo to Enrique Oteiza, 7 January 1969, CLAEM Archives, Torcuato Di Tella Institute.

51 In April 1967, von Reichenbach wrote worriedly to the director of the Di Tella Institute to inform him that 'there was practically no progress in the construction of the Laboratory', even though 'everything is planned to be able to immediately assemble what is missing'. See Fernando von Reichenbach, internal memo to Enrique Oteiza, 21 April 1967, CLAEM Archives, Torcuato Di Tella Institute. The remodelling ended in early October 1967. See Fernando von Reichenbach, internal memo to Enrique Oteiza, 25 October 1967, CLAEM Archives, Torcuato Di Tella Institute.

52 Fernando von Reichenbach, 'The Sound Level Photoprogrammer', *Electronic Music Review* 4 (1967).

53 For examples and detailed explanations of each one of the apparatuses described here, see Simon Crab, '120 Years of Electronic Music: The History of Electronic Music from 1800–2019', *120years.net*, https://120years.net/wordpress/ and Andrey Smirnov, *Sound in Z: Forgotten Experiments in Sound Art and Electronic Music in Early 20th Century Russia* (Cologne: Walther Konig, 2013). For a much longer history of sound and light, see Peter Vergo, *That Divine Order: Music and the Visual Arts from Antiquity to the Eighteenth Century* (London: Phaidon, 2005). (Particularly curious is

composer, although mostly concerned about synesthetic experiences, inspired various researchers to develop instruments that mix optics and audio. In Leningrad, around 1932, Yevgeny Sholpo (1891–1951) and Georgy Rimsky-Korsakov (1901–65) developed the Variophone in which waves were cut into cardboard discs that rotated in sync with 35mm film. In the United States, around 1945, John Hanert (1909–62) designed a synthesizer for the Hammond Organ Company that took information for height, duration, timbre, and intensity from graphite strokes marked on 11×12 in. paper cards. In 1958, Russian Yevgeny Murzin (1914–70) developed the ANS synthesizer (named using Alexander Nikolayevich Scriabin's initials). The instrument would synthesize sounds through waves drawn on glass discs and achieved a polyphony of 720 simultaneous tones, with a minimum distance of a sixth of a semitone between them. In England, engineer and composer Daphne Oram (1925–2003) designed a machine called Oramics in 1959. The composer painted over ten 35mm films that passed synchronously over photoelectric cells generating a charge that controlled the frequency, timbre, amplitude, and duration of sounds. The *Graphic I* was already in the Bell laboratories by 1965, designed by William Ninke together with Carl Christensen and Henry S. McDonald to be used by Max Mathews (1926–2011) as a graphic interface for his MUSIC IV. In addition, there are plenty of public references to machines that predated Xenakis's work. However, none of those I have been able to consult contain any record that includes von Reichenbach's creative inventions. Obviously, the idea of monogenesis is not necessarily valid, and it is quite possible that many of the experiments cited here had appeared independently. At the same time, the possibility that these composers and inventors, immersed in a broadly transnational musical tradition, were aware of developments in other latitudes cannot be ruled out. The interaction between Xenakis and von Reichenbach, and the interest that the Greek composer demonstrated for the engineer's work, is easily confirmed in conversations with composers who were at CLAEM during this period. For the time being, it has been impossible to verify what type of discussions the two composers had, or if in later years the two stayed in contact. As far as I could find, Xenakis never mentioned von Reichenbach when referring to his UPIC. However, it is difficult to believe that such creative minds, with interests that resulted so curiously similar despite stemming from very different questions, would not have discovered in their meeting such a tremendous source of common inspiration.

* * *

This brief examination Xenakis's visit to Argentina provides several insights into the transnational nature of avant-garde Western art music in the mid-twentieth century. Actual, on-the-ground experiences within the contemporary music scene of a city such as Buenos Aires challenge assumptions about the peripheral nature of such locales within the circuits of circulation of this musical tradition.[54] Xenakis's music had been performed, disseminated,

the story of Louis-Bertrand Castel's ocular harpsichord in the early eighteenth century, see pp. 234–45). I am thankful to one of the anonymous reviewers for pointing me to this source.

54 See, for example, Andrew Raffo Dewar, 'Performance, Resistance, and the Sounding of Public Space: Movimiento Música Más in Buenos Aires, 1969–73', in *Experimentalisms in Practice: Music Perspectives from Latin America*, ed. Ana Alonso-Minutti, Eduardo Herrera, and Alejandro L. Madrid (New York: Oxford University Press, 2018); and

and criticized by the time he visited, and music critics and journalists were aware of the significance he had inside this art world. Understanding the kind and the extent of the interactions he had with composers at CLAEM fleshes out ideas about influence that might otherwise seem vague and opaque. While brief statements in biographical entries that list former professors or guiding figures might provide insight into the genealogies of compositional creativity, I argue that it is through oral histories and ethnographic work that we gain clarity on how these interactions shape and change the people involved. In a similar way, while the evidence of interaction between Xenakis and von Reichenbach proves to be inconclusive in telling us if and how von Reichenbach's inventions furthered Xenakis's imagination leading to the creation of UPIC, it does bring into the foreground the absence of von Reichenbach's work in the scholarship of graphic-based technologically mediated composition.

Finally, in terms of historical echoes, it is surprising how a place such as CLAEM remains a footnote among significant meeting sites for people invested in contemporary music during this time. There should be little need to argue that CLAEM occupies similar formative and impactful status within the post-Second World War avant-garde as events or parallel institutions such as the Darmstadt Summer Courses, the Donaueschingen Music Festival, or IRCAM. Composers who participated directly in CLAEM's activities (e.g., Xenakis, Nono, Copland, Messiaen, Maderna, Dallapiccola, Vladimir Ussachevsky (1911–90) or Mario Davidovsky (1934–2019)), or those who interacted with the institution or its fellows indirectly (e.g., Cage, Stockhausen, Schaeffer, or Mumma) were aware of its importance as can be verified by their published and unpublished accounts and letter exchanges. This indicates that CLAEM's absence in current narratives about the avant-garde is a musicological blind spot worth revisiting.

Bibliography

Añez, Daniel. 'La música para piano de Graciela Paraskevaídis', in *Sonidos y hombres libres: Música nueva de América Latina en los siglos XX y XXI*, ed. Hanns-Werner Heister and Ulrike Mühlschlegel. Madrid: Iberoamericana-Vervuert, 2014. 35–42.

Budón, Osvaldo. 'Materialidad sonora y "desarrollo estático" en magma VII de Graciela Paraskevaídis', in *Sonidos y hombres libres: Música nueva de América Latina en los siglos XX y XXI*, ed. Hanns-Werner Heister and Ulrike Mühlschlegel. Madrid: Iberoamericana-Vervuert, 2014. 43–50.

Castiñeira de Dios, José Luis, ed. *La música en el Di Tella: Resonancias de la modernidad*. Buenos Aires: Secretaría de Cultura/Presidencia de la Nación, 2011.

Childs, Edward. '*Achorripsis*: A Sonification of Probability Distributions'. *Proceedings of the 2002 International Conference on Auditory Display*. Kyoto: ICAD and Advanced Telecommunications Research Institute, 2002. 1–5. www.icad.org/websiteV2.0/Conferences/ICAD2002/proceedings/16_EdwardChilds.pdf (accessed 30 December 2022).

Córdova Lebrón, Rodolfo. 'Grupo Fluxus de Puerto Rico: Una guerrilla musical'. *Musiké: Revista del Conservatorio de Música de Puerto Rico* 3/1 (2014), 51–69.

Corrado, Omar. '. . .*altre voci e risvegli*. . .: Las obras corales de Graciela Paraskevaídis sobre poemas de Cesare Pavese', in *Sonidos y hombres libres: Música nueva de América Latina en los siglos XX y XXI*, ed. Heister, Hanns-Werner and Ulrike Mühlschlegel. Madrid: Iberoamericana-Vervuert, 2014. 65–82.

———. *Vanguardias al Sur: La música de Juan Carlos Paz*. Havana: Fondo Editorial Casa de las Américas, 2010.

Eduardo Herrera, 'That is Not Something to Show in a Concert: Experimentation and Legitimacy at the Centro Latinoamericano de Altos Estudios Musicales', in *Experimentalisms in Practice*, ed. Alonso-Minutti, Herrera, and Madrid.

———, ed. *Estudios sobre la obra musical de Graciela Paraskevaídis*. Buenos Aires: Gourmet Musical, 2014.
Crab, Simon. '120 Years of Electronic Music: The History of Electronic Music from 1800–2019'. *120years.net*. https://120years.net/wordpress/ (accessed 14 March 2022).
Dewar, Andrew Raffo. 'Performance, Resistance, and the Sounding of Public Space: Movimiento Música Más in Buenos Aires, 1969–73', in *Experimentalisms in Practice: Music Perspectives from Latin America*, ed. Ana Alonso-Minutti, Eduardo Herrera, and Alejandro L. Madrid. New York: Oxford University Press, 2018. 237–304.
Doornbusch, Paul. 'Early Hardware and Ideas in Computer Music: Their Development and Their Current Forms', in *The Oxford Handbook of Computer Music*, ed. Roger T. Dean. New York: Oxford University Press, 2009.
Herrera, Eduardo. *Elite Art Worlds: Philanthropy, Latin Americanism, and Avant-garde Music*. New York: Oxford University Press, 2020.
———. 'That is Not Something to Show in a Concert: Experimentation and Legitimacy at the Centro Latinoamericano de Altos Estudios Musicales', in *Experimentalisms in Practice: Music Perspectives from Latin America*, ed. Ana Alonso-Minutti, Eduardo Herrera, and Alejandro L. Madrid. New York: Oxford University Press, 2018. 21–48.
Karp, Eliana Mariel. 'Catalina: El Convertidor Gráfico Analógico de Fernando Von Reichenbach'. *Revista 4′33″* 12/20 (2021), 55–71.
Keller, Damián and Brian Ferneyhough. 'Analysis by Modeling: Xenakis's *ST/10-1 080262*'. *Journal of New Music Research* 33/2 (2004), 161–71.
Paraskevaídis, Graciela. 'Edgar Varèse y su relación con músicos e intelectuales latinoamericanos de su tiempo. Algunas historias en redondo'. *Revista Musical Chilena* 198 (2002), 7–20.
———. 'Presencia de Xenakis'. *Pauta* 20/77–78 (2001), 175–6. www.gp-magma.net/pdf/txt_e/sitio-Xenakis-Pauta.pdf (accessed 14 March 2022).
Paraskevaídis, Graciela and Pablo Luis Bardin. 'Entrevista con Iannis Xenakis'. *Tribuna Musical* 9 (1966), 38–40.
Paz, Juan Carlos. *Alturas, tensiones, ataques, intensidades (Memorias I)*. Buenos Aires: Ediciones de la Flor, 1972.
———. *Alturas, tensiones, ataques, intensidades (Memorias III)*. Buenos Aires: Ediciones de la Flor, 1994.
———. *Introducción a la música de nuestro tiempo*. Buenos Aires: Editorial Nueva Visión, 1955.
Perrone, Marcela. 'La música latinoamericana de vanguardia durante la década de los años setenta y la obra *todavía no* de Graciela Paraskevaídis'. *Boletín Música* 33 (2012), 61–76.
Torres Rivera, Noel. *'The Making of an Avant-gardist: A Study of Rafael Aponte-Ledée's Early Life and Works (1957–1966)'*. PhD diss., City University of New York, 2020.
Rüdiger, Wolfgang. 'Cutting Paths, Singing: Approaching *sendas* (1992) for Seven Winds and Piano by Graciela Paraskevaídis', in *Sonidos y hombres libres: Música nueva de América Latina en los siglos XX y XXI*, ed. Hanns-Werner Heister and Ulrike Mühlschlegel. Madrid: Iberoamericana-Vervuert, 2014. 51–64.
Sánchez, Nancy and Juan Ortiz de Zarate. 'Gabriel Brnčić entrevistado por Nancy Sánchez y Juan Ortiz de Zarate en el Hotel NH Florida, Buenos Aires, el 20 de junio de 2011', in *Conversaciones en torno al CLAEM: Entrevistas a compositores becarios del Centro Latinoamericano de Altos Estudios Musicales*, ed. Hernán Gabriel Vázquez. Buenos Aries: Instituto Nacional de Musicología 'Carlos Vega', 2015. 85–96.
Smirnov, Andrey. *Sound in Z: Forgotten Experiments in Sound Art and Electronic Music in Early 20th Century Russia*. Cologne: Walther Konig, 2013.
Solomonoff, Natalia. '". . .vivir tan hondo. . .": Humanismo y militancia *en* y *por* el sonido. Una interpretación de los recursos compositivos y expresivos en la música de Graciela Paraskevaídis a partir del análisis de cuatro obras con participación de la voz', in *Sonidos y hombres libres: Música nueva de América Latina en los siglos XX y XXI*, ed. Hanns-Werner Heister and Ulrike Mühlschlegel. Madrid: Iberoamericana-Vervuert, 2014. 17–34.
Suárez Urtubey, Pola. 'Xenakis: De la I.B.M. a la música'. *El Mundo*, 8 September 1966, n.p.
[Unsigned.] 'Coloquio musical con el compositor griego Y. Xenakis'. *La Nación*, 2 September 1966, n.p.
Varga, Bálint András. *Conversations with Iannis Xenakis*. London: Faber & Faber, 1996.
Vázquez, Hernan Gabriel. 'Mariano Etkin entrevistado por Hernán Gabriel Vázquez en el bar T-Bone, Buenos Aires, el 9 de marzo de 2012' in *Conversaciones en torno al CLAEM: Entrevistas a compositores becarios del Centro Latinoamericano de Altos Estudios Musicales*, ed. Hernan Gabriel Vázquez. Buenos Aires: Instituto Nacional de Musicología 'Carlos Vega', 2015. 97–112.
Vergo, Peter. *That Divine Order: Music and the Visual Arts from Antiquity to the Eighteenth Century*. London: Phaidon, 2005.
Von Reichenbach, Fernando. 'The Sound Level Photoprogrammer'. *Electronic Music Review* 4 (1967), 35–6.
Xenakis, Iannis. 'La crise de la musique sérielle'. *Gravesaner Blätter* 1 (1955), 2–4.
———. 'Musiques formelles: nouveaux principes formels de composition musicale'. *La Revue musicale* 253–4 (1963), 1–232.