

Latin American Electroacoustic Music Collection

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Abstract

Latin American electroacoustic music has a long, interesting, strong and prolific history, but it's a history that is little known even within the region itself. Many composers born or living in Latin America have been very active in this field, in some countries as far back as some 50 years, but the availability of electroacoustic music recordings and information in Latin America has been a problem for educators, composers, performers, researchers, students and the general public. In an effort to preserve, document and disseminate at least a portion of the electroacoustic music created by Latin American composers, an archive has been developed at the Daniel Langlois Foundation for Art, Science, and Technology and is now open to the public.

1 Introduction

The development of electroacoustic music seems to be associated with a few countries where the pioneering activities started. But the creation of music using electroacoustic technologies in a contemporary manner (in spite of some differences I will refer to the term "electroacoustic music" in this document) has also been of great interest to composers living in Latin American countries since before the 1950s. However, there is a significant lack of information in this respect, and little research has been conducted in this area.

Having started to work in the electroacoustic music field during the mid '70s in my native country of Argentina, I found it very difficult to obtain information on related activities in surrounding countries and even in my own city. Although challenging, it was nevertheless possible to find recordings by composers living in Europe or North America, but it was very difficult to locate any by local or regional composers. What appeared during my initial years of research to be a paradox later became almost a constant. One could find composers' names and the titles of their works, but not their music. It took me a very long time to obtain a few electroacoustic music recordings by composers living or working in Latin American countries and to discover a world of sound that had been partially hidden, if not completely lost.

If people were interested in art and new technologies, and if a significant body of electroacoustic music works by Latin American composers existed, why then was it so difficult to find recordings or at least some basic information on the subject? There is no simple answer, but during my search I did discover a few clues that underscored the complex relationships between the economical, political, cultural and social spheres.

In various Latin American countries, universities, state organizations and major private foundations had taken initiatives from time to time to support art research and the use of new media, but most had stopped short of developing the resources to document the processes and preserve the results. Many early tape compositions had been lost or the master recordings damaged, and there no longer existed scores or documentation on these. Fortunately, however, a large number of recordings could still be saved. Tapes were stored in private studios and composers' houses, and many had been sleeping on shelves in large institutions for decades, with no action taken to conserve the works or provide access to the people interested.

To preserve a chapter of our past while trying to learn from it is no simple task. We can all learn from the actions of the others that came before us (and surely not just about music). Creativity abounds in Latin America, and this, of course, is in

keeping with our past. I believe we need to nurture our memories, and I wish to help to that process by preserving some traces with concrete action.

2 Opening the box

Almost every recording and piece of information I have collected since the mid '70s was obtained by searching for and contacting each composer directly. Over time, I began to build a small but growing personal archive that included electroacoustic music recordings on open reel tapes, analog cassettes and a few vinyl LPs. I decided not only to share this music and related information with colleagues and students, but to explore other ways of making it widely available, knowing there might be many others interested in it. Lectures, concert series and (South American) activity reports published during the early '80s in *Array*, the newsletter of the International Computer Music Association (then known as the Computer Music Association or CMA), were just a few of the early initiatives I took to share these recordings and related information. The next step: more than 10 years of radio broadcasts (the “Música electroacústica y por computadora,” “Electromúsica” and “Música y Tecnología” series on the National Radio of Argentina and the Buenos Aires City radio station) and CD artistic productions published by Leonardo Music Journal, oodiscs and the Computer Music Journal.

I had been thinking about how best to organize and make available the materials I had gathered over more than 20 years. At the same time I was looking to delve deeper into this research about musical creations using electroacoustic media by Latin American composers. Then, a few years ago, a opportunity presented itself. I was invited by UNESCO to participate in the first international Digi-Arts meeting held in Paris in March 2002, when the project was still at an early planning stage. UNESCO commissioned me to research and write several reports about electroacoustic music and media arts. The resulting two key reports were *Historical Aspects of Electroacoustic Music in Latin America: From Pioneering to Present Day* and *La música electroacústica en América Latina*, published online in 2003 on the UNESCO Digi-Arts Knowledge Portal. These are not English and Spanish versions of the same text, but rather complementary texts on the historical aspects of the electroacoustic music development in Latin America, with extensive references to composers and their work.

The research was conducted by searching and analyzing hundreds of letters, thousands of emails, concert program notes, books, newsletters, magazines and journals, scores, recording sleeves and other documents, as well as through personal interviews and communications. Table 1 lists the number of composers named in the English report and their related countries, i.e. where they were born or pursued a portion of their professional careers.

Table 1: The number of composers per country cited in the research text *Historical Aspects of Electroacoustic Music in Latin America: From Pioneering to Present Day*

Argentina:	191
Bolivia:	14
Brazil:	90
Chile:	39
Colombia:	39
Costa Rica:	5
Cuba:	44
Dominican Republic:	3
Ecuador:	11
El Salvador:	5
Guatemala:	6
Mexico:	73
Panama:	3
Paraguay:	4
Peru:	15
Puerto Rico:	12
Uruguay:	27
Venezuela:	35

3 Music here...music there

According to Hugh Davies' 1968 *Répertoire international des musiques électroacoustiques/International Electronic Music Catalogue*, **Mauricio Kagel** (b. Buenos Aires, 1931) composed eight electroacoustic studies in Argentina between 1950 and 1953. Then, from 1953 to 1954, he created *Música para la Torre* (also known as *Musique de Tour*), a sonorization of some 108 minutes, which included an essay on *musique concrète*, for an industrial exhibition in Mendoza. Kagel tried to establish an electronic music studio in Argentina during the 1950s but was unable to at that time. He moved to Germany in 1957, where he composed *Transición I* for electronic sounds in 1958 and *Transición II* for piano, percussion and two tape recorders in 1958-1959, among many other works.

Reginaldo Carvalho (b. Guarabira, 1932) composed his first *concrète* pieces on tape between 1956 and 1959 at *Estudio de Experiencias Musicais* (Musical Experiences Studio) in Rio de Janeiro. Among them were *Si bemol* from 1956, probably the first *musique concrète* work realized in Brazil; *Temática* and *Troço I*, also from that year; *Troço II* from 1957; *Estudo I* from 1958; and *Estudo II* from 1959. While the first tape pieces were all based on piano sounds, Carvalho also worked with glass and wood as sound sources.

In Chile, **León Schidlowsky** (b. Santiago, 1931) composed *Nacimiento*, a *concrète* piece on tape, in 1956. At the time, **Juan Amenabar** (b. Santiago, 1922 - d. Santiago, 1999) and **José Vicente Asuar** (b. Santiago, 1933) were experimenting with electroacoustic techniques at Radio Chilena in Santiago. In 1957, the Taller Experimental de Sonido (Experimental Sound Workshop) was established at the Catholic University in Santiago by Amenabar and Asuar, together with a small group of composers: Schidlowsky, Mesquida, Rivera, Quinteros, Maturana and García. Fernando García said about the Taller: "It was created in 1957, and the idea was not to talk about music and produce academic concerts, but rather to learn the mysteries of electronics." Juan Amenabar also premiered his tape work *Los Peces* in 1957. Asuar wrote *Mechanic and Electronic Generation of Musical Sounds* for his engineering thesis and in 1958 created Chile's first electronic music studio at the Catholic University, where he composed his *Variaciones Espectrales*, which premiered in 1959.

Kagel was not the only Argentinean composer interested in the many possibilities of electroacoustic technologies and techniques during the pioneering years. **Tirso de Olazábal** (b. Buenos Aires, 1924 - d. 1960) lived in Paris during the early '50s, where he worked with electroacoustic media and composed *Estudio para percusión* for tape in 1957. He also organized one of the first concerts of electroacoustic music in Argentina in 1958. At the end of that year, the Estudio de Fonología Musical was founded at the University of Buenos Aires by **Francisco Kröpfl** (b. Timisoara, Romania, 1931) and Fausto Maranca; it was in this lab that between 1959 and 1960 Kröpfl composed his first works using electronic sounds: *Ejercicio de texturas* and *Ejercicio con Impulsos*. During that same period, **César Franchisena** (b. General Pinedo, Chaco, 1923 - d. Córdoba, 1992) was also experimenting with electronic sound sources at the National University of Córdoba radio station and composed *Numancia*, his ballet music for tape, in 1960. And, a young **Horacio Vaggione** (b. Córdoba, 1943) started to experiment in Córdoba with the musical potential of electroacoustic technologies at this time, composing *Música Electrónica I* for tape in 1960 and *Ensayo sobre mezcla de sonidos*, *Ceremonia* and *Cantata I* in 1961.

Prior to this and using only electronic sound sources, **Hilda Dianda** (b. Córdoba, 1925) composed *Dos Estudios en Oposición* for tape in 1959, working at the Studio di Fonologia Musicale of RAI (Italian Radio and TV) in Milan. Another Argentinean composer, **Mario Davidovsky** (b. Médanos, Buenos Aires, 1934), composed tape pieces *Electronic Study No.1* in 1960 and *Electronic Study No.2* in 1962 at the Columbia-Princeton Electronic Music Center in New York. In 1962 he began writing a series of mixed pieces under the generic name of "Synchronisms" and went on to receive a Pulitzer Prize in 1971 for his *Synchronisms No.6* for piano and electronic sound, which he composed in 1970. Just as Davidovsky traveled to the United States, so did Argentinean **Edgardo Cantón** (b. Los Cisnes, Córdoba, 1934) find his way to France. There he composed several electroacoustic works during the '60s, including *Animal Animal* in 1962 and *Tout finit par tomber dans le même trou* in 1963. Meanwhile, in Buenos Aires, **Miguel Angel Rondano** (b. Godoy Cruz, 1934) was also using electroacoustic media in his work during the early '60s; among other pieces, he composed *La batalla de los ángeles* for tape in 1963 as well as *Promenade* and *2 Times*, both ballet music on tape, during the same year.

In 1965, a group of composers founded the Centro de Música Experimental (Experimental Music Center) at the National University of Córdoba. They included **Oscar Bazán** (b. Cruz del Eje, 1936), **Pedro Echarte**, **Carlos Ferpozzi** (b. Córdoba, 1937), **Graciela Castillo** (b. Córdoba, 1940), **Virgilio Tosco** (b. Achiras, Córdoba, 1930 - d. Córdoba, 2000), and, for a certain length of time, Horacio Vaggione. In 1963, **alcides lanza** (b. Rosario, 1929), who started to experiment with tape

recorders around 1956, realized the tape part of *Contrastes* for two pianos and tape by **Armando Krieger** (b. Buenos Aires, 1940). In 1965, Ianza composed his first tape piece, *exercise I [1965-V]*, in 1965 at the Columbia-Princeton Electronic Music Center and has around sixty works using electronics in his catalogue. And finally, **Dante Grella** (b. Rosario, 1941) composed his first tape piece, *Música para el film 'C-65'*, in 1965 in his home studio in Rosario, and in 1968 he composed *Combinaciones* for mixed choir, percussion and tape.

In Cuba, right after the revolution in 1961, **Juan Blanco** (b. Mariel, 1919) composed *Música para danza*, his first tape piece, using an oscillator and tape recorders. Between 1961 and 1962 he composed *Estudios I y II*; between 1962 and 1963 *Ensamble V*; and in 1963 *Interludio con Máquinas* and *Ensamble VI*, all for tape. His first mixed work for orchestra and tape was *Texturas*, composed between 1963 and 1964. In 1964, Blanco also organized Cuba's first public concert with electroacoustic music, and the following year he began to create electroacoustic music for massive public events and large venues. Examples of these works include *Música para el Quinto Desfile Gimnástico Deportivo* for symphonic orchestra, sound toys group and tape from 1965; *Ambientación Sonora*, a tape work played back using a special network of loudspeakers for spatial sound distribution at Cuba's Pavilion during the 1967 International and Universal Exposition (Expo '67) in Montreal, Canada; and *Ambientación Sonora*, a five-track work from 1968 played during 30 nights along La Rampa Avenue in Havana. Blanco has composed approximately 100 works using electroacoustic media.

Back in Argentina, the Centro Latinoamericano de Altos Estudios Musicales (CLAEM) in the Instituto Torcuato Di Tella in Buenos Aires (Latin American Higher Studies Musical Center of the Torcuato Di Tella Institute) was a major meeting point for students and composers from Latin America. The Argentinean composer Alberto Ginastera founded the Center in 1962 and directed it until it was closed in the early '70s. Composers such as **Blas Emilio Atehortúa** and **Jacqueline Nova** from Colombia, **Rafael Aponte Ledée** from Puerto Rico, **Florencio Pozadas** from Bolivia, **José Ramón Maranzano**, **Eduardo Kusnir** and **Pedro Caryevschi** from Argentina, **Ariel Martínez** and **Antonio Mastrogiovanni** from Uruguay, **Alejandro Nuñez Allauca** from Peru, and **Gabriel Brncic** from Chile, among others, worked in CLAEM's electronic music lab creating new pieces using the facility's electroacoustic resources. They also attended lectures by internationally recognized composers from Europe and North America, including, for example Luigi Nono, Iannis Xenakis, Bruno Maderna, Aaron Copland, Olivier Messiaen, Vladimir Ussachevsky and Luigi Dallapiccola, to name but a few.

Peruvian composer **César Bolaños** (b. Lima, 1931) arrived in Buenos Aires in 1963 with a fellowship to study at CLAEM and was in charge of the electronic music lab for a number of years from its creation in 1963. In fact, in that same year, Bolaños composed *Intensidad y Altura*, the first electroacoustic work produced at CLAEM. During the next several years he used electroacoustic and computer techniques extensively in his music, composing tape and mixed pieces and working with live electronics and multimedia. Among other pieces, he composed *Interpolaciones* for electric guitar and tape in 1966; *Alfa-Omega* for two reciters, theatrical mixed choir, electric guitar, double bass, three percussionists, two dancers, magnetic tape, projections and lights in 1967; and, as the result of his computer experimentation with mathematician Mauricio Milchberg, together they created *Canción sin palabras* or *ESEPCO II* for piano with two performers and tape in 1970 (ESEPCO stands for "estructura sonora-expresiva por computación" or "computer sound-expressive structure"). Also from Peru, **Edgar Valcárcel** (b. Puno, 1932) was at CLAEM during 1963-1964, but it was at the Columbia-Princeton Electronic Music Center in New York that he composed his first pieces using electronic sounds: *Invencción* for tape in 1967 and *Canto Coral a Túpac Amaru* for chorus, percussion and tape in 1968.

In Brazil, **Jorge Antunes** (b. Rio de Janeiro, 1942), who in 1961 had created an electroacoustic piece in his home studio using piano and electronic saw-tooth waveforms, composed a work the following year using only electronic sound sources. *Valsa Sideral* is considered the first piece of its kind realized in Brazil. In 1963, Antunes composed "Música para varreduras de frequência," in 1964 "Fluxo luminoso para sons brancos I," and the following year *Contrapunctus contra contrapunctus*, all tape pieces. During these years, Antunes also composed mixed and multimedia works, including *Ambiente I* for tape, lights, static and kinetic objects, incense and food in 1965; *Cromoplastofonia I* for full orchestra and tape in 1966; and *Invocação em defesa da maquina* for percussion and tape in 1968. Antunes was awarded a scholarship to study at CLAEM in Buenos Aires between 1969 and 1970 and composed tape pieces *Cinta Cita* during his first year there and *Auto-Retrato Sobre Paisaje Porteño* the year after.

In Uruguay, **Coriún Aharonián** (b. Montevideo, 1940) and **Conrado Silva** (b. Montevideo, 1940) also started to work with electroacoustic resources in their pieces in the early '60s. At first, Aharonián mainly used them in his music for theatre, and in 1966 he composed *Hecho 2 (en tres partes y en re)*, a musical theatre piece for prepared piano, xylophonic claves, sine and square wave electronic generators, tubular bell, four idiophones and/or membranophones, six tape recorders and paint brushes, and in 1967 *Música para aluminios* for three instrumentalists and tape. Aharonián also won a scholarship to study at

CLAEM between 1969 and 1970, and while there he composed *Que*, a piece for tape. In 1964, Conrado Silva composed *Musik für Zehn Kofferradiogeräte* ("Music for ten portable radios" or "Música para 10 radios portátiles"), using computers to organize the compositional materials in his piece. After a number of years experimenting and composing in Uruguay, he moved to Brazil in 1969, promoting electroacoustic music and founding several electronic music studios there. From 1971 to 1989 Silva, Aharonián and other composers coordinated the Cursos Latinoamericanos de Música Contemporánea (Latin-American Courses for Contemporary Music), held in a variety of cities throughout Latin America. The courses became benchmarks for new music in the region.

Bolivian composer **Alberto Villalpando** (b. La Paz, 1942) first began experimenting with electroacoustic music in Buenos Aires at the National Conservatory of Music in 1962 and later at CLAEM. Back in Bolivia in 1965, he continued his work with tape techniques. Villalpando composed several tape and mixed pieces, including *Mística No. 3* for double string quartet, French horn, flute, double bass and tape, and *Mística No. 4* for string quartet, piano and tape, both from 1970.

In Guatemala, **Joaquín Orellana** (b. Guatemala City, 1937) composed *Contrastes*, ballet music for orchestra and tape in 1963. Having won a scholarship to study in 1967 and 1968 at CLAEM, he composed *Metéora* for tape while there. Back in Guatemala, Orellana composed *Humanofonía* for orchestra and tape or tape only in 1971; *Malebolge (Humanofonía II)* in 1972, *Primitiva I* in 1973, *Sortilegio* in 1978 and *Imágenes de una historia en redondo (imposible a la equis)* in 1980, all five pieces for tape.

The Estudio de Fonología Musical of the Instituto Nacional de Cultura y Bellas Artes (INCIBA), established in 1966-1967 by Chilean composer and engineer José Vicente Asuar, is considered the birthplace of electroacoustic music in Venezuela. **Alfredo del Mónaco** (b. Caracas, 1938) composed *Cromofonías I* there in 1966-1967, the first electroacoustic music work produced in that country, and in 1967-1968 he wrote *Estudio electrónico I*. Del Mónaco then moved for a number of years to New York, where he produced several tape and mixed pieces at the Columbia-Princeton Electronic Music Center before returning to Venezuela in the mid '70s. Among other works, he composed *Metagrama* for tape in 1969-1970; *Alternancias* for violin, viola, cello, piano and electronic sounds on tape in 1971; *Syntagma (A)* for trombone and electronic sounds on tape in 1971-1972; and *Estudio electrónico III* for tape in 1974.

Carlos Jiménez Mabarak (b. Tacuba, 1916 - d. Mexico City, 1994) is widely accepted as the first Mexican composer to create a piece on tape: *El paraíso de los ahogados* from 1960. He also composed *La llorona*, ballet music for small orchestra, electronic oscillator, timpanis, percussions, piano and strings in 1961, and *La portentosa vida de la muerte* for tape in 1964.

Ecuadorian composer **Mesías Maiguascha** (b. Quito, 1938) was already actively incorporating electroacoustic media into his music in the mid '60s when he moved to Germany. Some of his early works include *El mundo en que vivimos* for concrète and electronic sounds on tape, from 1967, composed for the Polish documentary film *Dort wo wir leben; Hör-zu* from 1969 and *Ayayayayay* from 1971 (both for tape); and *Übungen* for violin, clarinet, cello and three synthesizers from 1972-1973.

Héctor Quintanar (b. Mexico City, 1936) composed several pieces using electroacoustic resources during the '60s, including *Aclamaciones* for choir, orchestra and tape in 1967; *Sideral I* for tape in 1968; and *Símbolos* for chamber group (violin, clarinet, sax, French horn, trumpet, trombone, piano), tape, slides and lights in 1969. In 1970 he was named artistic director of the first Electronic Music Lab founded in Mexico. During the years that followed, he composed several pieces in this lab. They included *Opus 1* in 1970; *Suite Electrónica* in 1971; *Voz* for soprano and electronic sounds; and *Mezcla* for orchestra and tape, both in 1972.

The above is just a brief introduction to the vast musical production by Latin American composers during the '50s, '60s and early '70s. Most worked in precarious conditions but had enormous interest and enthusiasm to experiment, research and create new music using cutting edge composition techniques and the latest available technologies. This spirit and creativity still abounds, and I believe the music should also.

4 Tie it with wire!

In 1942, **Juan Blanco** registered the description and design of a new musical instrument at the Patent and Trademark Office in Cuba. He called his creation the “Multiórgano” (Multiorgan), and it was based on 12 magnetophonic wire loops (recording on magnetic tape was under development!) running through a playback head. A polyphonic instrument, the Multiorgan could be loaded with 12 chromatically recorded voices, musical instruments or other sounds, including any multitimbral combinations and limited only by the allowed number of loops. Each sound signal would be controlled by a keyboard to switch its flow to the amplifier. One pedal changed the sound’s amplitude, another modified its frequency/duration, and varying loop speeds were also considered. The Multiorgan concept predated the Mellotron by several years, but the original instrument invented by Blanco was never built. In 1991, during the *Musical Inventions and Creations: Denial of Utopia* International Symposium held in Bourges, France, Blanco presented a blueprint of the original design.

An engineer interested both in electronics and music, **Raúl Pavón** (b. Mexico City, 1930) began to promote the use of electronic musical instruments in Mexico years before the first studio was built there in 1970. In 1958, he built the prototype of a loop-based musical instrument using magnetic tape recordings without knowing this principle was already in use. Then, in 1960, he built a small electronic musical instrument that featured an oscillator with multiple waveform outputs, a variety of filters, an envelope generator, a white noise generator and a keyboard, among other materials. Pavón named the instrument the “Omnifón” (meaning: all sounds), and it was among the first electronic sound synthesizers built. Pavón was the technical director of the first Electronic Music Lab in Mexico, created as part of the Composition Workshop at the National Conservatory of Music. With Héctor Quintanar as its artistic director, the laboratory launched activities in January 1970 with equipment that included Buchla and Moog synthesizers.

Years later, Pavón wrote one of the first books in Spanish about electronic music: *La Electrónica en la Música ... y en el Arte* (*Electronics in Music...and the Arts*), which was published in 1981 by CENIDIM. In the book, he wrote about the acoustics, history, technology and techniques of electroacoustic music as well as about new media arts. Pavón also developed the “Icofón,” an oscilloscope-based system that derived images from sounds (working with Lissajous figures). He used this system to create several multimedia works.

In Argentina, **Fernando von Reichenbach** (b. Buenos Aires, 1931) played a major role in technological development during the CLAEM / Di Tella Institute’s days in the mid '60s. He invented the Convertidor Gráfico Analógico (Analog Graphic Converter), or Catalina, used to convert graphic scores from a paper roll into electronic control signals adapted for musical uses with analog instruments, capturing the original drawing images with a camera. The first piece created using the converter was *Analogías Paraboloides* by Pedro Caryevschi, composed in 1970. During these years, von Reichenbach also created devices such as the keyboard-controlled polyphonic third/octave and octave filter and a special patch-bay that helped solve the complex needs of composers at the lab.

5 Bake, freeze...eat and enjoy!

In order to provide the public with access to information and musical works that could be of interest, while keeping the large amount of material I had already collected as safe as possible and knowing a large portion of it would be hard to find and listen to in Argentina or neighbouring countries, I was searching for a place where the preservation of documents was not only important but also possible. I felt that the *Daniel Langlois Foundation for Art, Science, and Technology* in Montreal would be the ideal place to propose my project.

I applied to the Foundation's Researcher in Residence program and proposed developing an archive and database based on my personal collection of recordings and documents. The all-digital archive would be preserved and made available for listening at its Centre for Research and Documentation (CR+D), and the database would provide public access through the Internet.

Two consecutive grants as Researcher in Residence during 2003 and ongoing work in 2004 have allowed me to work for some 20 months with recordings on open reel, analog cassette and DAT tapes, and vinyl LPs and CDs, digitizing and/or converting from different formats, editing and baking as needed, and filling the database of the Foundation with all of the available information on the pieces involved (title, composer, year of composition, instrumentation, program notes,

production studio, version, duration, composer bio; etc.). To date (November 2004), there are approximately 1,800 digital audio files archived at the Foundation's CR+D, most of which are in AIFF, stereo, 16 bits, 44.1 KHz format.

The work has been extensive: navigating through myriad technical problems (recovering from massive hard disk crashes, finding tape recorders with old track formats, re-digitizing material to correct severe DC offsets in brand-new equipment, OS and FireWire conflicts, etc.), defining how best to work with very noisy old recordings (a few pieces were processed using an advanced de-noise system to moderate hiss, always preserving the original recording and following the composer's advice), working with three different computers and nine hard disks to manage the audio and visual files, the database and the large amount of info and daily international communications, and the list goes on.

The music archive includes pieces for fixed media (tape, DAT, CD or similar) as well as mixed works for acoustic instruments or voices and fixed media or live electronics/interactive systems. There are also some multimedia works. In the case of pieces for fixed media and other sound sources (e.g. mixed works), full recordings as well as "tape only" (i.e. fixed media) parts (cues) are preserved and catalogued. The archive also includes audio and audiovisual recordings of interviews with composers and technical innovators as well as photographs, videos, DVDs and a few very rare scores.

Most of the text-based information contained in the music archive's audio files database is available through the Daniel Langlois Foundation Web site. Online access to a versatile search engine allows the user to explore the data by title, composer, date, etc.

In most cases, the composers represented in this archive were born in Latin American countries. There are also a few composers who, although not originally from the region, pursued at least a portion of their musical career in Latin America. The database contains information on composers associated with 18 Latin American countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Panama, Paraguay, Peru, Puerto Rico, Uruguay and Venezuela. The list of composers and compositions included in the archive as well as a number of statistics, such as compositions by decade and country and composers by country, are all available on the Foundation's web site.

It should be noted that not every audio file in the archive is a complete piece, as there are cases where each movement of a composition is stored as a different file with its corresponding individual information (according to the rules the composer used to store his or her work).

A significant number of compositions from the '60s and '70s have been archived as well as many more from the '80s, '90s and recent years. Only a few pieces from the '50s were found and included. I hope this archive will trigger similar projects to help to preserve, document and disseminate electroacoustic music, both in Latin America and other regions in the world with comparable historical situations.

Given the aforementioned difficulties the public has in accessing this music, even in centers with hundreds or thousands of hours of musical recordings and considerable human and technical resources, I find it a major achievement that free access exists to listen to the recordings included in this archive at the Daniel Langlois Foundation's CR+D. I hope that in the near future, this archive will be mirrored in other research and/or educational centers and that other institutional archives will also be opened to the public.

A short selection of pieces is also available for listening through the Web site. Several criteria were used to define this selection, including dates (ranging from the mid 1950s to 2004), geographic representation (15 countries), instrumentation (e.g. works for fixed media, mixed pieces for acoustic instruments or voices and tape, live electronics), techniques, etc. Some of the texts included in the database were originally written for the UNESCO reports mentioned above.

It must be noted that the meaning of "archive" in this text refers to the place where an ordered group of documents and information of special interest or value are guarded for preservation. This archive integrates the results of more than 20 years of research. It also represents more than 20 years of action, building bridges for communication and confidence, and giving and receiving.

Last but not least, as a Researcher in Residence at the Daniel Langlois Foundation, I have had unlimited use of a phone line for international calls. This seemingly minor factor actually allowed me to contact composers for whom I had been searching for many years and in some cases decades. Only someone who has tried to contact a large group of people to

research activities that took place 40 or 50 years ago in Latin America can truly appreciate the complexities involved. There is a story behind virtually every recording obtained, every date confirmed, and, without question, every email or telephone contact. It would astound readers to learn how long it took and how difficult it was to obtain Juan Blanco's early recordings from Cuba or to contact Joaquín Orellana in Guatemala or César Bolaños in Peru, but today they and many others are present in this archive with their music, recordings and scores. I am delighted to have been able to contribute to keeping the work and thinking of these wonderful artists alive, for today and for the future.

6 Conclusions

Hopefully, this text will invite you to begin exploring the wonderful and largely unknown world of music created by hundreds of Latin American composers over the past several decades. I believe the archive will provide useful introductory information about Latin America's electroacoustic music and composers.

The data included here was taken from bibliographical information, personal and email communication with composers and institutions, and interviews and program notes from concerts and recordings. There is no correlation between the number of lines written and the work achieved by the composers and researchers or the quality and relevance of their achievements. In most cases it was very difficult to collect the data, and it happened frequently that dates and names varied from source to source.

For me, Latin America is synonymous with diversity and cultural richness, but it is also synonymous with a lack of support in terms of documenting and preserving its cultural heritage. I hope my recent actions will bring some positive and interesting results to the community in this respect, and although my contribution may be a mere drop in the ocean, as Lao-Tse said "A journey of a thousand miles must begin with a single step."

This is not a finished project. It is a digital musical archive and online database that I hope to be able to maintain and expand through recordings and information, as well as by correcting any unintentional mistakes that might be found. Please make this archive a living project both by using it well and by sending any additional information, suggestions, comments, updates and corrections to my email address: "Ricardo Dal Farra" <ricardo@dalfarra.com.ar>.

7 Acknowledgments

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Ricardo Dal Farra (b. Buenos Aires, Argentina, 1957) has been conducting activities in the merging fields of arts, sciences and new technologies for more than 25 years as composer, multimedia artist, educator, researcher, performer and curator.

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Dal Farra's music has been played in concerts and symposiums in more than 40 countries and has been recorded in 15 different editions. He has also performed using live interactive systems since the late 1970s. Dal Farra's work has been distinguished with grants and commissions by the International Computer Music Association, the International Arts Biennial of San Pablo, Brazil, the National Endowment for the Arts from Argentina, the Concours International de Musique Electroacoustique de Bourges - France, the National Rostrum of Composers from Argentina, and Centro di Sonologia Computazionale from the University of Padua in Italy, among others. He has been invited to present his music, research and educational developments at CCRMA - Stanford University, New York University, Dartmouth College, The Julliard School of Music and Brooklyn College in the United States, the University of Brasilia and Itaú Cultural in Brazil, The National Conservatory of Music of La Paz in Bolivia, the University of Puerto Rico, IRCAM in France and The Banff Centre in Canada, among other institutions.

Dal Farra has been directing radio series on electroacoustic music on the National Radio of Argentina and the Municipal Radio of Buenos Aires for more than 10 years. He has been a member of the Board of Advisory Editors of the Journal of New Music Research since 1988 and International Editor for Leonardo Music Journal - International Society for the Arts, Sciences and Technology since 1995. He is also a fellow of Colegio de Compositores Latinoamericanos de Música de Arte.

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