

Unveiling the Dark Side of Tonewoods: A Case Study about the Musical Instrument Demand for the Venezuelan Youth Orchestra El Sistema

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In this article, I visualize the relationship between tonewood exploitation and the import of musical instruments for Venezuela's El Sistema, with the participation of the Venezuelan State, the Inter-American Development Bank (IDB), the United Nations Development Program (UNDP), and manufacturing companies from China and the Global North. My basis is a documentary study about the acquisitions and tenders to meet the demand of El Sistema, supporting this information with semi-structured interviews given to key informants. Subsequently, I contrast tonewood exploitation observed in these documents with environmentalist complaints that clarify the troubled deforestation scenario in the Global South since colonial times. All of this allowed me to uncover how, beneath the social welfare discourse of El Sistema, there are scenarios of environmental injustice. Finally, I deem the decolonization of these policies through the implementation of an ecological epistemology to be necessary and urgent.

Keywords: *tonewoods, Global South, El Sistema, environmental injustice, ecological epistemology*

Thus transformed into a Petro-state, the Venezuelan State eventually had in its power not only the political violence monopoly but also that of natural wealth. The State has exercised such power theatrically, ensuring consent by showing off its imperious presence: it seeks to conquer, not to persuade... Being an heir of the Baroque culture, the Venezuelan State “enchants minds” in very rhetorical cultural ways, which seek the audience’s consent by leaving it, as Godzich would say, open-mouthed (1994, 79). The Venezuelan State often dazzles by the wonders of power but does not persuade through the power of reason since it becomes an ingredient in its empire’s frightening show. By manufacturing astounding development projects that originate collective progress fantasies, it casts its spells on the audience as well as on the actors. As a “magnanimous wizard,” the State takes control of its subjects by inciting receptiveness for its prestidigitation tricks: a magical State. (Fernando Coronil 2013, *The Magical State*)

Case Study

In line with the neoliberal economic model that gained ground in Latin America during the 1970s, Venezuela lived through an oil boom, which allowed the State to invest heavily in new economic and investment programs that met the cultural interests of the national and governmental elites of the moment. A large portion of this historical period has been known as the “Great Venezuela” era, during Carlos Andrés Pérez’s first government (1974–1979).

Following the nationalization of the oil industry, decreed by the Executive Branch in 1975, the State started to exploit and market the national crude oil directly, no longer taxing only the foreign oil companies that had settled in the country. According to Coronil (2013), the price of an oil barrel before the nationalization went from \$1.85¹ in 1970 to \$10.99 in 1975, generating enormous tax revenues to Pérez’s administration that reached 40.370 million dollars that year (Bautista Urbaneja 2007). This meant that Venezuela generated more revenue from its oil exports than all European nations thanks to the Marshall Plan (Coronil 2013).

As a result of these huge profits, it is not by accident that the country’s main cultural institutions were created during the 1970s, such as the *Consejo Nacional de la Cultura* (CONAC), the *Fundación para la Cultura y las Artes* (FUNDARTE), the *Museo de Arte Contemporáneo*, and the *Galería de Arte Nacional*, among others. A product of its time and heir of the said oil boom, El Sistema was created as an expression of one of Great Venezuela’s most renowned cultural and educational policies, thanks to the clever political involvement of José Antonio Abreu (founder of El Sistema) in order to obtain strong financing from different actors and institutions. This remained unchanged from its outset to Hugo Chávez’s administration (1999–2013).

The Great Venezuela was the era in which the nationalization of oil companies coincided with the global energy crisis, as well as the increased importance of OPEC member countries as price setters on the international hydrocarbons market during the 1970s. President Carlos Andrés Pérez explained this situation as a promise of progress, as the alleged most efficient antidote in order to achieve an immediate modernization, and “as Venezuela’s historic opportunity to overcome underdevelopment, conquer its second independence, and build Great Venezuela” (Coronil 2013, 301).

Within this context, José Antonio Abreu has been remarkable as a widely politically experienced actor who had the skills to obtain substantial financing from

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different public and private sectors, NGOs, and international organizations, which have contributed to the economic and media support to El Sistema since its onset. Inspired by modern developmentalism, José Antonio Abreu has proven, without a doubt, to be its loyal heir. This ethos was inspired by the national planning models imposed by President Marcos Pérez Jiménez (1953–1958), in particular, the enforcement of a Eurocentric, centralized educational project by the country's elite that has promised social betterment programs through the orchestral practice, as well as the predominance of art music in orchestral repertoire. To this day, this has hierarchized and, hence, set local expressions aside within music education, resulting in the systematic shutting out of alternative proposals that cause any type of inconvenience or hurdle to the interests of the aforementioned social elites, which control state and business power in Venezuela (Baker 2014).

El Sistema is an educational and artistic project started on February 12th, 1975, during a time in which Abreu assembled the Juan José Landaeta National Youth Symphony Orchestra in Caracas “with Ángel Sauce's and José Francisco del Castillo's music students” (Sánchez 2007, 68). Three years later, its name was changed to Simón Bolívar Venezuelan Youth Orchestra, some of whose musicians currently perform with the internationally known Simón Bolívar Symphony Orchestra of Venezuela. Over time, a national proposal such as El Sistema eventually became a globally imitated model to “systematize music collective and individual education and practice through symphony orchestras and choirs, as social organization and humanistic development tools” (Fundamusical 2013).

After having been part of different governmental ministries and sites, El Sistema had managed to move up to the highest agencies of the Venezuelan State. After many concerts throughout the country, more musicians from other states joined in, and as of February 20th, 1979, by Decree 3.093, published in the Official Gazette no. 31.681,² the Venezuelan State started to participate more actively in sponsoring the orchestra. Under these terms, the Ministry of Youth created the *Fundación de Estado para la Orquesta Nacional Juvenil de Venezuela*. Ever since, the main contributions have “come from the Venezuelan State, which have been carried out uninterruptedly since the creation of ‘El Sistema’” (Borzacchini 2004, 5), with the purpose of “contributing to the training of human resources and to the securing of funding needed by the ‘Sistema de Orquestas Juveniles, Infantiles y Preescolares de Venezuela’ for the carrying out of its programs and activities” (Peñín and Guido 1998, 644).

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The consolidation of an artistic program within the State policies was achieved thanks to the perseverance with which Abreu was able to weave it within the state structure. In 1994, El Sistema was incorporated into the Ministry of Family, Health, and Sport, with the intention to make it a program “of transformation and rescue of persons (children and youths), as well as their protection against being incited to vices by idleness” (Carabetta, Rincón, and Serrati 2017, 137). From this social assistance perspective, in 1996, the nationwide participation of El Sistema was increased. Thanks to community strengthening throughout the country, the *Fundación para El Sistema Nacional de las Orquestas Juveniles e Infantiles de Venezuela* (FESNOJIV) was created.

A landmark in 2007 was the creation of “Music Mission” in the famous radio program *Aló Presidente* no. 292, which Hugo Chávez broadcast on public television every Sunday.³ At that time, Chávez and Abreu resolved that the main goal of El Sistema would be for a million people to join it, taking into account that the program “must be taken to the core of the Communal Power and that a center of social action through music must be working in every communal council, so that children may have access to instruments, choirs, and orchestras” (Chávez 2007).

Three years later, El Sistema became more established than ever in the institutional structure by becoming part of the Vice Presidency of the Bolivarian Republic of Venezuela. In 2011, by decree 8.078 published in the Official Gazette no. 39.626,⁴ the FESNOJIV changed its name to *Fundación Musical Simón Bolívar* (Fundamusical) and moved to the Ministry of Popular Power of the Office of the Presidency and of Governance Monitoring of the Bolivarian Republic of Venezuela. From a state point of view, the road forged by El Sistema since the 1980s was unimpeded and free of controversy while, in fact, this oversimplification of the history of El Sistema conceals a whole structure of power that was revealed through scandal, financial controversy, extortions, and dark ploys within Venezuela’s politics and media (Baker and Frega 2016). Critics have been prominent since El Sistema was created and even before that, when Abreu was part of Venezuela’s cultural, economic, and political life; however, the so-called “conspiracy of silence”—as musicians called it (Baker 2014) regarding El Sistema—allowed critics to be silenced or bought off, and sometimes called for high office in the public cultural administration (Baker 2014).

Afterwards, this structure of power displayed by Abreu increased over time. Chávez openly praised 20th century developmentalism, with no intention

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whatsoever of revealing the dark side of El Sistema, relying on a contradictory discourse in which he clamored for rescuing what was popular and traditional, while commanding sizable funds from the Inter-American Development Bank (IDB), the United Nations Development Program (UNDP), and the Andean Development Corporation (CAF). The ironic impression conveyed in his discourse became an opportunity for Abreu, who realized that Chávez's administration was his gold mine.

According to the 2013 National Budget Act,⁵ the Bolivarian government allocated 0.32% of the national budget to the Ministry of Culture, which meant Bs. 1.217.935.232⁶ to tend to several institutions: *Compañía Nacional de Teatro*, *Fundación Casa del Artista*, *Fundación Compañía Nacional de Danza*, *Fundación Compañía Nacional de Música*, *Fundación Teatro Teresa Carreño*, *Fundación Vicente Emilio Sojo*, and *Instituto de las Artes Escénicas Musicales*. It is known today that El Sistema managed to climb to a privileged position after Bs. 876.353.820⁷ were assigned to it in 2014.

As a consequence, the inclusion of popular and traditional Venezuelan music in the program became a priority in project *Alma Llanera* (2012). This was a milestone since, from here on, a new type of *cultural veil* arose, in which it was convenient to turn musical and regional memories into a show capable of "covering up for the State's failures and the inconvenient everyday facts" (Logan 2016, 61). This was nothing more than a reconfiguration of the famous art democratization⁸ discourse as a means to attain social welfare, since now it was fueled by an intercultural, uncritical perspective that did not question the gist of what caused the social irregularities and inequalities within El Sistema. This type of interculturality is still useful for the existing domination system in the academic musical institution, because it does not question the rules of the game and is compatible with the tangible neoliberal model.

Methodological Considerations

This research began with a compilation of digital sources published between 2012 and 2016 that were associated with the acquisition plan of *FundaMusical* (the administrative body of El Sistema), contracts with the IDB and the Venezuelan State, as well as international tenders created by the UNDP. This data came from the study of IDB loan agreement no. 1869/OC-VE from 2008 to 2015. Second, I conducted semi-structured interviews with two key informants between July and

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August 2017. Informant A was a lawyer who has held high office in El Sistema since its establishment and has been highly involved in its policies for the acquisition of musical instruments since 2012. Informant B, on the other hand, was a luthier and one of the founders of the movement called *Red de Constructores de Sonido* (RCS), which since 2013, has both discussed and organized working sessions on the variety of problems that affect professionals involved in the making of musical instruments. Therefore, the informants had diametrically opposed viewpoints on El Sistema and its involvement in Venezuela's politics and cultural economy. To protect the informants and their jobs, their identities are protected.

I subjected the information collected to a content analysis, in order to explain new understandings and representations of the facts beyond what the documents explicitly state. I conducted a contextual analysis to make it possible to grasp situations, discourses, means, and intentions beyond the open assertions within the collected information. Finally, I constructed a tentative practical guide for action (Krippendorff 1990) based on a case study strategy.

I chose two tools (content analysis and semi-structured interviews) for the purposes of this research, in order to implement this multi-method strategy based on the information collected in a written and oral manner. Triangulation was conceived as a proposal in which data, authors, theories, tools, and methodologies circulated (Denzin 1970, 301), which strengthened the content of this research. In this case, I employed triangulation because it allowed me to discuss theoretical positions from various places and times and to use different information-understanding techniques.

This research was substantiated as a particular case study, since it “tries to shed light on one or more *decisions*: why they were made, how they were implemented, and what was the result” (Schramm 1971, cited in Yin 1994, 12). In case studies, the triangulation of various sources of information is highly important because the goal is, precisely, to “deliberately encompass the contextual conditions that lead to a modern phenomenon” either through qualitative or quantitative data (Yin 1994, 13). This is why my main questions were based on *how* and *why* there has been such a massive demand for musical instruments in Venezuela's El Sistema during a particular time frame, bearing in mind that those instruments were made of critically endangered tropical woods.

To encompass these methodological expectations, I used two information channels with the objective of putting together enough pieces of evidence to

support the critical argument; I used two semi-structured interviews as well as various documentary sources deliberately chosen (digital and print). By putting both pieces of evidence together, I was able to draw up a chronology of varied events, decisions, and situations that overlapped, complemented, or conflicted with each other, fostering a reliable social research with controversial arguments “whose intention is to build knowledge” (Yin 2013, 14).

Easy and Immediate Solutions

The content analysis has allowed me to determine some of the strengths and weaknesses of the educational program. For example, the program’s management has underestimated the major problem caused by the massive acquisition of musical instruments, although it was recently taken into account within the bureau of El Sistema. The reasons for this are 1) a gradual increase in the numbers of children and adolescents in the program since 2012; 2) Chávez’s interest in promoting music from the Venezuelan plains;⁹ 3) the widespread use of local instruments in the country in 2013, which is called the “year of the *cuatro venezolano*”¹⁰ and 4) local musical instrument manufacturers’ limitations to quickly supply El Sistema’s demand. It is noteworthy that, in 1998, the State, El Sistema, and the IDB signed a loan agreement for the creation of the *Programa de Apoyo al Centro de Acción Social por la Música*. During the first phase, financial support from the IDB was prominent, estimated at \$8 million, for the establishment of training programs for advanced students, teachers, and orchestra conductors of El Sistema (IDB, website).

Ten years later, in August, 2008, a new loan agreement for the staggering amount of \$150 million¹¹ was signed by the same actors to create the second phase of the support program, in three areas: 1) the building of the physical premises of the *Centro de Acción Social por la Música* in Caracas; 2) the institutional support in curriculum-related matters and training for orchestra conductors; and 3) musical instrument acquisition, either with public or private funds to finance El Sistema. This last goal was the focus of this research.

In the second phase of the support program, a greater interest in acquiring a number of musical instruments capable of meeting the demands of the widespread growth and expansion of El Sistema was evident. In view of this, the IDB and the Inter-American Culture and Development Foundation (ICDF) created the *Banco de Instrumentos Musicales* in 2009 to strengthen music programs in Latin

America and the Caribbean through the collection and donation of instruments.¹² To continue complying with the objectives established in the contracts, and with the help of the UNDP, the IDB acquired these musical instruments to give to children and adolescents who were part of the orchestral practice, so that 99% of its young students started their music education using an instrument supplied by the UNDP.¹³

The second phase of the IDB's support program was different from the first. For instance, *FundaMusical* requested a greater number of musical instruments under the label *Procurement Plan*. At first, it was expected to acquire a larger number of instruments—at least, 46.620 from 2008 to 2015. Secondly, approximately \$66 million was allocated for the acquisition of musical instruments from 2010 to 2016. Based on these enormous figures, it is evident that this second phase represented “one of the most crucial moments in the history of ‘El Sistema’” (Baker 2016, 56). It is worth mentioning that companies located in metropolitan centers of the Global North such as Ifshin Violins,¹⁴ Eastman Strings,¹⁵ Henri Selmer Paris,¹⁶ and Buffet (Crampon) Group¹⁷ employ a Chinese labor force to manufacture their products, which were included among the brands awarded in the contracts signed between El Sistema and the IDB in 2013.

Date	Firm/Company	Location	Musical instruments	Reference
6/6/13	RYTHMES & SONS FLIGHT CASE	France Strasbourg	Percussion, music stands, hard cases	VEB0641
6/6/13	IFSHIN VIOLINS	USA, El Cerrito	Violins, violas, cellos, string accessories	VEB0642
8/5/13	HENRI SELMER PARIS	France, Paris	Saxophones, clarinets, bassoons, brass	VEB0647
8/5/13	BUFFET GROUP	France, Paris	Woodwinds	VEB0646
8/5/13	YAMAHA MUSIC LATIN AMERICA	Panama, Panama City	Various musical instruments	VEB0645
11/6/13	CONN SELMER INC	USA, Elkhart	Marching band instruments	VEB0661
11/19/13	HONIBA SA-STOMVI ART & TE	Spain, Valencia	Brass and woodwind instrument repairs	VEB0665
11/19/13	EMANUEL WILFER OHG	Germany, Mohrendorf	Upright basses	VEB0663
11/19/13	YAMAHA MUSIC LATIN AMERICA	Panama, Panama City	Various musical instruments	VEB0664
11/19/13	BUFFET GROUP	France, Paris	Woodwinds	-
11/19/13	EASTMAN STRINGS, INC	USA, Pomona	Violins, violas, cellos	-

Table 1: Contracts awarded between IDB and El Sistema for musical instruments and accessories (2013)

Amidst the contracts financed by the Venezuelan State, regional development banks, and international organizations, Informant B expressed that this massive

provisioning policy has harmed the sense of belonging that the making of folk/popular musical instruments implied, by systematically excluding local luthiers from massification projects of El Sistema like *Alma Llanera*. In response to this, in 2013 the *Red de Constructores de Sonido* (RCS) was created; this is a group of craftspeople and luthiers who voiced their discontent concerning the import of musical instruments, since it meant the destruction of the national production and family businesses that depended on these trades.¹⁸ It should be pointed out that both European and local instruments that were acquired by international firms have been used in the popular and folk music projects, as shown by the data collected.

Furthermore, the fast realization of a massive provision policy of European and local musical instruments in every agency of El Sistema across the country was driven by the Venezuelan import company Ideal Music, which acted as a third party in this process and that is managed by:

a person from the orchestra who had some relatives... a young man that worked with us—an engineer; he started his own instrument sale business and he has done very well... When the Orchestra was started, nobody imported anything!... But we, as an institution, did not import anything at all. The only thing we could negotiate was the price, but the rest was not my duty, as an institution. Go figure. The orchestra sends a delegation to buy trumpets in New York; that is not the purpose! Then, it began like that and this company, Ideal Music, I repeat to you, belongs to a young man who worked with us at the institution, an engineer, and after some time he offered, “listen, I propose that I be the importer of these instruments.” (Informant A)

This instrument acquisition policy—a scheme to import them through friends and relatives who are El Sistema devotees—has revealed a structural flaw within the ambitious program, which has been unable to successfully re-establish its own instrument-making project, known as the *Centro Académico de Lutería* (CAL). This project was founded in 1982 “to train and prepare the most suitable professionals for the manufacturing, maintenance, and repair of symphonic and popular instruments that musical ensembles require such as those that are part of the *Alma Llanera* program.”¹⁹

That said, I want to highlight that, in this research, I have taken a critical approach towards the open international tenders of the UNDP during 2014, as a reflection of the low production of musical instruments and the limited response capacity of the CAL, the RCS, and Venezuelan luthiers in the country. This reflects

the deplorable manner in which the country's cultural and musical policies have been carried out. For example, between 2013 and 2014, President Nicolás Maduro approved resources for the creation of a musical instrument factory with the support of Chinese capital.²⁰

Particularly, it is important to take into account the UNDP's Technical Requirements and Specifications Scheme, addressed to national and foreign suppliers who submitted offers for the provisioning of string (plucked and bowed), woodwind, and brass instruments for El Sistema:

1. 3,000 Venezuelan cuatros (beginner, semi-professional, and professional) made with spruce wood for the top soundboard; maple for the ribs and back; mahogany for the neck and scroll, and finally, ebony or rosewood for the fingerboard.
2. 420 violins (4/4, 3/4, and 1/2) produced from silvery fir or spruce²¹ for the top; maple for the back, upper block, and neck; and ebony for the chin rest, the fingerboard, the tuning pegs, the nut, and the tailpiece.
3. 160 violas (16, 15, 14, and 13).
4. 140 cellos (4/4, 3/4, and 1/2).
5. 105 double basses (4/4, 3/4, 1/2, and 1/4). The last three have the same requirements as the violins regarding tonewoods. In this section, the strings required were made, verbatim, of high-quality woods.

Unveiling the Dark Side of Tonewoods

It is striking that, in the said tenders, the ecologically responsible extraction of the woods required was not taken into consideration, while the fact that many of them are endangered species worldwide was ignored. UNPD's document only explicitly stated the need for having instruments made of "good quality woods," while overlooking the certifications issued by the Forest Stewardship Council (FSC).

While the high costs of the acquisition plans and the number of instruments required for the program that was examined can be a useful source of quantitative data, one must not forget that behind every figure there are qualitative sources that sketch stormy socio-environmental inequalities. This is the origin of my interest in developing a political ecology of music:

As a matter of fact, music formats, media players, and musical instruments (not to mention music scores or their usefulness during concerts) are all treated in this

literature as something more than facilitators of musical-aesthetic gatherings and exchanges; they are also “things” that must be grasped as part of the global supply chains, as warehouses for natural and raw materials such as plastic, waste, and decomposition. Hence, studies in media ecology and ecomusicology have started to focus on the environmental impact—or what we might call the political ecology—of modern music (Straw 2000; Acland 2007; Gabrys 2011; Maxwell and Miller 2012; Allen 2013; cited in Sheperd and Devine 2015, 11).

Socio-environmental problems may be described as the scenarios in which a great variety of actors who fight over the exploitation and commercialization of natural resources participate. The emergence of these inequalities can be especially found in the scenarios of creation, extraction, appropriation, and globalization of resources, which trigger more inequalities (Ulloa 2014).

Throughout history, the making of musical instruments has involved the extraction of natural resources in varying proportions. Actors associated with a wide range of alliances, feelings, and interests that drive the behavior of social groups are active participants in these interactions. That said, interactions are defined and consolidated by the participation of nonhuman entities—such as raw materials and tools—in such transformations. Therefore, instruments are not only objects that change evolutionarily and in conjunction with human beings, but they also bear stories and technological controversies about who builds them, how they are made, and how they adapt to the material and aesthetic needs of peoples (Mendivil 2016). From these reflections, transdisciplinary topics, and problems worthy of the cultural study of musical instruments and the social and natural dynamics inherent to their production, manufacturing, and consumption thrive (Dawe 2003).

One can then infer that between the widespread growth policy of El Sistema and the extraction of natural resources for the making of musical instruments demanded by the program, there is a poorly visible production chain that is not publicly criticized. There is an interest in making a massive number of instruments using certain woods that are endangered today, commonly utilized in small-scale instrument production. This predicament is even worse when there is an intention to strike a deal with Chinese corporations and manufacturing companies that implement new automated production methods, which accelerate deforestation and shut out customary actors like Venezuelan luthiers in such tasks.

In a sense, and thanks to the enormous demands of El Sistema, the progressive instrument production industrialization in Venezuela created an impression that musical instruments are made as the result of thorough, handcrafted work in

which one or only a few people participate. Actually, the music industry and large-scale educational programs are more interested in deeming instruments to be commodities²² that are inevitably part of exploitation networks, legal and illegal traffic, and resource manufacturing and commercialization, as is the case with other full-scale extractive processes.

I consider that the most alarming aspect of this is how fast natural resources have been consumed in order to make people believe that musical instrument provisioning automatically entails social welfare. In this muddle, people overlook the fact that all socioeconomic levels involved in the making of musical instruments have suffered due to the increasing scarcity of tonewoods obtained from endangered tree species.

Although historically this trade or industry has always implied some type of natural resource extraction, nowadays we face a more dramatic scenario involving the reduction in forest coverage and the consequent deforestation that bring about the loss of flora and fauna globally. Therefore, I consider that there should be some sort of academic response from music education that lays stress not only upon politics-and neocolonialism-related matters (Baker 2016), but also upon the abrupt climate changes that have a direct impact on the way in which musical professions and expressions adapt to this environmental crisis through which we are living (Kay 1964). With this in mind, the planet's alarming loss of biodiversity has been a source of concern at several international assemblies and conventions. Some organizations have played an active role in classifying endangered species by using red lists; for example, at the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the International Union for the Conservation of Nature (IUCN). In this regard, the following species are worthy of note:

In CITES' list, the Brazilian rosewood (*Dalbergia nigra*) in appendix I from 1992, the American mahogany (*Swietenia mahagoni*) in appendix II from 1998 and, more recently, the Pernambuco tree for making violin bows (*Caesalpinia echinata*) in appendix II. In IUCN's red list, the Indian rosewood is noteworthy. (Beattie 2009, 1)

The majority of these woods can be found in tropical zones in the Global South. This is not only a geographic region but also a series of areas that are home to a rich biological biodiversity that, throughout history, has been plundered because of clearly destructive territory occupancy rationales. According to several academic

authors and environmental activists, most tonewood extraction sites are located in what have been called sacrificial zones, that is, areas “that due to different social, economic, and political reasons, have been subject to extractivist development policies to the point of causing them a degeneration that can only be justified under nationalist-developmental, productivist discourses” (Bolados-García 2016, 111).

Sacrificial Zones

To paraphrase Robert Sack (1986), the proliferation of sacrificial zones has generated social emptying, proportionate to how much these places comprise natures that are highly valued by major transnational corporations and extractive companies. This has caused a systematic policy of displacement of rural, farming, and indigenous communities in the name of progress. In this context, the realization of sacrificial zones tends to “depreciate other forms of production and ways of life different from those of the dominant economy” (Svampa and Viale 2014, 84). Sacrificial zones are a way of geographically categorizing the complaints and discontent of many of the communities and groups that are made invisible at political and economic negotiations among large multinational companies, development banks, and State institutions, since they question the validity of the “bad development” (84) generated by extractive-exporting entities, which are increasingly present in 21st century Latin American progressive government projects. More generally, in the Global South areas, one can perceive a variety of scenarios of creation, extraction, appropriation, and globalization of nature that commend agrotoxic sprayings, open-pit mega-mining, monoculture plantations, and fracking or hydraulic fracturing, among others (Ulloa 2014).

For the purposes of this research, I focus on deforestation in the Global South, which covers the extraction of tonewoods that, in order to comply with the massive consumption of wooden musical instruments, have been subjected to a large-scale monoculture process.

An example of this situation is mahogany, a wood often used for the neck of plucked instruments. Between 1950 and 2003, 70% of genuine mahogany in the world disappeared, strongly affecting forest covers in much of Africa and Central America (Clowes 2017). On the other hand, in countries such as Tanzania or Mozambique, cutting down passion fruit trees to produce woodwind instruments is well known, but “what many do not know is that the tree is often felled illegally and that species are declining” (Hsu 2012). Meanwhile, as shown in the

documentary *The Music Tree* (2009), the overuse of Brazilian pernambuco to make violin, viola, and cello bows has caused a rapid deforestation of the Atlantic region of the Amazon forest cover since the colonial period:

For a long time, makers of violin bows have valued the pernambuco, a South American tree included in the endangered species list of the International Union for Conservation of Nature. The pernambuco, also known as *Pau Brazil*, has been exploited since 1500, when European merchants started exporting its heartwood as a colorant (Hsu 2012).

From these historical issues, powerful intersections emerge between environmental injustices and the dominant patterns of classical orchestration, in which the maintenance of the materials used in each wooden instrument is crucial, taking into account that within the musicological world there has not been enough interest to keep the reciprocity between both phenomena in mind. Another decisive historical example that shows this complex relationship involves “the musical boom of the Baroque period (17th and 18th centuries) [that] would not have been possible without the Amazon woods exploitation” (Alimonda 2016, n.p.), carried out by native and African slave labor during the colonial period.

More recently, the reconfiguration of global geopolitics due to China’s particular participation (especially enterprises and manufacturing companies located in this country) has been decisive in the new neocolonial processes of “accumulation by dispossession” (Harvey 2004, 113), as there is a recurring series of socio-environmental problems rooted in the dynamics of the global market of tonewoods used for the manufacturing and marketing of musical instruments on a global scale.

It is my understanding that the dynamics of the global market of wooden musical instruments follow a subcontracting process that is increasingly common among major multinational companies, in which they stop producing their own appliances and delegate that task to third parties, as is the case with other industries such as the automotive, textile, and computer manufacturers, among many others. This method, called *original equipment manufacturer*, gained momentum since the 1980s in the world of wooden musical instruments (especially guitars), revealing an “offshore” market strategy between large multinational companies and the different Asian production and labor exploitation geographies; for example, “the cheap guitars made in China that are more than half of the world trade in that sector” (Gibson and Warren 2016, 434).

The Asian Giant of Tonewoods

According to the United Nations' merchandise trade statistics, between 2009 and 2015, China's international timber trade has undergone an impressive rise, and because of this, the Asian giant has been publicly criticized by international organizations (Fogarty 2012). According to the statistics, countries in Southern Asia and the Pacific such as Papua New Guinea, Vietnam, Indonesia, Burma, Laos, and Solomon Islands competed to be the main wood suppliers for Chinese companies. Nevertheless, in the past five years, Chinese manufacturing companies have expanded their operations to Africa because, in the countries with the highest extreme poverty rates, child labor abounds, estimated at one trillion people as opposed to the smaller populations of the South Asian nations previously mentioned, according to the World Bank's former senior vice president and founder of the China Center for Economic Research in 2014.²³

Chinese manufacturing companies' expansion to Africa has occurred not only due to demographic factors—such as the fact that the child population is most vulnerable to inhumane exploitation—but also due to the environmental opportunities that the lands and ecosystems in this region provide. As Coronil (2013) explains, underpaid work implies lower expenses for exploiters, while the usufruct of colonized lands means a great gain for those who manage to dominate them territorially and, thereby, to gain advantage in the international market. Large wood companies are not exempt from these social and human abuses; such businesses are strongly interested in the exploitation of forests in the intertropical zone of the Global South in order to extract wood and ship it to China and, from there, manufacture and export various products to most parts of the world.²⁴

On the other hand, China has been the largest rosewood consumer for the past 15 years, reaching its peak in 2014 (Bax 2016). This has brought about serious repercussions, across both local forest communities and in some of the most endangered ancient forests in the world (Gaworecki 2015). Moreover, the long-standing illegal logging in Vietnam (Drollette 2013) has hastened the extinction of more than 1,700 plant species in order to sustain a million-dollar trade in timber that only increases the number of territorial displacements, affecting other neighboring countries such as Thailand and Burma (Phillips 2015).

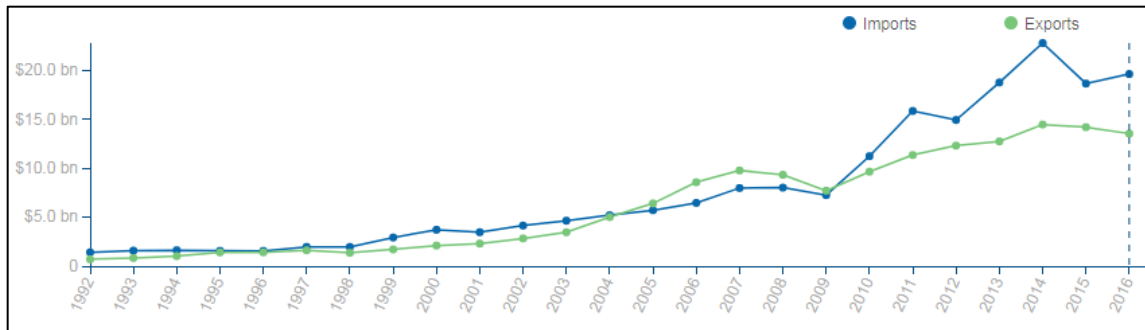


Figure 1: China's worldwide trade of wood, related items and coal since 1992 (Source: Department for International Trade (DIT) & Department for Business, Energy and Industrial Strategy (BEIS), <http://comtrade.un.org/labs/>)

Since 2011, China has positioned itself as the world's largest wooden musical instrument market, generating a total of \$1.4 trillion in exports in 2014 (UN Comtrade, n.d.). This figure is expected to reach 100 trillion yuans before 2020. According to statistics from the Chinese Musical Instrument Association, in 2012 the number of pianos made worldwide was 500,000; China produced 80% of that figure, as well as 80% of the 1.3 million violins made throughout the world that same year.

It should be noted that, of the 2 million Western instrument orchestras in the world, 60% were put together thanks to Chinese labor (China Daily USA 2013). According to statistics on trade in goods and commodities in United Nations partner countries (Comtrade), China's voracious economic rise in the past 10 years has been unrivaled with respect to the international wood and musical instrument trade.

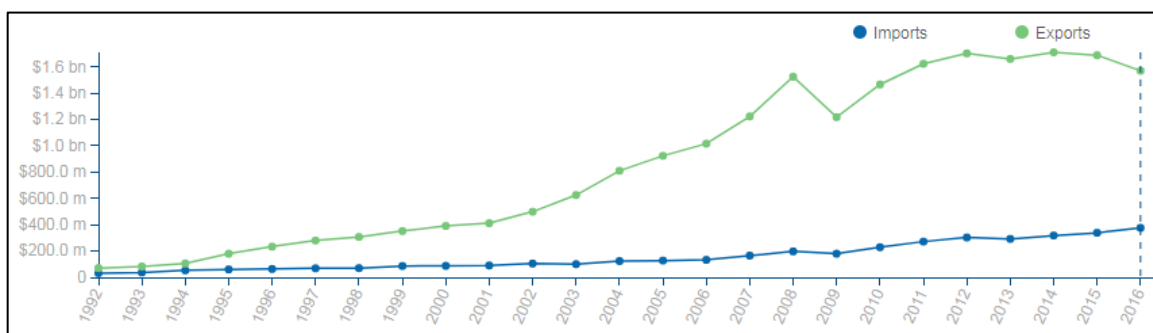


Figure 2: China's worldwide trade of musical instruments and accessories since 1992 (Source: Department for International Trade (DIT) & Department for Business, Energy and Industrial Strategy (BEIS), <http://comtrade.un.org/labs/>)

The Good Chinese-Venezuelan Relations and the Industrial Musical Instrument Rationale

As a result of this boom, devastating environmental and social consequences are perceived throughout the Global South, especially because the source and the large-scale manufacturing of the musical instruments take place in the Global South through illegal trafficking in endangered timber species. In my case study, this scene portrays the controversy surrounding the policies of musical instrument acquisition intended to join the ranks of El Sistema, taking advantage of the good relations and trade agreements between China and Venezuela during the past five years.

In Venezuela, many social and environmental sacrificial zones had sprouted throughout history long before Chavez's coming to power. International logging companies interested in Venezuela's huge forest reserves—like Socopó and Uribante, for instance—somehow imposed a resource extraction method that ravages and does not allow the utilization of other timber that is mutilated and massacred by machinery and mechanical tractors:

They raze the whole forest using big machines—every tree lying on the floor—and then smaller machines called *jaibas*—which are little bulldozers with a sting on their rear end, like scorpions—come in and poke the log that they want. Then these companies exploited three or four species only, and they left the rest to rot. They weren't interested in other precious, beautiful woods because they were too hard; they don't trade in them, so they let all those trees rot there. (Informant B)

Other problems include the Venezuelan State's corruption and illegal timber trafficking, which causes reforestation with different types of trees that have various social functions to be non-existent. Informant B also advised that this dire environmental scenario was not going to change after Maduro's (2016) newly-implemented *forestry engine*, which is expected to yield 33 million plants in order to “counteract the economic war.” This non-existing reforestation also affects luthiers and local craftspeople who are concerned about these circumstances and the unfair competition against the Chinese logging industry over wood radial cutting, necessary for the making of musical instruments and the production of strings:

What they have sent us is a sort of kingwood or Palo Santo and a kind of fir—I have seen it—and perhaps cedar for the neck. You asked me about the demand, the supply, why the Chinese, why all of that happens here, why there are agreements with El Sistema, why all of this happened. We have great human potential,

but the production capacity is not [great]. That is one of our hurdles: production capacity. That is why I support the initiatives created by [the] Ministry of Culture, in order to organize and start grasping that we could start a big team with the State's support, with a warehouse like they do in other Venezuelan aspects regarding production, not turning us into a rentier matter, and starting to have a sound judgment in regards to this. (Informant B)

Importing musical instruments for El Sistema reflects Venezuela's technological dependence on China. Nowadays, the logic of hiring an Asian workforce for the construction and operation of musical instrument workshops has been favored over strengthening local initiatives to plant tonewoods in several states across the country. This need has been constantly concealed by official media, which stresses that something positive and hopeful will result from the relations between Chinese and Venezuelan workforces:

along with craftspeople's and artisans' knowledge, Venezuela and China will build a musical instrument factory for Simón Bolívar Orchestras and popular culture... We have already handed over 400,000 musical instruments, and we should hand over, at least, 100,000 more this year. In partnership with China, another instrument factory will be built in Simón Bolívar Park, in La Carlota; it will be managed by the orchestra itself. This project is already in progress. (Maduro, in García 2014)

Through the cooperation agreement between China and Venezuela, a musical instrument factory will be built in the state of Lara. This was announced by the Office of the Presidency and of Governance Monitoring Minister, Carmen Meléndez, during her radio show, *Ojo Avizor*, which is broadcast on Radio Miraflores FM. (Valdez 2017)

Because of these two statements by Nicolás Maduro, I remembered that in early 2018, I had a conversation with members of IASPM-AL via e-mail, in which there was a debate between ethnomusicologists and professionals from different disciplines on the issue of musical instrument mass production. Indeed, the popularization and consumption of many instruments has involved the participation of a wide range of stakeholders from all over the world. This was implied by one of the participants in the discussion, when he replied that different economic levels in Mexico (and, in general, in the whole region) are deeply involved: "individual- and family-owned workshops, small- and medium-sized businesses, and not only the big companies that are usually foreign. This may be yet another problem."

In Venezuela, the predominance of this industrial logic conflicts with the interests of local luthiers and with the ecological cycles expected in order to make musical instruments without harming the environment. It is worth mentioning

that this national logic is stimulated both by the capitalist dynamics of the global musical instrument market and by the demand requested by El Sistema.

Today, I have no knowledge of Chinese musical instrument companies located in Venezuela but, based on past experiences in other aspects, can hypothesize that a full knowledge transfer between the Chinese workforce and local producers is not far from becoming reality. This transition from a rudimentary technology to an automated one brings with it dynamics of knowledge of the international corporate culture and the current technological systems that threaten to make the local knowledge base irrelevant.

In line with this, Kevin Dawe (2003) reminds us that, in general, musical instruments *travel* around the world and are the product of social, economic, and cultural exchanges, “caught in the movement of consumer goods ... and in the multimillion-worth music and manufacturing businesses” (274). Without a doubt, musical instruments are devices that are continuously reconfigured and that can take us, metaphorically, to “a garden of possible forking paths” (Williams and Edge 1996, 2). When it becomes urgent to standardize musical products, either due to practical reasons or to industrial efficiency, variety is decreased, and there is a risk that the way in which musical instruments are made is homogenized (Barret 1998, in Bijsterveld and Schulp 2004).

One of the first steps for reverting this predatory process should be the collective understanding of an ecological epistemology—previously embedded in discourses of indigenous and social movements—to confront developmentalism infused into neoliberalism, which in historical memories of some Latin American native communities is encapsulated in the concept *sumak kawsay*.

Towards an Ecological Epistemology from and to the South

Sumak kawsay is a concept “historically constructed by the indigenous peoples of what today is known as the Andean area of South America and that refers to the achievement of a full life, to living well” (Simbaña 2012, 222). As an approximation, the notion of *the community* and a full respect for ecological time are the central elements of *sumak kawsay*, which has been recently interpreted and suggested as a centralized State policy in Bolivia and Ecuador. Also, the notion is part of the world views of indigenous peoples that throughout history have related the sense of responsibility and social justice to the sense of having a harmonious

relationship with nature. In this regard, *sumak kawsay* is distinguished by adopting a “radical questioning of the distinction between mankind (culture) and nature—an exclusively European and modern distinction since Francis Bacon, because it was not made by any other civilization until then” (Mignolo 2009, 10).

Criticism of the Baconian ontological rupture has been crucial to disassemble the “rational” way of understanding musical expressions and professions, that is, through written notation and the standardized making of musical instruments. This imperative has had us believe, to a certain extent, that there is no other conceptual model but that sketched by the Global North to produce new knowledge (Santos 2010). This division has brought about serious pedagogical issues, for it has made the production of knowledge “that allows music to be freed from conceptual tyranny” (Sagredo 1997, 60) impossible, especially after the development of Western written notation.

Musical knowledge decontextualization has many facets and processes. In Weber’s words, making certain musical instruments was a catalyst “so that the standardized notation be effective” in the West (Turley 2001, 634), that is, that the instruments be adapted to the timbre and sound requirements that liturgical activities demanded, in contrast to other musical objects from different localities and that were alien to the Western Catholic Church.²⁵ For instance, “folk instruments made locally may not have undergone a similar standardization, which makes it difficult to compose for them, particularly in an ensemble” (Turley 2001, 634).

I believe that the technological determinism of this Western tradition was strengthened by Sebastian Virdung’s (1465–?) notable contributions and his *Musica getuscht und ausgezogen* (1511), in which he classified a wide range of instruments taxonomically, organizing them into families according to their composition, making an effort to separate the object from its production and performance contexts.²⁶ Subsequently, Michael Praetorius’ (1571–1621) work partly established organology thanks to the second volume of his *Syntagma musicum*, called *De Organographia* (1619). This musical instrument organology, from the 18th century on, gained political legitimacy thanks to the accession of the European bourgeoisie.²⁷

Later, in the 20th century, Curt Sachs’ (1881–1959) and Erich Moritz Hornbostel’s (1877–1935) treaties started to gain relevance. They established a major part of modern organology, which has been widely criticized due to its Eurocentric and comparative bias. Both of them published the renowned work *Zeitschrift für*

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Ethnologie (1914), which was the source of a new musical instrument taxonomy known as the Sachs-Hornbostel system; this is nowadays the most widely used organization model in the musicological and ethnomusicological academy (Tresch and Dolan 2013).

Based on this, and according to Perlman (2014), the current standardized, massive production of musical instruments is an heir of that induced decontextualization, for there is no synchrony between the demand and the ecological availability to meet it.²⁸ Sadly enough, an “ex post facto” criticism of the environmental damage increasingly jeopardizes life on the planet, presuming that the solution is to make the use of resources more efficient “at the end of the production process and not at its beginning” (Beck 1998, 79); for example, the UN campaigns to reduce tonewood deforestation or the initiatives of large multinational guitar manufacturers.

On the basis of the educational and academic fields, I deem it important to keep Matsonubi’s doctoral thesis (2009) in mind, which deals with the emergence of an ecological epistemology that commends teaching methods that are alternative to the predominant anthropocentrism:

The emerging ecological world view states that human activities, including music creation, are part of nature’s processes. For example, Bateson (1972) and Capra (1996, 2005) have suggested that the human mind’s activities are connected to ecological patterns of a large system that is, hence, located in, interrelated with, and dependent on the environment. Instead, this acknowledgement clamors for a pedagogical approach that promotes an objective, relational analysis of the world rather than an isolated one (Bowers 1995, Riley-Taylor 2002). Such a relational understanding of human nature questions the anthropocentric approaches of knowledge production in different areas, including music education (17–18).

Following this discourse, I refer to Shevock’s valuable pedagogical contributions with respect to music education as a reproducer of the “local sense of belonging, through learning about indigenous, farming, and ancestral—both popular and traditional—knowledge in music education” (2015, 11). Therefore, a decolonial music education must make use of the contributions from music ecopedagogy, in order to join efforts to achieve public educational policies that conceive of art as an act that is morally responsible to its closest ecological environment:

Bowers (1995) argues that the creative expression of traditional cultures strengthens people’s moral sensibility and eco-responsibility, for it involves a sense of renovation of the spiritual ecology that ... works as the basis of a cultural group’s sense of moral order that determines human responsibility towards

plants, animals, and other life sources. Musical creation becomes an ecological act when it highlights and deepens one's relationship with the environment. (Matsonubi 2009, 307)

Based on my case study, El Sistema, in cooperation with the Venezuelan State, the UNDP, and the IDB, has developed strategies whose objective has been to hasten the achievement of Millennium Development Goals²⁹ 1 and 8. These goals seek to put an end to extreme poverty and famine, as well as to promote a global partnership for development. Nevertheless, it seems more urgent to establish a new musical knowledge production matrix that makes the achievement of those objectives possible without hampering the efforts to attain Goal 7, which is to ensure environmental sustainability.

It seems that behind every El Sistema discourse on social justice, there lies a series of environmental injustices that are currently not part of public agendas of political discussion. It is distressing to think that a boy or a girl in El Sistema is able to have access to a musical instrument thanks to the enslavement of another boy or girl in the Global South who is subjected to forced labor, either for deforestation, the illegal trafficking of endangered wood species, and/or large-scale musical instrument manufacturing.

My intention in this article has been to contribute to the debate on hegemonic ways of musical production as one of the features of the current alarming social-environmental crisis. The musical response to the environmental reality may be deemed to be overdue (Sanfeliu 2010), even though other authors maintain a slightly more optimistic stance by proposing that musicology can be a relevant discipline when it comes to solving this crisis, highlighting the beginning of an early eco-musicology in the Global North that takes notice of the materiality of wooden musical instruments (Allen 2011, Dawe 2016).

That said, and in terms of scale, my case study deals with the modest ecological impact caused by the use of tonewoods, although the educational model under consideration is the most replicated one globally. Hence, my contribution sheds light on the major problems and socio-environmental scenarios that fall outside the scope of this work. Although the denunciation presented here should involve all the orchestras of the world and, in particular, the materiality that supports playing an instrument, this study might set the groundwork for an analysis about the cycles and stability of the market for musical instruments made with wood from the Global South for educational programs in the Global South; it may also guide the

discussion about environmental controversies in the heart of Latin American music education.

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A native of Venezuela, Attilio graduated from *Universidad Central de Venezuela* and is a member of the Political Ecology Laboratory at *Instituto Venezolano de Investigaciones Científicas* (IVIC). He has conducted research in the fields of ecomusicology, sociology of technology, and decolonial studies. Lafontant Di Niscia recently became a member of the Venezuelan Musicological Society. He is currently a Master of Science candidate at IVIC and resides in Buenos Aires, Argentina.

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Notes

¹ All figures expressed in dollars mean they are expressed in United States dollars.

² <http://www.pgr.gob.ve/dmdocuments/1979/31681.pdf> (last accessed January 09, 2015).

³ This audiovisual source can be found in the Official Gazette No. 38.818 of November 26th, 2013.

⁴ For further information, see the Official Gazette No. 40.317 of December 17th, 2013.

⁵ <http://cdn.eluniversal.com/2011/03/23/gaceta39626.pdf> (last accessed January 10, 2015)

⁶ http://www.ministeriodelacultura.gob.ve/mppc/images/stories/memoria/Memoria_2013.pdf (last accessed January 05, 2015)

⁷ http://www.asambleanacional.gob.ve/uploads/documentos/doc_547d5e0938ea729586cd66935be31ab216ae392a.pdf (last accessed January 07, 2015)

⁸ “The democratization of fine arts in the developing world has been largely driven by the need to attract investment from companies and governments (Martorella 1983, 284–86). In Venezuela, El Sistema would have never received as much support from Chávez’s administration and international institutions had it not integrated social objectives” (Baker 2014, 152).

⁹ Los Llanos is a region located between Colombia and Venezuela that runs through a large portion of the Orinoco basin.

¹⁰ This announcement was made in April, 2013, by the Instituto de Patrimonio Cultural (IPC), in conjunction with the Vice-Ministry of Cultural Promotion and Economics, in a solemn institutional act. During the ceremony, it was highlighted that the declaration must be carried out because it was “the national cultural symbol of our musical expressions” par excellence. For more information, visit <http://www.mincultura.gob.ve/index.php/prensa/11-prensaweb/actualidad/2896-el-cuatro-es-declarado-patrimonio-cultural-de-la-nacion>

¹¹ See Loan Agreement No. 1869/OC-VE

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¹² <http://www.iadb.org/en/news/announcements/2009-05-19/inter-american-culture-and-development-foundation-launches-bank-of-musical-instruments,5412.html> (last accessed February 17, 2015)

¹³ http://www.undp.org/content/undp/en/home/ourwork/ourstories/venezuela_music_orchestras_impoverished_youth.html (last accessed April 30, 2015)

¹⁴ <http://www.violinist.com/discussion/response.cfm?ID=28108> (last accessed December 20, 2015)

¹⁵ <http://www.eastmanstrings.com/vision> (last accessed December 19, 2015)

¹⁶ <http://www.saxophonepeople.com/just-received-my-henri-selmer-tenor-saxophone-54-from-china...received-the-...-19890.html> (last accessed December 11, 2015)

¹⁷ https://www.namm.org/sites/www.namm.org/files_public/presskits/WN13/2012%20-%20Press%20Release%20Buf-fet%20Group%20B%26S_o.pdf (last accessed December 11, 2015)

¹⁸ For more information, see <http://albaciudad.org/2013/09/la-red-de-construtores-de-sonido-se-manifesto-contra-la-importacion-de-instrumentos-tradicionales-y-propuso-alternativas/>

¹⁹ For further details on these courses, see the Centro Académico de Lutería section on FundaMusical official web site: <http://fundamusical.org.ve/educacion/centro-academico-de-luteria/#WcLdIfPyjIU>

²⁰ <http://www.correodelorinoco.gob.ve/nacionales/venezuela-y-china-instalaran-fabrica-instrumentos-musicales-para-orquestas-simon-bolivar-y-cultura-popular/> (last accessed November 6, 2014)

²¹ Spruce is part of the family *Pinaceae*.

²² The codes and the sublist of commodities associated to musical instruments, parts, and accessories can be accessed via the following link: <https://comtrade.un.org/db/mr/rfCommoditiesList.aspx?px=H1&cc=92>

²³ http://business.tianjin.com/index.php?option=com_content&view=article&id=7637:labour-intensive-enterprises-should-move-to-africa-according-to-world-bank-economist&catid=26:china-finance&Itemid=65 (last accessed August, 13, 2016)

²⁴ <http://isthmus.com/news/cover-story/wiedenhoeft-illegal-tree-detective-researcher> (last accessed August, 16, 2016)

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²⁵ “...for example, the creation of rational musical notation – without which modern composition would be inconceivable – and, even before that, the creation of certain musical instruments that imposed the harmonious performance of musical intervals ... Specific features, conditioned sociologically and by the history of religion, which were characteristic of the Christian Church’s external and internal situation in the Western world, allowed that this musical predicament (which was ‘technical’ in its essence) arise from Western monastic orders’ exclusive rationalism” (Weber 1990, 252).

²⁶ “However, here we are also dealing with problems relating to a rational, merely technical ‘progress’ ... Therefore, the difference between that ancient music and chromatic music, created by the great musical innovators of the Renaissance in the middle of a feverish search for rational discoveries in order to give musical form to ‘passion,’ lies not in the ‘intention’ to express oneself artistically, but in the technical ‘means’ of expression (251).

²⁷ “It is no longer a matter of continuing to think about music as a naturally ordered set, but to impose the realm of reason and of the scientific perception of the world to it: the harmonious order is not naturally guaranteed by God’s existence; it must be built by science, wanted by men ... this way, the European bourgeoisie is going to achieve one of its most beautiful ideological productions: creating a theoretical and aesthetic support for its necessary order, *‘by suggesting, making others believe’*” (Attali 1995, 93).

²⁸ <https://ethnomusicologyreview.ucla.edu/content/ecology-and-ethnomusicology-metaphorical-representational-and-literal> (last accessed 12 February 2018)

²⁹ <http://www.un.org/es/millenniumgoals/> (last accessed on January 21, 2016)