Some considerations towards a more critical practice in Mobile Music
By André Damião

Abstract
This paper proposes to reflect on the production of experimental electronic music mediated by mobile devices. The definition of Mobile Music is somewhat vague; among different classifications – which could be considered more open or closed characterizations of the genre – we can find something in common: the significance of movement, or the willingness of displacement. The release of corporate mobile devices at the end of the last decade, such as smartphones and tablets, caused a drastic change in the perspectives within the genre: artists and researchers started to give much more attention to objects of consumption, rather than situations in which mobile sound could be experienced. Having this turning point in mind we could consider that Mobile Music started working much closer to the market logic and became more dependent on it, due to the adoption of commercial devices as well as researchers interested in developing new products. Thus, in this text we speculate about other alternatives to practices of Mobile Music, which could be somehow considered more critical.

Keywords: Mobile Music, Mobile Music Market, Controlled Consumption, i-Ensembles, Critical Mobile Music

Mobile Music as a Genre
The term Mobile Music in experimental music refers to a small niche in art production mediated by electronic media. Its boundaries are diffuse and often contradictory as the definitions made by the community of musicians, programmers and musicologists are conflicting.

The first attempt to define Mobile Music as a genre came from a group that created the *Mobile Music Workshop* (MMW), a series of events that took place in Europe and North America between 2004 and 2008[1]. The event was organized by researchers connected to British institutions, mainly Atau Tanaka, Frauke Behrendt and Lalya Gaye, and has become a key point for the establishment of this practice in the field in experimental music. Perhaps we should consider the work developed at MMW as a first phase of Mobile Music as a genre, because there is a drastic change in the research with portable media in the late 2000s, and some reflections proposed by this group of researchers also covers part of the sound art production of the 80s and 90s, such as the works by Christina Kubisch, Janet Cardiff and Benoit Maubrey, which could be considered Mobile Music[2]. In the article *Mobile Music Technology: Report on an Emerging Community*, by Lalya Gaye, the group defines Mobile Music as a new field that discusses issues of interactive music in mobile situations, using portable technology, as GPS for example. According to the authors, the term covers any musical activity using portable devices that are not fixed in a specific location, thus making interactions more dynamic, and creating new participatory possibilities in mobile scenarios. The devices could have sensors that would allow distributed networking, knowing which would be the context of the interaction, detect the user's location, and all could be combined with technologies incorporated in the environment (GAYE et al., 2006). Some examples of types of work which were developed in MMW in that period are: sonification wireless network signals, music remixing between users in remote places and exchanging of sound files between users connected by LANs. An example of this type of work is *Sonic City* from Lalya Gaye, Ramia

Mazé and Lars-Erik Holmqvist[3]. This work, presented in 2003 in Gothenburg, aims to create a personal soundscape which produces a dialogue between the participant headphones and the environment. The participants would manipulate an electronic sound synthesis through their movement and the data captured from their surroundings.This first definition – besides being quite fetishist in relation to the means of production, since it emphasizes the potential ´magical´ elements of wireless networks, mobile devices and surveillance systems – does not cover the production shown at MMW as a whole. Many artworks, for example, kept the Italian stage format and used mobile devices as musical instruments in fixed situations, we could cite the work *Handydandy* by Bauch Bernhard, Gross Luc, Kirisits Nicolaj, Savicic Gordan, Waldner Florian, presented at the MMW in 2006, as an example[4].

Other mobile music theorists propose more open definitions, such as Gopinath and Stanyek (2014), who in search for another definition of Mobile Music first look at how and why mobile devices are used, and how they shape and influence our sensible experience, and thus seek the elements that would form an aesthetics of mobility. The authors assume that the mediated experience of sound in motion occurs through commodities. In their approach, these goods are treated in the mobile listening paradigm not only as social and economic aspects, but also linked to our senses and creative sensitivity. These elements establish different relations between subject, object and infrastructure, and add to the construction of an aesthetics of mobility. Therefore, Mobile Music linked to experimental music practices could be viewed in this wider perspective. This point of view brings more complex situations for analysis, because it goes far beyond the field of artistic production.

Perhaps the most relevant theoretical result developed by the MMW group would be the classifications proposed by Behrendt (2010), which determines three areas of operation in Mobile Music: technological, social and geographical. The author considers that these three aspects are deeply intertwined in complex situations wherein this first generation of artworks occurred. In her view these three points were connected and present in works of Mobile Music assuming that: technology would be a way to create new types of listening and interaction through sensors embedded in mobile devices; social implications would consider that it would be possible to engage viewers with different types of interaction in performance or installation situations which would be more participative; there would also be activities related to geo-location that would be based on analysis of how urban space influences the process of musical creation, either by objective means, such as capturing data via sensors, as *Sonic City* described above, or subjective means such as observing how it would be possible to propose approaches that would interfere in the daily routine of participants, resulting in new aesthetic experiences.

These areas of operation mentioned by Behrendt are some of the indicators that led us to observe a turning point in the production of Mobile Music at the end of the last decade, more specifically after 2007, when more sophisticated mobile devices produced by major corporations began to circulate in the market.

Through powerful new hardware, more versatile operating systems and an oligopolistic market structure, the field of Mobile Music has become more attractive to the software market for mobile media. New applications and musical gadgets have multiplied since 2007. If we look at the software virtual stores, we will see a long list of items: virtual instruments; effects processors; sequencers; musical games; samplers; generative music apps; musical toys; tuners; tape recorders; workstations (DAW), etc. This market directly affected the artistic and academic production. Techno-positivists discourses proliferated in academia, and the language of academic research and marketing became seriously intertwined:

> The mobile music evolution has been catalyzed by the advancement and proliferation of the smartphone, portable and compact computing devices with built-in physical sensors, persistent connectivity, and location awareness. In particular, the iPhone brought about an inflection point in mobile devices, and transformed the notion of mobile device into a general computing platform. Looking back only five short years (to 2008), we might attribute the success of the iPhone to several reasons. First reason: "killer hardware" (...).(WANG, 2014, p.487)

In this article excerpt, Ge Wang uses very similar terms to the ones introduced by Steve Jobs at the release of the iPhone[5]. The context in which Wang uses the word "evolution" seems quite out of place, because the author does not refer to a practice that depends solely on technological development but a use of electronic media applied to artistic actions. Therefore, thinking of an "evolution" of the genre, there should be seen, above all, an artistic evolution, regardless of the development of technology. This discourse may be viewed as a symptom that shows a change of artistic interest and academic community of Mobile Music, which started to produce more commodities, rather than artwork.

Soon, several groups specialized in performances with tablets and smartphones appeared. The *i-Ensembles*, many of which demonstrate a high level of virtuosity in interpreting orchestral pieces of the Baroque and classical period[6]. Moreover, it was not long before we could see the first concertos for large orchestra, with tablet as a soloist[7]. Witnessing such a level of virtuosity, if we choose to forget for a moment the existence of the capitalism maintenance mechanisms, we could believe in the possibility of the beginning of a new tradition of virtuoso musicians, specializing in touch-screens and gyroscopes. However, firmware updates, Digital Right Management (DRM) issues, many restrictions on use, and software/hardware obsolescence do not let us forget that these ´new instruments´ cannot be treated like any other instrument. These devices are a surface of a controlled consumption market model. Søren Pold and Christian Andersen (2014) summarize the concept of "Controlled Consumption", developed by Ted Striphas, in three key points: 1 - A cyber industrial structure that integrates and manages the production, distribution, exchange and consumption which is developed around a product; 2 - consumption is controlled by algorithms that monitor closely the behaviour of users and the effects of advertising strategies through tracking and surveillance; 3 - The product is designed with a maximum length time, which limits its functionality (planned obsolescence). This model privileges the monopoly of large corporations, and restricts its users to quite a few options and many conditions. These constraints determine a system with asymmetric aspects of production and consumption, and therefore these devices fundamentally become, vehicles of acquisition. As Pøld and Andersen observe, even artists and developers who contribute to these platforms with cultural content have to accept so many conditions that turn them into a kind of "specialist consumer", requiring licenses to develop their products, and who, in addition to sharing profits with the platform, must go through a series of algorithmic filters which determine whether their production would be suitable for digital platforms or not. In the case of the relationship between musicians and apps, we can not think of corporate mobile interfaces in the same manner that we treat other electronic instruments - *Theremins*, modular synthesizer, *Ondes Martenot*, effect pedals, etc. - because they are fundamentally based on the logics of planned obsolescence and consumer platforms. They are ephemeral media. Excessive control over copyright also affects creation, by limiting or banning, practices of appropriation and reinterpretation of cultural content. The musician is subsumed by the system of which the mobile devices are a part of. He becomes a victim of a capitalist Stockholm Syndrome, and even while suffering the consequences of a market ruled by planned obsolescence, continues to use and consume devices, and thus becomes a form of advertisement for these technologies. It appears to be a dead end.

Production and reproduction of mobile sound

At first glance, the idea of a mobile experimental music, could have brought something much more poetic and revolutionary. It is no coincidence that authors related to the International Situationists, specially Guy Debord, are recurrent references in articles, work descriptions and titles of Mobile Music artwork. The idea of inhabiting public space, exiting the terrain of artistic institutions, exploring playful aspects in situations of everyday life as well as promoting collaborative creative processes, makes up a large part of the imagination of the Mobile Music community. In 1984 Shuhei Hosokawa, with his definition of *"Musica Mobilis"* is already trying to see the walkman as a trigger of types of urban "Gesamtkunstwerks", in which the listener can hear and interact theatrically with different sound layers that are in urban space that would leak by the headphones[8]. The listener through a polyphonic perception of the environment would be responsible for a kind of spontaneous musical composition.

It is interesting to observe that Hosokawa associates a device defect to highlight a possibility of re-signifying the aural public space. If the user had headphones that would completely isolate the external sound, and thus work perfectly, it would be an impediment for the realization of polyphonic listening proposed by the author. Hence, Hosokawa explores the precarious materiality of the media to develop his theory, unlike the texts of researchers associated with the MMW and Ge Wang, cited above, that accentuate the qualities of the devices, which are many times idealized due to a marketing discourse.

In our perspective, to work with sound and mobility is itself to make an apology to the precariousness of mobile audio reproduction, in regards to fidelity[9]. Until today, sound fidelity and portability are inversely proportional. Thus, defending a precarious sound fidelity reproduction is to promote not only the mobility of sound, but the mobility of listeners and producers. The materiality of sound mediated by portable devices is poor. These are compositions of trebly soundscapes, distorted and with low definition; something very divergent from the visual design of the products that are sold. After all, the ´bass´ is heavy and dependent on large speakers, and hard drive capacity is small if we consider the multitude of tasks that have converged in the form of applications on these devices. To speculate on the possibility of a more critical practice of Mobile Music – as opposed to Mobile Music that depends entirely on the means of production provided by large corporations – it is necessary to hear the reality of the ubiquitous sounds of everyday life, the proletariat of sound reproduction, and observe the interface of cultural developments and the economics of digital content in different social contexts.

The ubiquity of mobile sound implies social situations and forms of listening in which the interface becomes a means of aesthetic expression, and often political expression. The opposition between high-fidelity and portability makes the issues of mobile listening an integral part of an economy of precarious sound: "The MP3 is the most common form in which recorded sound is available today" (STERNE, 2012, p.1). The success of this type of compression occurred mainly because of two elements: small size of the files, allowing users to store more songs in less space and facilitate the exchange of data via the network, and of course, the form in which we listen to music. As pointed by Fernando Iazzetta, MP3 encoded music is heard in cars, mobile phones and laptops. Often these devices promote types of disinterested listening, composing a soundtrack for other activities. This posture makes the failures of compression practically unnoticeable, after all other noises external to the recordings, such as the urban space, and the limited spectral range of speakers, transform by itself this kind of listening into a low fidelity experience between original source and its representation.

The technique of removing redundant data in a file is called compression. The technique of using a model of a listener to remove additional data is a special kind of "lossy" compression called perceptual coding. Because it uses both kinds of compression, the MP3 carries within it practical and philosophical understandings of what it means to communicate, what it means to listen or speak, how the mind's ear works, and what it means to make music. Encoded in every MP3 are whole worlds of possible and impossible sound and whole histories of sonic practices. (...) The MP3 encoder works so well because it guesses that its imagined auditor is an imperfect listener, in less-than-ideal conditions. It often guesses right. (STERNE, 2012, p.2)

These less-than-ideal situations presupposed by the MP3 inventors are constantly present in everyday life: street vendors, cars stereos, boomboxes and loudspeakers of laptops and mobile phones. This range of devices that distort the original recordings and add noises to urban space, in general, do not reproduce low frequencies. According to Wayne Marshall, these are elements that define the current "Treble Culture" (MARSHALL, 2014, p.43). In this context, mobile phones have become one of the main interfaces to consume and play music.

Mobile listening directly influences our sound environment. Devices become a type of acoustic demarcation in space. One of the recurring terms in experimental Mobile Music artistic practices is to create ´spatial awareness´ usually done through sensors - such as a GPS - that scan data from places where the work occurs. However, the simple practice of public listening could also be a way to propose a "cultural space awareness". For example, to see people listening to music without headphones in public transport is a common scene. In some cities, such as São Paulo, it became an illegal activity:

Law No. 15.937, 23rd OF DECEMBER, 2013

Art. 1 In order to preserve the acoustic comfort
of users and combat noise pollution, the use of musical or audio
equipment, except through the employment of headphones,
 is prohibited inside all collective transport
vehicles, both public and private, operating within the municipality,
regardless of the agency or entity responsible for the administration of said vehicle.

In England, a particular word has been created for this type of activity, called *Sodcasting*. The word is a neologism joining "sod" and "broadcasting", so we could understand what it would mean literally. However, if we have look at the Urban Dictionary, it gives a much more specific meaning to it: "Verb - The act of playing music through the speaker on a mobile phone, usually on public transport. Commonly practiced by young people wearing polyester, branded sportswear with dubious musical taste" (Chris and Roj, 2007), exemplified as "Delia was exposed to hip hop for the first time last Wednesday, when, on the 75 bus to Catford, a youth was sodcasting from the back seat"(ibid.).

I'm the man with a box that can rock the crowd
Walkin' down the street, to the hardcore beat / While my JVC vibrates the concrete
I'm sorry if you can't understand / But I need a radio inside my hand
Don't mean to offend other citizens / But I kick my volume way past ten

(…)
Get fresh batteries if it won't rewind / Cos I play everyday, even on the subway
So get off the wall, become involved / All your radio problems have now been solved"
(LL Coll J, 1985)

This excerpt from the lyrics of *I can't live without my radio* represents one of the strongest cultural aspects of the boombox in the 80s. One can observe an appropriation of public space, including public transport, something very similar to sodcasting situations. The journalist Dan Hancox (Hancox cited by Marshall, 2014, p.43) considers interventions with mobile devices a form of politicized resocialisation of public culture through collective listening. To think about this resocialisation of a sound culture through mobile listening is also a way to prioritise portability in relation to sound representation fidelity. In this type of precarious reproduction, listening would not be restricted to hear the complete spectrum of a recording, but, rather, perceive a hue of a musical genre and its social values, which might provoke an "awareness of a space" in conflict. The hue of musical genres continues to invade the daily lives of those who use public transportation even after the prohibition of sodcasting in São Paulo. Its cultural significance remains regardless of the precarious sound fidelity. The means of sound reproduction are a fundamental sign of cultural identification.

The forms of reproduction influence directly the production processes of sound. According to Greg Milner, since portable radios became popular, musicians started to think about how they could create content that would sound better in that context, which at the time took the form of AM radio broadcasts played through small speakers. This movement caused the development of a specific type of sonority, that sounded much better on portable radios than other devices, that could reproduce audio with higher fidelity. Due to this aspect, when we hear some of the mixes made by producers such as Phil Spector and the Motown label in "ideal" conditions, the recordings may appear to have a reduced sound spectrum. They are mixes designed for specific media. The same phenomenon occurs in the current "Treble Culture".

In the economy of precarious sound there is a continuous feedback between production and reproduction, turning defects and mediated listening situations into artefacts of creative processes. In the same context of sodcasting, Marshall notes that part of the popular genre in the UK, Grime, uses the reiteration of MP3 compression as a process to create sonic textures that work perfectly in speakers of laptops and mobile phones. For example, the track *R U Double F*, by Ruff Sqwad, which is composed of beats compressed several times and made available to download only in a very low definition format MP3 (64 kbps)[10]. In this case, the process becomes a stylistic signature of the genre, incorporating the compression artefact as a technique. This process inverts the idea of digital audio fidelity. After all, the low definition file is the most faithful representation of the piece.

A recent development in Brazilian Funk music makes use of similar techniques[11]. A tendency rooted in producers working in Belo Horizonte, is to transpose the bass beats to much higher pitches, enabling any mobile device to reproduce their songs with much more accuracy, maintaining and developing the style's most important characteristics[12]. Perhaps in a wider

view another Brazilian genre, Tecnobrega, could also be a clear example of an economy sustained by the constant flow of production, exchange and re-utilisation of sound material. The compositional process, as described in a superficial way in the documentary *Good Copy Bad Copy*, is directed by a music producer and is based on downloading music in MP3 quality, treating the material and adding the bass line and sounds which characterize Tecnobrega. The same material returns to the network and often the process is repeated; the beats are remixed again, compressed and reused.

The sound is gradually dematerialised. The use of sound degradation as a procedure does not stop in itself; it is not just an audio effect, but a way of showing part of the infrastructure of production and reproduction. The form in which the content is manipulated and presented shows the system in which the artwork is inserted: from the MP3 downloads to sodcasting on buses.

Critical Mobile Music

In principle, making Critical Mobile Music would be to engage in creative processes that reflect mass mobile media, and to create artwork that does not depend exclusively on the means of production regulated by a controlled consumption market model, as defined above. Throughout the research, between 2012 and 2015, we developed some artistic projects highlighting aspects observed in this text, such as sound fidelity, programmed obsolescence and low fidelity file exchange. The works Narva and Bloco Ruído, developed throughout the research, were not thought of as a solution or response to the Mobile Music paradigm which we criticise, but as an extension of the questions and observations we are making.

The Narva series consists of two performance objects[13]. *Narva 1* focuses on a discussion of the fidelity of sound reproduction mediated by technology. The work was made with vinyl records, piezos, nails and a microcomputer. We produced two different LPs: the first record contains a solo piano recorded in studio and captured with quality microphones in 192khz and 32 bits, and therefore made with high fidelity. In the post-production process, we compressed the recording into a MP3 format repeatedly and changed some parts of the source code of the digital file to create compression errors which became audible. Then I remixed the material with parts of the original recording, creating a collage between low-fi and hi-fi and unbalanced textures. The second record contains silent recordings that have gone through the same process of compression and file corruption[14].

The records are played with one or more nails spiked through contact microphones in different positions. This way it is possible to listen to multiple grooves at the same time, and each ´needle´ has its own characteristic. During the performance, the nails as resonators destroy the grooves of the record, and in a first phase generates different kinds of closed loops on the vinyl, and then the groove is degraded until only the sound of the nail friction against the vinyl remains. Soon, the sound is unevenly spread between new and worn-out grooves. The microcomputer is controlled by motion sensors and buttons, and it overlays and distorts in real time samples recorded during performance.

Figure 1
Narva 1 by André Damião. Picture by Marília Furman

In this precarious system, the sound path overshadows the original source and highlights the materiality of the involved devices: the sound of compression, the noise of vinyl scratched by the nails, and the digitization process. The system itself becomes an artefact with its own sonic and instrumental characteristics. In this case, there is no loss of sound fidelity, as this is the desired result, and it defines the limits of the work.

Figure 2
Narva 2 by André Damião. Picture by Marília Furman

The second object of the series, *Narva 2*, is an audio-visual instrument, made from a portable tube television fabricated in the late 80s[15]. We have added an exoskeleton with sensors and micro-controllers, which digitize the performer's movements and emit an analogue signal that generates audio and video. The original function of TV had lost its meaning years ago, and so we had to go through a stage of analysis to rediscover and recreate what could be its new functions. The specificities of the electronic components determined many of the changes that could be made. The TV could break down at any time and there would be no replacement parts. Developing new functions for old media would be a reverse process to that which we have observed in most Mobile Music groups that use smartphones and tablets as their primary device. The process of working with old does not involve considering the future and what could be done with new media, but rather rethinking the past and analysing its impact on the present. To work with this kind of precarious media proposes a reflection on the notion of progress, and the linearity of this process, and its connection with the mass production of technological devices. To search for the logic of precariousness would be to oppose the ephemerality of new media. The precariousness would represent persistence, a rebuttal of obsolescence, while the ephemeral would only follow the logic of capitalistic production, which depends on discarding. The precarious device is a form of resistance.

Finally, based on these reflections, in the context of itinerant Mobile Music in public spaces, we created the *Bloco Ruído* (*Noise Crowd*)[16]. The sense of precariousness in the *Bloco Ruído* takes another form, which is not restricted to the objects, but would be relative to personal relationships. It is a Carnival group which crosses the centre of São Paulo on Ash Wednesday. The action is not limited to performance, but extends throughout the process of organization and manufacture of performance objects, which are made by most of its 30 members. The devices which we build are simple and produce only noise with high-pitched sounds. However, the need to build many instruments, amplifiers and accessories to produce noise in open space is laborious, and it becomes essential to collaborate with each participant, with whom a bond of mutual dependence is created from the beginning of production to the end of presentation. By creating some form of dependency bonds between the members of the group, in the act of manufacturing and performance, we encounter a series of expectations that are transformed along our path. This is an uncommon condition for electronic music, which highlights a sense of community. The form demands an active presence of all those involved.

Figure 3
Bloco Ruído workshop. Picture by André Damião

One of the objectives of the group in its course, is to traverse different architectural spaces, so that the noises resonate and reflect in different ways. The groups walk actively builds a mobile aural space, which is altered by the architecture and sounds of the city. The continuous waling makes the modulation of sound through space perceptible. The echoes of the block sound radically different when passing through open areas or the underground passages of the subway, thus providing an acoustic perception of the architectural structures of the city.

Figure 4
Bloco Ruído performance. Picture by André Damião

Conclusion

This economy of Music in motion seems to be much richer if compared to the artistic community restrictions and definitions of Mobile Music. Perhaps Mobile Music, in the way it appeared as a genre and was perpetuated in conferences and festivals of art and technology, is not something in itself, but only a convergence of many practices of experimental electronic music that already existed. The compositional approaches are a result from the same process of convergence that mobile media went through in the last century. In the case of academic Mobile Music, experimental music and sound art practices such as experimental instrument building, network music, sound walks, circuit bending, multi-channel diffusion, hardware hacking, live coding and others are simply transferred to mobile devices. The same aesthetic proposals and methodologies are transferred directly to a new media, and when they are integrated into an artwork with some success, the inherited process is reframed due to the mobility provided by, or for, the instrument and form of listening.

However, it does not seem comparable to the cultural and economic complexity of which these devices are a fundamental part. So perhaps this lack of definition of genre, or limitation, is not a problem in itself. The real discussion that permeates this issue is the need for building a macroscopic awareness of a system in which the interfaces are inserted, and which suggests that the community working with art mediated by electronic technologies, could establish, considering the situations of consumption and production, music beyond the concert halls and galleries. While working in the key of innovation which often transpires in the experimental music field as an exchange of the search for the "new sound" pursued by the vanguards of the twentieth century in the quest for "new technology", without considering the specificities of each medium and what is its real social impact, we will continue doing more of the same, regardless of the media we use.

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Footnotes

[1]   http://www.attayaprojects.com/work/mobile-music-workshop

[2] Such as Electrical Walks by Kubisch, Audio Walks by Cardiff and Audio Ballerinas by Maubrey

[3] https://vimeo.com/39001483

[4] http://www.yugo.at/handydandy/

[5] See transcription of the iPhone release talk by Steve Jobs [0:49:02]. Available at: http://www.european-rhetoric.com/analyses/ikeynote-analysis-iphone/transcript-2007/

[6] Examples:
> Mobile Phone Orchestra (MoPho) – http://mopho.stanford.edu/
> Michigan Mobile Phone Ensemble – http://mopho.eecs.umich.edu/
> DigiEnsemble Berlin – http://www.digiensemble.com/

[7] Concerto for iPad Orchestra by Ned McGowan, performed by Keiko Shichijo on the iPad with the Sinfonia Rotterdam, conducted by Conrad van Alphen. Available at: https://youtu.be/eRYkC6fY190

[8] "music whose source voluntarily or involuntarily moves from one point to another, coordinated by the corporal transportation of the source owner(s)" (HOSOKAWA, 1984:166)

[9] By precariousness in this article we do not mean only "unstable" or "badly done", but we appeal to a wider discussion in the field of art, held by artists and authors such as Hito Steyerl, Thomas Hirschhorn and Hal Foster. In this paradigm what might sound as an apology of precariousness could also be interpreted as forms of resistance and problematization of the *status-quo*.

[10] https://www.youtube.com/watch?v=Q3C5NMEek-E&feature=youtu.be

[11] For informations on brazilian funk check *Un funk trop bruyant* written by Carlos Palombini. Accessible at: https://www.academia.edu/17249492/Carlos_Palombini_et_Paula_Salnot_Un_funk_trop_bruyant

[12] Some examples can be listened at: http://www.ovolumemorto.com/single-post/2017/02/15/inestan-subaco-e-os-bailes-de-bh-um-ambient-space-funk, listed by GG Albuquerque.

[13] The series title refers to the East German Narva factory, which was the only lamp factories which rejected the Phoebus Cartel determinations, which was the first multinational action of planned obsolescence, in which the participants set an arbitrary maximum limit for the duration of their products.

[14] http://andredamiao.hotglue.me/narva1

[15] http://andredamiao.hotglue.me/narva2

[16] https://www.facebook.com/blocoruido/, https://www.youtube.com/watch?v=m2ivZ0ftvrc

Biography

André Damião is an artist who works transversally between the fields of music and electronic art. He graduated in Composition at the State University of São paulo (UNESP), and is a PhD student in Sonology at hte University of São Paulo (USP). He has presented his works in galleries and concert halls in 18 countries. http://andredamiao.hotlgue.me