

## **Digital Advancements & Creative Evolution**

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AME 333: Improvising Cyborgs

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### **Introduction**

I will be opening up a sort of discussion that is centered around the technological advancements of electroacoustic music, amongst other practices, and the subsequent evolution of improvisation alongside creative implementations of technology. That which stems from combining the interdisciplinary fields of music and technology to create art that is both intrinsically tied to the long history of musical studies and innovation, as well as advancing the worlds of electroacoustic and musique concrète. Firstly covering some general history of these aforementioned terms to establish the past innovations made within these fields, after which I will speak on the current world of interdisciplinary artistry within these practices. And lastly conclude by speaking on the speculative advancements that may be in store for the future of creative expression.

### **Background**

The general terms and musical practices of ‘elektronische musik’ and ‘musique concrète’ that are generally encompassed by the term ‘electroacoustic’. Intriguingly, these terms are tied together within their origin, by this I mean that their inventions were conceived around the same time period, 1940’s-50’s, and utilized some of the same technologies. Yet attributed to a few different pioneers of these disciplines that went about their practices in distinctly different ways. Within musique concrète’s origin, there is a singular progenitor, that being Pierre Schaeffer, a French composer who is also credited as ‘the godfather of sampling’ (Patrick, 2016). While on the other hand, elektronische music, or rather electronic music, has been attributed to a number of different individuals for their contributions, but primarily cited is the German composer Karlheinz Stockhausen (Mooney, Schampaert & Boon, 2017). Moving forward, it is important to note that within the field of electroacoustic music, there is much opposition to the idea that any single individual is responsible for entire fields. As is the nature of a creative practice, a summation of many creative minds contribute to the art as a whole, and crediting any one individual can exclude others from the history of their practice.

While to most, the fixed media nature of these musical fields may present as theoretically similar, the differences are specified in their unique approaches to non-traditional composition. Schaeffer himself, in a 1986 interview, stated his struggles with advancing his own musique concrète were also in competition with electronic music; “I fought against electronic music, which was another approach, a systematic approach, when I preferred an experimental approach actually working directly, empirically with sound” (Hodgkinson, 1986). With these differences being directly noted elektronische musik being ‘systematic’, as Shaeffer is referencing how this

form utilizes sounds recorded from acoustical sources. Conversely, musique concrète utilizes editing techniques that combine natural and industrial sounds (Jones, n.d.).

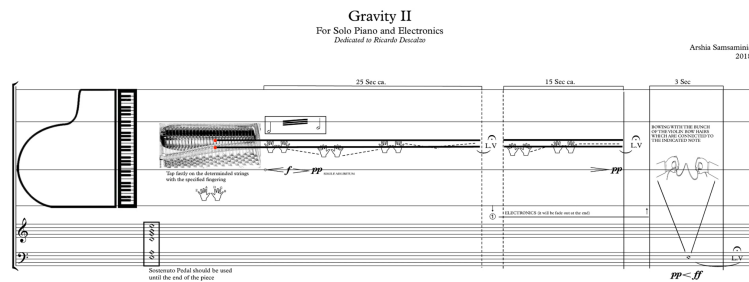
In addition to the intrinsically interdisciplinary nature of electroacoustic music, by means of incorporating emerging technologies within the human experience of song to construct coherent soundscapes in musical application, I would also like to speak on the improvisational aspect of this music and how it has evolved alongside the progression of technological advancements. In what follows I will cover these types of advancements in relation to a variety of work examples and theoretical speculations.

### **Discussion**

#### **Electroacoustic Improvisations**

To define improvisation, we have to distance ourselves further from the traditional compositions and practices of Western music as we know it, which is something that electroacoustic music does through incredibly creative methods. One alteration being in the tempo of a composition and the method in which a pace is kept, or changed, over the course of the song. As in traditional compositions one might expect a single conductor to follow a lead sheet to keep all sections of an ensemble together, or perhaps a rhythm section to drive a song forward, electroacoustics may use alternative means of looping fixed media or creating an entire piece *a piacere*, at leisure, of the composer. One composition that comes to mind is *Gravity II* (2018) by contemporary composer Arshia Samsaminia, as performed by Ricardo Descalzo. In this piece for solo piano and electronics, as opposed to having a set tempo akin to most scores in standard notation, is played in approximate sections broken up by seconds as seen in the provided image of the score.

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*Arshia Samsaminia's Gravity II (2018) Partial Score*

Yet it is easy enough to find the more compositional strategies within this practice as many artists have utilized the nature of technology and acousmatics in pre-prepared settings. Akin to an orchestral setting the stage by intensive study and rehearsal of a pre-written piece, an electroacoustic composer will hours perfecting their components of code, programs and applications to all work seamlessly on stage and be able to achieve consistency within a performance. Whether that consistency is written or played from memory, I would still consider this, at its core, a composition, not purely improvisation- as one has taken the time to prepare with the intention of replicating a set plan for their art. Then, where exactly does an electroacoustic improviser fit in?

The musician and sound artist, James Andean, commented directly on this point in two extremes from the standpoint of free improvisation. On one hand he suggests that of preparation in any capacity may have an effect on the improvisation when coding and programming preparations are made in advance: "Regardless of the relative flexibility of the tool itself, the performer has sat down and deliberately imagines and prepared a set range of performance actions and directions beforehand" (Andean, 2013, 2). On the other hand, however, there are groups that have made it a point of avoiding exactly that preparation by coming to stage empty

handed, using only what materials are provided within the performance space already. And to this, Andean acknowledges and makes a point which I entirely agree with “even if one arrives empty-handed, one is still guided by a vocabulary developed and established through the weight of prior performance experience” (Andean, 2013, 3). Here, we may begin to understand a difference between this proposed ‘free improvisation’ and the more standard view of improvisation that involves a performer and their familiar equipment providing a performance that is somewhat or entirely separated from composition.

In this next section I will delve a bit more into the syntax and semantics of what ways typical compositions and improvisations may be distinguished. With each of these approaches to music, I would argue that there are limitless schools of thought and opinions of what each variant may mean to an individual performer, ensemble, or pedagogical approach. Many such examples are apparent in notation alone, given many variations exist to fit the performer or specific compositional needs. In the 2018 paper ‘Analyzing Visual Mappings of Traditional and Alternative Music Notation’, development of alternative notation “based on the fundamental concepts of information and data visualization” (Miller, et al., 2018, 1), that being “Gestalt Principles”, is expressed with background research included on various existing notation formats.









And to acknowledge my own history and experience with improvisation, many of the scoring approaches that I discuss have introduced me to entirely new perspectives when it comes to this discussion, and here is what I have found within the context of interdisciplinary electroacoustic fields. Compositions will traditionally be prepared in advance and repeatable, serving as a medium for consistency, perhaps in the form of standard notation or another contemporary form of signaling to a performer when an event should occur. In my own

understanding of improvisation, the use of composition may or may not be included as the performers may use a tangible composition as a basis or foundation of a performance, but separate into exploratory and interpretive practices. It is in this area that I feel my expertise resides having been a part of numerous ensembles; whether in a standard large jazz ensemble in which instrumentalists would play over a chord progression or open up an existing composition to solo improv sections, there exists expressive freedom within bounds. Finally in the practice that is most new to myself, being free improvisation, those boundaries are eradicated –but only to an extent. In Andean’s writings, we may derive the conclusion of each performer being *free* to performatively explore a craft through their own methods and pacing.

While it is possible to separate a performer from their tools and preparation in search of an exceedingly organic performance, even this will require some degree of technical or mental preparation. Whether it be coding or programming that is executed in advance of performance, or even instrumentalists needing to properly tune their equipment or warm up beforehand. Every human, artist or not, is the culmination of their life experience. Therefore any performative application of their being will be portrayed through any of these methods, yet perhaps even more “freely” through free-improvisation. It is also my understanding that not one of these methods has practices that are mutually exclusive to one specific field. This is evident in the practices of various electroacoustic artists already. One such example is the work of Luigi Nono in *La Fabbrica Illuminata (1964)*, a composition for voice and four-track magnetic tape, dedicated to factory workers at Italsider steel plant. Samples of industrial noises and sounds (words, orders, and slang) of the working environment were recorded as well as all electronically modified covals by Chorus of Rai of Milan- improvisations sung by Carla Henius. In this composition, the boundaries of standard notation are pushed as vocal events are notated with various created

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symbols while specific timing for sound events is done by tempo markings in combination with chronological time markings.

GLOSSARY OF SYMBOLS FOR THE SOLO VOICE	
	fermata on a breath
	extended fermata
	spoken on the indicated pitch
	spoken without a specific pitch
	whispered
	half whispered
	half spoken (specific pitch)
	quarter-tone oscillation around the indicated pitch

Luigi Nono's *La Fabbrica Illuminata* (1964) Glossary of Symbols for the Solo Voice

ca. 1'01'' ca. 1'03'' ca. 1'07'' ca. 1'09''

I esposizione operala  
II esposizione operala  
III elevatissima  
IV esposizione operala

4

ca. 1'50'' ca. 1'58'' ca. 1'59'' ca. 2' ca. 2'01'' ca. 2'02'' ca. 2'03'' ca. 2'04''

alissime temperature  
esposizione operala

5

(stessa altezza)

SU OTTO ORE SO - -LO DU - -E NE INTA - SCA L'O-PE-RAIO

Luigi Nono's *La Fabbrica Illuminata* (1964) Partial Score Parte I

## Progression and Advancement of Musical Practices

Within the rapid development of technology and subsequent use by interdisciplinary artists to incorporate this into their works, I find that electroacoustic music is one of the practices that sit right at the forefront of this innovation.

Calling back to Andean, his statements about coding and patching prior to an improvisationalist's performance and whether or not it may be possible to incorporate such

actions to be performative (2013), may seem like an obsolete question by the standards of media in 2023. Additionally thinking about the relative adolescence of electroacoustics in comparison to the ‘traditional’ antiquity of Western music practices, being a new format of musicality that arose from huge advancements in digital and technological incorporation, the accessibility of incorporating prerequisites such as coding or patching is growing increasingly accessible. To this point, I will elaborate more with my later speculations.

Yet, my point from here is not to directly dispute Andean’s exposition, but to showcase some of the unique, and successful, performative strategies that have been made possible by utilizing various interdisciplinary technologies. Within an article written by the musician/sound artist/educator, Lauren Hayes, a description of her improvisational pedagogy is provided to elaborate on creative and interdisciplinary techniques employed by students within a course, which I so happen to be currently enrolled in, that emphasizes the employment of exactly the performative strategies that I would like to example. “Some students quickly modified the code on their own local machines, employing algorithmic processes– for example, setting up clocks– in order to automate certain activities at rates that would not be possible by human action alone” (Hayes, 2019) among other strategies that include gestural controls, utilizing contact mics during painting, dance, and in my own experience, a performative role play game setting. These practices already open up the possibilities of interdisciplinary collaboration in an improvised setting to a boundless scope.

### **Speculation on the future of electroacoustic improvisation**

Within the past few decades, technology across all fields has undergone drastic improvements. The advancements of technology in media is, without a doubt, no exception. Yet



a focal point, and an intrinsically interdisciplinary one at that, would be that of immersivity.

Within the London based artist collective known as D-fuse, a number of installations and performances have been undertaken with the intention of immersing their audience not only in multi-sensory experiences, but also addressing social and environmental topics. Within Matthias Kispert's article 'Audio-Vision in Realtime' within the 2012 'Reflections on Process in Sound' magazine, he describes the work of D-fuses installation series titled 'Particle' and their visual aspects. "Most of our filming is unscripted and footage has been collected in the spur of the moment in unfamiliar environments" (Kispert 2012). In a way, I interpret this strategy of collecting resources for art to be improvisational in of itself, and perhaps from this we may glean a future of more artists incorporating the documentation of their preparatory processes in various ways within the performance. This may even have the added benefit of deeper immersion, as an audience, whom can consciously shift from the initial marvel of unique technical audio-visual practices, may feel a better sense of creative development. Too often many of these practices go undocumented or not even brought into consideration by an audience, I speak from the firsthand experience of not documenting my work and, as a creative, I often tell myself to ask artists questions such as; "what was your thought process", "how did you achieve this or that effect", "how did the inspiration for this unique portion of the piece". I believe that there is a great appreciation amongst creatives, as well as consumers of such art and media, to further understand the artist, their mind, their lives, and their reasoning all through what has been made. And this appreciation is only ever increasing, and from this comes my own reasoning of why a celebration of the process itself, not just the end product, is an artistic and immersing practice which may very well see more incorporation.

### **Conclusion**

To conclude I would like to share a quote from the composer, Jonathan Harvey, that I find to be well said and pertinent to the topic of new electronics; “electronics as a medium. They are the desperate peace-broker on the battlefield where the rational self and the would-be suppressed experiencer of a forbidden other reality fight it out” (Harvey, 2009). With upcoming technology, and the rapid advancement seen only within the first few decades of the twenty-first century alone, we blur the lines of dreaming and waking ideas. It has never been more accessible to document a vision, creative process, or experiment than with the tools we are provided with today. Yes, convenience and ease of access seems to be the resounding focus of how we use so many electronics, very much so in musical or improvisational aspects. There are also fields, such as electroacoustics or free improvisation, that turn these tools on their head and push the human creative ability to engrain practices of the mind, body, and electronics into one coherent form of expression.

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