

# Politics of Musical Interfaces: Ideologies and Digital Disenchantment

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## 1. Abstract

This paper analyzes some of the actual tendencies for musical creation with music controllers laying emphasis on first, the ideologies of interface design through a “maximal versus minimal” dualism; and second, on the actual perception of the inflation of “the digital” which also finds its creative counterpoints in musical practices like controllerism. In the context of a diversity of cultural contexts and socio-political implications within our networked world, specific examples on the artistic use of musical interfaces are analyzed for understanding the profound implications of embracing a particular interface as creative partner. Under the hypothesis that our interfaces are “scripted” with ideologies, we focus our interest on the relevance of understanding their political values as a way of resistance against the actual situation of digital super-abundance and commodification.

## 2. Introduction: Interface Objectification

“Wow, you have to watch this” - posted an university fellow on my facebook wall. It was *Coldplay's* latest video “*Midnight - Live 2014*”<sup>1</sup>. The youtube video shows a live performance of an old Coldplay song arranged specifically for electronic instruments. Interestingly, it starts with an impressive close-up of a *reactTable*<sup>2</sup>. On the *reactTable*, only three objects: an audio file player (namely “*loop player*”) and two more global controllers, the “*global output volume*” object and the “*song settings*” object. A few seconds later, a musician begins the interaction with the instrument and we notice him rotating the “output volume” block towards higher values. Unfortunately, we cannot perceive any causal relation within the audio. Certainly, and along the last thirty seconds, the overall volume has evolved but in a complete different trajectory than we expect from the action on this *reactTable*. Sixty seconds later, a first laser harp makes its entry. And just before the second minute, a second one is switched on. Again, both laser harps occupy a protagonist place in the song. But in the moment when the singer approaches the laser strings and starts playing them (quasi in a *Jean Michel Jarre* way), it is clear that this harp is not producing any real sound. Finally, a new “loop player” block is put on the *reactTable*. We observe how it is able to play very exact piano notes in sync with the rest of the music, and actually at the very adequate moment without any minimum delay. A minute later the

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<sup>1</sup> <https://www.youtube.com/watch?v=EkMxw2tWlpc>

<sup>2</sup> The *reactTable* is a round form electronic music instrument. By placing blocks called tangibles on the table, and interfacing with the visual display via the tangibles or fingertips, a virtual modular synthesizer is operated, creating music or sound effects.

camera focuses on the hands of a pianist playing the same piano notes, with identical sort of timbre and articulation, on a keyboard. -*Yes, it was worth to watch it-* I thought.

A natural posterior sentiment of disenchantment with digital technologies can result from this process of “interface objectification”. Independently from the original creative intentions within a musical project, turning our musical interfaces into de-instrumentalized devices is the final confirmation of how digital instruments are also becoming another piece of ludic capitalism. Whether these practices are more or less extended, their philosophical analysis can serve us to formulate certain questions about the political perception of our actual musical interfaces. For example, how can technology-mediated music still captivate and fascinate massive audiences through its interfaces and not mainly through its sonic results. Also, why is this *interface miming* not always perceived as negative. Along this text, we will elaborate a discourse about them.

### **3. The nature of our musical interfaces**

The debut of computers as *digital music instruments* triggered the modern production of interfaces for musical expression. Using various types of metaphors, musical interfaces have adopted different arrangements. Mostly, they can appear as tangible artifacts, graphical programs (GUIs) or even composed of multimodal substance. Musical interfaces have proliferated with every new musical style and novel technology available. From Max Mathews' earliest digital instruments (e.g. *Radio Baton*) to the latest entries at *kickstarter*, musical interfaces have conquered our stages as an indispensable tool for controlling any type of digital content. If musical interfaces are physical, they are also known as *music controllers*, thus embodying diverse configurations, technical protocols and visual appearances. Finally, as we will describe here later, they have took up varied idiosyncrasies, from experimental and D.I.Y. designs to the most standardized forms in commercial music.

Musical interfaces have retrieved also relevance in modern musicology for being responsible of discontinuing the traditional embodied sonic relationship among interpreters, instruments and sound. In fact, and simplifying the matter, musical interfaces are essentially elaborated remote controllers. This occurs as much as in digital instruments, gestural control and sound synthesis are completely decoupled. Thus, a performer's physical gesture with a digital interface do not necessarily produce any sound (e.g. *controlling music with a Kinect*). In fact, our corporeal articulation is captured in real time with sensor technologies, then converted into digitally encoded information and finally mapped into sound using some type of software. This decoupled nature has severely redefined the long-term and deep-rooted practice of composing or performing music with instruments. Yet, for most of these musical interfaces we cannot use a standardized notational system. As a consequence, composing musical works for these digital instruments can be a very tedious task. In conclusion, the *effects* produced in the musical system after the introduction of digital interfaces have been so profound, that even a new field of research called *New Interfaces for Musical Expression (NIME)* had to be born in

order to study their new particularities: instrumental, compositional, technical, philosophical, etc.

As philosophical substance, musical interfaces show the ability to *mediate* musical expression not only through their ergonomics and functionalities but also through certain cultural attitudes they seem to incorporate. Manovich [9] explains how “*in cultural communication, interfaces are codes which rarely are transparent or simply neutral transport mechanisms*”. In our context, playing a specific type of interface can also bring the assumption of implicit *politics* and inherent *ideologies*, produced and assimilated by a particular community of users. If we think of, for example, practitioners of *live coding*, virtuosi of *retro-game music synthesis* or *finger-drummers* for naming a few examples, result in communities which usually perform with similar if not identical sorts of interfaces. This *interface effect* as Galloway [7] illustrates, comes not only as a result of a technocratic decision but mostly as a socio-political declaration of identity ingrained within media. In other words, in the same way that music has had a legacy as a medium for communicating ideologies, the act of building, hacking or performing with certain interfaces would mean manifesting the artistic vision and the distinct politics of its performers.

To this extent, we can bring here *Chicks on Speed's* song *We Don't Play Guitars*<sup>3</sup> as an ironic but adequate example:

*We always thought that we were not a rock n roll band but it sure feels  
like rock n roll over here tonight  
We don't play guitars  
We're standing on stage with our microphones, but we don't play guitars  
Got the sherman up here with us, no we don't play guitars  
(...)*

Douglas Wolk, for the *Pitchfork Magazine* asserts [13], “*Chicks on Speed have always shared a cynicism toward capitalism and commodification. Imagine Adorno in a plastic mini-skirt and smeared lipstick and you have some idea of their since-derailed mission statement*”. Through this trashy electro-pop song, *Chicks on Speed* resume some of our arguments. Intuitively, the *Chicks* expose a certain *musical ideology* through their instrumental exposition. Bringing the *Sherman* (“*Filterbank*”) up on the stage (and the electric guitar down) affirms their musical affiliation and their creative ideology in the process of engaging music. Also, they give us a hint on how their interest on saturating and distorting the beats produced by others. Definitely, they are not a rock'n'roll band.

#### **4. Politics of Musical Interface Design**

After having described some of the effects produced by our musical interfaces, we may ask ourselves about the place where these ideologies are ingrained. To that extent, we can question if a solely digital interface is able suggest specific ideologies or if it mostly a social construct result of our musical practice in communication with others. Mara Mills [10] explains how interfaces can embody a

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<sup>3</sup> It is worth watching their music video: <https://www.youtube.com/watch?v=sK9XQLSpFBA>

full range of cultural and economic values, some of which are deliberately “*scripted*” into design, others of which “*accrete inadvertently*”. These scripts, in our field of study, would include privileging some styles of music, compositional languages, etc. For Mills, technical scripts would be “*ability scripts and as such they exclude or obstruct other capabilities*”. Yet, if we think of the available tools for music production, their interfaces clearly promote or benefit specific types of music production. Unfortunately, in most of the cases, these interfaces are either immovable or slightly customizable. It is somehow understandable: how a music process is represented through these interfaces is clearly an affirmation of ideology, but also a trademark.

The possibilities of stressing particular artistic intentionalities through the interface design has been studied by Mike D'Errico [4]. The author distinguishes between two different trends in interface design, *maximalism* and *minimalism*.

A maximalist design values the creative options offered by embracing as many different types of interfaces as possible. In our modern interfaces, it would be the case of *Live Ableton* or *Fruity Loops Studio* among many others which could be included here too. Under those interfaces, a musical work can be represented and controlled from different *interface perspectives*. The elements of the interface present the possibility of using pre-produced presets, effects and constructions. For researcher Matthew Ingram these systems encourage “*interminable layering*” and inculcate “*a view of music as a giant sandwich of vertically arranged elements stacked upon one another*”. Critic Simon Reynolds [12] describes how this practice results into a *digital maximalism* in which cultural practice involves “*a hell of a lot of inputs, in terms of influences and sources, and a hell of a lot of outputs, in terms of density, scale, structural convolution, and sheer majesty*”.

In contrast to this maximalist approach, the minimalist design positions users in front of minimal elements, ideally a blank screen and obviously, no preset options at all. It would be the case of *Pure Data*, *Max* or *SuperCollider*. As Miller Puckette, initiator of *Max* and *Pure Data* explained in a keynote at the McGill University in 2012, those maximalist software interfaces are “*useless for music composition, because in creating software environments you are ideally cutting out 90% of the possible algorithms that a computer is capable of*”. As D'Errico asserts, the maximalist interface “*is about a sort of fetishization of accessibility*” and minimalist interface design “*is about transparency, adaptability, and flexibility*”. Indeed, these two different political visions for musical interface design would relate to the two possible ideologies of consumption in the digital age: “*those who find creative potential in maximizing content within predetermined forms (maximalism), and those who wish to change the fundamental forms themselves (minimalism)—a desire couched in vaguely ethical terms*”. The political and ideological discussion is served.

## **5. Disenchantment**

Nowadays, the artistic use of musical interfaces is generalized. One can easily find a forty-euro MIDI controller incorporating eight faders and knobs, plus 24 buttons (e.g. *Korg Nanokontrol*) and the possibility of creating multiple scenes. That is probably more than enough for controlling a normal gig with no time to lose in hardware development. In parallel, it seems that the traditional market of GUI

applications have expanded their industry towards controllers. Often, when buying a piece of music controller we are also acquiring a programming suite. Unfortunately in this merge, many times it seems that hardware is not about the users. These companies produce this hardware in a way that it is designed mostly to help themselves at selling more things in the future (sound libraries, extensions, etc) and often at the detriment of the overall user experience. At the same time, popular creative technology blogs, the kickstarter project, twitter and facebook have been the perfect medium for promoting a massive flood of new digital instruments and musical gadgets. If traditionally people had decided the solely instrument to which their musician's life would be dedicated, every year a new music controller revolution is announced. Certainly, the fascination for all these devices has become historical<sup>4</sup> and the market follows this tendency.

As spectators we discover how advanced musical interfaces often share stage with mainstream pop stars, and as we have seen, many times merely as a visual attraction (e.g. Coldplay or Björk and the *reaTable* as described in the first section). Without any doubt I can confirm this extent from my daily job as interface developer: how music managers and musicians needed of creative ideas approach our lab in the search of impact generators. Certainly, in the actual economy, music controllers have the risk of becoming another piece of ludic capitalism. Under these circumstances, many authors [2] have outlined a pertinent disenchantment with digital technologies in the arts creation. Also in the academy, it is a general phenomenon that every year more art students feel themselves engaged with media archeology projects and less with the development or application of innovative digital solutions. For Cramer [1,2], this growing interest for the non-digital finds its roots on the inflation of the digital as a synonym of “*advanced, cultural coolness and cleanness*”. This inflation in digital music means super abundance. As an example, it is incredible how we have got used to streaming music services which are now stepping up their efforts to provide listeners with “*the right music for every mood and moment. The perfect songs for your workout, your night in, or your journey to work*” [8]. As a contrary to all this commercial intervention, a nostalgic cultural trend for the analog and the retro has been triggered. Probably as a *naive* tendency than as a real cultural trend, for Cramer “*such a withdrawal seems little more than a rerun of the 19th-century Arts and Crafts movement, with its programme of handmade production as a means of resistance to encroaching industrialisation*”.

Under the possible critical visions to musical interfaces booming in the last years, many have been articulated around what we know as *post-digitalism* [2]. But strangely, the idea of what a *post-digital* work can be has changed during the last years. Originally, at its initial definition during the decade of 2000s by influential artists like Cascone [3], the term alluded to the loss of relevancy of the digital for inspiring art. For Cascone, the long-time prediction of Negroponte's digital revolution was already happening and that the generalization of digital music was a fact. Thus, the artistic interest for digital production tools was over. However, and then years after this vision, the development of new digital technologies merging the virtual and

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<sup>4</sup> As an example, the musical controller OVAL, a digital version of an acoustic handpan, was able to reach 300,000 euro in pledges in less than a week.

physical world together with the *Internet of Things*, has been responsible of updating what now we understand as post-digital. Therefore, *post-digital* artworks would be those tending to address the humanization of digital technologies. For Rasmus Fleischer [6], a world of musical superabundance “*might weaken the individual’s ability to be affected by music in everyday life, while at the same time leading to a renewed interest in collective experience, in ways which are not limited to established notions of musical liveness* “. The digital would be also responsible of making us less attentive and sensible to our sonic environment. In this context, a solution would be attempting the cultivation of a “postdigital sensibility” that would have a political significance in its potential to subvert the contemporary processes of commodification. For Fleischer, “*the quest for a post-digital sensibility may be understood as an act of resistance, based on the refusal to let music be subsumed under predefined activities or moods*”.

## **6. Euphoric Controllerism**

In music controllers, a natural resistance against the proliferation of commercial interfaces would be the development of custom and critical interfaces. However, mutant controllers and experimental setups have been present in the experimental since the the so called *composing inside electronics* practice from the late 1960s. Also, *music hardware hacking* and *circuit bending* are not really emerging practices today but well established fields<sup>5</sup> with renowned performers. Likewise, the D.I.Y. philosophy is not new at all in our plot. Having this context in mind, the introduction of free-hardware projects at the mid 2000s (e.g. *Arduino*) served even more for lowering the entry costs and the technical skills needed to create custom interfaces. A result, the sudden proliferation of custom and critical projects. Its effect: the perception that building custom musical controllers is the new mainstream. Thus, if the act of building custom and experimental setups was again converted into a conventional practice, we could only expect “*the next revolution*” from the cultural. And, from latest trends on new instrumental uses of musical controllers we find an interesting and transversal expression. It is the so called *controllerism*.

Controllerism appears early in the mid 2000s as the creative application of musical controllers to build music upon mix, scratch, remix, effect, or other technique and in any type of electronic music. We have to remark that it has been exploded to the maximum by digital DJs<sup>6</sup>, whom have really developed technically this practice. Controllerism means creating music with controllers, but rejecting the passive task of the laptop-performer. In words of its pioneer DJ Moldover [5] “*controllerists use computer technologies as musical instruments, differentiating themselves from people who 'check their e-mail' on stage*”.

Controllerism is a clear *interface effect* produced by the introduction of musical interfaces into the field of DJs. Since controllerism depends on a physical controller and a software interface, there is considerable uniqueness with equipment and personal styles among controllerists. Controllers can be hacked, modified and extended for instrumental means, as a way of emphasizing a particular

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<sup>5</sup> As an example, Nicolas Collins's books on music hardware hacking.

<sup>6</sup> Those DJs using audio files loaded in computers and not records or CDs.

instrumentality. Moldover here asserts: “*Right now controllers are where it's at, and so that's the name for the movement. Button-pushers, finger drummers, digital DJs, live loopers, augmented instrumentalists; we're all controllerists. The beautiful thing is that it's still new, it's still raw, and it's not about this or that style*”. If NIMes<sup>7</sup> are usually understood as inheritors of the contemporary music and experimental improvisation scene, *controllerism* is a practice inherited mostly from *turntablism*. Indeed, genuine controllerists battles have been regularly organized by Moldover and others. The magic of controllerism however, does not come from technological constructs like fancy velocity sensitive pads, sync buttons, or pre-mapped triggers and samples. Instead, the controllerism relies on the human skill of the performer standing behind them. It has brought liveness to electronic music.

The success of controllerism resides on its perfect adaption to already popular musical practices, assuming their transformation as a result of the mediation produced by their controllers. Certainly, the type of music from these controllerist practice is recognizable itself. Controllerists have developed techniques, methodologies and studies. For example, how quick *finger-drumming* is explained in several youtube videos clearly shows a technique which takes into account ergonomics and musical intentions.

Another important aspect for us lays on its capability to create a highly euphoric and communicative practice with digital technologies. In contrast to the overall trend against the digital, controllerism has shown us how it is possible to articulate a fruitful communication with other musicians and with our music through the mere engagement with technology. This has resulted on a huge and international community of practitioners sharing their tricks, achievements and musicality mostly through Internet. Where computer music has failed as a medium to communicate musical ideas to the massive audience, controllerism has taken the opposite direction: engaging from its liveness, making interesting and causal the relationship between gesture and sound produced in controllers. Finally, the dissemination of this controllerism has also made specialized companies emerge. These are fully dedicated to the production of interfaces for controllerists. For example, interfaces with rapid but silent arcade buttons which help on the articulation of quick finger-drumming.

But also controllerism, with origins in the experimental underground, irremediably it has become another mainstream medium under the influence of social media. In a daily basis, popular *controllerists* show us videos of their new live remixes of the latest hit (e.g. *Skrillex*) using *16-arcade-button*. Nowadays renown controllerists collaborate with companies to make videos getting millions of hits. At the same time, as Phil Morse [11] describes, although controllerism is very present in Internet, probably not many of us have actually attended to a controllerist concert or battle. If a concert like that would happen in our city, we would not be aware of that. Also its presence on the radio and other traditional media is absolutely non-existent. These are undoubtedly characteristics of cultural practices in the underground. For Phil Morse, “*controllerism is here to stay, and it's only a matter of time before button*

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<sup>7</sup> New Interfaces for Musical Expression: [www.nime.org](http://www.nime.org)

*pushing is the new vinyl spinning - and sooner or later, someone will tell you that you're old fashioned!"*

## **7. Conclusions**

Musical interfaces have mediated profound changes in our impression of what a musical instrument can be. After decades of technical and instrumental evolution, musical controllers have conquered our stages while they have even become a part of the ludic capitalism, quite often as “objectified” interfaces. Whether our perception regarding controllers stays linked to the negative industrialisation of the digital, or to the positive creative possibilities of emphasizing communication among people through technology, depends mostly on our ethical use of these interfaces. Understanding the ideologies and politics ingrained at interface design is decisive as far as our interfaces are perfect trojan horses to promote or obscure specific uses. Thus, the decision of which type of interface we adopt as our partner in musical creation gets the maximum relevance. In our democratic systems, the process of identification with political options is usually based on a process of self-reflection over the available tendencies. In the sphere musical interfaces, ideologies are highly influenced by popular trends and the commercial interference. Interestingly, like in real politics, we often evaluate our past experience and our expectations to make our music grow with interfaces. And fortunately, we can still decide if we continue with our affiliations or not.

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music controllers laying emphasis on first, the ideologies of interface design through a "maximal versus minimal" dualism; and second, on the actual perception of the inflation of "the digital" which also finds its creative counterpoints in musical practices like controllerism. A natural posterior sentiment of disenchantment with digital technologies can result from this process of "interface objectification". Independently from the original creative intentions within a musical project, turning our musical interfaces into de-instrumentalized devices is the final confirmation of how digital instruments are also becoming another piece of ludic capitalism. 4.

Politics of Musical Interface Design After having described some of the effects produced by our musical. Overview Interface Aesthetics examines the aesthetics and technical practices of digital audio producers from multiple, sometimes conflicting perspectives, including musicians, music scholars, sound artists, software developers, and game designers, as well as my own experience working with sound across media. While software interfaces are often designed to give the impression of "direct manipulation" between human and computer, it is important to recognize that the digital buttons, knobs, and icons with which we interact on a regular basis are just virtual metaphors for physical objects.<sup>11</sup> This "skeuomorphic" design philosophy, in which interface elements are metaphors for "real" objects, has become less prevalent with. Sure, music trends tend to be generational, but there is something oh-so-powerful about music genres and how they shape our cultural identity while creating solidarity across decades, age groups and even countries. People typically have no problem being vocal about their musical preferences, and dissing someone's favourite artist may just be the end of your relationship. In the internet age, musical fandom has brought about the "stan" phenomenon, with fellow fans banding together to form passionate and loyal groups that have a strong online connection that reaches all around the world. A Beyhi