

# *THE EXTENDED PIANO(S), THE EXTENDED BODY(IES)*

EL (LOS) PIANO(S) EXTENDIDO(S), EL (LOS)  
CUERPO(S) EXTENDIDO(S)

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**RESUMEN:**

"The extended piano(s), the extended body(ies)" es un proyecto de investigación en curso, que estudia el piano como un instrumento extendido, y fue iniciada en el 2014 por el pianista y compositor Hara Alonso. A través de los años se ha ido desarrollando en diferentes direcciones y formas que incluyen la composición, la improvisación y la instalación. Las preguntas de investigación son: ¿cómo podemos repensar el piano más allá de su historia y tecnología? ¿Cómo podemos expandirlo al incorporar métodos de composición personificados? Esta investigación pretende desarrollar herramientas que aumenten las cualidades del piano en términos de sonido (timbre) y los elementos performativo- conceptuales a través de la improvisación, composición, elementos electroacústicos y el *performance*. Estos elementos mejorados han cambiado y han abierto un gran rango de posibilidades para interactuar con el piano, tanto sonora como físicamente, ampliando así las prácticas pianísticas. El cuerpo del pianista tiene un valor fundamental en la investigación como el iniciador del sonido, el gesto y la intención, siendo así el punto de partida en esta investigación. La investigación entrelaza dos ejes: 1) el piano como generador de sonido y su expansión mediante medios digitales, y 2) el cuerpo del pianista es el instrumento primario.

Este artículo cubre el período de investigación desde 2014 hasta 2021, en el cual Hara Alonso desarrolló numerosos trabajos para piano extendido que se han presentado en varias actuaciones públicas.

**Palabras claves:** piano, gesto físico, composición aumentada, práctica somática, interfaz digital.

**ABSTRACT:**

"The extended piano(s), the extended body(ies)" is an ongoing research project on the piano as an extended instrument started in 2014 by the pianist and composer Hara Alonso. Over the years, it has been developed in different directions and forms ranging from composition, improvisation and installation. The research questions are: How can we rethink the piano beyond its history and technology? How can we expand it by incorporating embodied composition methods? This research intends to develop tools to augment the piano qualities in terms of sound (timbre) and the performative-conceptual elements through improvisation, composition, electroacoustic elements, and performance. These enhanced elements have changed and opened up a wide range of possibilities to interact with the piano, both sonically and physically, widening the piano practices. The pianist's body has a fundamental value in the research as the initiator of the sound, gesture, and intention, becoming the point of departure in this research. The investigation intertwines two axes: 1) The piano as a sound generator and its expansion through digital means, and 2) The pianist's body is the primary instrument.

This article covers the research period from 2014 to 2021, in which Hara Alonso developed numerous works for extended piano that have been displayed in several public performances.

**Keywords:** piano, physical gesture, augmented composition, somatic practice, digital interface

## Background

Like any other instrument, the piano is by nature an extended instrument. Each pianist plays it differently, and each composer employs it differently. Composers such as György Kurtág have created an entirely new notation system for the piano, Alexandra Pierce has explored the physical aspects of piano performance, and some, such as Alexander Schubert, have even incorporated the internet community into the piano composition.

Driven by all these inspirations, this research commenced in 2014 during my master's degree in Contemporary Performance and Composition, an itinerant program in four European cities: Tallinn, Stockholm, Lyon and Hamburg. The proposal of the master's is to gather eight musicians (both performers and composers) to study and compose collaboratively. The program has a strong emphasis on electronic music, having *Music programming lessons*, *interactive music* and *digital composition* as one of the main topics of the studies. Before this master's, my artistic practice was centered on piano performance, mainly classical contemporary music. Thanks to the tools and resources learnt in this course, I started to develop my artistic work in the field of composition, becoming both the performer and creator of my music. The need to find my own voice, re-appropriate my instrument and create a personal sound, aesthetics and language translates into the works I present later.

My composition interest is relatively broad, ranging from open form compositions, graphic elements and semi-improvised scores, use of electroacoustic elements, DIY interfaces and sensors. I participate in this process as a designer, researcher and user; therefore, the result has a highly personalized idiom in each work. Some of the works I present are hard to share as a traditional composition due to their complex setup and specific needs, which places these works in a non-conventional space characterized by their specificity, uniqueness and authenticity.

Many of these works are ongoing projects that continue developing through the years, incorporating new knowledge and practices thanks to different collaborators and personal investigations. In order to define the two aspects that configure this research, I will separate two different but interlaced concepts: the extended piano and the extended body.

## The extended piano

What is considered an extended piano? According to Luk Vaes the extended piano and its performance techniques are all and everything improper to both the sound and the performance technique of the piano (Vaes, 2009). The word *improper* here refers to the piano's history and traditional technique, mainly focused on the keyboard. The evolution of extended techniques is closely associated with the development of the

twentieth-century music, transcending the use of traditional, “proper”, techniques, in the words of Nyman:

*Experimental music exploits an instrument not simply as a means of making sounds in the accepted fashion, but as a total configuration —the difference between “playing the piano” and the “piano as sound source”. (Nyman, 1990: 20)*

In 2005 Reiko Ishii wrote:

*Timbres produced with extended techniques may become mediators between conventional instrumental sounds and synthesized tones in order to blend acoustic and electro-acoustic media, just as sounds produced by extended techniques are now integrated into traditional sounds. (Ishii, 2005: 101)*

The use of electroacoustic elements, signal processing or sensor-based interfaces to compose for piano has become very common in the last decade as well as the creation of new instruments inspired by the piano, such as the microtonal piano or the electromagnetic piano. An accurate definition of any extended instrument is articulated as “composed instruments” by Curtis Bahn and Dan Trueman:

*We consider our entire systems, from physical instruments, sensor interfaces, interactive computer music environments to spherical speaker arrays, to be both extended instruments and non-linear compositions: composed instruments. (Trueman & Bahn, 2020: 19)*

My definition refers to the extended piano as “any approach to the piano (both acoustic or digital) that augments its default characteristics in terms of sound, morphology or performance”. Some aspects to consider while working with the piano as an extended instrument through electronic means are the amplification of the piano and the digital interfaces. The amplification of the piano is complex due to its enormous resonance and the multidirectional diffusion of its sound. It is fundamental to create a correct microphone setup and speaker setup. Sometimes the use of electronics and piano creates an unnatural sound space when the speakers are far away from the source of the sound. If the intention is to blend both elements, it is good to think of ways of launching the sound from the piano or behind it. Another aspect of creating a digital interface is to consider using elements that already exist in the piano, such as keys, pedals or strings, and transform them into MIDI controllers (pedals, keyboards, etc.), or going in the opposite direction and find other systems for interaction. In my personal experience, using elements related to the piano playing for digital interfaces helps to interact more organically since the movement is already integrated into the practice. The combination of physical interface and sonic reinforcement provides aural and tactile feedback cues essential to our music-making (Trueman & Bahn, 2020). This tactile feedback is fundamental in music performance since it is the body the one that plays and transforms the sound through its movement. Therefore, an ergonomic approach to the system will determine a smooth synergy within the instrument, adapting it to the different abilities, body types and skills of each individual. When

customizing their own instruments, musicians, like dancers, gain kinesthetic skills, increasing awareness of how they move (Mainsbridge, 2022).

## The extended body

“the sound death makes the living body” (Lyotard, 1997: 231)

The ways in which the human body guides our perception and actions in the performing arts have not been fully explored yet (Mashino & Seye). Although some contemporary composers use physical gestures as compositional material, such as Simon Steen-Andersen, Elo Masing or Aaron Cassidy, body awareness and the performer’s physical presence have not been fully incorporated into music performance and composition. The kinesthetic dimension in music performance is fundamental since we hear music, but we also see it and activate it through our movement. The body is the mediator between the musicians’ mental representation of a piece of music and the physical actions they produce in order to realize this representation (Leman, 2008). Suzanne Cusick writes in her book *Feminist Theory, Music Theory and the Mind/Body Problem*:

Music, and art which self-evidently does not exist until bodies make it and/or receive it, is thought about as if it were a mind-mind game [...] We end by ignoring the fact that these practices of the mind are no practices without the bodily practices they call for—about which it has become unthinkable to think (Cusick, 1994).

Even in other artistic fields, the theme of the body became relevant. For example, Kristie S. Fleckenstein, a researcher on rhetoric and composition, writes about the concept of the somatic mind. The concept of somatic mind and body as a permeable, intertextual territory that is continually made and remade offers the means to embody our discourse and our knowledge without totalizing either (Fleckenstein, 1990).

Alexandra Pierce, one of the pioneers in this investigation, suggests that movement refines listening, which in turn alters the movement quality so that it becomes like music, having fluency, coherence and shape (Pierce, 2010). Most contemporary dance practice methods generate the work through the process of embodying material, focusing the attention on the practice instead of the result. It is clear that dance and music share a basic process of creation and perception: both are generated by and experienced as a movement. Movements can develop in different ways —as sonic, visible, tactile, or kinesthetic phenomena (Mashino & Seye, 2020), so why not incorporate these practices into music creation?

The composer Elo Masing proposes in her dissertation the concept of “augmented instrumental choreography” as an embodied method of composition, defined as:

*The commentary defines augmented instrumental choreography as an embodied method of composing that focuses in on and magnifies the physical movements involved in performing instrumental music and uses choreographic processes in developing*

*musical material, turning the choreographic nature of instrumental performance into a significant compositional resource and illuminating the continuum between the kinaesthetic and the auditory. (Masing, 2015)*

Another approach comes from Juraj Kojs, who has researched the action-based notation concerning choreography and its graphic representation. Action-based music mediates the intrinsic relationship between composition, performance and listening, as shown in the variety of its notation methods. Frequently displayed through transparent graphics and verbal instructions, from the performer's perspective, such scores promote awareness of the body and instrument (Kojs, 2011). This kind of request from the performer demands the development of physical awareness and body control. Practices such as body-mind centering, the Feldenkrais method or contact improvisation are good tools for connecting with the body.

These two approaches to composition are applied to my two works *Resonance Corporel du Piano Virtuel v. 2.0* (2016) and *Somatic Studies for Piano: Study on Gravity and Study on Antigravity* (2020).

The kinesthetic exploration in contemporary music composition can deepen musical performance but can also transform our music conceptualizations.

## Toggle (2015)

Toggle extends the piano with 5 computer keyboards and a circuit bending board using Max/MSP, Ableton for the sound processing, and junXion (STEIM) to connect the different keyboards. The amplification of the sounds (both the electronic and the actual piano) was made with two small Genelecs 8010A placed inside the piano (Fig.1)



**Fig 1. Toggle. Performance in the Kungl. Musikögskolan in Stockholm, 2015**

The idea behind this was to find a similar keyboard to the piano to trigger samples and place them all around the piano. The keyboards mimic the physical aspect of playing the piano, the simplicity of note on/off. First, the sound of the keyboard keys was sampled and placed into each key. Each key had a different behavior, some were only note on/off, and some were toggles that would loop the sample. Then I tried to find a similar sound on the piano by trying different preparations and found out that I could get a muted but crispy sound by placing some heavy books on the strings. Finally, I tried to translate the digital behavior of the computer keyboards into the piano by mimicking those pointillistic or looped sounds. The sonic material is very articulated, with staccatos, sforzatos and a wide range of polyrhythms. This interface allowed them to have different banks of sounds always available to improvise and compose with them in a very intuitive and playful way.

## Resonance Corporel du Piano Virtuel v. 2.0 (2016)

This piece arises from the research on the physical gesture as compositional material that I started in 2014. Exploring body movement in relationship with the instrument led me to a more liberated and sensitive piano playing. This piece is a deconstruction of the piano where its presence is removed, leaving only the pianist's body as a performance instrument.

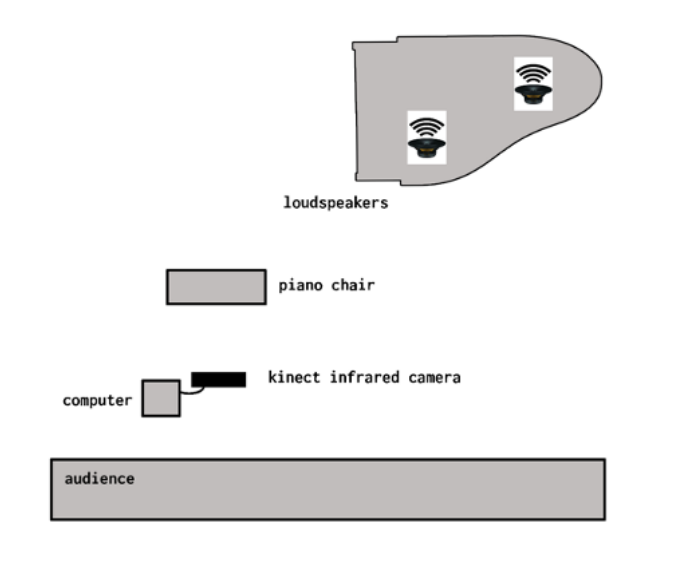


Fig. 2 Setup.

The piece has two parts, the first using only the Kinect camera and the second using the piano. In the first part, I sit in front of the audience, facing them. This is already a challenge in the standard piano playing, even though in the XIX century, many pianists (e.x. Liszt) would play facing the audience (Fig. 2). Using a Kinect infrared camera to

track the body movement, I established a complex body mapping that would activate invisible piano keys scattered on the space defined by small squares in the space in different heights and depths. The Kinect camera can track the body's position in space, specifically the body joints. Each joint is mapped as a 3-dimensional vector positioned in 3 axes (X, Y, Z). Then, the body movements are decoded and translated into a data stream received and processed by the computer. For this piece, I only mapped the two wrists since they are the body part more active in the piano performance. That created the illusion that my fingers were the ones that were mapped and played the invisible piano keys. These piano keys would trigger different samples recorded using my prepared piano techniques (tape, wood clamps, chopsticks, flageolets, etc.). In order to build up the piece, I included the use of different calculations to detect the direction and speed of the movement and mapped this data to sound parameters such as reverb and delay.



**Fig. 3. Performance in Kampnagel, Hamburg, 2016**

Instead of performing a score, the piece was a choreography of movement, silence and sound where the physical gesture was the center of the piece, allowing the audience to imagine the sound coming from the pianist's fingers (Fig. 3). The piece builds up through time, opening more and more invisible keys in space as a sort of phantom piano that reveals slowly. There is a piano in the background where two speakers play the sounds, creating the feeling of separation between the body and the instrument but related. Then, the second part of the piece is the revelation of all those piano sounds played through the body, played for real on the piano.

The pianist's body becomes an augmented body, a musical instrument by itself. I found



many possibilities for music performance in the separation of the musical instrument and the body by using silence as compositional material sustained by body movement. Given that the pianist's body is charged with sound and the piano's memory, the audience can almost listen through the eyes. This augmented composition reflects on the performer and the audience. The performer's body movement becomes part of the music itself, and therefore the listeners receive both the sonic and the visual input. Andrew Mead describes this phenomenon as "kinesthetic empathy" (Mead, 1999). Instrumental gestures are intrinsically semiotic in the sense that they address the listeners' ears, and the information being conveyed (sound) can be judged (Cadoz & Wanderley, 2000).

*The Max/MSP patch was, in a way, also the score for the piece, or more like a timing map.*

### Tape piano (in development since 2014)

*Tape piano* is an ongoing piece that departs from the use of videotape on the piano strings as preparation. This project has taken different forms through the years, as a tool for live performance in improvisation and composition or even as an installation piece (Fig. 4)



**Fig. 4. Tape piano, piano installation at Fylkingen, 2020**

For many years I explored my preparations on the piano, looking for a personal sound that could enrich my compositional tools. Due to the nature of the piano, it is impossible to sustain the sound of the keys for a long time after pressing them. Fortunately, there are many ways to create long sounds inside the piano, such as using an ebow or bowing technique using a fishing line. I found both interesting but limiting since the ebow does not work on all strings, and it is not possible to modulate the sound. Moreover, the fishing line needs resin (which gets the piano dirty). In my tireless attempt to find a technique to maintain the sound of the strings, I tried with cassette tape, and that sound was quite impressive, but the tape was a bit too fragile; it would break all the time. Then I tried with VHS tape, or videotape, which is thicker and stronger. The sound that came out of

the piano was rich, full of harmonics, similar to cello sound. It brings the possibility of sustaining the sound indefinitely by constantly pulling the tape using both hands. The sound would vary depending on the register, getting extremely low and dense in the low register and bright in the high register.

During the exploration, I discovered many tape techniques, playing only with one finger or two, adding more or less tension to the tape, doing pizzicato, etc. This extended technique became a very flexible resource for composition and improvisation, serving for sampling and live performance. In addition, it is a very clean and respectful preparation for the piano as well as a recycled material easy to find in any second-hand shop for a very low price.

The tape can be played in different setups with different rigging difficulties. The simplest one is to play directly on the strings and just manipulate them with the hands. In case one, it is desirable to have many of them and attach their ends to the piano lid using adhesive tape. The most sophisticated system is to attach the tape to a percussion frame or even a beam already existing in space. The use of the tape as an installation opened up the possibility for the audience to interact with it.

This project has had a very improvisatory nature, and the performances followed semi-structured forms not fully notated. The notation of this technique is complex due to its enormous range of possibilities and its shaky response occasionally. Sometimes it is hard to achieve the same harmonic even if the tape is held in the exact same way. Therefore, the notation for this extended technique is something to keep investigating in the future.

## **Somatic Studies for Piano: Study on Gravity and Study on Antigravity (2020)**

The *Somatic Studies for Piano* crystallized the research on the physic gesture as material for composition I initiated back in 2014. These pieces arise from my personal practice around body awareness and somatic practices and my collaboration with dancers and choreographers. The contact with the dance world opened up an immense new terrain of methods for creation, incorporating the body as a compositional tool and the gesture as the primary element in the music conception. Through my research in somatic practices, I cultivated the awareness of my mental and physical states during the piano performance, discovering how sound and movement can amplify and transform the body-mind connections (Mainsbridge, 2022).

The use of physical gesture in my works always departs from the musical gesture, amplifying and stretching it from the sonic to the visual. The piano techniques, especially those related to articulation (legato, staccato) or pitch (using one note or a full arm cluster), are embodied in the pianist's practice and developed through the years. Therefore, the exploration of its potential comes naturally as another extended

technique.

There are different ways to define the notion of gesture. An interesting study on the playing technique of the late pianist Glenn Gould by François Delalande (1988) proposed a division of the notion of gesture in three levels, “from purely functional to purely symbolic”:

- Effective gesture: necessary to mechanically produce the sound —bow, blow, press a key, etc.
- Accompanist gesture: body movements associated with effective gestures —chest, elbow movements, mimics, breathing for a piano player, etc.
- Figurative gesture: perceived by the audience but without a clear correspondence to a physical movement —a melodic balance, etc.

Incorporating these non-obvious (ancillary or accompanist) gestures unfolds the body movement as a composition element by the idea of the movement as sound in resonance. This resonance suggests a continuation of the piano playing without playing the instrument, but only through the resonance of its movement. Along with the exploration of the composition of the *Somatic Studies* (2020), I established several piano gesture typologies in order to find a wide palette of compositional elements. The overall idea behind the *Studies* was to investigate gravity as the primary force in playing the piano, as well as its contrary, antigravity. Those two concepts generate completely different approaches to piano playing in terms of physical effort and mindset. Along with the performance of the pieces, the pianist is required to enter a specific energy continuum deeply rooted in the body. The indication for *Study on Gravity* is:

*Feel the force of gravity  
embrace the weight, the heaviness, the density, the impulse  
let it drive you  
allow it to penetrate the piano  
sharp and pleasant*

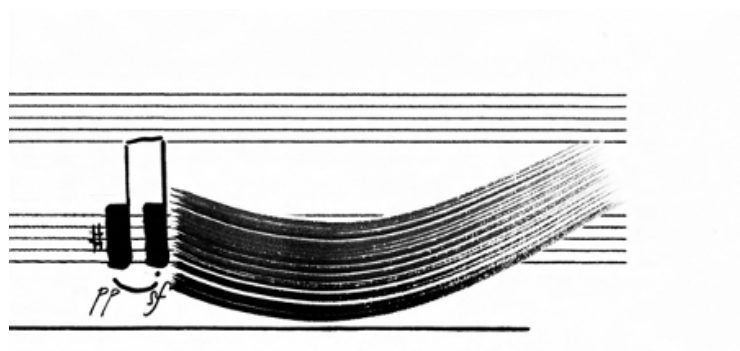
While the indication for the *Study on Antigravity* is:

*Breath through your fingers, your hands, your arms and your whole body  
feel your center of gravity lifting  
meet the air, dance, swim it smoothly  
become the resonance of the sound*

The notation of body movement presents many difficulties due to the lack of a standardized system —one of the few notation systems is the Laban, but its use is not so usual nowadays. Composers use different notation symbols and graphics to indicate movement, but by its nature, body movement is a very personal and

untransferable quality. The use of extra-musical elements creates scores that open broader interpretations and give agency to the performers to take part in the work in a more active way. The affirmation of Stefan Östersjö, “The work is never equivalent with the score” (Östersjö, 2008), highlights the need to understand the score as a map that guides the preparation, guidance and analysis of the music work, but not as finality in itself. Trevor Wishart states that the score rapidly usurps the sound experience of music as the focus of verbal attention and becomes the keystone of an eminently verbalizable conception of what music “is” (Wishart, 1985). This affirmation could also include the body experience as the primary focus during the music study and performance.

For the notation of *Somatic Studies* (2020), I explored different systems to translate the physical movements into the score. The result was a mix between traditional linear notation and graphic elements that suggest the pianist’s body involvement. The notation is handwritten to highlight the bodily expression even from its graphic representation, made in Chinese ink using a plume and different brushes. The scores combine traditional, contemporary notation techniques (such as clusters) and other special notations such as body resonance (ink trace, Fig. 5), reversed play (white note, Fig. 6) or remove weight (degradation of the ink, Fig. 7).



**Fig. 5 Example of resonance notation**



**Fig. 6 Example of reversed play mixed with regular play**



**Fig. 7 Example of degradation**

In order to share my personal experience with other musicians and pianists interested in this practice, I wrote a background text to accompany the *Somatic Studies*. An excerpt of the text is:

Learning how to play an instrument is a long life process. The practice shapes through the years by assimilating knowledge at different levels. Each piece of music, each improvisation, requires a specific technique, specific attention, and specific listening. It took me many years of practice to learn how to listen. It took me many years of practice to learn how to be aware of my body.

I used to play the piano for many hours during my adolescence; it was my favorite activity. At some point, I got terrible back problems. I was recommended to take yoga and tai chi lessons, so I did.

Those were my first encounters with my body, learning how to breathe, how to feel the muscles, how to balance.

In 2014, by chance, I started to practice contact improvisation, an improvised dance technique that uses sharing weight as a fundament. This practice opened up the possibility of communicating with other bodies and the space. After some improvisation sessions, I started to experiment with those physical sensations while playing the piano. I began to dance with the piano, to explore it as an object in space. This experience changed my musical practice. It was a revolution in my listening and my body.

During those years, I had the chance to collaborate on many dance projects, working hand in hand with dancers and choreographers and learning their compositional tools. The dance practice is very situated, defined by the dancers' bodies, by the space. They learn the choreography by motion, not by notation (in the traditional sense); therefore, the memory is in the body. I got very captivated by the possibility of understanding music notation as a choreography.

In the last years, I practiced body techniques such as Body-Mind Centering and the Feldenkrais. Those methods allowed me to work with deep corporal sensations and translate them into my piano practice. Therefore I started to use physical gesture as

a composition element, decentering the focus from the front (the score, the vision, the brain, the fingers) to the sphere (the whole body, the organs, the peripersonal space).

There is a direct transference during the piano playing between the body and sound, between the quality of the sound and the physical movement that produces it; they are inseparable. The composition of *Somatic Studies for Piano* is an approach to embodying music content by creating a music notation. That is to integrate the evocative and suggestive power of corporal sensation as an indication for the performance to align attention, intention and sensation.

## Somatic Suspension (2021)

*Somatic Suspension* is an album for piano and electronics released in 2021 on the label Eotrax. The piano used, an electroacoustic Yamaha cp-70, is a rare instrument with a piezo pick-up system, outputs, a built-in equalizer and a tremolo effect. This instrument provides a perfect combination of acoustic and electronic processes and removes the need for microphone amplification, which makes the processes more compact and fast.

The composition method departs from the somatic practices as the generation of material. The gesture repetition, the circle and the spiral are the onset for the different pieces, especially audible in the pieces *The Centre of the Sun is Empty*, *La Memoria del Futuro* or *40 Days of Silence*.

The digital processes accompany and process the piano dissolving its pure sound into a mesmerizing superposition of layers and glitches. Using a wide range of signal processing techniques such as filtering, granulation routines, distortions, and feedback networks designed in Supercollider extends the piano sound into a completely new instrument. The piano becomes the creator of the electronic part by transforming it into texture, dense drones and resonances.

```
(
  Ndef(\feedback, {
    var src, loc, del;
    del = 1/100;
    src = Decay2.ar(SoundIn.ar(0), LFNoise2.kr(10).range(0.001, 0.0001), LFNoise2.kr(1).range(0.005, 0.05))!2
    * Saw.ar(LFNoise2.kr(1).exprange(4, 14));
    loc = BPF.ar(LocalIn.ar(2) + [src, 0], LFNoise2.kr(0.1).range(40, 400), 3.2);
    loc = GVerb.ar(loc, 1, 4, mul:0.02, add:loc);
    loc = Compander.ar(loc, loc, 0.9, 1, 0.001);
    loc = (loc * 0.51).tanh;
  });
)
```

```

loc = Compander.ar(loc, loc, 0.1, 1, 0.1);
loc = DelayC.ar(loc, del * 2, del * 1);
LocalOut.ar(loc.reverse * 0.45);
Out.ar(0, Compander.ar(loc,loc,0.1, 1, 0.05) * 0.2)
}).play;
)

```

In order to compose using all these materials, I established the concept of the DRY/WET instrumentation. The “DRY” instrument is the clean piano signal, and the “WET” is the processed signal. During the composition, I established different layers inside these categories depending on the number of simultaneous layers: WET 1, WET 2, and so on. In this way, I can control all the different layers processed by the different filters and freely apply AM or FM to them.

Future development for this system would be to build an interface controller to perform live with Supercollider in a more organic way. A potential tool would be the microcontroller Bela (<https://bela.io>), a robust low latency board that integrates Pure Data, C++ and Supercollider.

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*Tape piano* (2020):

[https://www.youtube.com/watch?v=\\_je6yCCCJYo&feature=youtu.be](https://www.youtube.com/watch?v=_je6yCCCJYo&feature=youtu.be)

*Resonance Corporel du Piano Virtuel v. 2.0* (2016):

[https://www.youtube.com/watch?v=vCZ\\_h5vdAQ8&feature=youtu.be](https://www.youtube.com/watch?v=vCZ_h5vdAQ8&feature=youtu.be)

*Study on Gravity* (2020), performed by Carolina Santiago:

<https://www.youtube.com/watch?v=52mSNeWHpzi&feature=youtu.be>

*Study on Antigravity* (2020), performed by Carolina Santiago:

<https://www.youtube.com/watch?v=BkAUiPWwmvI&feature=youtu.be>

*Somatic Suspension* (2021):

<https://eotrax.bandcamp.com/album/somatic-suspension>