

# ON EMPTINESS (OR, ON FINISHING WITH A BLANK CANVAS)



**MIGUEL CARVALHAIS**  
mcarvalhais@fba.up.pt

INESC TEC / Faculty of Fine Arts  
University of Porto, Portugal

Lisbon  
Computation  
Communication  
Aesthetics  
& X

## **Abstract**

Starting from a review of monochromatic art, minimalism, and conceptualism, this paper attempts to understand the significance of these approaches to processor-based arts, looking at a dominant strategy in these works, the deployment of destructive processes. The paper then studies a series of recent works by Austrian software artist Lia, that are closer to the roots of monochromatic painting, suprematism, and constructivism, and are based in a deeply procedural and conceptual approach that we describe as a constructive process.

## **Keywords**

Generative Systems  
Conceptual Art  
Minimal Art  
Software Art  
Ergodic Systems  
Artificial Aesthetics

## **1. INTRODUCTION**

Minimal art emphasises the *thingness* of artefacts through the elimination of non-essential features from the artworks. In visual arts, the extreme form of minimal art designated as *monochromatic painting* is a radical consequence of this ongoing elimination of non-essential features, until almost no features, or none whatsoever, remain in the artwork. An even more absolute form of reductionism can be identified in conceptual art, when concepts take precedence over visual or material concerns, often leading to the absolute dematerialisation of the work. Minimal art, monochromatic painting, and concept art all seem to reduce things to a bare minimum, by reducing form or even by discarding it completely, in favour of an "idea [that] becomes a machine that makes the art" (LeWitt 1969).

In this paper, we will start by examining a series of works, hailing from a diversity of contexts, and diverse to the point of often being regarded as distinct or unrelated. However, these works share structural surface similarities, and allow us to peruse their authors' motivations, strategies, and approaches to the reduction of form. We will argue that at times, when that idea that remains is procedural, the process of elimination may not be reductionist but rather allow for the development of a maximalist generative potential in artworks and in their viewers.

## **2. PRECURSORS**

Some of the earliest precursors of monochromatic painting and radical minimalism can be found in the late nineteenth century, when the French poet, playwright, and librettist Paul Bilhaud presented his 1882 all-black painting *Combat de Nègres dans un tunnel* (Black Men Fighting in a Tunnel). Almost certainly intended as a pun, this work inspired the writer and humorist Alphonse Allais to exhibit, at the 1883 *Salon des Arts Incohérents*, a work titled *Première communion de jeunes filles chlorotiques par un temps de neige* (First Communion of Anemic Young Girls in the Snow), which consisted of a single white sheet of Bristol paper. This work was followed, already in 1884, by the all-red *Récolte de la tomate par des cardinaux apoplectiques au bord de la mer Rouge* (Apoplectic Cardinals Harvesting Tomatoes on the Shore of the Red Sea), and by five other works that were later compiled in Allais's 1897 book *Album Primo Avrilesque: un livre pour rire...* (April Fools' Album: a book for laughing...), which also included a musical composition and two "spiritual" prefaces.

These early works by Bilhaud and Allais can be regarded as explorations of the limits of visual representation, but should perhaps be understood as narrative experiments. Particularly because of their titles, they are (still) largely representational, while later works (from modern minimal, abstract, and conceptual art) may almost have no subject matter. An example of such narrative-based comedic reductionism can be found in the musical score that was also published in Allais's book, the *Marche funèbre pour les obsèques d'un grand homme sourd* (Funeral March for the Obsequies of a Deaf Great Man), comprised of 24 empty bars to be performed in the whimsical tempo of *Lento Rigolando* (Takahashi 2014, 138).

Already in the twentieth century, artists as Kazimir Malevich or Yves Klein developed monochrome paintings that objectively tried to avoid narrative construction, and almost any representation, consequently offering a wider range of possible interpretations, or even the absolute impossibility of interpretation. The titles of these works often consisted of single descriptions of the immediate, surface

forms of the works. Malevich's 1915 *Black Square* was the first in a series of paintings that would establish constructivism as a "generative" system where all shapes and forms are created from a limited repertoire of distortions, displacements, multiplications, alignments, and superpositions of the black square—which was posed as the fundamental suprematist element—over a field of white that for Malevich was the colour of space. The black square on a white field was then the primeval form of expression, with the square being the *sensation*, and the white field, the *nothing* outside of this sensation (Malevich 2003).

These paintings were, strictly speaking, not monochromes, but they gave way to 1918's *Suprematist Composition: White on White*, a work that, whilst representational, is imbued with the idea of monochromatism. On *White on White* form was barely present, with the tilted white square, almost moving outside of the canvas, as if floating. But if white is the colour of space, then *White on White* becomes a depiction of space itself. Malevich did not strive for simplicity, simplification, or reduction, rather he sought complexity as the ultimate goal of art. *White on White* should therefore not be seen as an empty field, but perhaps rather as a field of possibilities, as a phase-space that is pregnant with potential and diversity.

In 1921 Aleksandr Rodchenko took this rationale further and reduced painting to "its logical conclusion" when he created three canvases titled *Pure Red Color*, *Pure Blue Color*, and *Pure Yellow Color*, shown at the  $5 \times 5 = 25$  collective exhibition in Moscow. These works were constituted by fields of plain colour, devoid of any form or representation, and, according to Rodchenko, affirmed the end of painting. They were developed through the exploration of a single variable—colour—willingly abdicating of everything else. Still, as physical artefacts, their *thingness* was inevitably present in the texture of the canvas or of the brush strokes, in the paint, in crackles and small defects, in the ageing of materials, etc. Instead of the simple artefacts that Rodchenko intended to create, they actually became quite complex artworks, allowing for long and detailed scrutiny, and leading to rich and complex aesthetic experiences. In their utmost abstraction, by reducing everything to a single field of colour, they became extremely concrete aesthetic experiences.

Two and a half decades later, Yves Klein's *Monochrome Propositions*, started in 1949, were likewise extremely concrete, and they also resulted from an attempt to paint "against painting, against all the anxieties of life, against everything" that led Klein to chart the territories beyond art, as a practice for the end of art, enacted by painting monochromes. Works such as the 1955 *Expression du Monde de la Couleur Mine Orange* (Expression of the World of the Colour Orange), and other works with fields of red, pink, or yellow, allowed Klein to affirm the ultimate stage of art history, transcending it, as well as life itself. The later phase of his work, developed from 1955 to 1962 and known as his *blue period*, includes many IKB (International Klein Blue) monochromes that Klein, a self-described "impressionist and a disciple of Delacroix", proposed as "landscapes of freedom".

In this genealogy, we may also find Robert Rauschenberg's monochromes as e.g. *White Painting (Three Panels)*, or *White Painting (Seven Panels)*, both from 1951. These, and three other works in the series are composed by modular panels that were painted completely white, in an attempt to develop a painting that "looked untouched by human hands, as though it had simply arrived in the world fully formed and absolutely pure." (Roberts 2013b) These white canvases were open conceptual spaces, firstly because Rauschenberg conceived of these

1

The white paintings were in fact repainted, repaired, or refabricated several times (Roberts 2013b).

2

Full of things that absorb light.

3

Samon Takahashi's essay *Grooving in Silence* (2014) is an excellent source for a number of other silent works.

works as remakeable,<sup>1</sup> but particularly because he also considered it essential that they would be pristine white, with minimal brush or roller marks. They were also not points of departure, or empty works, but rather points of arrival, finished artworks. Not being empty, they lead viewers to the idea of emptiness, or of the empty work.

A similar concept is explored in works by Man Ray as the all-black 1930 *Photo Noire* (dedicated to Robert Desnos, "plein des choses qui absorbent la lumière"<sup>2</sup>), or in other works by Klein such as 1958's *Le Vide* (The Void), an encased empty space, and his *Zones de sensibilité picturales immatérielles* (Zones of Intangible Pictorial Sensitivity), from 1957–1961. Christo Javacheff in the late 1960s, Robert Irwin in the 1970s, and Raphael Juliard, already in the 2000s, have proposed similar works consisting of empty rooms. Andy Warhol in the 1980s, Tom Friedman, or Matthew Crawley in the 1990s, proposed smaller scale works consisting of empty spaces or placeholders for non-existing sculptures.

Besides Allais's *Marche funèbre...*, other composers have proposed completely silent pieces of music. John Cage's *4'33"* is perhaps the better known of these, and was admittedly inspired directly by Rauschenberg's *Monochromes* (1973, 98). As these aimed to extend seeing beyond the actual painting, *4'33"* tried to lead the listener to hear beyond the actual piece of music. Klein conceived *Symphonie Monoton-Silence* (Monotone-Silence Symphony) in 1949, enacting it in several versions over the following years. The basic structure of a period of twenty-one minutes of a single tone followed by twenty-one minutes of absolute silence was performed as a tape piece by Pierre Henry in 1957, issued as a record titled *Musique du Vide* (Music of the Void) in 1959, performed by a chamber orchestra in 1960, by a 60-member orchestra in 1961, etc. *Composition 1960 #4* by La Monte Young, consisted of turning off the lights of the space for the duration of the composition (that could have any length) and announcing when the composition would start and end. A further note allowed an announcer to also inform the audience, at the end of the composition, that their actions *had been* the composition, although, as also noted, that was "not at all necessary". Examples of absolute nothingness can be found in Yves Klein and Charles Wilp's 1965 LP *Prince of Space*, *Musik der Leere* that, although pressed, contained no music, on Coil's 1984 vinyl *How to Destroy Angels* whose side B (labelled as *Absolute Elsewhere*) was left blank, in a strategy akin to Christian Marclay's 1987 *Record Without a Groove*.

Nothing to hear, nothing to see. The 2000 CD *0.000* by Nosei Sakata's project \*0 meant to explore the oriental and Japanese thinking about nothingness, and how it could create all things. Its 16 tracks were composed of sounds well outside the human hearing range, therefore containing nothing that could be heard. Stephen Vitiello's 2004 sound installation *Fear of High Places and Natural Things* is also composed of sounds at very low frequencies, making them impossible to be perceived. Unlike *Musik der Leere*, these pieces are not composed of silence alone, but they are nevertheless silent. At least for us humans.<sup>3</sup>

A note to mention works that being almost empty, may at first sight be regarded as monochromes, Derek Jarman's 1993 film *Blue*—consisting of a single-shot of deep, saturated, blue, and soundtrack—and João César Monteiro's 2000 film *Branca de Neve* (Snow White)—almost imageless, composed of mostly black intertwined with very few and very short shots, and soundtrack. Famous for their absence of image, both films resort to sound to create and develop a narrative experience that is not, in the end, very far from *conventional* cinematic narrative.

### **3. DESTRUCTIVE PROCESSES**

Emptiness can be the starting point for a work; it can be the arrival point; it can be the outcome of a process. If *why* we get to nothing is at times conceptually relevant, often *how* we get to nothing can also be promoted as the core of the aesthetic experience. In such cases, a destructive process develops towards emptiness, with the result being *nothing* or being *some* remains of the content over which the process was developed.

Arguably the most well-known artwork resulting from a destructive process is Robert Rauschenberg's 1953 *Erased de Kooning Drawing*, created when Rauschenberg attempted to find a way to draw with an eraser. Unsatisfied with early results, Rauschenberg concluded that "the only way to create a work of art through erasure would be to start with a drawing by an artist of universally recognised significance" (Roberts 2013a). He therefore approached Willem de Kooning, that understood the concept and consented to the collaboration. This work was linked by Rauschenberg to his *White Paintings*, explaining that the monochrome paintings had triggered a wish to understand how he could develop a similar process with drawing, leading to experimentation with erasing. If the *White Paintings* "tested the boundaries of painting by exhibiting seemingly blank, all-white canvases", the *Erased de Kooning Drawing* pushed even further in "testing the boundaries of what qualified as a work of art" (Roberts 2013a). But the *Erased de Kooning...*, unlike the *White Paintings*, presents direct evidence of the action of its creation. In line with action painting and gestural abstraction of the 1950s, the *Erased de Kooning...* records the events of its creation, thus conceptualising the artwork as "the result of a process that was begun in complete uncertainty and unfolded over time." (Roberts 2013a)

To be sure, *Erased de Kooning Drawing* reverses the physical, additive process of action painting, but it hinges entirely on the concept of an artwork as a performative act. In fact, the work is so event-based as to have required the development of the explanatory background story as a sort of pendant that testifies to the actions of its creation, completed in the privacy of the artist's studio. (Roberts 2013a)

From recording and valuing the artist's actions, we come to the development of processes that are exogenous to the artist, and that often may not be totally under their control. Two other artworks allow us to understand the allure of these semi-autonomous processes of erosion and degradation, Andy Warhol's 1978 *Oxidation Paintings*, and William Basinski's *Disintegration Loops*. Warhol's paintings were created with materials prone to oxidise, rust, and decay over time, such as copper-based gold paint and uric acid that reacted with the copper, forming coloured patterns of mineral salts. Basinski's pieces were composed in the process of digitising recordings made on magnetic tape that, having aged and degraded, were destroyed by the transfer process.

The oxidation in Warhol's paintings was artificially halted by processes of conservation. If that had not happened, the works would have eventually been destroyed by the oxidation. As they are, they freeze a moment in time, a particular stage of the process. Basinski's tapes were transferred to digital, and thus the fully destructive process of *disintegration* was recorded for posterity, becoming central to the compositions and defining their titles.

On these works emphasis is put in a destructive and deteriorating process whose effects on a seed or starting point—the gold paint in Warhol, the tape loops in Basinski—are perceivable and constitute the matter of the work. We may argue that the end goal of these pieces is not to achieve nothingness, as nothingness would preserve no traces of the original seeds and therefore also nothing of its process of deterioration. Therefore, if the process is the core of the aesthetic experience, nothingness can never be achieved. If we ever came to a blank screen, to a total silence, would any information about the seed still be present? Perhaps only as a memory, perpetuating and continuing the piece.

Still in the domain of analogue media, erosion and deterioration can be promoted to an almost performative role. Two examples of this, with similar mechanics, can be found in works by Simona Brinkmann and Nate Harrison where dubplates are played to exhaustion. Dubplates are fragile one-off recordings in PVC or plastic that have a short lifespan, being able to be played for a limited number of times before the audio quality significantly degrades and the erosion of the needle eventually effaces the grooves. This premise is central to both Harrison's 2004 *Can I Get an Amen?* and Brinkmann's 2008 *Long Rider*.

With processor-based media, further explorations of autonomous or semi-autonomous processes of degradation, destruction, or erasure, can be developed. Significant examples can be found in Richard Eigner's 2007 *Denoising Noise Music*, and Zach Gage's 2009 *temporary.cc*.

Gage's website *temporary.cc*, is a study about decay, data corruption, and disintegration within a language's standards, that was programmed to randomly delete a part of its code every time it was accessed by a visitor.

These deletions change the way browsers understand the website's code and create a unique (de)generative piece after each new user. Because each unique visit produces a new composition through self-destruction, *temporary.cc* can never be truly indexed, as any subsequent act of viewing could irreparably modify it. (Gage 2009)

On "Saturday, October 22nd, 2011, after 40,153 unique visitors", *temporary.cc* became a blank website, with all its previous configurations "remembered only by those who saw or heard about it" (Gage 2009).<sup>4</sup>

Eigner's works use noise-reduction technologies over a range of "noise music"<sup>5</sup> erasing most of the original compositions and leaving only a few surviving signals that bear witness to the cleansing process (Dworkin 2013, 159). In a later work, Eigner proceeded to apply the same noise-reduction techniques to field recordings of trains, streets, swimming pools, or public transportation (2009).

Florent Deloison's 2012 *Hommage à New York* and 2016 *Hommage à New York III* are breakout-style games where the player not only destroys bricks but also the code behind the game, "which end by inevitably stop working when commands essential to the program have been deleted by the player." (Deloison 2012) Titled after a 1960 self-destructive sculpture by Jean Tinguely and Billy Klüver, these games are impossible to win, and have as sole purpose their own destruction.

<sup>4</sup> The process was, naturally, and much like Basinski's Disintegration Loops, recorded for posterity. <https://vimeo.com/7576617>

<sup>5</sup> Such as Xenakis, Merzbow, Luigi Russolo, or Lou Reed.

## 4. CONSTRUCTIVE PROCESSES

To start from nothing. To arrive at nothing. To declare an action or a process, perhaps even instantiate it, but to have no results or outputs perceivable. In a constructive, or generative, process nothingness can be both the start and the end point (if ever there is an end point). The work may come from nothing, and arrive at nothing, being an open field of possibilities, a phase-space that is created from the medium and from the process, dispensing with a seed.

Early examples are Cage's *4'33"*, deliberately set up as a space to hear sounds that are present in the space but not in the score, attracting them, and constructing each instantiation of the piece from them. *4'33"* was not composed to be heard as four minutes and thirty-three seconds of silence, but rather as consisting of all the sounds heard, but not played, during that length of time. *4'33"* is created by sounds that are neither composed nor performed, by sounds that are brought to the piece by all systems but the traditional or the expected channels of music performance (whichever these may be in any given time, space or context) (Carvalhais 2016, 162). Nam June Paik's 1964 *Zen for Film* comprises approximately 23 minutes of transparent film leader that when loaded and projected produces nothing but white light with the occasional scratch and dirt. If *4'33"* looks outward, *Zen for Film* looks inward, focusing viewers in the seemingly empty rectangle of white light that is projected. They are both blank slates that become compositions: *4'33"* reclaims the entire sound field of the space where it is enacted, *Zen for Film* reclaims the entire surface of the projection, and the space between this and the projector, and absorbing noises from the projector, variations in lightning, shadows of the audience, etc. All the glitches, interruptions and interferences with the whiteness being projected are no longer annoyances, noise, or perturbations, but fuse with the absolute nothingness, becoming part of the film. (210)

6  
<http://www.liaworks.com>

A recent series of works by Austrian software artist Lia<sup>6</sup> take this approach further, proposing generative processes that start from nothing and become (mostly) nothing through algorithmic processes. Lia's *Monochromes* are presented as a series of videos that do not contain much more than opening titles followed by a field of white of variable duration. All but *Monochrome No. 16* are silent, and only two include something besides the field of white: *No. 13*, that flashes a black rectangle once in the span of its 7 minutes and 18 seconds, and *No. 23*, that over a period of 24 hours fades from the field of white to a field of black.

The opening captions present their titles accompanied by descriptive subtitles as *Upwards Moving White Circle on White Background*, *Clockwise Rotating White Rectangle on White Background*, or *Grid of White Ellipses on White Background Generating Patterns*. They are therefore reminiscent of Malevich's or Rodchenko's titles, that contained formal descriptions of the works. But we can also discover a relationship with Bilhaud's and Allais's titles, in that way how they are descriptions of processes besides forms. Of processes that ultimately produce form, but of which a final form can only be imagined, and not seen. If in Malevich's or Rodchenko's works the formal description is complete (as in *Pure Red Color*), or leaves out small details, nevertheless describing most the elements in the work (as in *Black Square*), in Lia's works, much as in Bilhaud's and Allais's, many details of a potentially rich, intricate, and complex scene are left out. Lia's titles do not describe a final composition, a static image or object, but rather groups of objects, their actions, or interactions.

7

Although attempts can be made to rebuild the original de Kooning drawing, as SFMOMA did in 2010, using digitally enhanced infrared scans, which curiously seem to show that de Kooning already made heavy use of the eraser in his own drawing, before this was turned over to Rauschenberg (Roberts 2013).

If Lia's *Monochromes* are therefore clearly inscribed in the tradition of Malevich and Klein, formally they are even more abstract and minimal. If Malevich described form and colour, Lia stands closer to Rauschenberg, expanding the descriptions to also include process. But if Rauschenberg's process on *Erased de Kooning Drawing* destroyed something that can never be seen again,<sup>7</sup> leaving the viewer with an artefact, and a mystery, Lia's processes create fields of possibilities framed by the procedural descriptions.

These works are developed from procedural starting points, not from formal concepts. They are therefore deeply algorithmic, with all behaviour and form emerging from processes that are coded twice: firstly, in the works themselves, secondly, in their titles. By giving nothing but the essential details in the titles, Lia leaves to the viewer the development of hypothesis about the *dynamics* of the works (Hunnicke et al. 2004), about their run-time development, and these must be derived from observation and interpretation (Carvalhais and Cardoso 2015a, 2015b). As such, these works can also be inscribed in the tradition of algorithmic art represented by works as John F. Simon Jr.'s 1997 *Every Icon*, or Casey Reas's *Process* series. In these pieces the processes that are developed by the artworks are detailed to the viewer as code, pseudo-code, or textual descriptions. However, if on Simon's or Reas's works, by disclosing the process to the viewer the authors allow the minimisation of the effort that may be needed to develop and test procedural hypothesis about the work (Carvalhais and Cardoso 2016, 2017), Lia's pieces manage to do something quite different. The procedural descriptions in the titles are used to prime the viewer with the idea of a process, therefore leading the viewer to mentally instantiating this process even if almost no output is perceivable in the surface of the works.

The viewer must assume that the processes that are described are in fact developed by the works—and documented by the linear videos—, but as these produce no perceivable outputs, it then becomes up to the viewer to develop hypothesis about the surface elements and behaviours that these processes may lead to, by mentally recreating them. In all their whiteness, which must be remembered, is Malevich's colour of space, Lia created a field of possibilities, and her *Monochromes* reclaim the procedural space of the viewer. They become notational works that manage to be simultaneously autographic—because they are presented as videos that document singular runs of the code—and allographic—as they are scores for the viewer to execute, mentally enacting the processes (Goodman 1976, Lee 2006).

The viewer may develop expectations towards the development of these processes, but with few exceptions, these can never be confirmed in the empty screens one is faced with. The only two works that somehow allow the direct confirmation of predicted behaviours are *Monochrome No. 13: Black Rectangle on White Background If You Are Lucky* and *Monochrome No. 23: Day and Night*. The first of these playing with the difficulty of the careful attention required to witness a fleeting event,<sup>8</sup> the second with the almost real-time span of the event that is developed. All the others remain elusive.

8

The black rectangle is displayed for eight seconds at 4'46".

If one's consciousness is the one thing that we can be absolutely certain not to be an illusion (Harris 2012), if things and phenomena exist not so much in the material world as they do in one's conscious, mental, internal world, it follows that having one's internal simulator primed by a process, as Lia's pieces do, can perhaps be regarded as the ultimate act of conceptual art. Creation does not happen ex nihilo, because a brain needs to be involved, an external procedural

Or the external systems need to be documented, as happens in Lia's videos.

system needs to exist,<sup>9</sup> and communication protocols are necessary in order for the aesthetic experience to be developed. As these three are put in place, the pieces are then allowed to unfold and to create lasting, and ever evolving aesthetic experiences.

**Acknowledgements.** FourEyes is a Research Line within project "TEC4Growth—Pervasive Intelligence, Enhancers and Proofs of Concept with Industrial Impact/NORTE-01-0145-FEDER-000020" financed by the North Portugal Regional Operational Programme (NORTE 2020), under the PORTUGAL 2020 Partnership Agreement, and through the European Regional Development Fund (ERDF).

Thank you to the anonymous reviewers for the invaluable inputs they provided.

## CITED WORKS

- Allais, Alphonse. *Première communion de jeunes filles chlorotiques par un temps de neige*, 1883  
 Allais, Alphonse. *Récolte de la tomate par des cardinaux apoplectiques au bord de la mer Rouge*, 1884  
 Allais, Alphonse. *Album Primo Avrilesque: un livre pour rire...*, 1897  
 Allais, Alphonse. *Marche funèbre pour les obsèques d'un grand homme sourd*, 1897  
 Basinski, William. *The Disintegration Loops*, 2002-2003  
 Bilhaud, Paul. *Combat de Nègres dans un tunnel*, 1882  
 Brinkmann, Simona. *Long Rider*, 2008  
 Cage, John. *4'33"*, 1952  
 Coil. *How to Destroy Angels*, 1984  
 Crawley, Matthew. *My Invisible Friend*, 1994  
 Deloison, Florent. *Hommage à New York*, 2012  
 Deloison, Florent. *Hommage à New York III*, 2016  
 Eigner, Richard. *Denoising Noise Music*, 2007  
 Eigner, Richard. *Denoising Field Recordings*, 2009  
 Friedman, Tom. *Untitled (A Curse)*, 1992  
 Gage, Zach. *temporary.cc*, 2009  
 Harrison, Nate. *Can I Get an Amen?*, 2004  
 Irwin, Robert. *Experimental Situation*, 1970  
 Jarman, Derek. *Blue*, 1993  
 Javacheff, Christo. *Store Front*, 1968  
 Juliard, Raphael. *Espaces Vides*, 2004  
 Klein, Yves. *Symphonie Monoton-Silence*, 1949-1962  
 Klein, Yves. *Expression du Monde de la Couleur Mine Orange*, 1955  
 Klein, Yves. *Le Vide*, 1958  
 Klein, Yves. *Zones de sensibilité picturales immatérielles*, 1957-1961  
 Klein, Yves, Charles Wilp. *Prince of Space, Musik der Leere*, 1965  
 Lia. *Monochrome No. 3: Upwards Moving White Circle on White Background*, 2016  
 Lia. *Monochrome No. 6: Clockwise Rotating White Rectangle on White Background*, 2016  
 Lia. *Monochrome No. 7: Constantly Transforming White Triangle on White Background*, 2016  
 Lia. *Monochrome No. 13: Black Rectangle on White Background If You Are Lucky*, 2016  
 Lia. *Monochrome No. 15: White Vertical Lines Moving to The Right on White Background*, 2016  
 Lia. *Monochrome No. 16: White Particle System on White Background Reacting to Sound in Realtime*, 2016  
 Lia. *Monochrome No. 18: Grid of White Ellipses on White Background Generating Patterns*, 2016  
 Lia. *Monochrome No. 23: Day and Night*, 2016  
 Malevich, Kazimir. *Black Square*, 1915  
 Malevich, Kazimir. *Suprematist Composition: White on White*, 1918  
 Marclay, Christian. *Record Without a Groove*, 1987  
 Monteiro, João César. *Branca de Neve*, 2000  
 Paik, Nam June. *Zen for Film*, 1964  
 Rauschenberg, Robert. *White Painting (Three Panels)*, 1951  
 Rauschenberg, Robert. *White Painting (Seven Panels)*, 1951  
 Rauschenberg, Robert. *Erased de Kooning Drawing*, 1953  
 Ray, Man. *Photo Noire*, 1930  
 Reas, Casey. *Process series*, 2004-2010  
 Rodchenko, Aleksandr. *Pure Red Color*, 1921

- Rodchenko, Aleksandr. *Pure Blue Color*, 1921  
 Rodchenko, Aleksandr. *Pure Yellow Color*, 1921  
 Sakata, Nosei. *0.000*, 2000  
 Simon, John F, Jr. *Every Icon*, 1997  
 Vitiello, Stephen. *Fear of High Places and Natural Things*, 2004  
 Warhol, Andy. *Oxidation Paintings*, 1978  
 Warhol, Andy. *Invisible Sculpture*, 1985  
 Young, La Monte. *Composition 1960 #4*, 1960

## REFERENCES

- Cage, John.** *Silence: Lectures and Writings by John Cage*. Hanover, NH: Wesleyan University Press, 1973. 1961.
- Carvalhais, Miguel.** *Artificial Aesthetics: Creative Practices in Computational Art and Design*. Porto: U.Porto Edições, 2016.
- Carvalhais, Miguel, and Pedro Cardoso.** "Beyond Vicarious Interactions: From Theory of Mind to Theories of Systems in Ergodic Artefacts". In *xCoAx 2015*, edited by Alison Clifford, Miguel Carvalhais and Mario Verdicchio, 139-50. Glasgow, 2015a.  
 ——. "What Then Happens When Interaction Is Not Possible: The Virtuoso Interpretation of Ergodic Artefacts." *Journal of Science and Technology of the Arts* 7, no. 1 (2015b): 55-62.  
 ——. "Searching Meaning through Procedurality in Computational Artefacts". In *Designa*. Covilhã, 2016.  
 ——. "Creation of Meaning in Processor-based Artefacts." *ISEA 2017 Bio-Creation and Peace*. Eds. Arango, Julián Jaramillo, Andrés Burbano and Felipe César Londoño. Manizales: Department of Visual Design, Universidad de Caldas, 2017. 408-414.
- Deloison, Florent.** "Hommage à New York." [http://www.florentdeloison.fr/eng/projets/hommage\\_ny.html](http://www.florentdeloison.fr/eng/projets/hommage_ny.html).
- Dworkin, Craig.** *No Medium*. Cambridge, MA: The MIT Press, 2013.
- Eigner, Richard.** "Denosing Field Recordings." <http://richard.ritornell.at/index.php?show=denosing&w=1>.
- Gage, Zach.** "temporary.cc." <http://www.stfj.net/index2.php?project=art/2009/temporary>.
- Goodman, Nelson.** *Languages of Art: An Approach to a Theory of Symbols* [in English]. Second ed. Indianapolis, IN: Hackett, 1976.
- Harris, Sam.** *Free Will*. New York: Free Press, 2012.
- Hunicke, Robin, Marc LeBlanc, and Robert Zubek.** "Mda: A Formal Approach to Game Design and Game Research." In *Challenges in Games AI Workshop, Nineteenth National Conference of Artificial Intelligence*. San Jose, CA, 2004.
- Lee, John.** "Goodman's Aesthetics and the Languages of Computing". In *Aesthetic Computing*, edited by Paul A. Fishwick. 29-42. Cambridge, MA: The MIT Press, 2006.
- LeWitt, Sol.** "Paragraphs on Conceptual Art." *Art-Language* 1, no. 1 (May 1969 1969).
- Malevich, Kazimir.** *The Non-Objective World*. Mineola, NY: Dover, 2003. 1959.
- Roberts, Sarah.** "Erased De Kooning Drawing." San Francisco Museum of Modern Art, <https://www.sfmoma.org/artwork/98.298/essay/erased-de-kooning-drawing/>  
 ——. "White Painting [Three Panel]". San Francisco Museum of Modern Art, <https://www.sfmoma.org/artwork/98.308.A-C/essay/white-painting-three-panel/>.
- Roddy, Stephen.** "Absolute Nothingness: The Kyoto School and Sound Art Practice." In *Invisible Places*. Ponta Delgada, 2017.
- Takahashi, Samon.** "Grooving in Silence". In *Mono #2: Cochlear Poetics: Writings on Music and Sound Arts*, edited by Miguel Carvalhais and Pedro Tudela. 137-47. Porto: i2ADS, 2014.