## Unstable Media & Computer Art

In this section, I will briefly summarize and define what I mean with computer art, digital art and unstable media and related terms.

### Unstable media

Broadly speaking, “Unstable Media Art” is used to describe a category of contemporary art that incorporates technology and digital media as integral components of artwork. Following the Unstable Media Manifesto (V2\_ 1987), a first define unstable media as follows:

Unstable media is *“…all media which make use of electronic waves and frequencies, such as engines, sound, light, video, computers, and sound. Instability is inherent to these media.*

*Quantum mechanics has proved, among other things, that the smallest elementary particles, such as electrons, exist in ever-changing forms. They have no stable form, but are characterized by dynamic mobility. This unstable, mobile form of the electron is the basis of the unstable media.*

*The unstable media are the media of our time. They are the showpieces in our modern homes. We promote their comprehensive use, instead of the often practiced misuse of these media…”*

*“…the unstable media move within the concepts of ‘movement-time-space’, which implies the possibility of combining more forms and contents within one piece of work. The unstable media reflect our pluriform world.*

*Unstable media are characterized by dynamic motion and changeability, this in contrast with the world of art which reaches us through the publicity media. This has come to a standstill and has become a budget for collectors, officials, historians and critics…”*

#### Illustration, Light-Space-Modulator

At a first glance, it may seem that unstable media is related to computers and digital media. However, this is not a necessary to make an unstable media artwork. Let’s take the example of the “Light-Space Modulator” (1930) by Laszlo Moholy-Nagy. Here is a description of the work by Moholy-Nagy himself:

*“This piece of lighting equipment is a device used for demonstrating both plays of light and manifestations of movement.*

*The model consists of a cube-like body or box, 120 x 120 cm in size, with a circular opening (stage opening) at its front side. On the back of the panel, mounted around the opening are a number of yellow, green, blue, rot, and white-toned electric bulbs (approximately 70 illuminating bulbs of 15 watts each, and 5 headlamps of 100 watts). Located inside the body, parallel to its front side, is a second panel; this panel too, bears a circular opening about which are mounted electric lightbulbs of different colors. In accordance with a predetermined plan, individual bulbs glow at different points. They illuminate a continually moving mechanism built of partly translucent, partly transparent, and partly fretted materials, in order to cause the best possible play of shadow formations on the back wall of the closed box. (When the demonstration occurs in a darkened space, the back wall of the box can be removed and the color and shadow projection shown on a screen of any chosen size behind the box.)*

*The mechanism is supported by a circular platform on which a three-part mechanism is built. The dividing walls are made of transparent cellophane, and a metal wall made of vertical rods. Each of the three sectors of the framework accommodate a different, playful movement study, which individually goes into effect when it appears on the main disc revolving before the stage opening.*

*The first sector’s playful movement study: three rods move jerkily (since the plan of the edges and base are somewhat different) on an unbroken path. Different materials, translucent screening, parallel horizontal rods, and wire netting are mounted to the three rods.*

*The second sector’s playful movement study: found within three levels arranged one behind the other is a large immobile aluminum disc; moving up and down in front of this is a small, bent and highly-polished perforated brass disc; at the same time—between the two—a small ball is set in motion as if on a roller coaster.*

*The third sector’s playful movement: a glass rod topped by a spiral of glass. This describes, in the reverse, the movement of the pin of the large disc, whose tip touches the base made of a diagonally-arranged and sector-shaped glass disc, levitating over a reflecting circular platform.*

*This piece of lighting equipment can be used to arrive at countless optical conclusions, and it seems correct to me that the development of these attempts be continued as planned, as a way to approach the designing of light and movement.”* (Moholy-Nagy sd)

An important point to notice here, is that the Light-Space-Modulator artwork is not only the sculptural (physical) object but also how that object interacts with the space. When the “Light-Space-Modulator” is turned on, the different pieces move and then reflect the light in the room creating abstract forms and movements over the surfaces of space where the piece is located. Since space and light on it are not stable, the “Light-Space-Modulator” intentionally was designed to embraces this instability.

The Light-Space-Modulator really embraces the fusion of art and technology as promoted by the Bauhaus school. This is a connection of unstable media with the avantgarde movement.

László Moholy-Nagy (1895-1946) was a Hungarian painter, photographer, filmmaker, graphic designer, and influential figure in the world of modern and avant-garde art. He is particularly known for his contributions to the Bauhaus school and his pioneering work in multiple artistic disciplines. The Light-Space-Modulator is considered a pioneering piece in the field of kinetic art and unstable media {ref ???}.

His view on the autonomy of art and autonomous art institutions, can be seen on his teaching at the Bauhaus. *“When Walter Gropius invited him to teach at the Bauhaus, in Dessau, Germany, he took over the school's crucial preliminary course, and* ***gave it a more practical, experimental, and technological bent****. He later delved into various fields, from commercial design to theater set design, and also made films and worked as a magazine art director.”* (The Art Story sd)

Also, on his view of how artists should address new technologies like the photo camera.

*“His interest in photography encouraged his belief that artists' understanding of vision had to specialize and modernize. Artists used to be dependent on the tools of perspective drawing, but with the advent of the camera* ***they had to learn to see again. They had to renounce the classical training of previous centuries****, which encouraged them to think about the history of art and to reproduce old formulas and experiment with vision, thus stretching human capacity to new tasks.”* (The Art Story sd)

He also believed that artist had the potential to challenge the status quo of modernity by embracing new technologies. *“Moholy-Nagy believed that humanity could only defeat the fracturing experience of modernity - only feel whole again - if it harnessed the potential of new technologies. Artists should transform into designers, and through specialization and experimentation find the means to answer humanity's needs.”* (The Art Story sd)

As we can see here, almost half a century before the V2 Unstable Media Manifesto, the seed of unstable media thinking was present on key figures of the (historic) avantgarde.

### Computer art

Of course, computers are very fruitful for unstable media. Here I will give a brief introduction to the so-called computer art.

Computer art, also known as digital art, incorporates, algorithms, digital technology, and computers in the creative process[[1]](#footnote-1).

In the last decades, there has been shift in our understanding and engaging with digital tools, aka computers. I can no longer function correctly in this society without several technological augmentations. These are not embedded in my organic body. However, my phone, computer, Facebook profile, and many faces on the blockchain are essential to my identity(Ghost). Without them, I will be just a shell. Technology has become, to me, a companion species. I spend more time with my phone than with my dog. Nowadays, we fuse with technology like Kusanagi merged with the Puppet Master in the well acclaimed film Ghost in the Shell (Oshii 1995). Following Haraway (Haraway 2015), I can say that I am a cyborg because I am a collection of individualities. I have my organic body, but I have a presence on Instagram, Facebook, and several blockchains. They are genuine shells that I use to exhibit part of my Ghost(identity).

Matt Pearson, one of the precursors of the Processing language, sees it as follows: *“This revolution would be impossible without a new understanding of software as cultural artifact. Where we once saw text processors as literal typewriter replacements, we now download and exchange apps as a popular pastime. Websites that used to be closed domains of proprietary information now sport public APIs, enabling professionals and enthusiasts alike to create ever popular “mashups” based on their data.*

*In the creative field, the most significant development is the realization that software [and hardware] processes aren’t simply tools, but can become the very material from which works are made… …A new generation of electronic artists has turned to code as fertile ground for conceptual and formal experimentation, simultaneously providing a pragmatic framework for computational creativity and a theoretical context for the created artwork.”* (Pearson 2011, x)

An additional point to Pearson’s view is that already in the years 1960’s artists were using computers for creative purposes. One crucial shift of paradigm was necessary for this to happen. Namely, artist had to change the view of the art object as and static object dissociated from the artist and the viewer to a perspective where the art piece becomes a dynamic object that interacts with the artis and the viewer. Moreover, during the creative process technology allows for a “conversation” between the artist, the machine and the work of art. This very much aligned in the view of the Unstable Media manifesto of the previous section, but also the creation process and the artwork itself become a cybernetic system where feedback loop is essential [ref?? ask Willem].

All of this means that in order to make art with computer a different way of thinking was needed. As stated by Matt Pearson, *“With more traditional art forms—sculpture, painting, or film, for example—an artist uses tools to fashion materials into a finished work. This is clearly doing it the hard way. With generative art, the autonomous system does all the heavy lifting; the artist only provides the instructions to the system and the initial conditions. The artist’s role in the production process may be closer to that of a curator than a creator. You create a system, model it, nurture it, and refine it, but ultimately your ownership of the work produced may be no more than a parent’s pride in the work of their offspring.”* (Pearson 2011, 4)*.*

#### Illustration Vera Molnar – square variations

I will illustrate this with the views and work of one of the pioneers of computer art Vera Molnar[[2]](#footnote-2).

Vera Molnar is a Hungarian-French artist known for her contributions to the field of digital art and algorithmic art. She was born on January 5, 1924, in Budapest, Hungary, and studied painting at the Budapest School of Fine Arts and then moved to Paris where she developed most of her practice.

Even of the social context in which she was educated, Vera Molnar wanted to be an abstract painter. In her own words, *“If I can describe myself, I am a painter, an image-maker of images of a non-figurative kind. I 'create' visual forms in the sense that they consist of combinations of shapes that cannot be found in nature”* (V. Molnar 1975)

She followed the constructivist tradition. She was not interested in grand concepts but rather on simple principles and rules that would reveal unexpected beauty, she claimed that her life was about squares triangles and lines (Riagamonti en Kennedy 2018).[[3]](#footnote-3) For her form was one of the most existing notions created, developed, and manipulated by human consciousness. In her view, thanks to computers, the concept of form, in the broader sense, could be reduced to a lack of randomness with an organized set of elements (V. a. Molnar 1989). From gave us a bridge between art and technology.

She described her method as follows *“Whenever I begin a picture, I have an initial idea of it in mind. The procedure that I use to arrive at the final work, to be described below, is tedious, if carried through by hand. Furthermore, the final picture rarely corresponds to my initial idea of it.*

*I develop a picture by means of a series of small probing steps and each step is followed by evaluation. In my opinion, painters should employ such a procedure, especially if they consciously wish to learn what kind of aesthetic importance is occurring on the canvas as the painting develops and what effect the work may have on viewers. Making a series of pictures that are alike except for the variation of one parameter is not uncommon”* (V. Molnar 1975, 186)

Before computers, she would use/become an “imaginary machine” to follow this method: *“I will set up a set of rules and will follow them. I would modify the rules according to the results. Before I had access to computers, I used when making my works an “imaginary machine” for which I would execute the rules and make the results. However, this stepwise procedure has two important disadvantages if carried out by hand. Above all, it is tedious and slow. To make the necessary comparisons in a developing series of pictures, I must make many similar ones of the same size and with the same technique and precision. Another disadvantage is that, since time is limited, I can consider only a few of many possible modifications. Furthermore, these choices are influenced by disparate factors such as personal whim, cultural and educational background, and ease of execution.”* (Nierhoff 2018)???

When she was able to get access to a computer 1968 (Nierhoff 2018, 6), her “imaginary machine” became a “real machine”. She described this change as follows: *“the computer with its unmanageable potential of image variations is an optimal device. When it comes to digital images, the absence of their seclusiveness accom­modates the artist’s experimental scientific approach be­cause, behind the single picture, there is always the image category that also needs to be considered. By means of random generators, chance can introduce interference into the program at various stages. As a consequence, new variations can be continuously calculated and real­ized as images. The selected images thus constitute only limited material expressions of a virtually infinite consec­utive chain.”* (Nierhoff 2018, 10)

##### Square Variations

One of the most recognizable works by Vera Molnar is from the series “Structure des Quadrilaters” (year?). She has many variations during the years, but the core principle is the same. *“…drawings start(ing) from an initial square array of like sets of concentric squares.”* (V. Molnar 1975, 188)then by making variations on the variables a “conversational method” of the Author and the computer takes place.In theparticular case of this work, *“…the available variables are : (1) the number of sets, (2) the number of concentric squares within a set, (3) the displacement of individual squares, (4) the deformation of squares by changing angles and lengths of sides, (5) the elimination of lines or entire figures and (6) the replacement of straight lines by segments of circles, parabolas, hyperbolas and sine curves. Thus from the initial grid a great variety of different images can be obtained.”* (V. Molnar 1975, 188)

[Add pictures, perhaps some code]

Notice that here Vera Molnar, talks about a “conversation” between she and the machines. This is in line with avantgarde thinking of Maholy-Nagy we discussed in previous sections. Vera Molnar also recognizes the importance of artis to embrace new technology (computers) to create art. In her view *“The computer, on its own, does not have the capacity to create art, however: it is a very good assistant, but it is a little bit stupid, a lot must be explained to it.”* (Nierhoff 2018, 7). However she recognises that the computer was often more innovative than what she, or humans, could achieve *“Time and again, I have compared both forms of chance, one generated by me and the other resulting from mathematical probabilities, only to realize that my self-generated chance was much less innovative”* (Nierhoff 2018, 9). At some point she mentions that for her 1% or 2% of randomness was enough to make interesting art [ref]. Moreover, she also does not ignore the position of art in society and rejects the autonomy of art, she says *“I do not make drawings and paintings with the aid of a computer solely for personal satisfaction; I hope that others will also enjoy them. I do not agree with the notion of art for art's sake and of science for the sake of science. Sartre convincingly explains why this notion is untenable. I, personally, know of no artist who refuses to let people see his work. On the other hand, I do not believe that an artist should go to the extreme of ignoring his own taste and convictions in order to please others. There should be an intermediate ground where aesthetic satisfaction is experienced mutually.”* (V. Molnar 1975, 189)

*[make the connection to the avantgarde more clear and structural]*

### Section Summary

In this section we briefly presented the concepts of Unstable Media and Computer Art form a historical perspective. We pointed out how unstable media and computer art require a paradigm change from a static view of the art piece into a dynamic view where interaction and collaboration between man and machine is essential.

In both cases, the avantgarde principles we mentioned before naturally come into place. [make more precisse]

1. For this section we will avoid talking about the internet as that will be discussed in later sections. [↑](#footnote-ref-1)
2. Some may differ whether Vera Molnar is really one of the pioneers of computer art but since I do not want to not encourage the male dominated culture on art and its institutions, I will Illustrate the thinking behind computer art with her work. [↑](#footnote-ref-2)
3. Here the quote from her interview *“my life has been about squares, triangles, and lines. In this sense, I do not start from grand concepts that create patterns but rather from simple principles and rules and by introducing small variations undisclosed beauty appears”* (Riagamonti en Kennedy 2018). [↑](#footnote-ref-3)