

Post-Digital Art: Real Combination with Virtual and Human Cooperation with the Machine

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Abstract

Today, the dynamic structure of art continues its course in the parallelism of post-digital culture. In this research, the approaches of artists in the post-digital process are evaluated in terms of scientific-technological developments. Significant expansions take place in the content of the artwork and the artistic production formats and methods. Post-digital art will be explained to four different approaches. These can be listed as follows; interventions with software and hardware, to take advantage of disruptions, virtual and real association, machine human fusion, artificial intelligence and human association.

Nowadays, artists adopt searches for original design, not prescriptive, with deliberate interventions on codes while advancing in the field of artificial intelligence. Unpredictable results are achieved with this method. Screened interface virtual experiences called social media has been replaced by augmented reality technologies and experiences in three-dimensional space perception. Artists now turn to innovative applications independent of the screen with virtual reality

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equipment instead of continuing work in digital media by using computer program. It is observed that hybrid art works are becoming widespread while superior human projects for human-machine collaboration are continuing. The boundaries between virtual-real and machine-human are tried to be melted. It is aimed to explain post-digital art in the relationship of cultural structure transformed with these fields of activity.

Keywords: Post-Digital Art, Glitch Art, Virtual Reality Art, Robotic Art, Generative Art

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Introduction

Art, one of the cultural dynamics, changes over time and is shaped in connection with all the phenomena that affect culture. Today, it is known that the most important factor affecting people's life and perception is the digitalization that came to the fore with computer technologies.

With the opportunities provided by digitalization, individuals can manage many corporate transactions from where they are located and perform their actions in different ways. There has been a transformation in which cultural processes are experienced on the virtual platform. In the continuation of the digital culture that defines this transition process, the new life model, where the metamorphosis stage is completed, continues its development. In other words, if it is considered the pre-digital culture to the caterpillar, the digital culture to the cocoon and the post-digital culture to the butterfly, the caterpillar emerged from the cocoon as a butterfly, and after that it became a non-creep, flying, faster, aesthetic entity.

Today, while practices and theoretical studies about digital culture and digital art continue, the concepts of "post-digital culture" and "post-digital art" create a new discussion area. The purpose of this research is to evaluate new approaches in artistic production relationship in the post-digital culture, which has recently entered the literature and is a current subject.

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The approaches of artists after metamorphosis is evaluated transformations evolving with new media technologies. Examples that can be evaluated within the scope of post-digital art will be given with subtitles of "The Art of Glitch", "Interactive Robotic Art", "Art of Virtual Reality" and "Generative Art". The features of these art forms will be explained. In the conclusion and discussion section of the study, the data revealed as a result of the literature review will be evaluated, and predictions will be made about the course of art in terms of future constructions.

While collecting data domestic and foreign literature, theses that can be accessed from the national thesis center, theses that can be accessed from the national thesis center, online magazines and books that will contribute to the research as a result of searches on the internet, and current works shared by the artists in their online galleries and sites have been used. In this research, the sources have been reached by using key concepts related to the subject (post-digital culture, post-digital art, glitch art, virtual reality art, generative art, robotic art etc.). After examining the sources, the data were evaluated in the relevant sections of the research.

1. Findings

1.1. Post-Digital Culture and Art

Digitalization has opened the door to a new life model in worldwide. Digital culture describes the transition process shaped by digitalization. Nowadays, it is talked about a brand new technology

and a cultural structure that does not define it as something else. We are now living in period that “we stop thinking about the world as digitized and start thinking of digital as a world” (Koterbay-Mirocha, 2016: 60). A new quality was needed to define to process and the concept of “post” was came into the agenda (Demir, 2018: 102). Although the "post" prefix means "after / later", the concept of post-digital is used in the sense of continuation and beyond, not after the digital age (Cramer, 2014: 18). In this structure, virtual experiences, artificial intelligence and robotic structures complement each other with human experiences and physical life.

The concept of digital art has come to the fore with the use of digital technologies in the field of art. With digital technologies, images, photographs and videos are transferred to the computer environment with codings and any changes can be made on it. Works that involve the audience in the work, requiring joint action are created and feedback of the work is provided. It is ensured that digital works are transferred to long distances instantly and shared. Examples are frequently encountered to make it necessary for different field experts to work.

In digital art works, it is possible to see manipulations with conscious interventions in post-digital works while trying to make pictures on robots or machines with artificial intelligence through software / programs. In the post-digital age, unpredictable results are tried to be achieved with the “Glitch Art”. n digital artistic production, humanization efforts for originality, creativity and individuality are

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applied by making mistakes to machines and software. In the thesis of Simbelis (2018), it is necessary to be able to analyze the concept of "humanizing / humanized technology" used to explain post-digital art.

In the Post Digital Age, the lines between virtual experiences and experiences in physical life are disappearing. Augmented / virtual / mixed realities surround us. Along with this, there is an increasing trend towards the "Art of Virtual Reality".

In recent years, a "Trans-humanism" thought movement has been developed suggestions that technology and science should be used in order to increase the physical and cognitive abilities of human beings and to eliminate their undesired aspects such as aging and illness (Bilgen, 2014). In this approach, it is thought that a person's deficiencies such as aging, forgetting, fatigue, inability to make quick decisions, and not keeping more information in memory can be realized by human machine fusion. In such period, robots are developed and "Robotic Art" studies are carried out.

"Generative Art", where technological developments are effective and go beyond human, displays much more complex structure that combines software and human interventions in the post-digital age. There are production processes created by precisely defined rules such as codes and algorithms in generative art. Today, an element of interaction with people has been added to the software-based system. "Postdigital art addresses the humanization of digital technologies

through interplay between digital, biological, cultural, and spiritual systems” (Alexenberg, 2015).

1.2. Glitch Art

There are searches for “using digital qualities and making use of the disruptions associated with it” among the strategies in which post-digital qualities can be implemented (Lund, 2015). The feature of digital art, which is based on algorithmic calculations and does not include errors, has evolved into applications that malfunction or error was made by deliberate intervention and reaching unpredictable outputs by deliberate intervention in post digital art. Even though the phenomenon of consciousness cannot be resolved for the humanization of technology, it is used in post-digital art, in order to increase the uniqueness of the human in technology, in the works where defects are transformed into creative processes. “Post digital art shows us the human face of computers and introduces us to the world of machines that fail, age and die in front of our eyes” (Marzec, 2019: 39). Marzec's emphasis, the machine's dying and flawed structure like a human being is highlighted in artistic productions.

Glitch art is, in reality, the production of an aesthetic experience through the degradation of usage data. It can evoke a variety of emotions, including a real glitch, surprise, irritation and even anxiety. While an unexpected technological error can be devoted to art, the purposeful creation of a glitch is still beyond human control and its visual outcome is unpredictable (Hines, 2017).

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Post-digital aesthetics, one of the most important artistic trends in which understanding is seen, is “glitch art” that uses digital or analog errors by disrupting digital data. It uses the phenomenon of glitch as a tool to realize the creative potential. (Marzec, 2019: 39). These technical concepts that Simbelis mentioned while explaining post digital art are among the characteristics of glitch art. These are “aleatoricism and chance, deletion, repetition, error aesthetics and glitch aesthetics” (Simbelis, 2018).

Roy (2014) points out that artists aesthetize errors from digital or analog sources due to deliberate manipulation or malfunctions and distortions.





Figure: 1. Sabato Visconti “Glitch Art”

Glitch artist Sabato Visconti achieves unusual results by handling changes in the pixel sorting algorithms of image files, treating images as if they were sound (Visconti, 2015). The algorithm in digital art has been replaced by the change in the algorithm and codes in post digital art.

1.3. Virtual Reality Art

“In the near future, virtual reality content prepared in digital media environment will be realistic enough to cause people to question real life more” (Ferhat, 2016: 745). “The perception of reality, time and space will become much more complicated for us. Virtual reality will always be around us. Since the life in the virtual world is safer and more comfortable, physical spaces will be replaced by virtual spaces ” (Important, 2017). According to Jerald, a more up-to-date yet general identification of the term VR is a computer-generated digital setting which can be practiced and be involved in interaction as if that digital

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setting is real (Akan, 2019: 2). VR as “the use of computer modelling and simulation that enables a person to interact with an artificial three-dimensional (3D) visual or other sensory environment” (Koçbuğ, 2018: 7).

In the post digital age, where the lines between virtual experiences and experiences in physical life disappear, the artists are witnessed to create performances with augmented reality and virtual reality applications. Anna Zhilyaeva's work tells us about the post digital culture in which the lines between virtual experiences and experiences in physical life disappear and that augmented / virtual / mixed reality surrounds us. She uses virtual reality technologies in front of the audience. (Figure: 2). She has been performing augmented reality performances with musicians, dancers or orchestras in many places since 2017 (Zehilyaeva, 2017).





Figure: 2. Anna Zhilyaev, the Virtual Reality Art

In every post digital art project, Anna creates a mixed reality video. This technique allows a person without a virtual reality headset to monitor his paint in the virtual world. Then, the videos are shared on social networks. Anna's immersive works of art, constantly improving her technique and pushing the boundaries of virtual reality, resemble real oil paintings from any angle. She states that her works as a traditional and digital artist and adapts her skills to this new environment (Zehilyaeva, 2017).

1.4. Robotic Art

Another feature seen in post-digital art is hybrid structures. “The hybrid perspective makes the human and nonhuman, living and inanimate, human and machine or living organism and computation system into a single system” (Simbelis, 2018: 88). Hybrid workflow starts from studying how humans work and combining both human and machine specialties in the fabrication process. It allows us to

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maintain craftsmanship and input more humanity into digital crafts. (Lee, 2019). In artistic production, researches based on human and machine unity are ongoing (Figure: 3).

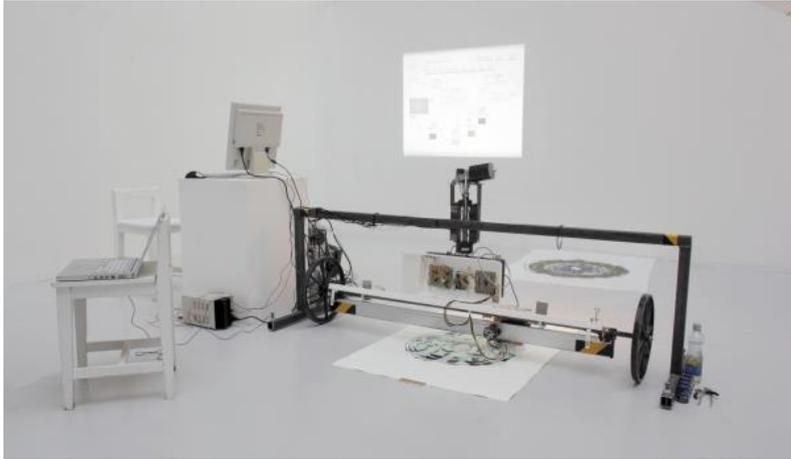


Figure: 3. Das Vegas “Metaphone”

Das Vegas is an artist, designer and researcher. Metaphone has been going through many various design iterations and been developed in several versions working with a few sensors, like microphone, EEG, GSR, HR, radio, blowing and control panel. Vegas increases the perceived humanizing technology and explores the connection between the human body and the machine from both scientific and artistic perspectives (Vegas, 2019). The interreaction consisting of mechanical and human body synthesis highlighted in the project is the humanization of technology. This mode of interaction between the body and the machine is clearly expressed by the fusion of heterogeneous elements in the installation. One of the arguments is the machine fed with biological signals, the other is the person strongly

affected by the machine. Human surrenders to the machine and allows it to control his experience through intimate interaction. The existing body and machine combination does not limit these two separately, but combines them into a single whole (Simbelis, 2018: 88).

It is being developed today in robotic studies that act and paint on their own, apart from machine-human association (Figure: 4).



Figure: 4. Ai-da Robot

In the beginning of June 2019, “Aida, considered the first ultra-realistic robot artist” was introduced. Its mechanical capabilities, combined with artificial intelligence-based algorithms, allow it to draw, paint, and even sculpt. It can draw people using its artificial eye and a pen in its hand. Aida's works and its first solo exhibition, “Unsecured Futures” were exhibited at Oxford University in July 2019. Aida has no real consciousness, thoughts or feelings. Nevertheless, the (human) organizers of the exhibition believe that Aida provides a basis for important conversations about the ethics of

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emerging technologies (Bildshahri, 2019). Robots also have their own advantages such as not getting tired, being fast, processing lots of data and memory capacity. While the hybrid approach is seen at the point of eliminating the lack of emotion and thinking states that are unique to the human, artistic productions are also tried with robots.

1.5. Generative Art

The word “generate” is used to mean “reproductive, pertaining to propagation”. The word “generative” meaning “productive” is formed with the suffix “-ive” which means “pertaining to, tending to; doing, serving to do” (Online Etymology Dictionary, 2019: web). Generative art can be defined as “any art practice in which the artist's natural language rules, computer program, machine or any invention that has taken some degree of autonomous action contributes to the completion or finalization of the work” (Güney-Uysal, 2019: 292) (Güney-Uysal, 2019: 292). Adrean Ward states that the generation process with digitalization is carried out by using computer or machine algorithms (Soban, 2006: web). Today, the development of methods and techniques used is expanding the field of production of generative art. Generative systems operate as an "independent organism" and interventions can also be made to these systems. "Curving Time" project of Ozan türkkan can be shown as an example (Figure 5).

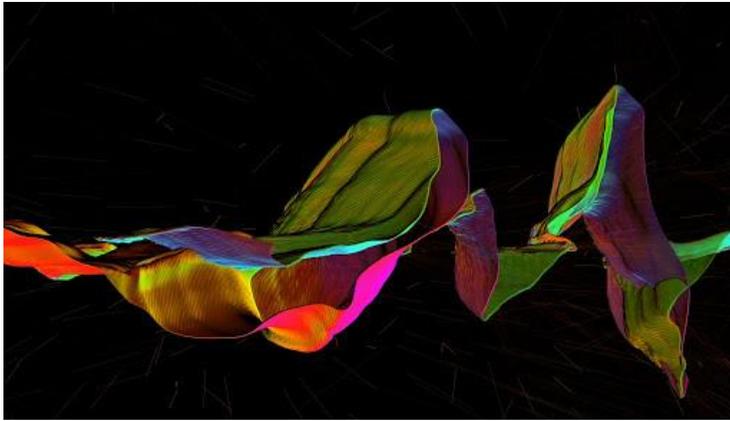
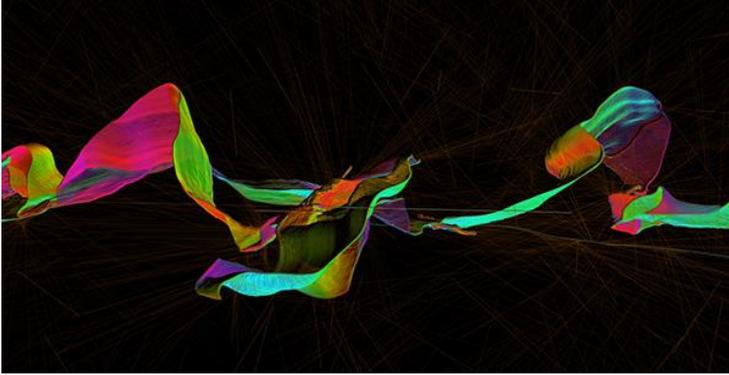


Figure: 5. Ozan Türkkan, “Interactive Touchs Screen Installation”

Interactive touch screen installation consists of one big Hi-Res touch screens and one mushroom-like red button. Interacting with the screen users can draw colorful curving lines generated by a software. It would work touching the screen or dragging the finger all over the screen. Since its generative software final result will be different each time. And the user starts the action but cant control the generative process Drawings may continue generatively eventhe user stop interacting with the screen (Türkkan 2019).

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The feature of this project is that the constantly changing artistic production also reacts to the touches. The system responds according to the touch and drawing movement of the person. In generative systems where initial values change, the process is irreversible and new artistic forms are created that are not similar to the initial values. While many unpredictable results occur in this process, it is seen that new searches / experiments have been carried out in which interaction can be made from outside.

Conclusion and Discussion

In post digital culture, the boundaries between virtual and real, machine and human are melting. In order to reveal the human side of the machine, there are tendencies towards seeking to benefit from disruptions by deliberate interventions, making mistakes. Software / programs in digital art broadened the artist's palette. It was tried to make pictures to robots or machines with artificial intelligence. In arts conducted with post-digital understanding, it is observed that conscious interventions and manipulations are directed. Algorithms that do not include errors in digital art, left their place to the mistake made by playing in the codes in post digital art.

The virtual has become an alternative to reality in communication models, socialization efforts, education, research, entertainment and games. It is obvious that virtual reality content, which replaces the virtual experiences with the display interface and provides experiences in the perception of a three-dimensional space, will cause more

questioning to real life. In the post-digital age, where the lines between virtual experiences and experiences in physical life disappear, artists perform these inquiries with the art of virtual reality.

Another feature seen in post-digital art is hybridization. In post digital art, human and nonhuman, living and inanimate or living organism and computation system are converted into a single system. Human beings have consciousness, emotions, inner intuition, freedom of choice and willpower. Digital technologies also have wider memory and processing speed. Robots / machines are not tired, bored and sleeping like human beings. It is thought that combination of robotic structures with superior human characteristics will have exciting results. In this context, based on human machine synchronization studies tend to increase.

Innovative production philosophy is the basis of generative art's sustainability with the transformations experienced from past to present. As time goes on, the production area of generative art expands with the development of the methods and techniques used. Generative art has displayed a completely different structure than it was in the past by shaping with the algorithms created in the environment shaped by new media technologies. In the post-digital age, where we stopped digitizing life and started to consider digital as life, the innovative production philosophy in generative art continues. Nowadays, productions that work like an independent organism that constantly change with algorithms continue its formation by reacting to external interventions.

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Every element that changes culture, every developing technology, every shaped dimension of perception has created new balance thresholds throughout history. With these formations, transformations in art have always been parallel from past to present. In the future, art will continue its course in parallel with these changes and developments. Future approaches have an organic connection with art. In this context, in order to be a step forward by creating new expansions rather than a follower, it is always necessary to think ahead while living the day.

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[https://en.wikipedia.org/wiki/Ai-Da_\(robot\)#/media/File:AiDa_Robot_at_Abu_Dhabi_Art.jpg](https://en.wikipedia.org/wiki/Ai-Da_(robot)#/media/File:AiDa_Robot_at_Abu_Dhabi_Art.jpg)

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