

A NEW DIGITAL ART GAME: THE ART OF THE FUTURE

Ieva Gintere

Vidzeme University of Applied Sciences, Latvia

Abstract. *The task of this study is to create an innovative digital art game of contemporary aesthetics on the basis of research. Research implies the analysis of digital art games and the historical background of their aesthetics, as well as their classification following the stylistic trends. Digital games have a great potential to integrate people into fields that would otherwise not meet their interest. The new game would develop the creative skills of players and teach them the current trends in digital art. The game would project the inheritance of art from the age of modernism into the digital world by teaching the player to recognize it (for instance, pixel aesthetics is a successor to cubism and constructivism). The new game will let its user play around with the trends in digital art such as vaporwave, glitch and others, and to create new ones. Thus, it would deal with the problem of knowledge cache and cultural segregation that characterizes modern art: being an esoteric subject to a great extent, it is difficult to access a large segment of the public. The aim of this study is to raise the interest of a wide-ranging public for contemporary art and to point out the newest creative tendencies in art. The paper presents an overview of digital art games, introduces a novel term, vaporwave, that has not been registered in the art game discourse so far, and offers an updated definition of the art game. The Design Science Research method is used in order to cross-cut such remote fields as the general public and the arthouse world, codes of modern art and the taste of the general public.*

Keywords: *art of modernism, digital art game, glitch, hacking, pixel aesthetics, vaporwave, generative art.*

Introduction

This paper is a part of cross-cutting research in the fields of digital art and ICT (information and communication technologies) product innovation. It examines the trends in modern art that were formed during the period of modernism and still constitute the basic trends of intellectual culture today. The research is aimed at finding a path to open up the cache of knowledge situated in the theory of modern art, and to incorporate the trends of modern art into the field of ICT. The focus of this research lies in experimental products such as gaming and eLearning (though eLearning is not outlined in this paper, see Gintere, Zagorskis, & Kapenieks, 2018). The goal is to transfer knowledge of modern art into the area of gaming, as well as to encourage the intersection of these

disciplines. Consequently, this research aims to create a new profile of products that would exemplify modern interdisciplinary and analytic thought.

The paper presents a classification of digital art games, the historical background of their aesthetics, and the art game concept. It summarizes the existing art game definition and updates it by adding the feature of coded messages to it. The theoretical basis of this research is rooted in the philosophical theories that explain the background of the art game discourse. The paper examines existing art games, their artists, and represents modern game theory. In the current game discourse, the games analysed in this paper do not always strictly belong to the art game field as it is still rather unformed: elsewhere, they have been called indie, ambient or activism.

This research introduces the novel term, vaporwave, in the art game discourse. Vaporwave is defined as the audio-visual Internet aesthetics associated with a satirical take on consumer capitalism, a nostalgic engagement with the popular entertainment and technology of previous decades. It incorporates early Internet imagery and late 1990s web design as well as symbols of leisure time. Vaporwave has only appeared in art terminology since the 2010s. It does not fit into the classification of art games according to their modernism heritage, however, it has been used in this study as one of the most current trends in digital art that is linked to the problems of modernism aesthetics.

The Design Science Research method is being used in this study in order to cross-cut such remote fields as the general public, the arthouse world, codes of modern art and the tastes of the general public. The Design Science Research method helps boost the efficiency and interest towards contemporary art games. It intends to integrate seemingly distant disciplines and seeks parallels in different areas in order to gain new knowledge and adapt fresh approaches. By finding common aspects in different areas, Design Science Research fuses areas and invites new trends into a research field (Pohl & Hadorn, 2007, 59). It creates new visions of handling problems in research such as the knowledge cache in the art of today. As Design Science Research is a method for the promotion of common good (Pohl & Hadorn, 2007, 21), it can make the modern art trends function in equal capacity for different social levels regardless of the art education of the player.

Arts' language with its intuition-based and creatively irrational approach can help to open new horizons in gaming. Modern art theory and gaming can be linked as related areas consequently moving contemporary art closer to the general public, and games can integrate the ideas of modern art into the lives of a wide-range of players.

The task is to create an innovative digital game of contemporary aesthetics. Its title is undecided yet; the project is in progress. The player of this new game will be able to create his/her own visual and acoustic environment using the

current trends of digital art inherited mostly from modernism: such as, glitch, pixel aesthetics, hacking, vaporwave, generative art. While activating the respective trends in the palette of effects, the player will meet their historical antecedents. The game will familiarize the player with the historical context of the current language of digital art as well as invite him/her to form individual artefacts. The game would raise the interest of a wide-ranging public in contemporary art and point out the newest creative tendencies in art. On a larger scale, this research intends to describe the language of art in the nearest future and thus to foresee the monetary value of the art of tomorrow.

Concept and Classification of the Art Games

Work on the new art game will be carried out in a collaboration of two Latvian researchers, Dr.art. Ieva Gintere (Vidzeme University of Applied Sciences) and Mag.art. Kristaps Biters who is a game artist. The game is being created in the framework of a Post-doctoral research led by Ieva Gintere (see Acknowledgments).

In the contemporary New Media art world, interactivity plays a dominant role. Historically, it is linked to the term “death of the author” invented by Roland Barthes in the 1960s (Barthes, 1984, [1968]). Modern artwork functions in the realm of its user – reader, spectator, player. The author creates an environment, an artistic matrix and steps back. It is the user who takes over the control of the work, assigns individual meaning to it and treats the material according to one’s taste and experience. Many digital artworks carry the idea of the activity of the user.

As interactive media, digital games have a great potential to integrate people into fields that would otherwise not spark their interest. The new game would develop the creative skills of players and collect the results of play forming a database of artefacts that will lead to scientific conclusions about future art. At the same time, the game would project the inheritance of art from the age of modernism into the digital world by teaching the player to recognize it.

This research follows the German Bauhaus tradition in the sense of integrating modern art and aspects of everyday life. Modern art theory comprises an intellectual cache – a specific, highly intellectual capital of knowledge – that can be used for activating art games. In the new game project, the trends of modern art are a tool for supporting art gaming.

The art of modernism will be used in the new game for education purposes to make them live outside the realm of self-aimed art. Regardless of the intentions of Bauhaus artists, the movement Pattern & Design, constructivists and postmodernists such as Daniel Buren, contemporary art still is self-aimed to a large extent as it was cultivated in the period of modernism. It was a highly

specific niche art that rebelled against the consumption of art and stated that arts' only purpose is art itself: art for art. Being interactive, the art of today intends to be closer to the general public, however, it is often self-aimed and without any practical purpose.

The Latvian digital artist Gints Gabrāns (b. 1970) has created a net-art piece named SAN (2017) that serves as an example of this “pure art” in Latvia today. Using digital devices people can see a projection of the SAN digital sculptures on Latvia's landscapes and cities (Gabrāns, 2017). The piece demonstrates the situation of art inherited from modernism: the piece offers the aesthetic feeling, the sensual experience of virtual and augmented reality. Although it has an interesting technical dimension and shows a relatively new approach to art, the piece is not oriented towards new knowledge and skills of the user but is largely aesthetical. In addition to the aesthetic dimension, the new art game would integrate the mind of the player into conceptions of art, letting them think about their history, understand the offspring of modernism and fantasize over the future forms of art.

The term art game (also known as artgame, arthouse game or artist game) was introduced by Tiffany Holmes in 2003. She notes that it “challenges cultural stereotypes, offers meaningful social and historical critique, or tells a story in a novel manner” (Holmes, 2003, 46). Apart from originality, critical thinking and reflection (Díaz & Tungtjicharoen, 2015, 4), other features of an art game have been underlined in game theory such as small teams of artists, the non-commercial character of the game, a short format, and a poetic idea (Chen & Michael, 2005, 225; Parker, 2014, 141).

Historically, art game lies in a framework of art theory of modernism starting with cubism, dadaism and other avant-garde movements and continuing in a post-modern scope. The works are often coded by nature as they are conceptually non-transparent according to the classical definition of the code (Eco, 1988, [1971], 28). The contemporary artwork is usually intellectually loaded and requires the spectator to be immersed in its historical and conceptual context. It is most likely not understandable at first glance. It only reveals itself to its audience when sufficient information has been gathered and the audience learns to read it as a semiotic phenomenon. In other words, the artwork is coded (Paul, 2003, 51; Gintere, 2017, 435). This is an important feature of art games that needs to be added to the existing definition. Art game sometimes encompasses a semantic vertical of ideas, so it functions not only on the aesthetic level, but largely in the conceptual dimension. It has a theoretical context rich with cultural references. The aesthetics of art games is a capital of coded ideas that can be fully grasped after studying their heritage.

To resume the definition of the art game, it is a form of digital game that is characteristic of critical thought, reflection, small teams of artists, the non-

commercial character of the game, a specific, anti-mainstream visual style, a short format, a coded and poetic idea. Art game can be conceptual by nature, it encompasses aesthetic approaches such as vaporwave, pixel, hacking, glitch, and generative art. An important feature of art games that needs to be added to the existing definition is the coded message.

For instance, the game *The Artist is Present* (Barr, 2012) is coded or kind of speaks in a foreign language. At the first glance, it is semantically opaque: it is not constructed like a regular game. To understand its idea, one has to “read” the reference to the postmodern theory, to the relational aesthetics that treats art as a space of human relations (Bourriaud, 1998). The game is inspired by the performance artist Marina Abramovic and depicts her famous work of the same title (2010, MoMA) where she sits motionlessly at the exhibition hall and maintains eye contact with visitors sitting individually in a chair in front of her (Parker, 2014, 188). The game implies the philosophical question about the author’s presence in his/her art and his/her control over it.

The existing art games are classified in this study according to their cultural heritage, mostly from the art of modernism of the 20th century (see Fig. 1). Some of the games can surely also fall under two groups like the games by Jodi that meets the criteria of glitch aesthetics and hacking. There are games that do not quite fit into those groups, however they need to be mentioned here because of their original artistic expression, these are *Samorost* (Amanita Design, 2003), *Limbo* (Playdead, 2010), *Mountain* (David O’Reilly, 2014), and *Everything* (David O’Reilly, 2017). The study goes beyond the inheritance of modernism as it includes the fifth trend, vaporwave, one of the newest and most interesting tendencies in contemporary digital art that has remained under-examined in the context of game studies.

Art games could be classified according to the existing principles offered by several researchers, although those models are not created for art games in particular. For instance, there is the multi-dimensional model of classification where games are grouped by aspects of representation, teleology and others (Elverdam & Aarseth, 2007). Games can also be classified by function: avoid, shoot, match (Djaouti, Alvarez, Jessel, & Methel, 2008). Other groups of researchers introduce a game typology by their type of gameplay, purpose, thematic field, or audience (Djaouti, Alvarez, & Jessel, 2011). Nevertheless, those models do not take into account the historical context and aesthetic dimension. In this study, art games are classified following their stylistic qualities, and their historical heritage.

Table 1 Classification of art games

Type of aesthetics of the art games	Examples of the art games
Glitch	The Unfinished Swan, Untitled Game, Error City Tourist, Memory of a Broken Dimension
Pixel	Flywrench, Nidhogg, Passage, The Pyramid Gate, Every day the same dream, Fotonica
Hacking	The Intruder, Super Mario Clouds, [domestic], Nude Raider I & II Patches, RetroYou R/C, Cities in Flux, SOD, Atari Noise, QQQ
Vaporwave	Sunset, Bientôt l'été
Generative art	Bellwoods, Diablo

Glitch is one of the main features of the art games. It is a form of artistic expression that originally means “the digital tick caused by a lost or incorrect binary code” (Kelly, 2009, 6). The term has been used widely to signify various forms of disturbances for artistic purposes of the digital media like audio, video, software, images, and others. Glitch is historically rooted in the tradition of deformation. It has a theoretically loaded background that recalls at first the ancient thought of Plato who argued in his Republic (Book X, 598a) that artwork is always an imitation, a secondary product and it cannot reveal the truth concealed in the metaphysical substance (Plato, 1968, 280). The aesthetics of modernism has followed these philosophical settings by showing that art is always artificial: it cannot and should not depict the realistic order of the world. On the contrary, art has to do with artificial forms. Art should not copy the visible but refer to the abstract meaning of metaphysical reality and invite us to reflect upon metaphysics.

This understanding of the function of art led to the turn of aesthetics at the end of the 19th century. Vincent Van Gogh and Paul Cézanne among others started to paint a deformed reality. Cubism, dada, futurism and many other trends represent this tendency as well. Deformation is one of the basic means of expression in the art of modernism, and it keeps being topical in the art of the 21st century in terms of the aesthetics of failure, viral aesthetics, glitch and noise.

The new art game that is being created will incorporate glitch to a great extent as it is a crucial trend of digital art and the mission of this game is to transfer the knowledge of contemporary art. In the area of games there are several examples representing this tendency, starting from a slight deformation of the visual image and ending with glitches of software: The Unfinished Swan (Giant Sparrow, 2008), Untitled Game (Jodi, 1996), Error City Tourist (Strangethink, 2016). A player of Memory of a Broken Dimension (Hanson-White, 2015) finds himself in a distorted area in black and white, filled with shattered objects. Jodi is a famous collective of artists (Joan Heemskerk and Dirk Paesmans) working with

glitch most currently. Their *Untitled Game* is based on glitches in the software for aesthetic purposes (Paul, 2003, 201).

The next visible tendency of digital art is pixel aesthetics that uses a digital image with low resolution (pixel is the smallest union of colour that a screen can display). Emma Grahn in her article *Modern Pixel Art Games* mentions mosaic, beadwork and cross-stitch embroidery as antecedents to pixel art (Grahn, 2013, 6). Pixel aesthetics is an obvious successor to modernism, its precursors are cubism, constructivism and *De Stijl* where geometric shapes were a dominant means of expression. Simple geometric forms still are a classical value topical in digital games as well. Geometry embodies simple, universal beauty, and metaphysical order. See, for instance, the wonderful game *Monument Valley* (Ustwo Games, 2014).

One of the most visible artefacts of Russian constructivism in the 1920s was Tatlin's tower (1919-1920) though it was never built. Also, suprematism flourished in Russia at that time with the famous *Black Square on A White Surface* (1915) by Kazimir Malevich. A chrestomatic example of cubism is *Les Femmes d'Alger (O. J. R. M.)* (1907) by Pablo Picasso where he used quadrangles and triangles instead of curved lines to draw bodies. The Dutch *De Stijl* movement also worked with pure geometric forms during the 1920s.

In the art games area, there are a lot of examples representing the tendency to use the pixel style. Namely, games by the artist Mark Essen or Messhoff – *Flywrench* (Messhoff, 2007), *Nidhogg* (Messhoff, 2014) – and *Passage* (Rohrer, 2007), *The Pyramid Gate* (Strangethink, 2014), *Every day the same dream* (Molleindustria, 2009), *Fotonica* (Santa Ragione, 2011), not mentioning the widespread use of pixel aesthetics in mainstream gaming like *Crossy Road* (2014), *Angry Birds* (2014) and *Flappy Bird* (2013). The prominent game artist Pippin Barr expresses himself very commonly in pixel aesthetics. The *Artist is Present* and many other of his works exemplify this trend. Games he creates show a simple design and ascetic environment. Although the new digital possibilities allow artists to create graphically smooth images, many of them still choose the old-school style of pixels nostalgically referring to the first videogames and the inheritance of modernism.

The so-called “hacking” is one the most visible New Media art trends. It is actively used in art games such as *The Intruder* (Bookchin, 1999), *Super Mario Clouds* (Arcangel, 2002), *[domestic]* (Flanagan, 2003), and many others. For instance, *Super Mario Clouds* is a game cartridge hack, a modified version of the famous videogame *Super Mario Brothers* (1985). The artist erased almost all of its graphics leaving a blue background with white clouds slowly moving on the screen.

Hacking is an anarchic trend with a tendency of crossing the red lines of the accepted behaviour. It enters the space of another work by breaking its original

identity, inventing new accents. The aims of hacking are nevertheless ethical: its goal is the liberation of the art world from conventions, a constructive criticism of values and lifestyle, searching for new horizons in the existing entourage of art.

The history of hacking goes back to Marcel Duchamp's and Robert Rauschenberg's classic works where they dare to intrude into pieces of other artists in order to create new ones. Duchamp used a post card with Leonardo's Mona Lisa painting and hooliganistically added a moustache and a beard to it (L.H.O.O.Q, 1919). Rauschenberg in turn used a drawing by his colleague Willem de Kooning, erased it and treated the traces of the drawing as his own artwork (Erased de Kooning Drawing, 1953). Those examples illustrate the tendency of contemporary art to rebel against conventional practices in culture and a wish to assign equal rights to every creative process. Robert Nideffer created a significant game referring to Duchamp's hacking precedent. His *Nude Raider I & II Patches* (1999) is a modification of the game *Tomb Raider* (Core Design, 1996) where Nideffer bestows the female protagonist of the game Lara Croft with a moustache and goatee (Pearce, 2006, 76).

Some of the game artists have used hacking to remake the mainstream action games and to turn them into art that reminds one of the paintings of modernism. For example, the author of *RetroYou R/C* (1999) Joan Leandre turned the car racing game into a visual experience close to abstract expressionism. Also, *Cities in Flux* (Sheely, 2010) glitches and distorts the original game's world in a stylistic of abstract art (it is a modification of *Grand Theft Auto: San Andreas*, 2004). Thus, art game today stands for changing the existing stereotypes in the area of games and intends to fill the gap between art and consumer culture. Other games of this direction are *Untitled Game* (Jodi, 1996), *SOD* (Jodi, 1999), *Atari Noise* (Constantini, 1999), and *QQQ* (Betts, 2002).

There is one more group of games that needs to be mentioned because of its' important role in the aesthetics of digital art. The group is called ambient games and they are connected in this research with vaporwave aesthetics. Ambient games are close to art games because of their original visual style and poetic idea like *Flower* (Thatgamecompany, 2009), *Journey* (Thatgamecompany, 2012), *The Endless Forest* (Tale of Tales, 2005), and others. These examples are not an obvious inheritance of modernism on a visual dimension, however they show an interesting turn of art after the fall of modernism. These games can be characterized by a pleasant atmosphere that is one of the most exciting problems of late 20th century art.

Modernism was not concerned with pleasure and relaxation. It was largely focused on the sublime aesthetics described in Immanuel Kant's *Critique of Judgment* (1790) and reinterpreted by Jean-François Lyotard in the context of modernism (Lyotard, 1988, 26). The art in modernism is not agreeable and calming, it is rather unpleasant. Lyotard says, its aesthetics are negative.

Following Kant, in order to experience sublime feelings, the visual object should not be enjoyable (Kant, 2006, 105). The sublimity fits with the downcast eyes: it is not our body with its capacity to see, but our mind that can fly in the sublime height. If the vision is being tempted by wonderful sights, the mind cannot focus on the metaphysical dimension. That is why visuality in modernism is not beautiful, but most likely weird and edgy.

In contrast to this, the 21st century digital arts' vaporwave style is oriented towards light pleasure and relaxation just like the above-mentioned games. Conceptually, they circulate about the same idea as vaporwave does: spending leisure time, enjoying the hours out of work. There are examples like *Sunset* (Tale of Tales, 2015), (Fig. 2) and *Bientôt l'été* (Tale of Tales, 2013) showing the typical attractive colours of vaporwave and its' calm, melancholic atmosphere. They also embody the Kantian aesthetics of beautiful (Koc, 2017, 67) reinterpreted in a curious way. Kant places the sublime higher than the beautiful by saying that our feelings for the beautiful are weak in comparison with the intense experience of the sublime, and one's mind is not engaged while contemplating the beautiful. Vaporwave uses these light emotions, it signifies something nice, pleasant and irrational.

Vaporwave emerged in the early 2010s in music. It appropriates smooth jazz, lounge and other "vaporish", light styles of so-called mood music. In the visual field, it uses fetishistic symbols of spare time of the era of capitalism like night life, lighted skyscrapers and exotic trips with rooms in chic hotels and beaches for hardworking people. It plays with the images of computers and phones to mark the presence of digital technologies. Also, it expresses self-irony admitting its own superficiality, and there is a sort of melancholy, a longing for real feelings and the past. With some antique statues and elements of the Greco-Roman building's vaporwave reminds viewers about classical aesthetics: the ancient understanding of aesthetics is a sensation that has been lost in the era of capitalism. Vaporwave embodies a longing for the old experience of deep emotions lost in favour of busy weekdays and prosperity. It plays with the very first models of digital technologies like Windows'95 to express longing for past times, accompanied by melancholic blue and violet neon lights.



Figure 2 *Sunset, screenshot* (www.tale-of-tales.com)

There is one more aspect of art game that is in the focus of this article: the generative art. It is a direct successor of modernism art, and will form the stylistic palette of the new art game. Generative art (also called genart, g-art) is based on the principle of self-organization. It refers to artwork that is partly or fully created autonomously, out of the total control of the author. In digital art, generative artwork is drafted by the author but further implemented by a technology so that the author can even be unaware of the outcome in detail. Certainly, this principle was already well-known before the birth of digital technologies. In the basic structure, it reminds one of gardening where after planting a seed one cannot precisely determine how it will proceed (Toop, 2001, 242). Creation in generative art refers to the conceptual position of Dadaism during the era of modernism. Dadaists argued that the role of the author has to be diminished. The most interesting art, they stated, occurs when the author loses his authoritative role. He creates a structure and watches how the work lives its own life. In favour of innovation, Dadaists also glorified a mechanical creation when there is a ghost in the machine that creates an artwork instead of a human. Another precursor of generative art is the fluxus movement of the modernism era. The conceptual piece by John Cage 4'33" (1952) is a chrestomatic example of fluxus that shows the basic idea of generative art. Cage drafted the structure of the piece and left it open to interpretation for the audience so any sound that occurred in the concert hall was considered suitable to form the piece.

In the digital art game field, there are several wonderful works where one can see the biological principle of self-organized growth and that of randomness which characterizes generative art. Bellwoods (DesLaurier, 2018) is a vision of a meadow with small white birds and a flying kite that is occasionally colliding with the grass. The image changes constantly as if growing, colours are altered

periodically. Diablo (Weavesilk, 2013) surprises the player with an image of a demon that grows magically in bright neon colours and endless variations (Fig. 3). Alison Mealey has chosen to base her work Unrealart on the computer game Unreal Tournament (1999, Epic Games, Digital Extremes). Mealey lets virtual players play the game with generative strategy and uses the data from the games to produce abstract drawings (she uses the game's movements in the drawing process in an external program).



Figure 3 Diablo, screenshot (www.weavesilk.com)

To resume, this study underlines the aspect of historical heritage in the modern art game theory. The new game will incorporate the historical antecedents of art games and other media of art such as paintings and music. Likewise, it will keep the structure of art games classification model envisaged in this article in order to show the most visible aesthetic trends of the art games to the player. Consequently, the new game will be based on the results of this research and carry out the knowledge transfer from the field of research to the player.

Conclusions

The new art game that is being supported by the European Regional Development Fund is innovatory because of its features that existing art games do not offer. At first, it is a research-based game with a historical context that would teach the player to recognize the current trends in art and the ancestors of aesthetics of art games. Secondly, the new game eventually implies a database that collects the artefacts – video materials, screenshots and other results of the activities of players. The collection of artefacts will be used for drawing scientific conclusions about the art tendencies in the near future.

The new art game will refine the skills of players and stimulate their creative forces. There are games like Art Game by Pippin Barr that places the player in the

role of contemporary artist, however Barr's Art Game puts an emphasis on the narrative, but our new game will emphasize self-expression and the transfer of knowledge. The new game is based on scientific research about the aesthetics of digital games: it shows the connection of modern art trends with gaming, it contains classification and analysis of existing art games and their theoretical discourse. The study goes beyond the inheritance of modernism as it encompasses the trend of vaporwave, one of the newest and most interesting tendencies in contemporary digital art.

Summary

The paper presents a classification of digital art games, the historical background of their aesthetics, and the art game concept. The paper discusses the most prominent art games and represents modern game theory. It introduces the novel term, vaporwave, in the art game discourse. Vaporwave is defined as the audio-visual Internet aesthetics associated with a satirical take on consumer capitalism, a nostalgic engagement with the popular entertainment and technology of previous decades. Vaporwave has been used in this paper as one of the most current trends in digital art that is linked to the problems of modernism aesthetics.

In the contemporary game discourse, the definition of art game can be updated as follows. Art game is a form of digital game that is characteristic of critical thought, reflection, small teams of artists, the non-commercial character of the game, a specific, anti-mainstream visual style, a short format, a coded and poetic idea. Art game can be conceptual by nature, it encompasses aesthetic approaches such as vaporwave, pixel, hacking, glitch, and generative art. The study updates the definition of art game by adding a feature of a coded message and determines its aesthetic scope.

The new digital art game that is being created will incorporate the modern art trends topical in digital art today, and a current trend in art called vaporwave. The new art game will make the contemporary art trends function in equal capacity for different social levels regardless of the art education of the player. Thus, the trends of modern art are a tool for supporting art gaming while they are meanwhile being imported to a socially wide-ranging territory of players.

Acknowledgements

This study has been supported by a grant from the European Regional Development Fund (ERDF) research "Leveraging ICT product innovations by enhancing codes of modern art" No. 1.1.1.2/VIAA/1/16/106 within the Activity 1.1.1.2 "Post-doctoral Research Aid" of the Specific Aid Objective 1.1.1 "To increase the research and innovative capacity of scientific institutions in Latvia

and the ability to attract external financing, investing in human resources and infrastructure” of the Operational Program “Growth and Employment”. Homepage of the research: <http://va.lv/en/research/research/leveraging-ict-product-innovations-enhancing-codes-modern-art>.

A related research supported by the Valmiera City Municipality “Analysis and supply of socio-technological opportunities provided by 5G technology for the development of smart cities and research projects” (no financial support for the respective research).



NACIONĀLAIS
ATTĪSTĪBAS
PLĀNS 2020



EIROPAS SAVIENĪBA
Eiropas Reģionālās
attīstības fonds

IEGULDĪJUMS TAVĀ NĀKOTNĒ

References

- Chen, S., & Michael, D. (2005). *Serious Games: Games that Educate, Train and Inform*. USA, Thomson Course Technology. Retrieved from https://anagroudeva.files.wordpress.com/2013/06/serious_games__games_that_educate__train__and_inform.pdf
- Barthes, R. (1984, [1968]). La mort de l'auteur. *Le bruissement de la langue. Essais critiques, IV*, 63-69.
- Bourriaud, N. (1998). *L'esthétique relationnelle*. Dijon: Les presses du réel.
- Díaz, C. M. C., & Tungtjitharoen, W. (2015). Art Video Games: Ritual Communication of Feelings in the Digital Era. *Games and Culture*, 10(1), 3-34. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.913.1814&rep=rep1&type=pdf>.
- Djaouti, D., Alvarez, J., & Jessel, J.-P. (2011). Classifying Serious Games: The G/P/S Model. *Handbook of Research on Improving Learning and Motivation through Educational Games: Multidisciplinary Approaches*. DOI: 10.4018/978-1-60960-495-0.ch006.
- Djaouti, D., Alvarez, J., Jessel, J.-P., & Methel, G. (2008). Towards a Classification of Video Games. *International Journal of Computer Games Technology*. Retrieved from http://www.ludoscience.com/files/ressources/aisb07_towards_a_classification.pdf.
- Eco, U. (1988, [1971]). *Le signe*. Brussels: Labor.
- Elverdam, & Aarseth, E. (2007). Construction Through Critical Analysis. *Games and Culture*, 2(1). Sage Publications. Retrieved from http://nideffer.net/classes/270-08/week_05_design/classification_and_design_aarseth_elverdam.pdf.
- Gabrāns, G. (2017). *Interview*. Riga, 04.11.2017. Recorded by I. Gintere.
- Gintere, I. (2017). Codes of Musical Modernism and Latvian Contemporary Music. 4th *International Multidisciplinary Scientific Conference on Social Sciences & Arts SGEM*, 1(6), 435-442.
- Gintere, I., Zagorskis, V., & Kapenieks, A. (2018). Concepts of e-Learning Accessibility Improvement – Codes of New Media Art and User Behavior Study. *10th CSEDU International Conference on Computer Supported Education*, 1, 426-431. DOI: 10.5220/0006787304260431.

- Grahn, E. (2013). *Modern Pixel Art Games: A Study in GUI Aesthetics for Modern Pixel Art Games*. Blekinge Tekniska Högskola. Retrieved from <https://www.diva-portal.org/smash/get/diva2:832803/FULLTEXT01.pdf>.
- Holmes, T. (2003). *Arcade Classics Spawn Art? Current Trends in the Art Game Genre*. Melbourne DAC Conference. Retrieved from: <https://web.archive.org/web/20130420092835/http://hypertext.rmit.edu.au/dac/papers/Holmes.pdf>
- Lytard, J.-F. (1988). *Le postmoderne expliqué aux enfants*. Paris: Éditions Galilée, 23-32.
- Kant, I. (2006, [1790]). *Kritik der Urteilskraft*. Hamburg: Felix Meiner Verlag. Retrieved from https://beckassets.blob.core.windows.net/product/toc/9023287/9783787319480_toc_001.pdf.
- Kelly, C. (2009). *Cracked Media: The Sound of Malfunction*. Cambridge, Massachusetts: the MIT Press.
- Koc, A. (2017). Do You Want Vaporwave, or Do You Want the Truth? Cognitive Mapping of Late Capitalist Affect in the Virtual Lifeworld of Vaporwave. *Capacious: Journal of Emerging Affect Inquiry*, 1. Retrieved from <http://capaciousjournal.com/cms/wp-content/uploads/2016/12/koc-do-you-want-vaporwave.pdf>.
- Parker, F. (2014). *Playing Games with Art: The Cultural and Aesthetic Legitimation of Digital Games* [PhD thesis]. Toronto: York & Ryerson Universities. Retrieved from https://yorkspace.library.yorku.ca/xmlui/bitstream/handle/10315/28164/Parker_Felan_S_2014_PhD.pdf?sequence=2&isAllowed=y.
- Paul, C. (2003). *Digital Art*. London: Thames & Hudson.
- Pearce, C. (2006). The Aesthetics of Play. *Visible Language*, 40(1). California: Rhode Island School of Design. Retrieved from <http://www.intermass.com/files/pearce.pdf>.
- Plato, (1968). *The Republic*. USA: Basic Books. Retrieved from http://www.inp.uw.edu.pl/mdsie/Political_Thought/Plato-Republic.pdf.
- Pohl, Ch., & Hadorn, G.H. (2007). *Principles for Designing Transdisciplinary Research*. Munich: Oekom Verlag.
- Toop, D. (2001). The Generation Game: Experimental Music and Digital Culture. Cox, C., Warner, D. (eds.) *Audio Culture: Readings in Modern Music*. London: Continuum, 239-247.

Ludography with Visual Presentations

- Amanita Design (2003). *Samorost*. Retrieved from <https://www.youtube.com/watch?v=VfsM0Zq5Pgs>
- Arcangel, C. (2002). *Super Mario Clouds*. Retrieved from <http://collection.whitney.org/object/20588>
- Barr, P. (2012). *The Artist is Present*. Retrieved from https://www.youtube.com/watch?v=V5eANXQI_RA&t=170s&frags=pl%2Cwn
- Betts, T. (2002). *QQQ*. Retrieved from <http://www.nullpointer.co.uk/content/qqq-2/>
- Bookchin, N. (1999). *The Intruder*. Retrieved from <https://vimeo.com/30022802>
- Constantini, A. (1999). *Atari Noise*. Retrieved from <http://www.atari-noise.com>
- DesLaurier, M. (2018). *Bellwoods*. Retrieved from https://www.reddit.com/r/javascript/comments/9fn3hw/bellwoods_a_generative_art_game_in_less_than_13/
- Flanagan, M. (2003). *[domestic]*. Retrieved from <https://www.youtube.com/watch?v=gRZBBA1HWsk>.

- Giant Sparrow (2008). *The Unfinished Swan*. Retrieved from <http://www.giantsparrow.com/games/swan/>
- Hanson-White, E. (2015). *Memory of a Broken Dimension*. Retrieved from https://www.youtube.com/watch?v=6G_IU51K1E8
- Jodi (1996). *Untitled Game*. Retrieved from <https://vimeo.com/89343205>
- Jodi (1999). *SOD*. Retrieved from https://www.youtube.com/watch?v=24KQiy0U_Uk
- Messhoff (2014). *Nidhogg*. Retrieved from <https://www.youtube.com/watch?v=8g9yqq7Np6k&frags=pl%2Cwn>
- Messhoff (2007). *Flywrench*. Retrieved from https://www.youtube.com/watch?v=Imt3lfa_tm8
- Molleindustria (2009). *Every day the same dream*. Retrieved from https://www.youtube.com/watch?v=LX0_xwtsZ7U
- O'Reilly, D. (2014). *Mountain*. Retrieved from <https://www.youtube.com/watch?v=N6dxrPLl9dQ>
- O'Reilly, D. (2017). *Everything*. Retrieved from <https://www.youtube.com/watch?v=JYHp8LwBUzo>.
- Playdead (2010). *Limbo*. Retrieved from <https://www.youtube.com/watch?v=wUc7hQvBdNs>
- Rohrer, J. (2007). *Passage*. Retrieved from <https://www.youtube.com/watch?v=n3o0HFXPfc0>
- Santa Ragione (2011). *Fotonica*. Retrieved from <https://www.youtube.com/watch?v=abxd5d0MEM0>
- Sheely, K. (2010). *Cities in Flux*. Retrieved from <https://www.youtube.com/watch?v=HQgRiulcBQc>
- Strangethink (2014). *The Pyramid Gate*. Retrieved from https://www.youtube.com/watch?v=_UDj2leok3o&list=PLlxZek2EIxklJBAG1tot-MRwc5Bkuda5S&index=11&frags=pl%2Cwn.
- Strangethink (2016). *Error City Tourist*. Retrieved from <https://www.youtube.com/watch?v=bDBYYGQtXAM&index=4&list=PLlxZek2EIxklJBAG1tot-MRwc5Bkuda5S&frags=pl%2Cwn>
- Tale of Tales (2005). *The Endless Forest*. Retrieved from <https://www.youtube.com/watch?v=vaB0XquLW7U>.
- Tale of Tales (2013). *Bientôt l'été*. Retrieved from <http://tale-of-tales.com/bientotlete/>
- Tale of Tales (2015). *Sunset*. Retrieved from: <http://tale-of-tales.com/Sunset/>
- Thatgamecompany (2009). *Flower*. Retrieved from <https://www.youtube.com/watch?v=s1oZnf3475c>
- Thatgamecompany (2012). *Journey*. Retrieved from <http://thatgamecompany.com/journey/>
- Ustwo Games (2014). *Monument Valley*. Retrieved from https://www.youtube.com/watch?v=wC1jHHF_Wjo
- Weavesilk (2013). *Diablo*. Retrieved from <https://www.youtube.com/watch?v=qDDJw9iIPgQ&frags=pl%2Cwn>