Artificial Life: Virtual Reality and Multimedia Associated Design Experience

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Article Info	*Abstract*
	Computer technology has revealed serious transformations on communication-based relationships over the past years. The development of artificial intelligence enables the phenomena of human-made design worlds to be followed in many areas such as cinema, advertising, photography, fashion, architecture and textile. Graphic is a line/drawing activity that has existed in an effort to exhibit nature as an extension of human endeavor and to reproduce what belongs to nature and human as a part of nature. In this context, graphic and design elements ranging from simple lines to complex shapes are used in various branches of art and scientific pursuits. Especially with the development of computer and internet technologies, visual designs for the 'virtual' have come to the fore. These productions observed in every moment and area of life, it almost offers clues to a simulation world and a living space. Artificial life, which is about human beings, presents humans and exhibits utopian narratives, is a time-space design that points to the manifestation of reality in the imaginary, although it emerges from the imagination of human beings. This design is the practice that emerges with the combination of graphics and multimedia, and the developments related to this practice are discussed in the study, new media technologies and the use of these technologies, and a proposition for future life practices has been developed.

Introduction

The message, which constitutes the essence of communication, constitutes the most basic tool of the togetherness of human beings. The simpler the message, the clearer and within the framework of common reference, the more possible the agreement will be. While the message developed for a specific purpose consists of a symbolic expression, it gains the feature of being common from the moment it is developed and shared. The interaction may gain intensity and/or lose its intensity depending on the symbolic power of the expression. Since the first day of existence, human beings have been learning, knowing and developing based on what they know. While each learning, technique and technology precedes it, the human mind tends to continue to produce.

Signs and symbols are prominent elements in human relations. Language, words, numbers, pictures, etc., as a means of common agreement. visuals can be listed as a few of the many narrative forms. While the sign represents the existing, it also reveals the relationship with the existing. Human, as an entity in an effort to make sense of his life and relationships, carries out his transfer to future generations through this system of meanings. In many fields, the cumulative knowledge of humanity can be recorded and analyzed on an ongoing basis. "A difficult challenge would be to create a system that could generalize and 'understand' what makes an image visually successful, and even generate other images that meet these learned criteria" (Sims, 1998: 92). Graphic and design applications that use human-made signs and symbols have played a leading role in the processes of self-expression, transferring to future generations, making sense of life and artistic narrative and reproduction until today.

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It is possible to talk about many application possibilities of artificial intelligence in the context of computer graphics and animation studies. Many application options, such as making use of existing objects, developing new objects, distorting objects, and spatial and temporal positioning of objects, shed light on the developments in the field. "Procedures could be evolved that generate motion from a set of rules (possibly cellular automata, or particle systems), or that control distributions and characteristics of 2D objects such as lines, solid shapes, or brush strokes. Algorithms that use procedural construction rules to create 3D objects from polygons, or functions that generate, manipulate, and combine geometric primitives could also be explored" (Sims, 1998: 91). While artificial intelligence and virtual reality technology enable users to experience artificial life in the context of getting the feeling of being 'there' or being in an environment different from the environment they are in, in essence, it is a three-dimensional (3D) computer product that allows or forces them to interact with this virtual environment. It is nothing more than an image. "According to Pérez Martínez (2011), VR helps to improve people's life quality in various fields of their daily activity, including science. In the case of behavioral sciences, the use of this technology has been varied—it has been used for data collection, self- monitoring, and immediate feedback for the users. However, its use has been limited in most cases, to the presentation of tasks on a computer screen with the main goal of getting the automatic record of the participant's responses, usually given through a mouse, a keyboard, or game control" (quoted by Rangel Bernal, Pérez Negron and Jesús Torres Ceja, 2020: 2). Artificial life offers the opportunity to interact directly through the use and means of augmented reality tools (glasses, helmets, gloves and even suits, etc.) and transforms virtual reality into a laboratory environment in applications. Thus, virtual reality is included in human life as a reality fiction design that includes visual, auditory, tactile and odor-based sensory stimuli designed to create a sense of reality in the user.

Virtual Reality: Designing and Applying

Design constitutes the essence of man's production world. The design, which seems to have become ordinary in the modern age, is reflected in all works touched by human hands, revealing an artistic vision. It is possible to find traces of design, which has a direct relationship with culture, in all human practices. Although there is no consensus on the meaning of the concept of design, "the most obvious reference point of design is fashion, interior design, packaging (packaging) where the concepts of form (form) and style (style) are temporary and highly variable, and in the absence of general rules, individual taste levels are valid) and for areas such as automobiles" (Heskett, 2002: 10). Contemporary design practice can be handled in a very wide scope from clothing to food and beverage, architecture and decoration. In this context, design can be expressed as a set of distinctive signs and symbols that are unique to human beings.

The design has an impact on everyone who is exposed to this production rather than the one who is produced. The ability to design is at the core of human existence and manifests itself in countless ways. "Design history can be more appropriately defined as a process of stratification, in which new developments are added over time. Moreover, this stratification is not only a process of accumulation or agglomeration, but also a dynamic process of interaction in which each innovative stage changes the role, meaning and function of what is at hand" (Heskett, 2002: 17). Although there are transformations in the technological, sociological and cultural context, the activism of design continues, although the tools and methods change in parallel with this change.

The transformation of design with computer technology has paved the way for graphic design studies to be transferred to the digital environment. The predecessors of virtual and artificial world fiction are important representatives of utopian life fiction. Cyber life fiction will help to keep track of digital lives produced through digital applications. "All these computer graphic artists are undoubtedly proof of the vitality of design that should be sought where there is life" (Weill, 2006: 126).

The combination of 'computer' and 'cyber' has opened up new worlds before humanity. "Virtual reality, a term coined by computer programmer Jaron Lanier in 1988, has been used to describe a variety of

methods for turning computers into something other than glorified typewriters. The phrase conjures up images of people plugging into their computers with display goggles and interactive controllers that allow them to experience and move within artificial environments in ways similar to -or utterly different than- those of the real world" (Grady, 2003: xi). The virtual world, in which smart technologies are based on the fiction of 'reality' and 'visuality' as an indicator of their unlimited dominance over the world, has become the artificial reality of today, while it was once a utopia for humanity. "Today, the new products of developing technology continue to feed people's interest in the real and the unreal through the need for entertainment, education, culture and defense" (Ferhat, 2016: 725). Reality is reflected in virtual worlds, similar to the reflection of the human body in the mirror. "The concept of pictorial truth refers, first of all, to truth in the sense of seeing the world as it really is. We speak of pictures – sights, views – opening up before us. In the spirit of common-sense realism, I will argue in the first section of the paper that those pictures very much tend to be veridical. In the second section, I will assume that we can also speak of pictorial truth in the sense of correct depiction, that is, resemblance" (Nyíri, 2017: 51). The transition from material existence to reflection in the mirror has become possible with the technology of the current century. This virtual environment in which communication processes are transformed is neither the opposite of reality nor the reality itself. "With the advent of new media technologies, the virtual refers to a spatial experience that promises "to transform interpersonal communication to the very extent of our imaginations. […] VR will eventually provide the means by which interactants will transcend the real and create communication environments that are hyperreal" (cited from Palmer 1995, Aczél, 2017: 30).

Virtual reality, which emerged through the world of video games and entertainment as an application area and became widespread in many areas, continues to develop as a computer-aided and user-based application practice today. "Virtual reality is a simulation model that allows its participants to interact with a dynamic environment created by computers that feels real" (Bayraktar and Kaleli, 2007: 2). Electronic commerce sites have started to include virtual reality applications predominantly. "The rapidly developing global competitive conditions make it attractive for new approaches that will allow better communication with customers and respond to their needs more quickly. More importantly, in an era where everyone is talking about speed, quality, agility and customer satisfaction, virtual reality is an important potential that can be used in reshaping manufacturing processes" (Bayraktar and Kaleli, 2007: 4). The entertainment world is the sector where these technologies, which are increasingly reflected in every part of life and find application areas, are most widely used. "Beatles member Paul McCartney is one of the first musicians to enter the world of virtual reality. A 360° VR camera specially designed by Jaunt was used in McCartney's "Live and Let Die" concert held at San Francisco Candlestick Park on November 20, 2014" (Ferhat, 2016: 739).

Virtual reality, music, painting, dance, education, health, etc. It is a designed space that can be used for various purposes, similar to many environments. Virtual reality offers humanity the experience of living in almost any animated cartoon environment. While performing many practices, the individual gains the ability to develop the foresight of possible alternatives to live in the virtual environment. Virtual reality environment, in short, is a set of applications developed through computer technology. "By making data and programs accessible in the form of three-dimensional (3-D) worlds that are directly present to the senses and to navigation we propose -for the first time- to make the computer adapt to the human. Homo sapiens are inherently three-dimensional creatures: From the moment we first lie on our backs in our cribs we learn to reach and grasp and manipulate objects in a 3-D space. From the moment we first begin to crawl and later walk we learn to navigate and locate things in a vast 3-D space. These interactions are so deeply wired into our brains that we often cannot imagine the world any other way" (Cadigan, 1993: xiv).

Virtual reality (VR) is a computer simulation application based on graphics and design that creates an image of the world on an individual's senses that appears as they perceive the real world and physical reality. "In order to convince the brain that the synthetic world is authentic, the computer simulation monitors the movements of the participant and adjusts the sensory display or displays in a manner that

gives the feeling of being immersed or being present in the simulation. Concisely, virtual reality is a means of letting participants physically engage in some simulated environment that is distinct from their physical reality" (Craig, Sherman and Will, 2009: 1). Virtual reality, which is constructed through internet-based technologies, is an environment where people can get involved, present the phenomenon of being in real life, and share their experiences. What is meant here is virtuality, the process of re-experiencing reality, and the world witnessed and interacted with in this process is quite artificial. "Design of VR and multimedia interfaces currently leaves a lot to be desired. As with many emerging technologies, it is the fascination with new devices, functions, and forms of interaction that has motivated design rather than ease of use, or even utility of practical applications" (Craig, Sherman and Will, 2009: 1).

Virtual reality experience addresses one or more senses of the person experiencing this environment through synthetic stimuli. "Computerized virtual reality is a visually and spatially designed, photorealistic space each frame of which requires 80 million 'polygons' (three dimensional objects which are created out of many two-dimensional figures amidst straight lines). For the illusion of motion at least ten frames per second should be created with the above visual potential" (Aczél, 2017: 31). A typical VR system specifically encompasses visual and stimuli. In addition, skin feeling and force feedback, collectively called tactile sensation, can be applied. Vestibular (balance), olfactory (smell) and taste (taste) senses are also among the VR senses referenced. "There are many specialty hardware devices involved in bringing the rendered sensory images to the user from the proper perspective. A familiar VR visual display device is the head mounted display (HMD)" (Craig, Sherman and Will, 2009: 2).

The concept of 'cyberspace', which is frequently used in the terminology of virtual reality technology, is that people in different physical locations in a spatial context can interact with the use of intermediary technologies as if they were physically close. "Within this historical context the image was interpreted as something that can captivate the viewer who can then become enthralled by its power, for the power of the image seems to come from its ability to acquire the properties of that which it represents" (Chan, 2014: 40). 'Telepresence' means virtually placing a participant in another location where they are not physically present. 'Augmented reality' (AR) provides the user with a modified view of the real world. These technologies, which focus on the visual sense, give the user the opportunity to see behind the walls, which is not possible in real life, and to easily overcome these sets, etc. It offers many conveniences, increasing their attractiveness. "Virtual reality offers the opportunity for new modes of interaction not previously available with traditional computing systems. While offering new possibilities, a downside is that there is no established set of conventional idioms. Often interaction styles are borrowed from two-dimensional user interfaces. For example, pull-down menus can be imported into a three-dimensional virtual World" (Craig, Sherman and Will, 2009: 27).

In the virtual environment, the user wants to intervene through augmented reality tools by taking advantage of environmental factors. The individual, who is willing to transform the fictional environment he is in and interact with objects and other users in this environment, will increase his ability to intervene as he adapts to this environment. "In many cases, the process of selecting an item may be incorporated directly into the manipulation process. For example, moving a box might be performed by touching or pointing at the box, pressing a button, and then moving the hand that is making virtual contact with the box" (Craig, Sherman and Will, 2009:30). The experience and the manipulated element based on this experience can be an object of the virtual world or a feature of the general virtual reality system.

Artificial Life and User Modelling

Artificial life fiction cannot be considered independent of user modeling. When the user model is mentioned, the user(s) involved in artificial life and the personal characteristics of these users -related to their environment- come to mind. "Whilst developments in digital imaging techniques such as 3D

film can be regarded as attempts to increase the realism and immersive qualities of the cinematic experience, they do not offer opportunities for interactivity" (Chan, 2014: 28). Modeling users in a virtual environment is basically based on the purpose of transferring real-world activities to artificial life. This modeling attempts to reveal user-based real-life thinking and behavior design. A simulated activism is an extension of man's desire to reveal his relations with objects and other living things and to present artificial life in the representation of reality. "I believe metaphor, functioning as metaphor, functions because it conjures up images. Metaphoric language cannot be reduced to non-metaphoric language because the visual foundations of thinking actually cannot be eliminated. Sacrificing images would amount to sacrifice truth. As I have suggested by way of introduction, it is the image that serves as the fundamental vehicle of truth" (Nyíri, 2017: 55). In this context, actions and/or operations performed as representations of reality are carried out in accordance with certain conditions created within the environment-time-space fiction. Artificial life is based on 3D applications of basic graphic design and is capable of developing complex relationalities - skill and behavior based - to give the user the ability to interact in virtual environment(s). "In this sense, the importance of user modeling lies in the fact of being able to create and modify a conceptual representation of the user, that is, to personalize and adapt the virtual environments according to the internal needs of the users. With this, it is intended to implicitly include the skills and declarative knowledge of each one of the types of users within the virtual system" (López, et al., 2020: 27). In this framework, User Centered Design (UCD) techniques are used in user modeling processes in order to include a large number of user types in more usage contexts in virtual environments. User-Centered Design focuses on the design and development processes and essentially tries to optimize the usability of the system. "Adapting a virtual environment to achieve the maximum degree of efficiency in the development of tasks or processes requires structuring of the contents of the environment in such a way that it meets the usability, accessibility, and user adaptability criteria" (López, et al., 2020: 28).

Multi-sensor systems multimedia variants are used in the reveal of the application. Numerous media processing devices produce output through audiovisual models. Moving images, text and graphics are revealed in high resolution; speakers also provide speech, sound and music output. At the heart of hardware rendering devices are software drivers. These provide device and storage facilities. "The design space of multisensory interfaces consists of several interactive devices; furthermore, interfaces are often distributed on networks. Although the software and hardware architecture is not the direct responsibility of the user interface designers, system architectures do have user interface implications. The more obvious of these are network delays for high bandwidth media such as video" (Sutcliffe, 2003: 6).

The personalization of the virtual environment gains importance in the context of its relation to reality. The designed appearance of the virtual environment and its functionality in the context of users depend on adapting it according to the tasks undertaken in that environment, existing values, cultural patterns and basic needs. User-oriented customization and interaction development processes are generally based on the common aspects of users as well as age, residence, culture, occupation, etc. organized in the context of demographic data. This dynamic structure varies according to the interests of the users. The user's willingness to be included in the virtual environment is made possible by personalized application options. Individual behavior and interaction styles play a guiding role in practices developed by using knowledge based on systematic thinking and observation. Getting to know the individual and the community of individuals closely will enable to make predictions about their attitudes and behaviors. In artificial life, environmental fiction and design are carried out based on human behavior, and the individual is actually directed to behave within the framework of existing life patterns. "The interaction with computers should be as natural as possible, and we, as users, tend to expect that computers to react and behave as human beings would. So it is of utmost importance that computer applications are able to interpret and simulate emotions in a natural way. One of the tools provided by computational science, that allows us to model the approximate reasoning mechanisms that humans use, is fuzzy logic. However, few research works have been carried out on the use of fuzzy

logic to model and simulate emotions. The most important models turn out to be too theoretical and fail to put forward a way to combine emotions with moods and personality traits to obtain an even more complex and realistic emotional simulation" (Julca, Me´ndez, and Herva, 2020: 91).

Graphics, art and design as a human-specific communication and narrative style express the cultural coding of culture. The design, which includes everything that can be seen, should also include the nature and environment in which man exists. "Throughout history and in different cultures and societies alternative realities have been explored in a variety of ways through incantations, meditation, prayer, dream states, hallucinogenic plants and drugs. In visual culture, the use of perspective, anamorphoses and Trompe L'Oeil paintings produced the illusion of three dimensions on a two-dimensional surface" (Chan, 2014: 35). The visual is anything produced or created by humans. "In visual culture, what is visual is what can be seen and has a functional and communicative purpose… Both graphic design and product design, for example, are visual and contain a communicative or functional purpose" (Barnard, 2010: 31).

Conclusion

When the traces of historical and cultural productions are traced, it is possible to reach many evidential works. As a result of a small-scale travel in the historical process, "the first thing that human beings will see will be various examples of our current culture; cities, art, religions, weapons, health systems, political systems, music, seven thousand different languages and powerful information technologies" (Marina, 2022: 13). 'Invention' and 'design' are indispensable elements for people who have to live together. It is mostly irrational behaviors that pave the way for the development of a person with reasoning ability. The human mind produces ideas, images, emotions, and this constant state of production plays a transformative role in life practices. Computer-based developments, the access and interaction possibilities offered by the network structure of the internet and an artificial life fiction on this mouth structure are also an extension of the extraordinary production mechanism of the human mind.

The concept of virtual commonly corresponds to 'digital', 'cyber' and 'simulated' within the framework of the possibilities provided by today's technologies. In this context, it comes to mind to reformulate the communicative processes, which are sometimes short-lived and often endless and intense, through numbers and codes. From this point of view, virtual means technological imagination, which enables the formulation of new, completely different fields for and through individual and collective actors. Virtual reality (VR), which is reproduced and refers to the artificial, is a simulation technique in which reality is transferred to the digital environment as a "computer-generated illusion". "Virtual reality comprises of spaces, each of which "is a hybrid of technical, social and economic practices" (Kuksa– Child 2014: 4). In terms of mediation, virtual spaces perform the highest form of immediacy, that is, the absence of the perception that there is a technology (interface) that mediates. In VR there feels to be no interface with which mental absorption of the human agent may be technologically reflected or the physical body objected. VR offers the experience of a physical and psychological involvement in a simulated and dynamic (because of feedback loops) world" (Aczél, 2017: 31). With this aspect, virtual reality has the real-time communication potential of new media. In the context of its user-based fiction, it appeals to holistic sensations in which digital simulations are heavily formulated. Belonging, existence, senses and feeling and artificial life reveal sensory, cognitive and emotional functions in the individual. "In many ways, digital code does appear to be the fundamental building block of life in contemporary culture since it is embedded into the operation of various technological products and services. But we need to be wary of cyber totalism, especially when this becomes a dominant ideological position which discounts other ontological or epistemological viewpoints and explanations about reality" (Chan, 2014:18).

The human mind continues to produce with free thinking and unlimited imagination. "Form an to be free, he must experience and maintain inner freedom, that private psychological space in which man

may become and remain 'himself' " (Fore, 1970: 46). Although the development of technology and its infiltration into all life practices of human beings play a transformative role in the way of thinking, they will not be able to prevent unlimited imagination. Inspiration that stimulates creativity and results in intense activity is reflected in the final product, causing designers to discover new forms or thoughts (Ambrose and Harris, 2010: 209). Art and design, emphasizing the deep-rooted relationship between man and the world he lives in, is the living proof of man's adventure of transcending himself. Human fictional digital lives can also be imagined as an extension of this unlimited way of thinking. The design, which is conditional over time and is the representation of a certain historical way of thinking in history, presents the traces of the practice of continuous development and transformation even in the historical one (Fischer, 1993: 12). It would be a correct proposition to state that design and the ability to design, which is almost as old as humans, will continue to make history as the basic phenomenon of constructing the world of tools and objects.

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