

Aestheticization of technology's: Mini review

Abstract

This essay seeks to emphasize the role of aesthetics within the context of progress in digital information technologies. When technologies reach a usability stage, they tend to stagnate and enter a process of self-reflection. Technological evolution finds a stability of operation that makes these technologies an object incorporated into our social and everyday behaviors. We will call this state of the aestheticization of technologies. In this state, formal elements from other technologies are aggregated into a single device. These couplings are crucial for the creation of new technological entities. So, in digital media, the idea of looking good is considered a status symbol. This changes how we do things and behave in a big way. This stability is temporary so that a new phase, another revolution can occur. This solution of technical problems internal to the device tends to optimize its most reasonable solutions, which will be seen here as 'aestheticization of technologies'.

Keywords: aesthetics in technology, information visualization, digital culture, aesthetics and artificial intelligence

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Introduction: visual interfaces

Technologies need a visual interface to be understood formally and semantically to become cognitively accessible to the user and applicability for their dissemination and sociocultural use. In this sense, some specific areas of computing, such as visual computing, play a fundamental role in the development of these technologies. This branch of computing was responsible for technological evolution in the way algorithms began to produce forms of simulation of natural phenomena such as smoke, fire, water, among others.¹ This change brought about by the algorithmic simulation of natural phenomena led to a revolution in the way reality began to be simulated and represented virtually.

On the other hand, technologies begin to investigate the human neural apparatus to develop computers and artificial intelligence. The first components of computational machinery were inspired by the way in which neurons in the human cortex fire their connections, initiating multidisciplinary research, and provoke a revolution in the way computers work, creating a new cultural paradigm. Many areas were involved in this revolution, linguistics, and mathematics to build a programming language, cognitive sciences to understand behaviors and translate them into binary code and so on.² At that time, the visual interface was a dream, but, with the advancement of technologies alone, in 1980 this became possible. Visual computing, the sub-branch of computational sciences that initiates intensive investigation into the visual cortex by providing a tool to develop algorithms creating "particle systems" such as smoke, fire, water and so on.

In this way, something different happens when an image emerges from data visualization, creation, synthesis image or captured from the real world on a technological device. Digital images displayed on a display, whether it be a computer or any other intelligent device, serve as an 'interface image', guiding the user towards specific operations suggested by the icon on the screen, facilitating navigation and comprehension of the actions it will initiate.

The presence of the graphical display interface allowed early computers to help users navigate functions that were driven by these icons. Which, at first, were simple black and white drawings on the screens of the first computers.

Information visualization and data visualization are terms used interchangeably, historically one precedes the other. However,

we cannot forget that information has always required a way of visualization like images in iconography and typography in writing.

The traditional way to visualize data involves points, lines and graphs to be quantified. Media visualization is a new paradigm of information visualization. Where large-scale visualization of visual data is enabled using interactive interfaces that allow diverse choices to be made by extracting visual data and choosing different visualization methodologies. This differentiates scientific visualization involving numerical data.³

In short, the aesthetic and visual perspective is a crucial way for human-machine empathy to occur. Throughout history, the way information is perceived is essential, both about technological evolution itself and regarding the human-computer interface that will promote more effective empathy.

Aesthetics as a paradigm for technical objects

Ethics was the first thematic branch of information philosophy to be associated with digital culture and artificial intelligence. However, technological devices have a moment of stagnation and operate only in the field of formal change and the internal solution in their functioning, optimizing them. This text seeks to introduce a reflection on this state of solving operational problems, defining this stage as 'aestheticization of technologies'.

If we consider digital pictures to be just a way to show information, we don't understand that artificial intelligence, like all living things, uses visual thinking to survive. Thus, we can begin to think that the aesthetic function in technologies is an essential condition that justifies and promotes their self-reflection and evolution.

Instead of evolution occurring from the abstract to the concrete, thus changing the entire technological paradigm. The mainstream of technology industries are used to renew technological devices. But, when these changes occur only in appearance without a real change in the scope of technological evolution itself, these changes occur only in the formal aesthetic scope. In no way is this aesthetic state in technologies neutral or devoid of real solutions that are true drivers of the solutions that will promote true technological revolutions. For example, at the beginning of the 21st century cell phones will begin, a process of aggregation of technologies, video, photography, telephone, computer, and internet will begin to amalgamate in a process that we call techno-hybridism.⁴

Therefore, by denying some types of technologies a real evolution, and rather, attributing to them only the condition of an economic event, the French philosopher Gilbert Simondon, proposed that technologies in their essence have two planes (here, as an analysis methodology, we will consider, a vertical plane 'abstract mode', where the technical object begins its evolutionary process to a horizontal plane 'concrete mode' where true technological advances would occur). However, these two modes do not have a hierarchy or difference in value; for the author in question, both are crucial phases for technological objects to evolve. In concrete form, technologies have a moment where advances would occur in terms of functioning where these devices would have formal solutions and optimization of functioning and would stabilize until a new evolutionary cycle.⁵

Therefore, based on these Simondian reflections, one of the focuses of this article is proposed – an aesthetic solution for technologies. In this temporary solution, the technological object continues to solve its aesthetic-formal and functional problems to generate new technological lineages. We could consider here the example of the emergence of smartphones. They were a revolution when they were implemented as devices that combined the mobile phone, the video and photography camera with the computer, the Web and social networks, changing our habits and relationships with the world.

However, they continue in a formal solution process such as size, image resolution, processing speed, adding new technologies such as biometrics, bandwidth, and processing power as well as other techno-hybrids – technological devices that fit into the context of the smartphone. All these solutions take place on an aesthetic-formal level. With the first smartphone, all solutions occur on a horizontal and therefore aesthetic plane. Will it remain as an aggregating device for other media and technologies, or will it evolve into something that we cannot yet measure? In my opinion, we will probably have a new revolution where this technological paradigm will be overcome. With the aggregation of neural processors and artificial intelligence, other actors begin to interact with the third order of technology. Today we could already say that the presence of the telephone in this device is of a corporate nature and, therefore, economical.

Other actants begin to act as modulators of a change that will begin to occur. Photography, video, and cinema start to work in smart mode. With the use of algorithmic film video-graphic simulation and electronic image scan line effects, various types of photographic film, cinematography, and video graphic effects give rise to smart photography.

Within this new perspective, sub-genres appear: smart videography and smart cinematography and smart photography. Complex artificial intelligence algorithms that simulate classic styles of photographers, filmmakers, and videographers already recognized and algorithmically embedded in these so-called smart devices. Which may be an indicator of a paradigm shift in this device. With the emergence of the metaverse that ranges from Web 3.0, augmented reality glasses, cryptocurrencies, blockchains and NFTs, both virtual existence and everyday reality begin to mix, where a new category of existence, the expanded experience, begins to dominate. Future scenarios of digital life and digital culture.⁶

This advent also seems to revolutionize our way of social coexistence and our existence in augmented reality. Therefore, in this new paradigm, the metaverse has a lot to resolve regarding its concreteness as an everyday device that will modify our conduct in the augmented reality universe. Therefore, these functional solutions will occur in a horizontal line, resolving usability and functional issues by operating technical-formal changes, that is, demand for aesthetic

solutions. As a result, these devices, such as 3D glasses, have always attempted to be incorporated into our everyday routines, but to no avail. Nowadays, the possibility of hyperrealistic images seems to be beginning to materialize in the metaverse, even though, with some problems to be resolved such as size, technologies to be coupled and usability – they therefore operate in the formal aesthetic field.

Ethics as a paradigm of the communication and information society

The information and communication philosopher Luciano Floridi⁷ will state that ethics is the great philosophical field of the 21st century, artificial intelligence must make choices based on ethics. With the need for philosophy to anticipate the ethical issues that emerge from the information and communication revolution. Thus, the philosophy of information and communication is the philosophy of our time and ethics is its field of investigation. If, for example, there is a decision to be made by artificial intelligence in the event of a collision between autonomous vehicles, who will survive? Just one passenger in an autonomous car or all the passengers in an autonomous bus? Thus, for the author, ethics is the major thematic area of current philosophy, if not the only one.⁷

For information ethics, moral action acts in recursive processing. The author focuses fundamentally on the reality character of information and its interactions with it, computational information and technology create new informational habits constituted by entities or informational agents, their properties, interactions, processes and mutual relationships. He will suggest three orders of technology: the first order would be when technologies are between human users and natural stimuli. Second-order technologies that relate humanity, technology, and technology. Second-order technologies are those that relate users no longer with nature, but with other technologies. And, finally, third-order technologies: Technology, technology and technology such as the 'Internet of Things', which exemplifies third-order technologies that work independently of human users.

As the story of the floppy disk shows, at some point it is easier to replace the entire system and change the paradigm, to put it more dramatically, than to continue improving one part of it. There is no point in having super powerful floppy disks if the millions of drives already installed are not up to the task of reading them. This explains one of the advantages of any technological leap: a subsequent technological entity does not need to deal with the legacy of any incumbent technological package (coupled first and second order technology) and is free to take advantage of the most recent advantages and innovative solutions.

Equivalent to an ecosystem, information ethics acts through a general environmental "ethics", a less anthropocentric concept, including non-human and artificial issues distributed in network entities. Less centered on biology, conceived as an ethical center of measures in any form of existence. In a more inclusive environment conception covering natural and artificial ecosystems.

He also emphasizes the existence of the artificial, more specifically, artificial intelligence as a crucial actant in the 21st century. Artificial intelligence has surpassed us with its super-cognition: we are no longer the only entities with intelligence on earth, we have been surpassed by artificial intelligence.⁷

The role of creation

Throughout history, artistic experimentation has proven to be a valuable place where technologies can advance. First, because they involve creative thinking to reconstruct technologies as a place of

aesthetic-philosophical reflection and what their function is in the world to evolve as an all. In the early days of discussions about technologies, visual arts occupied a prominent place. At first, with historical advents. For example, visual artists begin their experiments with techniques and technologies, when photography appears, its main function was to replace the painting and the painters; art loses its aura, and succumbs as a representation of reality. What was once the work of painters became a technical event through the photochemistry of the photographic image, which, in this period, represented an evolution in the way we represent the reality of the world. The Euclidean perspective also changes the way we perceive the world, with the advent of oil paintings and the frame painting the first mobility of images. Painting on canvas removes the image from its fixed relationship with the wall that characterized fresco painting.

In 1960, a convergent movement between all expressions of art began the succession of technologies called computational arts. Otherwise, technologies begin to investigate the neural apparatus of human beings to develop computers and artificial intelligence. The first components of computational machinery were inspired by the way in which neurons in the human cortex activate their connections, starting multidisciplinary research, causing a revolution in the way computers work, creating a new cultural paradigm. Many areas were involved in this revolution, linguistics, and mathematics to build a programming language, cognitive sciences to understand behaviors and translate them into binary code, and so on.²

At this time, the visual interface was a distant dream, but with the advancement of technologies alone, in the 1980s this became possible. Visual computing, a sub-branch of computational sciences, begins an intense investigation into the visual cortex, providing a tool to develop algorithms creating "particle systems" such as smoke, fire, water, among others.¹ It was with research in the field of visual computing that became possible with the development of human brain investigation devices based on neuroimaging, as well as facial recognition algorithms and vital signs with the intensive use of artificial intelligence.^{8,9}

Conclusion

In this sense, we propose a reflective analysis of the true role of creation and aesthetics in technological revolutions. Could technologies exist without aesthetic self-reflection? What is the role of creation and artistic experience in the field of technology and artificial intelligence? Don't work using immersive-participatory technologies

to present to viewers make these aesthetic user experiences crucial to mainstream technology? The conclusion of this essay suggests aesthetics as a second field of philosophy in the 21st century that deserves deeper reflection. Because it is what will give rise to evolution on the horizontal plane for technological objects. The formal solution in a given technological device will be the central point for it to change the paradigm, returning to the first abstract horizontal mode until the paradigm shift to the concrete mode. This cycle repeats itself from time to time with major technological revolutions.

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