

museums in
NETWORKS of development

Retell

Olira Saraiva Rodrigues



Olira Saraiva Rodrigues

is a professor and researcher at the "Interdisciplinary Postgraduate Program in Education, Language, and Technologies" at the State University of Goiás (UEG). She developed a post-doctoral fellowship at the "Department of Communication and Information Sciences at" the Faculty of Arts of the University of Porto in Portugal (FLUP). She developed a post-doctoral fellowship in "Cultural Studies" at the "Faculty of Arts" of the Federal University of Rio de Janeiro (UFRJ). OSR holds a Ph.D. in Art and Visual Culture from the Federal University of Goiás (UFG), a master's degree in Education from PUC-Goiás, and a degree in Literature from the State University of Goiás (UEG).

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PORTO | FLUP | 2024

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Cover: Carina Ochi Flexor
Final review: Olira Saraiva Rodrigues
Translation: Mariana Furio (Duda)
Graphic Design: Adriana Almeida (Pago por meio do Recurso financeiro proveniente do Convocatoria PrP/UEG Pro-Programas - n. 021/2022, Termo de Fomento/Compromisso n 15, processo SEI n. 202200020021048).

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Cataloging in Source
State University of Goiás
Central Campus Library: Anápolis

R696r Rodrigues, Olira Saraiva. Retell / Olira Saraiva Rodrigues.
– Portugal: University of Porto Faculty of Arts - University of Porto, 2024. 93 p. - (Trilogy: Museums in NETWORKS of development: Volume 1.

ISBN: 978-989-9082-95-3

DOI: <https://doi.org/10.21747/978-989-9082-95-3/ret>

1. Museological Institutions 2. Cultural Heritage 3. Museum – Scientific-technological development. I. Rodrigues, Olira Saraiva II. Title

CDU: 069.1

Prepared by Sandra Alves Barbosa – CRB 1 / 2659

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Preface

The warm color, the most intense of all, is identified not only by our vision but by our synapses. The trilogy *Retell*, *Entwine*, and *Detangle*, whose acronym refers to RED, is of similar intensity to the author who subscribes to them.

To scrutinize and cross the culture, Olira Rodrigues turns, stirs, and pokes, provokes twists and turns as she defends her readings about a time, the contemporary zeitgeist, linked to the museum, the object around which the three books orbit. **Museums in NETWORKS of development**, the trilogy, present themselves with the breath of an

epic, the epic of a thesis developed at the Post-Graduate Program in Art and Visual Culture of the Federal University of Goiás.

By inquiring, through her attentive gaze, about museums, their configurations, and reconfigurations, the author moves in time, in diachronic and synchronic observations, with particular attention to technology. In doing so, she distances herself from a mere relation of causality. She singularizes her discourse, instituting the polyphony of voices of time, spaces, and their objects, entangled in networks, implicated in moorings and liberties.

More than a reading about ways of retelling (Retell), interweaving (Entwine), and untangling (Detangle), the trilogy bends throughout the culture. It needs to be apparent motivations, densifications, and pulses.

The first volume, "**Retell: Museum in Evolution**" keeps an accurate seam about history, punctuating motivations, conceptualizations, and configurations of museums, from the Louvre and Smithsonian models to the most modern concepts of Atlas, the one that bears the weight of the world. Before

gaining time, the volume scrutinizes the space institution's formation and formal actions. This weaving results in a composition of diachrony that catapults the reader to the next book, "**Entwine: Networks**".

The second volume invites the reader into a weft, an amalgam of networks, systems, and rhizomes, whose flows, reflows, and reflexes suggest emergent technological links between humans and non-humans. The means have as a principle to reach the end. Although these wanders, intermingled with present and past, vectors that draw the imagined dazzle of the future crookedly.

And the end, at least of the trilogy, comes with the third volume, "**Detangle: Redesigning the Museum**". Here, the problematization is formed with a more excellent body, feeding on the previous volumes to analyze the anatomy of the present museum, its biometry, and its kinetic physiology. Spaces and times could summarize this foray, although one needs help to think of summaries of times and spaces. The volume provokes, like a storm that rages in the forest, new approaches to museums, redesigning songs, chants, and past

steps, traces of a future we stubbornly want to build, which we call Culture.

Cleomar Rocha

Presentation

Museums in NETWORKS of development

The relationship between the museum and the world has always affected human sensibility, and this affectation has intensified in contemporary times. While the future is imagination, the past glides in our memories, and we keep trying to fill our past narratives, making them unshakable over time. Museums contribute as guardians of the social past and go against the marks and consequences of the course of time. And, as subjects in this process, we are affected by this temporal storyline, appropriating a space in this world in the face of all temporal phases.

The trilogy **Museums in NETWORKS of development**, which arises from thesis research, leans on the potentialities of cultural environments, with the specificity in museums, after the establishment of modernity, a consequence of scientific-technological advances in the social context. As a fertile ground for studying social and cultural evolution, the museum slides in moving limits with the insertion of technology in an informational way, exposing poetics and aesthetics – sometimes materialized, sometimes projected in subjectivities – the discomforts and tastes of society.

It is worth clarifying that, in this trilogy, the museum is, in a broader sense, considered as a space for the socialization of knowledge, where one discovers, learns, expands knowledge, and deepens the consciousness of identity; and, in a more specific sense, a territory of interaction, facing sensations, ideas, and images irradiated by objects and referential.

Thus, the noun "museum" is identified as a space of interaction with the possibility of socializing knowledge and subjectivities. The characterization

of the study of museums, acquired in the expression "in contemporary contexts" – or it can be replaced by the temporal adverbial locutions "nowadays" or "in the twenty-first century" – indicates the material cut of the object of study, the period proposed for analysis, which qualifies a possibility of actions that go through formatting, connectivity, culture, and language studies, determined in a socio-communicational change of information flows and interaction.

The title of the trilogy, **Museums in NETWORKS of development**, enables a polysemic reading through various prisms: museums in networks, as well as the involvement of museums with network formatting, and even museums in reiterated development, following the changes arising from aspects of modernity. This writing indicates an expansion of museums in this sense in the face of numerous pointed indications. In a way, the research enables, in its evolution, the formation of a semantic context that leads to plural interpretative paths, such as the network conception itself.

The network formatting for museums formally indicates the contemporary context. The museological cultural institutions have reformulated their communication modes with new languages and forms of interaction – which sometimes incite strangeness – besides seeking to adapt to this cultural contemporaneity, updating their configurations with agglutinating ways. Thus, flows and relationships are fundamental to tracing museums in a network.

The trilogy is composed of the first volume, "**Retell: Museum in Evolution**", which describes the historical path of museological institutions. The second volume, "**Entwine: Networks**", proposes a study of network museological configurations. It describes the structuring of museums by nuclei – independent of the area category – from art museums to science museums, morphology, anthropology, natural history, and scientific museums, among many others. Although there is a space for discussion regarding evolution, in which art museums are highlighted, the trilogy in question is not restricted to studying the networking of art museums, thus covering all other species. Finally, the volume "**Detangle: Redesigning the Museum**"

concentrates on notes on the distance between theory and practice, verifying a gap between intention and action.

The three volumes – **R**etell, **E**ntwine, and **D**etangle – form the acrostic RED, like the color in English, in a sense of passion for the object of research, throughout its construction, symbolically with epistemic sacrifice (blood), for its exercise of hard work (fire) in analysis and reflection.

This exercise of interpretation of meanings made me feel like a researcher and an artist of this web that the work handcrafted entangled, given my background in Culture, Education, Language, and Technology.

Olira Saraiva Rodrigues

Presentation

Retell: Museum in Evolution

The volume "**Retell: Museum in Evolution**" is based on museological institutions, with historical punctuations marked by ruptures as a constant historical-social exercise. A historical path of the evolution of museums in harmony with scientific and technological advances in society is described starting with the creation of the Louvre in the 18th century and the Smithsonian Institution in the 19th century, with its characteristic of being inextensible. The book concisely presents a cross-section of the museum in secular periods from new experimentations. There is a unique approach to art

museums, starting from the historical process of museums starting substantially with this specificity.

The work reflects the Atlas Mnemosyne¹ project and the Hamburg Library, which also got its name from Aby Warburg's atlas². Warburg is portrayed by a fruitful ability to weave relationships into his accomplishments, whether in the library through the articulation of disciplines through the positioning of books or in the atlas with the images of the boards in dialogue. Early on, a notion of articulation in a semantic network.

The tension between memory and amnesia, as well as the articulation between past, present, and future times, are discussed in the light of Beiguelman (2014), Huyssen (1994), Chagas & Storino (2007) and Castells (2015).

The sense of a museum begins to be manifested with what Malraux (2013) understood as the imaginary museum, from the effect of photography in the mid-twentieth century, with its possibilities of registration and publication of works of art. In opposition to

1 79 panels, at the time, gathering about 900 images.

2 Aby Warburg (1866-1929) is known as the father of modern iconology (SAMAIN, 2011, p. 33).

this thought and contemporary to the literary work "The imaginary museum" (MALRAUX), the film "The statues also die" (MARKER & RESNAIS, 1953) decrees the fading of sculptures exhibited in museums in other space-time contexts of their creation.

In light of this contest, the development of the work allows for the opening of a range of complementary and conflicting thoughts concerning the authenticity of works of art amidst technical reproducibility, grounded in Benjamin (1996), Dubois (1993), Coelho (2015), and Arantes (2015).

The writing exposes the change of the contemplative subject, until the 19th century, who frequented museums, compared to the concept of *flâneur*, created by Benjamin (2006), as that passive subject who wandered among images, territories, and cultures, being replaced by the interactive subject in the 20th and 21st centuries, in which the museum becomes a territory not only of contemplation but of intervention.

Traces of modernity incorporated into museological institutions are analyzed through correlated and concatenated concepts, such as cyberception with

Ascott (2002), with the connectivity of telematic networks and new architectures, whose presences are distributed in physical and digital spaces, in a visible immateriality in its invisible construction; of contemporary art with Shanken (2009), defining as a hybrid in the field of contemporary visual poetics the centrality of technology and science to the practice of art and design (and vice-versa), opening new perspectives of creativity and invention, allied to the new generations of professionals in contemporaneity, with Domingues (2009), addressing the problematizing issue between the two physical and digital museum formats, and with Schneider (2015), with the integration of technology in museum institutions, facing the communication of Information Technology and preservation and restoration departments.

The analysis of traces of modernity continues through connectivity with Lévy (1999) because there is an incentive to go to traditional museums through the stimulus of personally examining the materiality of digitally disseminated works; of mobility with Lemos (2009), with the study of mobility culture as a characterization of contemporary places, producing connectivities,

viscosities, and social adherences; of interface with Rocha (2014), in which the author states that the technological revolution manifests itself from the development of interfaces and not with the development of systems, as many believe; of ubiquity with Santaella (2013), in the redefinition of notions of time and space, with the awareness of being in several spaces at the same time; and of network with Frieling (2014), Quaranta (2014) and Canetti (2014), considering that the interest in the new network proposal has driven a revolution, either in the form of organization or in the form of access on the system.

A narrative

The museum's evolution

This paper will focus on the characterization of museological institutions – non-formal educational spaces, open to visitation as spaces for preservation, research, and maintenance of cultural history – from historical points of view.

In much of human history, there have been changes in the scientific and technological field, intensifying scientific and technological interventions in society from the second half of the nineteenth century. According to Callon (2013), "modernizing a society would mean integrating itself into the world market by betting on science and technical progress" (p.

64). The entire modus operandi of contemporary society is found in science and, consequently, in one of its branches, technology, which becomes a specific feature of this culture. Given this premise, some scientific and technological advances have become notorious in the social scope.

Starting in the 15th century, a substantial factor in the Scientific Revolution that occurred in this period was the possibility of reproducing books with the creation of the printing press.

It was around 1450 that Gutenberg invented the movable type of press. This invention made printing thousands of identical copies of pamphlets and books possible. Before the end of the 16th century, millions of printed books were scattered throughout the Western world (Ribeiro; Chagas; Pinto, 2007, p. 31).

According to the authors, there was democracy in disseminating information and reaching new frontiers through informational dissemination in places that previously had no access, even though literacy was still a privilege of the minority.

Some examples of this revolution have flowed on a larger scale since then, as in the 16th century, with the vital aid of science for navigation;

according to Gurgel & Lewinsohn (2010, p. 107), "the naval technological progress that allowed the construction of caravels, among other vessels of greater or lesser size, occurred between the 15th and 16th centuries."

In the seventeenth century, Galileo Galilei's telescope resulted in a tremendous scientific question, whose theory of understanding the workings of the universe proved that the Earth was not its center, which coined a milestone in Astronomy by the considered scientific-technological innovations.

In November 1609, Galileo consummated a work that, for more than two months, took up almost all his time. That month, Galileo finished building yet another telescope (or lunette). It was the third telescope he built. It had a magnification of almost 21 times, much higher than his second telescope, which had a magnification of only eight times. Galileo made his famous observations with this instrument in late 1609 and early 1610, which practically confirmed the heliocentric theory (Las Casas, 2009).

Among so many developments, Chemistry presented a relevant development in the 18th century, distancing itself from Pharmacy and

Medicine. According to Filgueiras (2017): "the eighteenth century began with a more mature chemistry, distinguishing itself not only from the moribund alchemy as well as from that chemistry subordinated to medicine and pharmacy. Here one already sees a full-fledged science of nature."

The Industrial Revolution was made possible by this period's scientific and technological advances. Questions raised by Cavalcante and Silva (2011), in the introduction of "The importance of the industrial revolution in the world of technology", propose some reflections on the ballasts impregnated in a society of the industrial and technological revolutions. Among the questions are: "Were or are we slaves of capitalism? [...]; What are the two sides of the coin of these Revolutions?"

The first question comes from the historical factor of the passage from commercial capitalism to industrial capitalism, starting with the Industrial Revolution. What is in question is not the temporal questioning "was" or "are" but the characterization "slaves". Being dependent does not mean being enslaved. We depend on so much physiological care to continue vital signs, such as breathing,

feeding, and sleeping, that we do not become enslaved to them. The relationship with capitalism similarly traces a dependency factor in society.

The Industrial Revolution marked a whole of history as a great Technological Revolution, whose reflexes are lived until today, continuously, with the sensation of having no end. Science was institutionalized in the 18th century, and from then on, scientific-technological development occurred at a visible and disproportionate speed.

The 19th century was when technology spread with power to all areas that had not yet been reached, and technological development became an integral part of people's daily lives. One of this century's most important centers of scientific research was the Museum of Natural History in Paris, France.

Eric Hobsbawm (1995), in "The Age of Extremes: The Brief Twentieth Century", understands the twentieth century through the World Wars. In the work, technology is identified as an excellent war material of man against humankind itself, which made, in turn, the mere victims' targets in aerial

bombardments, depersonalizing them. Hobsbawm (1995) cites the Cold War as the Third War of the twentieth century, with the two great powers USSR and the USA, which, even without the actualization of war, due to the knowledge that there would be vast, mutual destruction, threatened a conflict armed with nuclear weapons.

Periods of war and technological insertion are congruent, and wars have constantly fomented the technological industry. Numerous examples, such as GPS¹, based on navigation systems, created and used in periods of World War II; digital cameras, based on spy satellites for Earth orbit, capable of capturing images of enemy territories, equipped with optical-electric cameras capable of transmitting images in digital formats; air traffic control, based on the first two-way radio communication in an airplane during World War I; the world's first electronic computer, developed during World War II, in the United States, but which was only ready during the Cold War, used basically for ballistic calculations; among many other technological tools used for war (Arruda, 2013).

1 Global Positioning System.

The historiographic literature shows that the evolution of technology was much more prominent in periods when man was at war. Thus, it is possible to infer that periods of war and scientific and technological development were inseparable, making the first a necessary condition for the progress of the second.

The wars also had repercussions on the emergence of several museums. For example, the Louvre, one of the world's leading museums in Paris, had its first collections, which resulted from looting during wartime. "Archaeological expeditions, *wars*, acquisitions, and donations have, over time, increased the museum's collection, which today has more than 400,000 pieces" (Oliveira, 2016, our emphasis).

In the 21st century, scientific-technological advances have spread and become integral to all segments of society. With a more restricted approach, museums have followed the social advances dictated by scientific-technological development. We will highlight, for now, some progress of museological institutions associated with scientific and technological advances.

The most incredible creation of museums that would serve as propagation models in Europe were in the 19th century, more precisely in the second half. However, the Louvre Museum, considered a milestone in the history of museums, was founded in 1793, in the 18th century. Initially, the museum recovered all the aristocracy and Catholic Church collections. The donated private collections were assembled into a piece of national furniture.

Thus, the museum's first director, Dominique Vivant Denon, started to build up the collection of the Louvre's holdings, also looking for various collections in other countries through confiscations. And according to Candido (2014, p. 34):

The model is encyclopedic, classificatory, and evolutionist. In addition to these benchmarks, museums of the nineteenth century, in general, were characterized by their location in large colonial metropolises, the profusion of references to territorial conquests, political power, scientific explorations, and aesthetic taste in tune with the representation of elites and their values. Many European museums significantly increased their collections this century through looting and goods transfers from their colonies worldwide.

The author refers to nineteenth-century museum models; however, the characterizations also engender eighteenth-century museums. With a general idea of a network, the Louvre Museum utilizes a composition within departments, such as Greek and Egyptian antiquities, among many others.

In museological cultural institutions, new formats emerged to follow the dictates of a society that continued to the modernity of the time. In the 19th century, the Smithsonian Institution Museum complex was created in Washington D.C. as the largest distributed museum model, composed of 19 museums and nine research centers. With this, the museum was articulated in a network, and this articulation was not limited to historical collections.

Such advances are translated into processes of rupture in which society is continuously involved. In this context, rupture is represented by cultural transgression and is defined by Rocha (2015) as routine.

While routine presupposes maintenance, the regular recurrence and rupture denote negation and breach. Transgression is an advance, a crossing, even if moved by subversion, which

is disorder or revolt. The rupture, as a break, can also be a transgression, a crossing. Culture is a sequence of transgressions and ruptures. In the end, *rupture is even a cultural routine* (Rocha, 2015, p. 03, emphasis added).

According to the author, ruptures have always existed, and change is a continuous social-historical exercise. Whether by transgression or subversion, ruptures are part of everyday cultural life.

As far as cultural transgressions are concerned, museums follow this vortex when they lose their characteristic of being considered only keepers of pieces of human interest. The museums created to safeguard the treasures of humanity behave in processes that sometimes are not amenable to this very guardianship.

There is an unresolved process of how the museum will store particular works, because many are more related to time than space. Museums have little affiliation with the arts, such as literature, theater, and music. When they do, they stick to records and traces, such as scenery, photographs, recordings, and rare books, seen as indices of history and not as aesthetic objects.

The work is not an object but an aesthetic action. A considerable number of artworks, to be manipulated, when kept, become imprisonment of the poetics of these authors. Also, museums are moving towards their specificities regarding their function and structure, which punctuates new conditions of being a museum, such as the networked museums, for example.

Traces and specific elements that form our past are the only elements that compose it. Historically, guardians of the past, but more than the cultural repository of all human work, they are also testimonies of the present, as present valuation, when defining substrates and approaches, besides new experimentations.

Thus, the identity crisis is installed as a discussion of museums and their relationship with time is instigated. In this way, museums begin to be questioned about their function as spaces that are not only created to keep the past but, above all, to project the future.

Museum, memory, amnesia

The word museum derives from the muse. Muse is semantically close to inspiration. By association, it is possible to arrive at Mnemosyne, which means the name given to the mother of the nine muses and the personification, in Greek mythology, of memory. Mnemosyne was also, according to mythology, the daughter of the lord of time, Cronos. The muses were also daughters of Zeus, an affiliation, demonstrated by Candido (2014), of the junction of memory (Mnemosyne) and earth (Zeus).

Hence the paradox that museums, so embedded in symbolic issues, are inexorably linked to material issues and to more earthly concerns:

from the fact that even the intangible heritage is represented in them by physical supports to the links with material costs and political conjunctures (Cândido, 2014, p. 27).

Mnemosyne was the name written on the entrance of the Hamburg library¹, engraved by Aby Warburg. Interestingly, all his artistic, linguistic, and historical knowledge made him organize his books by semantic proximity, providing a flow of thought and knowledge². Warburg was a visionary who did not establish boundaries between disciplines but rather links, questioning, and the ability to relate.

In this way, Mnemosyne is an encyclopedia of movements in constant wanderings through time, of tensions and other affections that inscribe themselves and inhabit the unconscious of collective human memory, like geological layers (Samain, 2012, p. 56).

Aby Warburg also carried out the Atlas Mnemosyne project, a methodological encyclopedia with immense documentary material. In the same way that he organized and cataloged the Mnemosyne

1 65,000 volumes.

2 This ever-moving and changing library was, in a sense, each day recreated and reinvented according to a principle that Warburg called the "Law of Good Neighborliness" (Samain, 2011, p.35).

library, he installed the boards and images contained in the Atlas Mnemosyne, without chronology or any other order, but in a dialogical manner so that the images could relate to each other in harmonies and confrontations. While the library provided a structural reading of Warburg's thoughts, the Mnemosyne Atlas visually read his ideas.

Warburg was an ideologue, for being a precursor of modern arts, whose works Mnemosyne(s) – library and atlas – prioritized memory through a network architecture with writings and images in flux and interaction in an interdisciplinary way.

Still, discussing memory and its antonym amnesia are pertinent when approaching museums of and in the future – dichotomous terms to study collections and preservation of works of art.

Andreas Huyssen (1994) states, in his article *Escaping from amnesia*, that “museums seem to fulfill a need anthropologically rooted in modern conditions: for it is they that enable modern people to negotiate and articulate a relationship with the past” (p. 37). Museums thus remain a field for reflections on temporality, identity, and otherness.

Museums are among the places that give us the highest idea of man, says André Malraux. They are windows, doors, and portals; poetic links between memory and oblivion, between the self and the other; political links between the 'yes' and the 'no', the individual and society. Everything human has space in museums. They are suitable for exercising thoughts, touching affections, stimulating actions, inspirations, and intuitions (Chagas & Storino, 2007, p. 6).

The museum treated by poetic and political links, by Chagas & Storino (2007), compatibility with what Castells (2015), in his article, "The museums in the information age: cultural connectors of time and space", assures:

Museums are repositories of temporality. They constitute an accumulated historical tradition or a projection of the future. They are, in this way, archives of human time, lived or yet to be lived, an archive of the future. Reestablishing temporalities in a long-term perspective is fundamental for a society where communication, technological systems, and social structures converge to destroy time by suppressing it, compressing it, or arbitrarily altering temporal sequences (p. 56).

For Castells (2015), the challenging role of museological institutions is undoubtedly the articulation between temporal modes, with the present's archives and the future's projections.

The experience articulated with the living culture is essential for museums to be spaces of communication of the human experience.

From the same perspective as Castells (2015), Beiguelman (2014) questions the retro *fever* and futuristic delirium that plague cultural life, in which memory has a preponderant role the question in the field of contemporary culture, although the interest in the museum and everything that denominates it is not current. Chagas & Storino (2007) state that:

Among the most different cultural and social groups, there is a clear need and a great desire for memory, heritage, and museum. This social phenomenon is not exclusive to the contemporary world, although it has excellent visibility in the contemporary world (p. 6).

However, for museums not to become obsolete and museum pieces, they must reinvent themselves so that they communicate. In short, they become cultural connectors.

Museum: a clash of metamorphoses

In André Malraux's "The Imaginary Museum" (2013), the author stated that "the museum is a confrontation of metamorphoses" (p. 10). For him:

Today, a student has the color reproduction of most of the masterpieces, discovers many secondary paintings, the ancient arts, the Indian, Chinese, Japanese, and pre-Columbian sculpture of the most ancient times, a part of Byzantine art, the romantic frescoes, the wild and popular arts. In 1850, how many statues were reproduced? Our albums found in sculpture - which monochrome reproduces more faithfully than it reproduces a painting - its privileged domain. One knows the Louvre (and some of its dependencies). Today, we have more significant works capable

of bridging the gaps in memory than a giant museum can contain (p. 13).

This determined the sense of the imaginary museum in the late 1950s and early 1960s in the 20th century. It is essential to consider the critical evaluation in another context since the work *Le Musée Imaginaire* (The Imaginary Museum) was written in the first edition in 1965.

In the sense of the imaginary museum, with the invention of photography in the 20th century, images of works of art acquired edges rather than dimensions and also lost their scale of size. After all, photographic reproduction meant that objects were reproduced in the same formats. A new relationship with the work of art. However, contrary to conjecture:

The framing of a sculpture, the angle under which it is admired, and, above all, studied lighting – the notable works begin to rival that of the great stars – often gives an imperious character to what until then was only suggested (Malraux, 2013, p. 92).

Malraux (2013) redefines the museum from the effect of photography with its possibilities of recording and publishing. Technological advances

at the time allowed the author to imagine the museum in a new relationship between the museum and the work of art, without loss between the context of creation and the utility of dissemination and even commercialization.

In the moving image, Marker and Resnais' perspective polemicizes the question of the image losing its reality in the film *Les statues meurent aussi* (The statues also die)¹ when they leave their historical-geographical, and therefore cultural, context. The film weaves a subtle criticism through a documentary about the presence of African statues loaded with meaning exhibited in European museums. For the filmmakers, the statues produced by African societies die the day they are cataloged and exposed to visitation. According to them, they die when statues become commodified objects from their original historical context – a political reflection between Western and African culture, with Eurocentrism.

1 This film corresponds to the same production period as "The Imaginary Museum", directed by Chris Marker and Alain Resnais in 1953.

The spatial context, Geography, is as essential to consider, as the temporal context, History, in museums since the sense of memory is imbued in these institutions. In opposition to the filmmakers' reflection, Malraux presumes that there is a work of updating in the face of the possibilities of meaning and reading that each object is metamorphosed due to the spatiotemporal context.

According to Malraux, with the advance of technology and utilizing photography, the museum modifies the works of art for exhibition value to the detriment of the cult value they once had. Cult value is understood as the aura of the work of art, that is, what makes it unique and, therefore, authentic, as Walter Benjamin (1996, p. 168) states:

The authenticity of a thing is the quintessence of all that has been transmitted by tradition from its origin, material duration, and historical testimony. Since the latter depends on the work's materiality, the testimony is also lost when it eludes man through reproduction. Undoubtedly, only this testimony disappears, but what disappears with it is the authority of the thing, its traditional weight.

The concept of aura allows us to summarize these characteristics: what atrophies in the age

of technical reproducibility of the work of art is its aura.

For Benjamin (1996), photography assigns an exhibition value to works of art, a reproduction that transforms it into a serial object. Therefore, the image no longer contains aura.

Similarly, in one of the epistemological positions of the documental value of the photographic image, Dubois (1993) "denounces this faculty of the image to make itself a copy of the real" (p. 53). For the author, the "image cannot represent the empirical real" (p. 53), even because there would be no reality outside the discursive contexts that speak of it, the discursive contexts in which it was conceived. In short, the image is (re)contextualized.

Approaching the thought of Benjamin (1996) and Dubois (1993), Coelho (2015) exposes in her report that more than caring about processes of saving works in digital devices and restoration of technological works is the record of the process of the work, the documentation of the details of the work. For the author, what matters is not the materiality of the work but the understanding of

the meaning of each element, the knowledge of the artist's purpose concerning the work, and its poetics. In short, the discursive context of its production.

Counterpointing Benjamin (1996), Dubois (1993), and Coelho (2015) in this regard, Malraux (2013) attributes to the imaginary museum a set of works that people can get to know and establish some contact with, even without going to a museum or knowing the artist's intention regarding the work, through reproductions and libraries. In this discussion, authenticity, reproduction, and the imagination in works of art in the face of photography and the press. According to Malraux (2013), topically, the museum would become public if everyone had access to its reproductions.

This thought follows the analysis of the imaginary museum by Malraux (2013), referring to the possibility of individuals having access only to photographed works without knowing them in person. As the author states, unlike the physical and traditional museum, the imaginary museum is a space that inhabits us much more than we inhabit it.

Still, regarding photography, Dubois (1993) states that if "the discourse of the 19th century about the photographic image is the one of similarity, it would be possible to say, always globally, that the 20th century insists more on the idea of the transformation of the real by the photo" (p. 36).

In this discussion of similarity and transformation of the real, Arantes (2015) brings an instigating need for a re/writing of history. The author presents a concept of balance that differs from a mimetic representation of the past but maintains fidelity to history in its reproduction. In summary, the re/writing of history only partially abandons the historical context or reduces the work to its context. However, it rewrites it today with echoes of its constitution, a differentiated repetition.

To repeat differently means precisely understanding the notion of a writing that, beyond the notion of identity and the idea of a pretended mimetic representation of the past, is seen as an action of difference production (Arantes, 2015, p. 34).

According to Arantes (2015), there is an incorporation of the past in the work of art as an archive, not in the representation of an inert

and fixed past, but of presentation through the production of different scriptures. The archive is alive whenever it is rewritten in constant processes of meaning constitutions. Therefore, the archive/reproduction process of the work is established through a rebirth.

For Benjamin (2006), contemplating the authenticity of an image is a way for humans to travel, to be a *flâneur*, perhaps, someone who positions himself between images, territories, and cultures.

In Benjamin's "Passages" (2006), the *flâneur* was considered the aimless wanderer in the city, the wandering wanderer who moved in the face of idleness and pure artistic contemplation. Perhaps this stereotype of the subject that wanders and simultaneously contemplates what he sees artistically comes closer to this new observer subject of the contemporary museums in both physical and digital spaces.

One of the defining characteristics of the 20th century that has intensified in the 21st century, reverberating in the cultural space of the museum, was the spectacularization of culture. According

to Cândido's (2014) analysis, "the museum is a fundamental part and its innovative and impactful architecture – as well as that of the great cultural centers – becomes a visual and symbolic landmark for cities" (p. 41).

The museum calls for new dimensions and formatting. The public is no longer passive, and the museum becomes dialogical, a space for social interaction with heritage. For the author, the museum space breaks with the physical walls, constituting a "territory of intervention" (p. 40).

The act of contemplation in museums, which marks, in a way, such places until the nineteenth century, has sought alternatives that glimpse other experiences in the twentieth and twenty-first centuries, now focused on participation and interaction.

Some decades ago, profound changes revolutionized Museology worldwide, and numerous international meetings have produced documents in which new concerns are identified, not only the material preservation of objects. Among these, one can highlight the social role of Museology, the need to integrate the environmental and cultural heritage, the importance of the museum's socio-educational

function and the stimulus for reflection and critical thinking, and the affirmation of the museum a means of communication. The museum is now understood as a space for social interaction with heritage, a broad concept considering many forms of realization.

This new experience brings a conceptual enlargement, a change in roles for institutions and society involved in this relationship, and a new reading for objects. Previously understood as a passive public, man is now taken as a culturally identified social group with whom the museum wants to dialogue. The object, until then understood as the collections, become more comprehensive in the expression of heritage references or integrated heritage. Traditionally an institutionalized space, the scenario goes beyond the museum walls and becomes a territory of intervention (Cândido, 2014, p. 4).

In the scenario described here, one notices the presence of new museum proposals incorporated in these spaces in connection with the advances in the scientific and technological fields.

Thanks to Bourdieu, we leave the abysmal and abstract opposition between the individual creator and the capitalist society to understand

the tensions between artistic projects and the concrete conditioning of galleries, museums, critics, collectors, and spectators (Canclini, 2012, p. 38).

Canclini (2012) states that the already established – including museums – are being tensioned by creative projects. The museum incorporates the characteristics of an environment of constant production and agency, even though this is not its mission in terms of the institution.

The *Pinacoteca de São Paulo* launched the project “The voice of art”, available for two months², as an action with cognitive computing, in a union between art and artificial intelligence. According to Pinacoteca’s international relations director, Paulo Vicelli:

In such a technological world, museums must be included. Pinacoteca is constantly reinventing itself and creating strategies to talk to its public. The partnership between Pina and IBM represents this effort, which resulted in an unprecedented, interactive, and accessible action (IBM, 2017).

The project collected many questions and doubted the visiting public obtained when accessing the

² April 5 to June 5, 2017.

works. Furthermore, this collection, fed by Watson's artificial intelligence³, created an environment of dialogue with the works, which answered the public's questions about the paintings and sculptures on display – a dynamic and appropriate space for art and for the elements of a culture that comes alive with every gasp, inspiring, given the possible readings, the purposes of these cultural environments in the present.

3 IBM Cognitive Platform in the Cloud.

Traces of Modernity: Cyberception, Modernity and Connectivity

Visibly, museums have been acquiring a new design due to the intrusion of digital means of communication and access to information.

A significant transformation of the museum field in Brazil has yet to be analyzed in its scope and practical repercussions. The creation of the Brazilian Museum System, in 2004, with the "purpose of facilitating dialogue between museums and related institutions, aiming at the integrated management and development of Brazilian museums, collections, and museological processes" (SBM, 2009) and Ibram, more recently, are factors that, together with the National Museum Policy, have been contributing

to make the sector more dynamic (Cândido, 2014, pp. 23, 24).

Therefore, this new model requires a new language, programs, devices, user agency, communication, learning, connection, and interactivity designs. With this, there is a need for the creation of a digital storage and communication system. Integrating technology in museum institutions, in the face of the communication of Information Technology (IT) and preservation and restoration departments, become essential in ensuring the perpetuation of works of art.

For this, the presence of professionals trained and specialized in the management of new digital formats of conservation and communication of the works is essential. It is important to point out that even amid the increasingly intense use of technology in everything it proposes to do, the digital memory of works of art is only a support for keeping and disseminating the work. Several factors are preponderant in this discussion of computer systems, such as hiring specialists, software updates, program compatibility, file

migrations, license payments, support, formatting, equipment, and servers.

However, it is worth pointing out that with all its apparatuses, technology is not the only and indeed not the most incredible process of change and rupture with standards established a priori. Unlike Malraux's (2013) imaginary museum, described before the access to photography technology only, in the 21st century, cyberception presents a new concept as an example of technological advancement.

Ascott (2002) presents the concept of cyberception as that which "involves a convergence of conceptual and perceptual processes in which the connectivity of telematic networks plays a formative role" (p. 32). This means a new structuring in the way of living, a new understanding of human presence, and new ways of thinking and perceiving.

In the text "The architecture of perception" (2002), Ascott points out that cities need new architectures whose presences are distributed.

A city must allow its population to share, collaborate, and participate in cultural evolution. Its many communities must stake their future on

it. For this reason, the city must be transparent in its structures, goals, and operating systems at all levels. Its infrastructure and architecture must be "smart" and publicly intelligible, comprising systems that respond to us as we interact with them. The principle of rapid and effective feedback at all levels must be correct at the heart of city development. That means ultra-fast data channels zigzagging through every nook and cranny of its urban complexities. Feedback must not only work but must be seen to work. This means discussing cyberception as fundamental to the quality of life in advanced technology and post-biological society (pp. 35 and 36).

For him, the new city needs to undergo this change in a visible immateriality in its invisible construction. "We will increasingly live in two worlds, the real and the virtual, and in many realities, both cultural and spiritual, regardless of the difference in urban designers" (Ascott, 2002, p. 37).

The author points to the class of artists as diffusers of this change, helping develop forms and characteristics of this new format and considering new principles of interaction and connectivity.

The artists can become the propagators of these seeds, who can venture to help the development of new forms and features in the new city. Their cyberception equips them with the global

awareness and conceptual ability to review, rethink and reconstruct our world (Ascott, 2002, p. 37).

Appropriating Ascott's thought for the study, the city is constituted by its numerous communities. Museums would be examples of these communities, or if one prefers 'mini-cities'. Translating Ascott's thought (2002), cultural evolution needs to enter these spaces as a dynamic negotiation zone conceived by networks and systems, constituting the museum model of the 21st century.

In light of this study, one can also observe the traditional museum space unfolding in informational terms in cyberspace. The internet is considered more than an extension of everyday life for much of the population everywhere. Sometimes, the internet becomes incorporated into many people's actions, making direct contact increasingly scarce about relationships mediated by computer systems.

Beyond social relations, personal or professional, many changes have occurred in contact and appropriation of culture and information. The notion of space and time governs new contemporary

semantics and establishes new frontiers since, through the web, individuals develop what some theorists call ubiquity (Santaella, 2013). Furthermore, according to Weissberg (2013), ubiquity does not mean mobility but sharing several places concurrently. For the author, "it is by assimilating the temporal continuity of the communicational link to an instantaneous plural location that one can speak of ubiquity regarding mobile communication" (p. 121). There is no strictly territorial space but a hybrid territory known as a communicational network. Regarding connectivity, Stocker (2014) assures that:

Suddenly, what you broadcast on the internet is no longer necessary; the main point of our networked society today is to whom one is connected. Connecting and connecting are our age and society's essential values (p. 55).

Connectivity starts from collective information construction, where multimedia messages are produced, published, distributed, and consumed. New challenges are introduced in processing culture, intimately connected to new habits, language, and communication.

We already live in an aesthetic of connectivity, understood as a taste, a pleasure of being connected. For some time now, art and design have been using this expedient to forge their works, to achieve their effects and enchantments. The magic circle of interactive poetics operates the connection between the work and the 'interactor'. With the IoT – Internet of Things – the world gains more fruitful and unusual dialogues. With the brain net, artificial brains will be new points of connection, whose trials we have been doing for some time with online conversation mechanisms, the web bots. (Rocha, 2017, p. 65)

The growing variety of connected devices and systems has consubstantially altered everyday actions, with interactions deeper than projected. The Internet of Things (IoT) is the protagonist of this new configuration.

The IoT can dive into the nooks, crannies, gaps and wormholes that exist in an imperceptible and often invisible world that extends far beyond human eyes, ears, smell, and consciousness. It creates new types of networks and systems – and entirely different pathways for data, information, and knowledge to travel (Greengard, 2015, p. 22).

First, the IoT has other nomenclatures with similar concepts, such as the Internet of Everything (IoE), Smart Things, or Machine to Machine

Communication (M2M). This paper will focus on the most commonly mentioned term, IoT.

IoT is an interdisciplinary concept involving language, communication, technology, and networking. The application of IoT technologies has responded positively in many segments of social life. Many even believe it to be the third great apex of the information industry, after the computer and the internet.

The Internet of Things promises to ratchet up the number of data points by an order of magnitude. The combination of ubiquitous connectivity, low-cost-sensors, and easy to deploy microelectronics now make it possible to connect just about anything and everything to the Internet (Greengard, 2015, p. 57).

Synthetically, IoT arises from a new range of associations in the Internet network in the connection process between humans and objects, whether actuators or sensors, i.e., a new configuration whose base is databases built from cyberspace and the mathematical information theory. Algorithms, programming, and systems distribute semantic information over the networks.

Data becomes semantic when, by processing it, the conception of meaning is added to a file.

The IoT emerges to automate essential issues in contemporary social life. For example, rain gauge monitoring uses this technology in Petrópolis, Rio de Janeiro state, to identify cataclysms. Likewise, information about a particular vehicle transmitted to police cars in São Paulo is obtained through IoT through traffic radar. Following this work, IoT is a sophisticated network of intelligent systems.

Of course, a greater number of connected devices translate into more data intersection points – and far more impressive possibilities. Realistically we've only begun to enter the age of connected devices. Although home networks and Wi-Fi have been widely used for more than a decade – and fast cellular connectivity is increasingly common – the platform and infrastructure for supporting all these devices is only now beginning to mature. Too often in the past, various systems and devices did not communicate or play nicely with one another. What's more, without clouds that make sharing and syncing data far less complicated, fast, and seamless data sharing simply wasn't possible (Greengard, 2015, p. 83).

Given the distinct specificities of IoT, scientific-academic studies postulate reflective and

comparative analyses for this theory in the breath of demystifying and becoming aware of the processes conceived by it, enjoying its opportunity possibilities.

The IoT is making itself present in all spaces where human beings somehow appear, act, and interact, with processes of integration and automation of environments, consolidating the perspective of connectivity. According to Greengard (2015), "as the Internet of Things and connected devices become part of our lives, a remarkable future is taking shape" (Greengard, 2015, p. 167).

Santaella (2013) corroborates Greengard (2015) by stating that "environments will become intelligent, transforming everything around us" (p. 31). Therefore, innovative environments created from IoT are mainly designed to resume users' interest in cultural heritage, with the assurance of interactive cultural experiences, optimizing the user experience in a museum.

According to the intelligent conception of Smart Cities, the museum can become a bright environment when it is upgraded through

innovative sensor and service models. Rethinking these spaces with system development is one way to enhance the appreciation and enjoyment of information about works, collections, and holdings. A cultural object can be contextualized and information about it juxtaposed. The diffusion of knowledge within a cultural space can be given, even from an interactive user experience.

Museums increasingly seek closer technological innovations, becoming intelligent cultural environments through new formats. Several museums already use IoT, through sensors that control temperature and humidity, as a technology used to conserve collections of rare works.

For example, the Museu do Amanhã, Rio de Janeiro, has adopted an application that communicates with beacons¹ scattered throughout the museum. This application makes available extra content about the exhibitions, besides bringing the programming, local map, and audio guides of the exhibitions. The goal of this adhesion was the search for experiences in the museum itself with an application full of interactions.

1 Small Bluetooth devices.

Another example concerns the Itinerant Egyptian Museum, which allows user to experience the work in person and visualize it through the cell phone, with multimedia content related to the work. These aspects require the installation of an app, as a novelty that connects people with the works, as another reflection of the IoT in museums.

In general, apps installed in museums provide interactive experiences, ranging from content related to the artworks on display to the storage and sharing of multimedia content. Although technology carries an optimism about the future – not to say a utopia – whenever it is deployed, it is practically impossible to predict its repercussion: how society will react/interact in the face of any innovative technological resource concerning a range of other existing technologies.

Although many identified caveats and concerns, there's also a distinct possibility that the IoT will unveil a far more dystopian future that approximates George Orwell's 1984 (Greengard, 2015, p. 188).

Given this premise and in the same direction as Orwell (2005), the IoT would be much more imprisoning than emancipating the individual from

the moment that the social control provided by technology is present. In a remodeled exegesis of the social system of manipulation of Big Brother by surveillance and control, presented in the book "1984", we have the "cybernetic resonance" (Rocha; Silva, 2015) that, with the emergence of the internet, establishes the function of the network as administrative control, whose system resonates data presented, because it captures information from the digital traces left on the networks by individuals in their various everyday accesses, transforming them into sources of surveillance and control.

The cybernetic resonance assesses precisely the conditions of relevance and unfolding of existence in the networks, composing a map of social implications from the contacts, replications, and comments arising from a first action. In the most prominent social network so far, Facebook, we are locating the points of cyber resonance not only in the number of friends and followers but in the actions of sharing, likes, and views of the posts published in that context (Rocha; Silva, 2015, p. 25).

Many scholars, beginning their investigations into this theme, understand IoT as a pervasive computational communication, a highly dynamic

and distributed connectivity. In museums, IoT is characterized as a technological advance to benefit exhibitions, collections, and programming. Art is already experiencing the impacts of IoT through systems to control temperature, relative humidity, lighting, air quality, security, connectivity, multimedia content, and interactive experiences.

The public frequenting physical museums are heterogeneous, ranging from the curious, tourists, casual and constant visitors, students, researchers, and those interested in culture. With the advent of the internet, new ways of viewing cultural heritage have been established, which makes studies converge to non-presence museums.

Cultural processes, as an example, in the current conjuncture of a mediated society, are being mediated by complex technological devices, ranging from computer interfaces and multimedia communication systems to telematic networks, among many others. Several contemporary authors of art and technology have discussed issues that transform the face-to-face museum into a museum in a digital environment.

It seems a paradox: artists leave museums to insert themselves in social networks (sociological art, ethnographic art, post-political actions), while actors from other fields keep art breathing and engage with its contributions (philosophers, sociologists, and anthropologists think from artistic innovations and curate exhibitions; political actors and social movements use performances in public spaces) (Canclini, 2012, p. 35).

In this dynamic, Contemporary Art is increasingly employing, according to Edward Shanken (2009), science and technology as artistic media. These interdisciplinary and hybrid research take a philosophical level to understand these hybrid forms' ontological and epistemological status in contemporary visual poetics. Shanken (2009) defines *hybrid* in contemporary visual poetics as the centrality of technology and science to the practice of art and design (and vice versa), opening new perspectives of creativity and invention allied to the new generation of professionals in contemporaneity.

Hybridization in culture, according to Canclini (2003), is considered "sociocultural processes in which discrete structures or practices that existed separately combine to generate new structures,

objects, and practices" (p. 19). In addition to this combination cited by the author in culture, the intersection of concepts, contents, methodologies, and processes is legitimized in contemporary visual poetics.

Diana Domingues (2009), in her text "*Redefinindo fronteiras da arte contemporânea: passado, presente e desafios da arte, ciência e tecnologia na história da arte*", addresses a problematizing issue between the two museological formats in face of the subtitle "Burn the Louvre! X Save the archives!" The text emphasizes the importance of preserving digital heritage as a future cultural heritage. It also indicates that the loss of data quality transmitted over the network of these institutions is compensated by online availability (Domingues, 2009). In reality, the author does not pay attention that, in this context, there is no loss of data transmitted over the network when they are saved in clouds, for example.

The author reports that non-presence museums present, on the one hand, greater accessibility and dissemination, especially in education and

communication, and on the other hand, limited experiences with collections and exhibitions.

Returning to Malraux's (2013) "imaginary museum" in this discussion, now cited by Domingues (2009), the space had already altered forms of documentation and archiving of art. In an ascending state, Christiane Paul, facing curatorial strategies in the network, accentuates the museum's role as "an access point or node in the network." The curator also points out that the 'net art' modality allows the museum space to be accessed anywhere on the net and at any time, with no need to comply with visiting hours.

The 'net arts' need to define the nomenclature of their space, which is still very recent and ranges from the digital museum to cyber museum, electronic museum, online museum, web museum, and museum on the net, among others still not widespread.

According to Domingues (2009), a review is necessary since changes are raised in the constitution of circuits in art. For the author, the roles of museums are reviewed in their physical

project of a museum without walls and especially for its constitution in a museum distributed on the network (p. 34). The author also alerts us to adapt the rooms with terminals, projections, and other technological devices to adapt the museum structures to the interactive nature.

Reinforcing Domingues' (2009) thought about the readjustment of museum spaces, Schneider (2015) exposes, in a report, the specific case of *Pinacoteca do Estado de São Paulo* during the "Contemporary Art seminar: preserve what?" (2014). The discussants' concern with the precision of adequacy of spaces, pointing out that:

Brazilian institutions need to adapt to the new museological demands, even if the presence of works with such specificities in the collections is a minority, because certain information is highly relevant to the memory and conservation of these works (Schneider, 2015, p. 138).

When the rapporteur mentions new museological demands in this scenario, she refers to hiring a professional with interdisciplinary training and a technician specialized in dealing with technological devices. The main issue that closes this report by Schneider is the end of the discussion with

a proposal for exchange between institutions, creating means of communication, "establishing exchange flows of experiences based on the same language" (p. 139).

However, not all museums can do this. Only those that can articulate virtual flows in a specific location, for communication and culture are global and virtual but also require spatial markers; those that can synthesize art, human experience, and technology, creating new technological forms for communication protocols; those that are open to society, being not only archives but also educational and interactive institutions, anchored in a specific historical identity and, at the same time, open to present and future multicultural currents. Finally, like other cultural institutions, museums must be able to assert themselves not only as repositories of heritage but as spaces of cultural innovation and as centers of experimentation (Castells, 2015, p. 61).

An analysis that the author Pierre Lévy (1999) treats in his book *Cyberculture* pieces evidence that "the more information accumulates, circulates and proliferates, the better it is explored (rise of the virtual) and the more the variety of objects and physical places with which it is in contact grows (rise of the actual)" (p. 221), which contradicts a concern of the turn of the non-presence

environment to the detriment of the face-to-face environment. For him, there is an incentive to go to traditional museums through the stimulus of personally examining the materiality of digitally disseminated works.

Corroborating Pierre Lévy (1999), Lemos (2009) states that "with post-massive, mobile and networked media, there are possibilities of consumption, but also of production and distribution of information" (p. 29). At this juncture, informational mobility feeds on physical mobility, enhancing this, from new territorializations, with differentiated spaces, subjectivities, and sociabilities.

André Lemos (2009) states that "the informational city of the 21st century finds in the culture of mobility its fundamental principle: the unprecedented mobility of people, objects, technologies, and information" (p. 28). In this dynamic movement between the near and the far, politics and culture are produced in the social sphere.

Also, in the scientific article "Culture of Mobility" (2009), Lemos portrays cyberculture as a producer of spatialization, whose characteristics of mobility

and location are simultaneously contradictory and complementary (p. 32). This paradox, which will characterize contemporary places, will seek connectivities, producing viscosities and social adherence to specific points of space (Lemos, 2009, p. 32).

Networking, in this format, is characterized by the operation of content over the infrastructure of user/system connectivity, a crucial goal of the interface. After all, this space of hypermobility indicates the intersections of digital and physical space in this digital revolution, also called continuous connection technologies, especially in cultural and educational contexts.

We define the interface concept from the book "Bridges, windows, and skins: culture, poetics, and perspectives of computational interfaces" (2014) by Cleomar Rocha. The book is organized into five chapters and proposes as its theme the discussion about computational interfaces, starting from its definition, going through its classification, poetics, and relation with cyberspace, and ending with perspectives for the future.

In the first chapter "On bridges, windows, and skins", the author discusses the definition of interfaces. With a dissertation genre, in dialogue with several authors, the referred work problematizes the interface definition, understanding that the term is used in several areas of knowledge, with some semantic variations. From this problematization, it reaches the second chapter, "Blues shades of Gagarin and Turing", in which one situates the exact area of the definition for the term it assumes for the rest of the book.

In these two chapters, there is the discussion and the proposition of the definition of the term interface, situating it in the computational context. The historical and semantic features set the tone of the author's argumentative basis, which investigates the uses, pointing out those in which the term is applied in a metaphorical or metonymic way, sometimes falling into the fad of common usage, pointed out as little indicated for specific studies on the theme.

These two chapters prepare the third, "Taxonomic perspectives", in which the author presents a taxonomic model for computer interfaces based

on their actuation structure. The three categories – physical, perceptual, and cognitive – make up the defended classification, modeled from logical methods of operation and actuation by the user. The proposed classification unfolded outcomes, such as perceptual interfaces, which can be graphic, audible, or tactile.

Thus, according to Rocha (2014), interfaces are classified into physical, perceptual (graphic, sound, and markup), and cognitive. The classification is put gradually to their innovations. While buttons and keys designated the physical ones, the perceptual ones, starting with the graphic ones, “took on the graphic-visual aspect, with windows, icons, and menus” (p. 58). The sound perceptual ones get, in turn, the role of “assistants in capturing or retaining the ‘interactor’ or his senses, in order to hold his attention for the contact with the system” (p. 67). On the other hand, the perceptual markers are not activated, as the physical ones, in a physical-motor process, “but only by the direct contact of touch, using pens or similar, including the finger itself” (p. 68). The multiple touches are evidence of the evolution of this type of interface.

Finally, cognitive interfaces² "are triggered by the recognition of actions and other manifestations, without necessarily direct contact with elements of physical-motor activation" (p. 71).

In the fourth chapter, "Poetics of interfaces", the author discusses poetic and aesthetic relations, approaching the concept of aesthetic experience. He begins with the distinction between dazzling and enchantment, resorting to authors such as Aristotle to support his thought. Clearly articulated with technological art, this chapter reserves the perspectives of a culture of visibility based on computer graphic interfaces. The author denounces the dazzling present in the luminescence of screens and technology and situates enchantment as a perspective for the poetics of interfaces, which mitigate aesthetic experience.

In the fifth and last chapter, "Projections", the author examines recent research and projects on interfaces, unveiling the vectors that point to their development. Articulating areas of computing, such as pervasive, parallel, cloud, and internet of

² Cognitive interfaces are designed to be triggered from presence, displacement, behavior, etc.

things computing, with research on usability and accessibility, design and art, the author points to ways of conceiving networks, reflected in the conception of cyberspace, and its insertion in contemporary daily life, composing a connected social experience.

As the subtitles suggest, the book oscillates between the technical and the poetic. For its comprehensiveness, it traces a historical and conceptual panorama of the theme in its primary contexts.

For the author, the development of interfaces indicates the technological revolution, not the development of systems, as many believe. It is the interfaces that innovate the way we deal with computer systems. Usability is a determining factor in analyzing the innovation in the system employing the interface, i.e., the more naturalized the dialog between the user and the system, the more modern the interface.

As one of the most readable readings on computational interfaces, the author points to ways of conceiving networks, reflected in the

conception of cyberspace and its insertion in contemporary daily life, composing a connected social experience.

Quaranta (2014), observing the current technological context, predicts the possible disappearance of traditional model museums in the face of the inadequacy of sociocultural demands.

Still, today's museums – like everything else – are confronting the challenges of the digital age. No one knows whether museums will survive these challenges and to what degree their traditional model must be revised to fit the new world order better (Quaranta, 2014, p. 235).

Since the 1990s, several museums have moved forward in this era of connectivity and mobility, taking the network concept for their formatting. "We believe that the network vision will bring changes to art history and museology, as it has already been happening in other segments of history and archeology" (Canetti, 2014, p. 203). Based on other authors who already model this thought, the author considers that the interest in the new network proposal has driven a revolution,

either in the form of organization or in the form of access to the art system and circuit.

For clarification, the form of organization in museums refers to network museums and the form of access over the art system and circuit to museums on the network.

As Frieling (2014) expresses, by Quaranta (2014) and Canetti (2014), "the museum has indeed become a productive site for reviewing the changing conditions and contexts of every work involving variables" (p. 164). The museum prompts constant updating with discursive, collaborative, cooperative, and critical practices, commuting with contemplative, historical, and analytical practices.

Based on the connectivity in the World Wide Web, ubiquity is present as notions of time and space are redefined. The awareness of being in several spaces simultaneously makes the individual ubiquitous.

Santaella (2013) discusses this type of communication's ubiquitous resonances in culture and education. Furthermore, borrowing the meaning of ubiquitous communication to apply

it to the ubiquitous museum, she displaces it in the interfaces of two simultaneous presences, the physical and the current. For the author, arguably, "the physical mobility of the cosmopolitan city has added the virtual mobility of networks" (Santaella, 2013, p. 277). Thus, cyberspace is inextricably merged with physical space.

This social-historical moment makes us reflect critically on the outcomes in the face of the cultural transmutations caused. It is no longer a prospection because it is already present due to the accelerated technological transformation that reflects on the social, historical, and cultural perspectives.

Narratives in flows and reflections

Museums become environments that bring history to the surface, starting with collections, inviting the public to observe objects and records kept by successive generations that portray the very dimension of living culture, still pulsating. Time moves in the eagerness to build concepts and relationships. The latter is considered a relevant aspect of contemporaneity. A constructed exercise, not given, is an exercise of interpretation, relationship, and connections between the present and the past, even if imperfect.

In this process of continuous evolution, museums, which could be considered an extension of our memory in the historical society, have been empowered. Memory can be registered not only by documents but by countless technological supports, more and more compact and with a greater storage capacity.

Updating, via interpretation in the present, is constituted by not seeing the world as it is but as we are. In this design, the present is only our reality, with all the subjective semantic charge impregnated. Meanwhile, the reality remains sphinxlike in its comprehensive completeness.

Although museums store the airs of the past, when they are interpreted, museums are updated by breathing in the present. There is, therefore, an exercise in constant updating insofar as the reading is contextual. In the typical exercise of continuous breathing, museums should keep their reinvention facet, adapting to the exposed context and aligning themselves to the concepts of contemporary society, the lungs of their work.

More than substitutions, it is a phenomenon of articulations between digital and physical environments. There are no barriers and borders but spaces of transits, flows, and reflections.

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ABOUT THE BOOK

Format: 14x21 cm

Typology: Raleawy

Number of Pages: 93

Book support: E-book

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2024

Printed in Brazil

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