# Configuring the Art Object in the Age of Digital Computing: Meaning, Intentionality and Virtualization

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### **ABSTRACT**

This paper highlights the art object nature as a theoretical anchor regarding contemporary virtual art, as well as traditional art practices, like painting. The analysis takes as a starting point the new immaterial status of the artistic object in the computer age. Despite the widespread prevalence in the analysis, our goal is to detach some key features as: meaning, intentionality and virtualization. These subjects prove to be related to each other and most of all, the link between intentionality and virtualization, brings forward the inconclusive nature of the art object and the decisive role of the spectator in the outcome of the creative process. Therefore, we acknowledge that the virtual fosters creativity, although remarking the lack of substance in some expressions of new media art. So, a final statement reassesses the importance of traditional practices. but now with the awareness of new media cultural logic, and its contribution to creation.

**Keywords:** Art Object; Virtualization; Intentionality; Digital Art; Meaning; Spectator; Traditional Practice

## 1 | INTRODUCTION

Identifying the essence of the object created in the context of artistic activity is of considerable importance when attempting to develop a sustained artistic study. In this context it is important to clarify the methodological approach in order to understand the basic theme, as well as the recognition of some of its features.

In this paper we choose to develop an analysis of the art object concept, which will focus on themes such as meaning, intentionality, and virtualization, that describes the object in question, suggests the direction of the most recent art, and focus the spotlight on the nature of the virtual. The object that characterizes the scope of art, is addressed not as a mere object, "seizable" linked to human scale, but as an entity with a translation in a scope or aesthetic dimension, capable of integrating the most diverse artistic productions, from a drawing, painting, performance art to the computer and virtual art. In the end, it is left open the need for a theory capable of accommodating not only the art that seeks to maximize innovative technological solutions, but also those returning to traditional techniques (e.g., painting).

## 2 | THE ART OBJECT

One idea that inspires this paper is based on demonstrating that the traditional notion of artistic "work" or "object" loses much of its "raison d'être" with progressive enlargement of the typological phenomenology of the artwork, that leads to

the immateriality of the work converted into an electronic signal or into a space of connections and interfaces. This new framework requires a series of theoretical requalifications towards a wider aesthetic conception. Also, and paradoxically, it is considered that the reference to the work or art object is nominally maintained, that is, having in sight the methodological continuity of historicalcritical analysis. In addition, the "object" establishes a transverse path among disciplines (art object, technical object, scientific object...), which includes new technologies in art. Moreover, as Baudrillard said, "the object is a whole body actor" (Baudrillard, 2001, p 13), and thus able to integrate contradictions and lean forward an autonomy which identifies itself with the complexity of contemporary artistic sphere. Human society has as its main function the creation of objects, "objects of civilization" (Francastel, 1963) as is the concept of Pierre Francastel - "which are always made of detachable entities, recognizable and classifiable in series" (Francastel, 1998, p. 22). Thus, artists are characterized by creating art objects with specificity (they refer to man's relationship with reality and are intended for contemplation and aesthetic pleasure), with characters shared with other human activities, and so the artists confirm their belonging to the community.

On another level we also invoke the contribution of the aesthetic theory of Jan Mukarovsky (forerunner of sociology and semiology of art) on the meaning of the artwork. The author has identified in the object of art an autonomous aesthetic sign consisting of a material artefact (a painted canvas, a copy of a book on paper) and an aesthetic object (what the different spectators see when they come in front of the painting or read the pages of the book, and that can be found in the consciousness of the community). The value and significance of the art object is mainly due to the fact that the aesthetic object distinguishes itself by its variability. The argument stands mainly in the sociological domain, as discussed below.

# **3 | MEANING**

An art object has its own meaning of an aesthetic nature, that stands for its individuality, and results from the works reception, that is, the mental reproductions made by the spectator and the impact on him of these images. These mental reproductions vary according to the epoch and the social context of the experience. As Murakovsy says: "the same work of art is not actually a constant magnitude: in each shift in time, space or social environment, it also changes the current artistic tradition, through which prism the work is captured; as a result of these shifts also changes the

aesthetic object in the consciousness of members of a given community which corresponds to the artefact material, the object created by the artist. Even when a work is positively evaluated in two different and far apart epochs, the object of evaluation is an aesthetic object always different and, therefore in a sense, is a different work." (Murakovsky, 1988, p. 64).

From these texts precursors of Czech structuralism (Murakovsky) and others who contributed to the birth of reception theory, sociologist Anna Lisa Tota underlines the importance of this concept of "aesthetic object", which is translated into complex mental images that different receptors prepare before the same material object that remain unchanged in time. The author reinforces the importance of the role of the reception experience which becomes a constituent part of the artistic event, concluding that "the work of art is conceived as an act produced in the intersection between the vector of meanings, inscribed in the author's own work, and the actual experience of enjoyment of a social actor that determines the meanings likely to be updated" (Tota, 2000, p. 43). In this sense, it is the receiver that retains the significance of the art object completing the work. It is precisely because it is the viewer that closes the loop, that we can stress the "unfinished" character of an art object. The work is completed successively in a multiplicity of moments, as many times as the viewers who have contact with it. However, despite this "conclusion" or meaning update of the work by the viewer (whom at least at the interpretation level becomes a co-producer of the work itself), the work always remains unfinished and open to future interpretations. According to this reasoning, the activity that gives meaning to the art object is made by the real viewer, albeit in part guided by the work in question. In short, as suggested by Anna Lisa Tota, the art object can always be defined "not as a set of cultural products in themselves, but as this same set at the time of enjoyment." (Tota, 2000, p. 33).

Finally, we allude to the notion of aesthetic meaning with semiological traits developed by Mukarovsky. Formed by the readings of Saussure and Peirce in this field, Mukarovsky seeks to distinguish the aesthetic sign from the communicative sign. In fact, the art object "is a sign that must possess a supra-individual meaning" (Murakovsky, 1988, p. 259), should appeal to everyone and not just to one individual. The author also distinguishes the artistic sign from the linguistic or communicative sign. As a matter of fact, communication, especially based on language (non-poetic), has an external purpose (to report an occurred fact, to express a feeling, to

cause a reaction in the listener). Communication is, as such instrumental and tends toward an external purpose, beyond the means of transmission (a word, an informative sketch, etc...). The artistic sign, in turn, is not a communication, and does not tend to anything outside itself, at least in what defines it as art: it has, so to speak, a purpose in itself.

"The artistic sign, unlike the communicative sign, is not "submissive", i.e., is not an instrument. It does not establish a comprehension between people in what concerns things — although these are represented in the work — but as a determined attitude towards things, a certain attitude of man towards all the reality that surrounds him, that is, not only towards all the reality that the work describes. But the work does not communicate that attitude — as a result the very artistic "content" cannot be expressed in words — but evokes directly the receiver."(ibid.)

This is the attitude in which we must recognize the "meaning" of the work, in other words, a certain intrinsic sense that is only objectively obtained with the collaboration of the spectator from his own relation to reality. As Mukarovsky suggests, the sense of the art object, although rooted in the receiver's attitude, does not depend on the free will of the spectator, but depends on the fact that the work, by its means and constitution, calls his attention, focusing it on its internal organization. We can still add that when contemplating the work the receiver intuits a personality or a subject in the characteristics of the object, and that the aesthetic sign also emerges through this mediation operated by the work between these two poles, receptor-author. The creator subject intuited in the art object, is not external to the work, he is part of it and is recognizable indirectly in certain elements of the work. It is the determined action of the artist, which gives the subject a particular configuration and orientation, suggesting that it has been made with a purpose or intent. The significance of the art object is therefore dependent on the intentions of the artist who conceives it.

# 4 | INTENTIONALITY

The fact that we feel an art object as "made", is clearly visible in a particular orientation of its shapes. The intentional character of the object, which also refers to a particular direction, which attended its creation, distinguishes it from an object of nature which has no intentionality and whose composition is casual. To clarify, it is also important to make the distinction between products of human activity with different intentionality (since it's not just the art object that is based on an intention). That is,

on the one hand we distinguish a group of objects with a specific external objective, the instruments. On the other hand, art objects, which differ from the former due to fact that they have a purpose in themselves. In short, we face different kinds of intentional constitution: the instrument seems to have as purpose to "serve", while the art object leads man to the adoption of a receiver's attitude towards its presence. Of course, there are many more distinctions to be made because the artistic object is intended for contemplation, while the technical and utilitarian object is directed toward functionality and its meaning is its use (aesthetic values are not discarded, but they came at most as an additional) - these categories have been largely described by M.Dufrenne and G. Simondon (Dufrenne, 2008). However it is essentially the distinction of the artistic property based on the intentionality that interests us here. Mukarovsky summarizes his relationship in a very clear statement t:

"The artwork differs from other products of human activity mainly because while intentionality converts these into things which are made to serve specific objectives, the artwork is transformed, by the same intentionality, into a sign not subjected to any external objective, but independent, and evocative, in man, of a certain attitude towards reality." (Murakovski, 1988, p. 259).

We know that the art object doesn't emerge from a merely arbitrary action, but rather is based on intentions. It is clear that a work of art is the result of some kinds of intent or the result of a network of intentions designed by the artist in some stage of the creative process. Concerning this decisions, we may also accept other kind of intentions (political, religious), although, the aesthetic intention, must be a relevant one, which concerns the ability of the artwork to offer an aesthetic experience (Carrol, 2010, p. 188).

Moreover, the depth of the reasons for an artist to act determines the energy with which he commits himself to the creative act and the quality of his action. Even though the artistic process is largely intuitive, and owes much to spontaneity, it is of utmost importance to know the reason why the artist creates and what makes him act.

In this context several questions of an existential nature arise: Which are ultimately the artist's intentions? Why, in the configuration of an object, is a particular choice or intervention is considered necessary? In general, when an artist is able to clarify and articulate his intentions it is more likely that he will develop a richer and more consistent work. We

also believe that clarifying the intent is quite different from pre-determining the artistic act. Above all, what is at stake is to discover what is really valued and the underlying causes of creation, free from any constraints. The opposite of this attitude, would be to impress the work of an intellectual intentions excess determining from the beginning its meaning. Indeed, Oscar Wilde already emphasized, about the openness recognized in the work of art more than a century ago (long before Umberto Eco), as it potentially raises completely different messages from the original intention (Wilde, 1993).

It must be understood that intentionality is not external to the indivisible act of creation. Pierre Francastel already called attention to this aspect, noting that "art objects are complex, ambivalent and are not be formed by parts" (Francastel, 1963, p. 147). The aesthetic meaning is not therefore a fact inferred from a value system previously made up, in which case these values would be placed outside the moment of creation.

Intentionality is not therefore an abstract attitude; moreover, if you look at the artist as well as an historical actor, we understand that his intentions are assisted by a context, and that the artistic tradition itself is present from the beginning in the creative process. The artist is faced even if, unconsciously with an artistic heritage from the past. Murakovsky anticipates here too this condition of the artistic activity, summarizing as follows:

"By intending to create an art work, the author comes into contact with the valid conception of the art work and art in general, with the artistic processes valid in the present and in past, that is, with the ways as were and are managed the various elements of a work of art. "(Murakovsky, 1988, p. 288).

These assumptions are similar to the most recent method of Jerrold Levinson (1989) to identify the art object, which gained some acceptance. In Levinson's perspective (historicism, intentional and indexical) what makes an object that is intended to be an art object capable of being validated as such, is the fact that he was intentionally tied to some kind of art of the past and to the corresponding appropriate ways to treat art. Levinson defines his perspective this way: "A work of art is one thing (one item, object or entity) that was seriously designed with the intention to be treated-as-work-of-art, i.e., treated in any of the ways according to which preexisting artworks are or have been correctly treated" (Levinson, 2009, p. 175). In turn, and understandably, Levinson suggests that the artist's intention can be conscious or unconscious. When

conscious, we have a relational intention, because it is explicitly assumed by the artist, a relationship with the way art works are and have been treated. When unconscious (intrinsic intention), the author can be making art directly intending that his object embody a series of treatments (approaches of plastic themes, shapes and attitudes) without having in mind the intention to invoke the art of the past, although it may be implicit in the shapes that he composes. Levinson's proposal, despite its formalism, is quite open in terms of intentionality, not restricting the freedom in creation. As the author states, this thesis is "not committed to the idea that these producers should make these intentions explicit, nor does it imply that they should be aware of their existence or that their relationship with prior art should be something evident to them." (Levinson, 2009, p. 192).

Despite a certain historicist conservatism, this method goes in a direction which we also contemplate, or would like to develop: the art object is the result of an action that ranges from the unconsciousness of a spontaneous plunge and a conscious decision.

Artistic practice thus requires an essential sense of direction, but from an open perspective. It is necessary to organize ideas and from this base proceed in search of meaning, through action. This requires courage and devotion because nothing is guaranteed, since creation is usually done from imbalance. Concerning the action and artistic creation in an unpredictable world, the acclaimed theater director Anne Bogart favours the perspective here promoted which assigns a determining and liberating value to intention in art, "Art happens in the midst of a flight. It does not happen from a state of balance" (Bogart, 2010, p. 39). The author emphasizes the importance of action and uses the image of a jump, in the sense that the artist's devotion to the adventure of creation is comparable to a jump for a flight with no success guarantees. "The leap in itself is an unconscious act of faith, made possible by the consciousness of intention. Art happens when you intend it to happen. It happens when you leap with intention (...) The act is the point, more so now than ever. "(Ibid).

Finally, if intentionality is directly linked to action, namely to the artist as an agent, the truth is that it is often privileged as inscribed in the art object. In this sense, there may be some doubt about the entity that we are referring to when we speak about intentionality in the scope of art. Basically, we can understand that it applies both to the artist and to his work. Or as M. Baxandall suggested, to talk about the intention of an art object "is not narrating psychological events, but describe the relationship of painting [or object] with

the circumstances, assuming that the author acted intentionally" (Baxandall, 1985, p. 72). At first, it is actually the artist who confers intentionality to the art object, but that is also relative, as from the moment the work is finished (or completed the process of intervention by the artist) it gains autonomy and a life of its own, carrying with it the inscribed intentionality conferred by the author, or by the receiver who apprehends it. This spectator can also apprehend it differently from the original intention, thus updating the meaning of the work, while taking part in its construction over the framework already established. It is this cooperation of the spectator in the creation process that is further developed by the virtualization operated by new media art.

### **5 | VIRTUALIZATION**

The subject of the virtualization performed by art is the point of arrival of this approach in the domain of the nature of the art object. In the contemporary world, new technologies and data processing are establishing unprecedented relationships with art. Now, its the virtual arts (interactive art, net-art, art immersive environments or new hyperreal images) to continue the progressive enlargement of the typology of the art object, already mentioned at the beginning of this text. In fact, as stated by Oliver Grau, the concept of "work", in processual or virtual, art tends to disappear as a single object. "Any concept of a work that seeks to give an idea an existential form for a definite period of time in space diverges categorically from the ontological appearance of a work of virtual reality. These ephemeral image spaces, which change within fractions of a second, achieve the effect of existing only through a series of computations in real time, 15 to 30 per second" (Grau, 2003, p. 205). The tendency of virtual art to immateriality is further underlined by the author, since "The immateriality of the work is a prerequisite for the highest possible degree of variability and the basis for interaction". We verify now that the material component of the art object, until recently considered one of the least variable references of the works (despite the invectives of the artistic avant-garde, such as, action art and performance from the 50s and 60s), became atomized. Indeed, by computation, and in what concerns images, materiality is limited to the individual pixel. As Bragança de Miranda recognizes, concerning the new aesthetic device, "the immaterialisation of the object and of the work begins with the machine, which afterwards creates a space where everything can be connected" (Miranda, 2007, p. 122). In this authors point of view, after the immaterialisation of the work through the technological apparatus, the

aim is to meet and internalize all the relations of the new aesthetic object (or device). In this new phase, the material of the work in the classical sense, gives rise to a space of connections, in which variations may participate in the field of interactivity. This important moment of transition through the virtualization of the art object, the possible conversion into an interactive space, or the ontological dismissal of the work with the passage to the immaterial, is present in the analysis of other authors that focus on the technologies of the virtual. In this sense, Lev Manovich speaks of the passage "from the object to signal" in the context of new media, in which he specifies the effects of electronics and computation in art. For Manovich the subject of old times material, becomes "soft" (software), in the sense it can be expressed numerically, and modified in multiple dimensions - a feature of "new media objects". Indeed, by "contrast to the material object, the electronic signal is essentially mutable" (Manovich, 2001, p. 133). In this perspective, the permanent mark the artist imprints on the material of the traditional art object, contrasts with the signal that can be modified in real time. If the change had already taken place with electronic media, the truth is that, as Manovich acknowledges, it appears now radicalized with digital computing: the object can now be modified, in the whole or its parts, all at once, by software based on certain algorithms. Virtualization in art is not limited to the most obvious process of immaterialisation of the object, launched by technology and computer media. In fact, more than an atomization of the material, the virtual is characterized by a change of identity.

Pierre Levy in his "guide" on the virtual reinforces this notion of heterogenesis, operated by the virtual, which is also a process of acceptance of otherness (Levy, 2001). Virtualization refers to a change in course, a "becoming-other" of the entity in question, a becoming. Also it is directly involved in art that operates "the most virtualizing of the activities." The virtual fosters creativity, in that it favours the transformation movements characteristic of the creation process and the genesis of the art object. Artistic creation does not happen in a place of stable reference, and often becomes an evasion from a place, a leap into the unknown, a deterritorialization. Inspiring much theory in this field, Gilles Deleuze also made attempts to approach conceptually the new virtual object. Resembling various concepts in his work, we may refer briefly to the "objectile", described in a work about Leibniz and the baroque : "As Bernard Cache has demonstrated, this is a very modern conception of the technological object (...). The new status of the object no longer refers its condition to a spatial mold — in other words, to a

relation of form-matter but to a temporal modulation that implies as much the beginnings of a continuous variation of matter as continuous development in form." (Deleuze, 1993, p. 19).

Virtualization, being an event, reinforces the inconclusive nature of the art object, in which is always possible to recognize a force, or some kind of power. The subject can therefore be understood as a problematic field, which, ultimately, the spectator can upgrade. That's why in a certain way, the art object aims to an otherness that takes place in the encounter with the spectator, who complements and extends the author's creative process. This model, which is a cooperation author-receiver, can also be understood as a dynamic interaction between both of them mediated by the art object, as mentioned in another context by Bragança de Miranda. Although the interactive issue is linked to the virtual, it would require some theoretical approach in itself, which is not to be accomplished in this paper.

Nevertheless, concepts such as "variability" or "combinatory", pervades both virtual and interactive realms, which José Augusto Mourão reinforces in the context of the new world of hypermedia: "the virtual object begins by being defined as a system of relations", and adds that this "can be defined as any object by its attributes but is independent and relies on a device of determinations that is also likely to change in the framework of its own combinatory" (Mourão, 2001, p. 49). After all, this system develops multiple kinds of connections in the virtual realm, which requires a transformation process to be accomplished by interactivity. Although it is the creator that establishes the system, through the parameterization of an idea (algorithm). It is the user who enacts the artwork, and extracts meaning from the interactive object, bringing it to life.

This combinatory, articulated directly by man or controlled by a computer model, emphasizes the artificial nature of the art object, which in the virtual space, not real and simulated, finds one of its ultimate expressions.

Here, the paradigm of hyper-reality of Baudrillard, also fits this last expression of the art object, converted to an interactive system that is essentially operational. But the dubious nature of this art object that enacts a lacking substance, and that constitutes a simulacra, stems, as Baudrillard suggests, from the "radical negation of the sign as value, and (...) the sign as reversion and suppression of all reference" (Baudrillard, 1991, p. 13) (it actually ceases to exist to establish signic equivalence).

The abolition of signification that marks this "aesthetics of disappearance", the fading of the real, which Baudrillard shares with Virilio (despite of the broader skepticism of the latter on its effects) is certainly a complex issue with its dangers. On the origin of this model, in which the difference between copy and reality ceases to exist, is quite possibly an excessive appreciation of Nietzschean relativism by the French post-structuralist theory. If the theories of art formulated on this basis, appear to serve presently the new virtual art, the truth is that they may fail in regard to embrace the artistic phenomenon as a whole — much of technologically advanced art results often spiritually impoverished, without exploring effectively the new issues at stake. Under that circumstance it could be of interest the adoption of a model that welcomes very different practices, and resolve with equal dignity of expressive possibilities, traditional methodologies and very advanced methodologies, such as the virtual. The return to traditional techniques such as painting, with the awareness of the cultural logic of new media, would not be in this sense an "anachronistic" or marginal behaviour, in fact, it can be stated as the vehicle for a new direction.

# 6 | CONCLUSION

The need to inform various approaches in art practice, in an era in which technology seems, sometimes, to override aesthetic concerns, demanded to clarify the nature of the artistic object. Taking as key features, meaning, intentionality and virtualization, we found a theoretical basis that hopefully may go beyond research concerns, becoming also an asset in art practice, in this age of digital computing.

After this analysis, we again emphasize that the issue of interactivity in art, requires an analysis in itself, though in fact, as we acknowledge, it is already implicated in virtualization. So, although interactivity is defined by factors such as virtualization (besides, variability, permeability and contingency (Gianetti, 2012, p. 180), we may consider that virtualization is broader, and many expressions of digital art, don't necessarily imply interactivity.

Finally, we are also aware of the difficulties of our approach, of an enlarged theory, which is aimed both at art using new media, and at traditional practices. But although we agree that more specific approaches are welcome, we consider that analysis with a broader extent, like ours, should not present partial visions as an outcome, because that would restrain the aesthetic experience. In this sense, we do not consider that technology by itself, guarantees meaningful artistic

creation, so we reject that "the new aesthetic object in interactive art, should be appointed as technology aesthetics" (Yoon; Kim, 2006, p. 126).

In fact, If artistic creation should not be separated from technological means and the new challenges it creates, but this doesn't imply that technology must replace the meaning which the artwork should deploy, the intention that mobilizes it and the empowerment that virtualization brings forward.

### **REFERENCES**

Arantes, P. (2005). Arte e Mídia: Perspectivas da Estética Digital. Editora Senac, São Paulo.

Almeida, B. P. (1996). O Plano da Imagem. Assírio & Alvim.

Almeida, B. P. (2002). Transição — ciclopes, mutantes, apocalípticos. A nova paisagem artística no final do século XX. Assírio & Alvim.

Baudrillard, J. (1991). Simulacros e Simulação. Relógio d'Água.

Baudrillard, J. (2001). Palavras de Ordem. Campo das Letras.

Baxandall, M. (1985). Patterns of Intention. On the Historical Explanation f Pictures. Yale University.

Bogart, A. (2010). And then you act. Making art in an unpredictable world. Routledge.

Carrol, Noel. (2010). Filosofia da Arte. Edições Texto e Grafia.

Crispolti, E. (2004). Como Estudar a Arte Contemporânea. Editorial Estampa.

Deleuze, G. (1992). O que é a filosofia? Editora Presença.

Deleuze, G. (1993). The Fold. Leibniz and the Baroque. The Regents of the University of Minnesota.

Dufrenne, M. (2008). Objecto Estético e Objecto Técnico in Estética e Filosofia. Editora Perspectiva.

Francastel, P. (1963). Arte e Técnica. Edição "Livros do Brasil".

Francastel, P. (1998). A imagem, a visão e a imaginação. Edições 70.

Gianetti, C. (2012). Estética Digital. Sintopia da Arte. Ciência e Tecnologia.

Grau, O. (2005). Arte Virtual. Da ilusão à imersão. Editora UNESP/Senac.

Huisman, D. (1997). A Estética. Edições 70.

Levinson, J. (2009). Refinando historicamente a arte, in Arte em Teoria - Uma Antologia Estética. Coord. Vítor Moura. Edicões Húmus.

Levy, P. (2001). O que é o Virtual? Quarteto.

Manovich, L. (2001). The Language of New Media. The Mit Press.

Miranda, J. B. (2007). Teoria da Cultura. Edições Século XXI.

Mourão, J. A. (2001). Ficção Interactiva. Para uma Poética do Hipertexto. Edições Universitárias Lusófonas.

Mukarovsky, J. (1988). Escritos sobre Estética e Semiótica da Arte. Editorial Estampa.

Plaza, J. (2000). Arte e Interatividade: Autor-Obra-Recepção.www.cap.eca.usp.br/ars2/arteeinteratividade.pdf

Tota, A. L. (2000). A Sociologia da Arte. Do Museu Tradicional à Arte Multimedia. Editorial Estampa.

Tofts, D. (1999). Parallax. Essays on Art, Culture and Technology. An Interface Book.

Searle, R. J. (2002). Intencionalidade. Martins Fontes.

Virilio, P. (1997). Open Sky, Verso.

Wilde, O. (1993). Intenções: Quatro Ensaios sobre Estética. Cotovia.

Woolley, B. (1997). Mundos Virtuais, Caminho.

Yoon, J.; Kim J. (2006). The Interactive Artwork as the Aesthetic Object: Aesthetic Technology Converging Technological Applications and Aesthetic Discourses. *in* Technologies for Interactive Digital Storytelling and Entertainment. Göbel, S; Malkewitz, R; lurgel, I (Eds.). Springer.

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