



# **Eisenstein multimídia: a media transposition**

*Eisenstein multimídia:  
uma transposição de meios*



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**Abstract:** This paper analyzes the transposition of Arlindo Machado's first book, *Eisenstein: geometria do êxtase* (1982), to CD-ROM media format, exploring the resources of digital media from the standpoint of aesthetic elements originated from Russian Constructivism and other features of Sergei Eisenstein's film language. This collaborative research work led by Arlindo may unfold in the broadening of the paths in the search for new technologies.

**Keywords:** Arlindo Machado; Sergei Eisenstein; editing; CD-ROM; multimedia.

**Resumo:** Este artigo analisa a transposição do primeiro livro escrito por Arlindo Machado, *Eisenstein: geometria do êxtase* (1982) para o formato de CD-ROM, explorando os recursos das mídias digitais a partir de elementos estéticos derivados do Construtivismo Russo e demais elementos de linguagem do cinema de Sergei Eisenstein. O desdobramento desse trabalho de pesquisa de Arlindo, realizado em pesquisa colaborativa, pode ampliar os caminhos na busca por novas tecnologias.

**Palavras-chave:** Arlindo Machado; Sergei Eisenstein; montagem; CD-ROM; multimídia.

Published in 1982 by Editora Brasiliense, *Eisenstein: Geometria do Êxtase* (*Eisenstein: Geometry of Ecstasy*) (Figure 1) is the first book by Arlindo Machado. Written with extreme lucidity, didacticism, and power of synthesis, the work foreshadows the important role that Machado would play among the theorists of cinema. In approximately a hundred pages, it manages to offer the reader an overview of Sergei Eisenstein's complex thinking. Divided into six chapters, the book follows thirty years of the filmmaker's production, marked by approximations and ruptures with the directions of the revolutionary state, from his entry into the *Proletkult* to the plans for filming *Capital*, a project interrupted by his early death.

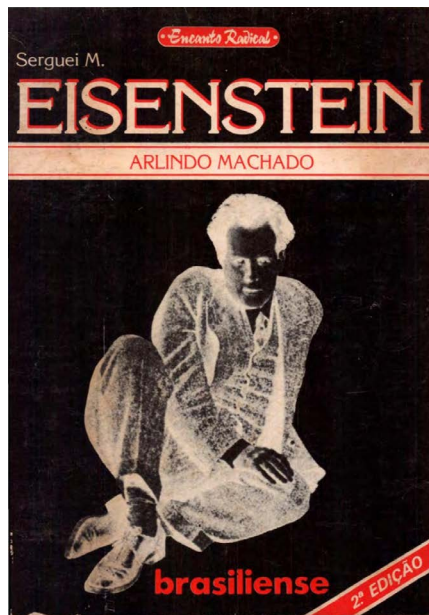


Figure 1: Cover of the book *Eisenstein: Geometria do Êxtase*.

Machado explains basic concepts of the filmmaker's work, such as dialectics, conflict, and ecstasy. The book deals with the production of a cinematographic syntax for ideological purposes, besides discussing plastic choices and approach to Constructivism. Above all, it shows how cinema performed with extreme intellectual control sought to produce emotional impact on spectators, and how Eisenstein uses dialectical thinking to break with the linearity of the montage, aiming to overcome the simple reproduction of the real. “The choice of conflict rather than linearity aimed to pull the viewer out of their comfort, inviting them to take a stance on the film, to an active rational and emotional participation, determining their impression of the work” (MORAES, 2015, p. 27).

Like Eisenstein, intellectually restless and visionary, Arlindo Machado did not theorize only about traditional cinema. From film to electronic format, from electronic to digital, he positioned himself as a pathfinder of the new media, always foreseeing its transitions; from cinema he discussed analog video, which, in turn, acted as bridge to digital video. Envisioning the importance that new languages would assume as hybrid forms of communication, with the intertwining of images, texts, music, sound effects, and voice in a context of digital technologies, in the late 1980s Machado began his studies on the subject and, later, on expanded cinema.

According to reports by Lucia Leão<sup>4</sup>, Machado's Master's degree student in 1993, the author created the Visual Languages Laboratory, inserted in the Postgraduate Program in Communication and Semiotics of the Pontifícia Universidade Católica de São Paulo (COSPUCSP), to research new languages based on digital technologies, thus developing and producing the CD-ROM *Eisenstein Multimídia (Multimedia Eisenstein)*, initially thought of as a digital hypertext experiment based on his first book, *Eisenstein: Geometria do Êxtase*. Unusually, among so many technological transformations of the audiovisual format, he was interested in CD-ROM, an emerging device quite different from the most common media such as film itself or video cassette tapes.

This format is based on an optical media, the compact disc (CD), developed in the 1980s by Philips and Sony. According to its standardization, the CD provided for multiple functions, unfolding in different formats to store audio and video, under stricter schemes, or digital data, in a broader sense. Intended for use in personal computers, the variant CD-ROM – acronym of compact disk read-only memory – had flexibility in storing digital files of various types, joining text, audio, still image, animation, and video, which characterized the format as multimedia.

As precursory and bold, this undertaking faced considerable limitations of financial and human resources, besides uncertainties regarding the results. Although the author had help from Lucia to implement a hypertextual language, full of possibilities that questioned the linear tradition of cinematographic narrative, he still faced technical issues about the choice of multimedia workstations for developing the project and the need for a multipurpose framework that addressed cinema – and therefore the complexity of Eisenstein's thought and works – and the technology needed for the work.

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In the 1990s, there were few options for implementing new ideas in digital media such as Arlindo's. Although Apple and Macintosh were considered references in Humanities, their use was quite limited to a few users in Brazil, mainly because of their high cost and the somewhat restricted support for the development of new applications. On the other hand, Microsoft had a huge presence in the domestic market and adopted strategies to have even more capillarity, such as offering accessible tools to develop new applications compatible with its operating system, Windows. The choice would then concern not only how *Eisenstein Multimídia* would be developed but, above all, how it would be made available for use. It is important pointing out that its primary function would be reading, since its concept would unfold in a multimedia book, an innovative form of publication.

Even after adopting Windows as an operating system and Visual Basic (VB) as a platform of development, object-oriented language, and with a relatively easy and simplified learning curve, the lab team encountered several difficulties in the programming stage, momentarily interrupting production in 1993. The fragmentation in this process, which occurred several times during the work's development, allowed additional understandings of what was being carried out, something like breaths, which offered opportunities to explore different creative paths.

In their statements, researchers of the Laboratory of Visual Languages report their previous experiences with hypertext, before the creation of the multimedia application, leading us to believe that Arlindo knew that such an essayistic exercise would go through repeated attempts and errors. Technical difficulties, in the case of a precursory initiative, could be transposed with the evolution of knowledge related to the tools used, and it is therefore interesting to follow this process of technological maturation with a continuous study on the relationship between Eisensteinian matter and new digital artifacts and their possibilities.

It is also worth questioning Arlindo's interest in offline media at a time close to the emergence of the Internet. We could deduce that his choice is due to the greater knowledge of the possibilities surrounding computer programming languages compared to the brand-new technologies that orbited online at that time, such as the simplified HyperText Markup Language (HTML). Under the justification of extensibility, the project on Eisenstein could, in a way, rely on more sophisticated audiovisual resources, as opposed to the rudimentary online implementations available at that time.

Staying true to the idea outlined under Windows, VB was abandoned and ToolBook, a development framework released by Asymetrix Corporation, took its place. With a defined vocation for e-learning, the ToolBook, as its name

says, guided a content organization similar to that of a book. Besides the similarity, the fact that it had a better-defined structure could better accommodate bibliographic content, without requiring the creation of a generic computer program.

Fernando Fogliano<sup>5</sup>, a PhD student guided by Arlindo, was part of the laboratory team and captained efforts with ToolBook, which included organizing the application and programming the source code. He recalls the constant problems presented by the development platform, which was still in one of its early versions, such as the usual “crashes.” in computing language. Even so, Arlindo noticed that going beyond the “simple” task of transposing the book to digital media was possible by improving the proposal and betting on another level of interactivity.

In 1997, Silvia Laurentiz<sup>6</sup>, PhD student to Professor Lucia Santaella – who was also Arlindo’s Master’s and Doctoral advisor – joined the team, contributing mainly to the graphic design of the “electronic book” by diagramming chapters and pages, creating the cover and typography used, as well as three-dimensional modeling several images, among other tasks. Fernando, with his experience in photography, also added to the work regarding its visual aspects, assisting in graphic design and proposing lighting sets to the 3D models created by Silvia, in addition to digitizing and editing images and videos included in the CD-ROM.

By combining the competencies of Lucia, Fernando, and Silvia and the possibility of joint work, a new episode arose in the development of *Eisenstein multimídia*, which would allow studying the narrative possibilities of multimedia technologies capable of expanding the reading experience of the original physical book. It is important pointing out that the development of this multimedia project proposed by Arlindo was part of the research by the members of this team as students of the Postgraduate Program in Communication and Semiotics of PUC-SP. Thus, the Laboratory of Visual Languages would not only impact on the academic production of these students, but also on the research of many others who would develop their Master’s and Doctorates in that same laboratory.

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For chronological purposes, interviews conducted in 2021 with laboratory researchers describe the development attempt in Visual Basic as a first version, whereas the following attempts, the second and third, refer to development in ToolBook<sup>7</sup>.

The main difference between the last two versions and the first goes beyond the choice of physical media. The structuring of bibliographic content had been worked on for a long time by Arlindo and Lucia since the first version, requiring only a due implementation of the hypertext and the inclusion of different types of media by Fernando with ToolBook. With Silvia in the team, a new creative front was opened, with the development of new modules and the incorporation of different perspectives to the understanding of multimedia in this project.

Soon after starting the CD-ROM, we are presented to the authorship of Arlindo Machado and the title of the work, accompanied by a musical theme (Figure 2). It is the first contact with the aesthetics that will be unfolded in the work, composed of sans-serif typography, in large size and strong colors, referring to Russian Constructivism, as well as geometric shapes, color palette of grays and reds, and the theme of *Aleksandr Nevsky* (*Alexander Nevsky*, 1938), composed by Sergei Prokofiev.



Figure 2: Cover of the book *Eisenstein Multimídia* (1993)<sup>8</sup>.

Source: Machado (1993).

Next is the index, which presents the same titles of the six chapters of *Eisenstein: Geometria do Êxtase*, as well as the chronology contained at the end of the book. We then find ten complementary texts – in hypertext format – written

<sup>7</sup> A first version in ToolBook would be available on multiple 3.5-inch magnetic floppy disks, and the other, later designed, on CD-ROM.

<sup>8</sup> Created by Silvia Laurentiz and Fernando Fogliano.

by Eisenstein, in addition to a manifesto on sound cinema, written together with Vsevolod Pudovkin and Grigori Aleksandrov, indexes of film excerpts, images and music, a bibliography, credits for the team that produced the CD-ROM, and the three interactive modules created exclusively for this work, being the castle of *Ivan Groznyy* (*Ivan the Terrible*, 1944), the montage of the battle on ice of Aleksandr Nevsky (*Alexander Nevsky*, 1938), and the analysis of the plastic composition of 14 frames of *Bronenosets Potemkin* (*Battleship Potemkin*, 1925) (Figure 3).



Figure 3: Indexes of the book *Eisenstein: Geometria do Êxtase* (1982) and the CD-ROM *Eisenstein Multimídia* (1993).

Source: Machado (1993).

Most navigation occurs through hyperlinks in text and icons, which direct to the respective page or trigger modal windows (pop-up) that overlap the screen (Figure 4). We can also listen to songs by Aleksandr Nevsky (*Alexander Nevsky*, 1938) in MIDI (Musical Instrument Digital Interface) format while reading. The book chapters and interactive modules also have a presentation screen, something like a cover page, with the title of what comes next. Though the content of the multimedia work has a very bibliographic format, by scrolling through it, the reader becomes an active subject, just as Eisenstein intended his spectators to be. “The public needed to retake the author’s journey so that the dialogues would be completed and make sense” (MACHADO, 1982, p. 43). In this way, Machado explains the objective of the Eisensteinian intellectual montage. And, just as the filmmaker rejects linearity in cinema, the CD-ROM gives Machado’s readers the freedom to create their own journey through the work, searching for a meaning.



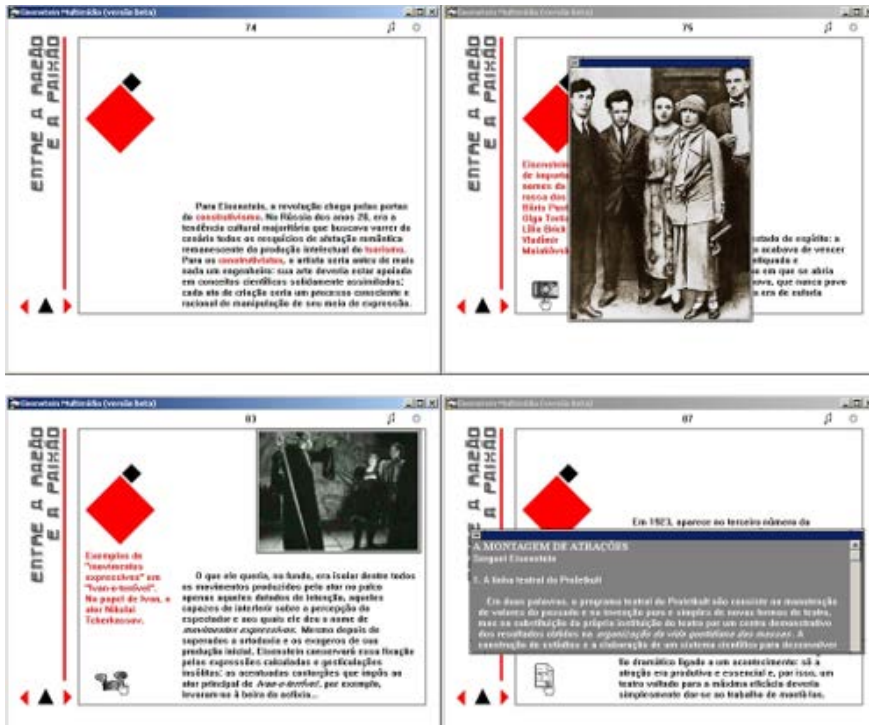


Figure 4: Screens referring to the chapter “Between reason and passion” on the CD-ROM *Eisenstein multimídia* (1993).

Source: Machado (1993).

The relationship between multimedia and Eisenstein’s thinking do not stop there, nor are they limited to the content of the book. In plastic choices, such as typography, layout and color, one perceives the approximation to the aesthetic procedure of the filmmaker and his link with Constructivism. Each content grouping is characterized by a certain aesthetic identity, which at the same time is not limited to a specific design and allows different visual proposals, such as the interactive modules, which each have their respective visual and sound proposal because of the very nature of what is presented.

Composition was a central idea in Eisensteinian thought, which considered framework as decisive in movie creation since the composition would correspond to the assembly within the plane. The production of meaning thus happens not only by a confrontation of the stimuli caused by the montage, but also through the plastic values of the plane.

According to researcher Maria Teresa Denser in her doctoral thesis *O pensamento gráfico no cinema: a construção e a representação da imagem cinematográfica* (*Graphic Thinking in Cinema: Construction and Representation of the Cinematographic*

Image, 2008), Eisenstein introduced graphic thinking in cinema by exploring elements such as the line, circle, square, and triangle. Thus, in his films the images start from geometric figures, and each frame has a structuring plastic figure that defines a type of opposition between the planes inside. The Eisensteinian image, therefore, is organized from two-dimensional structuring elements, which can be geometric figures or horizontal, vertical, and diagonal lines. This procedure is striking throughout the visual diagramming of the CD-ROM, as seen in the transposition of the chronology chapter of the book to the multimedia version. The choice of flat colors, especially black, white, and red, flirts with Constructivist procedures just as the diagramming, whose starting point is the work *Beat the Whites with the Red Wedge* (1919), by El Lissitzky (Figures 5 and 6).

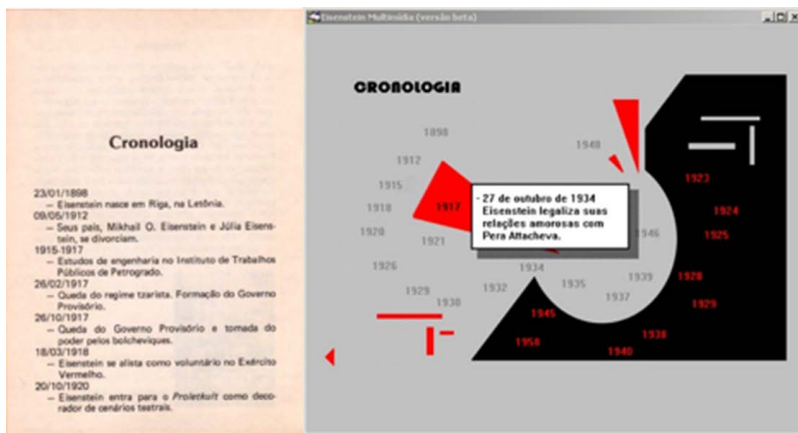


Figure 5: Chronology of Eisenstein's life in the book *Eisenstein: Geometria do Êxtase* (1982) and in the CD-ROM *Eisenstein Multimídia* (1993)<sup>9</sup>.

Source: Machado (1993).



Figure 6: *Beat the Whites with the Red Wedge* (1919).

<sup>9</sup> Digital version developed by Silvia Laurentiz and Fernando Fogliano with graphic concept by Lucia Leão.

The concepts and schematics of “Battle on Ice” and “The People of Odessa” developed by Silvia Laurentiz and Fernando Fogliano under the guidance of Arlindo Machado, came from Eisenstein’s own books, respectively *The Film Sense* (1990b) and *Film Form* (1990a). Despite not being included in Machado’s work, they refer to the larger subject, Eisenstein, and have all the necessary relevance to settle on the digital work (Figures 7 and 8). By offering the possibility of playing audio and video alone, which is limited in the printed paper media, these concepts would already be accredited to be presented on this CD-ROM.

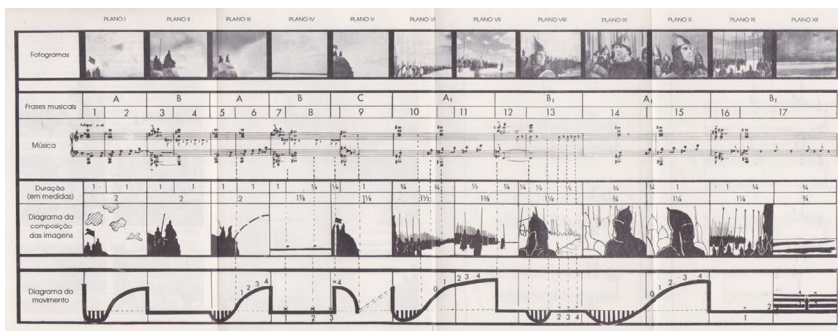


Figure 7: Schematic drawing by *Aleksandr Nevsky* (*Alexander Nevsky*, 1938)

Source: Eisenstein (1990b).

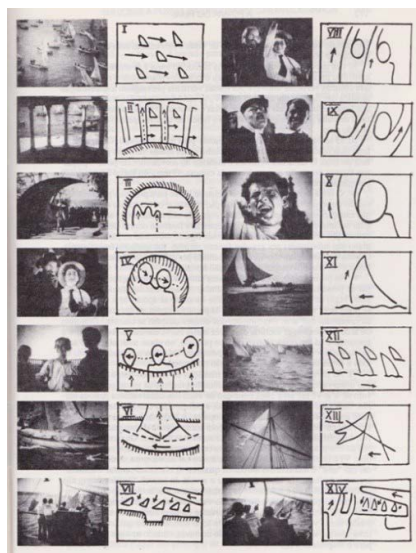


Figure 8: Schematic drawing of *Bronenosets Potemkin* (*Battleship Potemkin*, 1925)

Source: Eisenstein (1990a).

The first reproduces frame by frame and second by second of sound as in the cinema, simultaneously displaying the relationship between the musical score, the montage of the shots, the composition of the images, and the organization of the whole movement; the second uses the graphic animation feature on a video image to explain the plastic composition of certain frameworks (Figures 9 and 10).

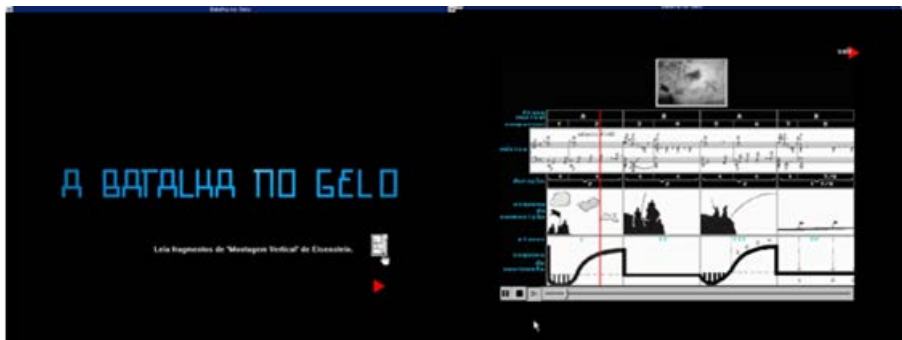


Figure 9: Interactive module “The Battle on Ice”.

Source: Machado (1993).

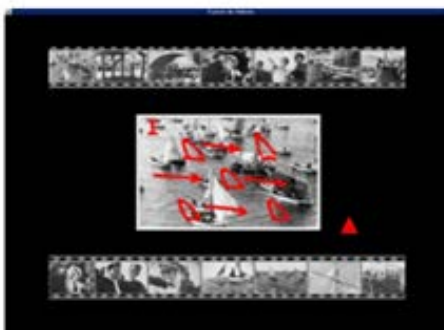


Figure 10: Interactive module “The People of Odessa”.

Source: Machado (1993).

“Ivan’s Castle” is an initiative of greater freedom and rather essayistic (Figure 11), structured under the concept of *The Glass House*, by Eisenstein (BULGAKOWA, 2016). From a research project led by Silvia Laurentiz and described in her doctoral thesis, the different floors of the castle were created by three-dimensional modeling in the 3DS program, intuitively and from the imaginary, offering an architectural reading about the Eisensteinian creation.

We received from the hands of Arlindo Machado, the task of creating a three-dimensional environment where scenes from a film by Eisenstein would be screened. The scenes had already been determined by him. It was a sequel to *Ivan the Terrible*. The challenge was how to work with the images of Eisenstein, which are meticulously planned, in order to reconstitute his plot and take it to a new dimensionality. (LAURENTIZ, 1999, p. 213)



Figure 11: Interactive module “Ivan’s castle”.

Source: Machado (1993).

The mission, something like a game, is to climb stairs and discover hidden scene objects in the gloomy setting, which reveal themselves by passing the mouse cursor over certain parts of the image, triggering the activation of audio and video excerpts of Eisenstein’s filmic works, such as the banquet scene from *Ivan Groznyy*.

*Skaz vtoroy: Boyarskiy zagovor (Ivan, the Terrible – part II, 1945)*. By reaching the top of the building, we obtain a superior view, which allows checking all the other floors and objects scattered as in a ground plan, where it is even possible to “jump” directly to these floors and subvert their logical and sequential ordering (Figure 12).



Figure 12: Film excerpt in “Ivan’s Castle”.

Source: Machado (1993).

Fernando contributed to the work mainly by discussing the photographic aspects and the scenic lighting of the space built virtually, as well as by participating in the processing of audiovisual material included in the navigation route, such as photos, audio, and video. Moreover, he implemented programming and integration of interactive scripts into the ToolBook development platform.

*The Glass House*, a project that appears in the director’s work notes between 1926 and 1928, would be a film essay to be shot in a house with glass walls, floor, and ceiling. With a constantly moving camera and using an elevator, Eisenstein intended to explore the transparency of the scenario to capture the concurrency of the actions. The mobility proposed by the director is recovered by Machado at its fullest power with “Ivan’s Castle” through the nonlinear narrative possible after reaching the highest level of the building (Figure 13).

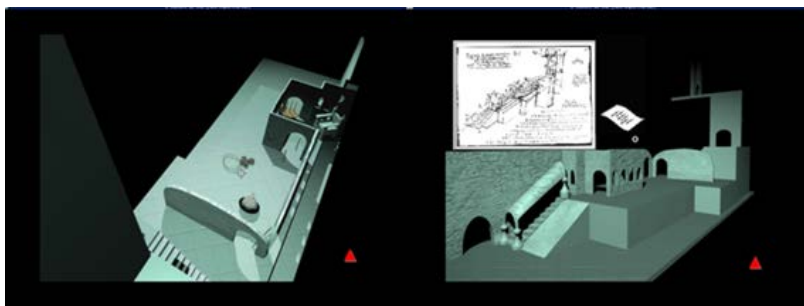


Figure 13: Top and side views of “Ivan’s Castle”.

Source: Machado (1993).

Another interesting point is the tone of the statements of the project participants, who found in the laboratory an open environment to discuss ideas rather than a place to simply execute what had been conceived by Machado. The discussions that occurred during the development process were incorporated into the research in visual languages of the team members, where Fernando studied image and digital photography and Silvia investigated questions about narrative and three-dimensional image.

Although the CD-ROM could work only as a multimedia adaptation of his book, Arlindo not only promoted this debate but also gathered human and physical resources, through projects encouraged by research agencies, to extend this work beyond what was originally intended, with all the uncertainties of the time. There was an understanding that this production, based in an academic and scientific environment, was above all a pedagogical instrument, in addition to the films and writings of and about the Soviet director, thus being able to incorporate new didactic perspectives to teach on the audiovisual.

The adoption of the optical disc as a distribution device is another aspect that should be highlighted as something beyond technological novelty, especially as a strategic decision that would allow the device to reach the academic community. CD media was designed to be economically accessible, even having, with the passing of time since its adoption, increasingly lower costs to the point of becoming suitable for smaller and experimental projects, just as the respective playback and recording equipment. Moreover, such media would be the most appropriate to simultaneously transport video, audio, and text – files considered “large” in weight considering the memory required for storage – in a feasible way, as opposed to needing multiple floppy disks for the same purpose (to correspond to the available space of a CD-ROM, about 450 3.5-inch floppy disks would be required). The relevance of the technologies chosen by the team was in full consonance with the moment lived, avant-garde, even establishing a parallel with the very emergence of Soviet cinema and modernity.

The major effort of the project also included, at the same time, to the precariousness and instabilities of these new technologies. Besides the limitations that did not support the fertile creativity of this group of researchers, the tools used presented operating problems, such as unexplained crashes and many others. The project went as far as it could with such difficulties, eventually stopping at a stage called beta, as something experimental – as it was from the beginning – due to specific operating problems from the ToolBook platform, but not by lack of intellectual or technical work. *Eisenstein Multimídia* thus finds great similarity in *The Glass House*: technological barriers to its full realization and operation.



Arlindo, not discouraged before this and aware of the effort spent for years until then, took the optical media with him to congresses, lectures, meetings, showing everyone the immense possibilities of the initiative, always searching for new ideas and collaborations so that he could complete this undertaking in the best way and make it available to people. At some point, the same progress of technology that raised *Eisenstein Multimídia* to the forefront may have debunked it from its position. With the internet and its derived technologies advancing rapidly, soon the CD-ROM would become something obsolete, falling into disuse – a hypothesis that may contradict the longevity of the printed book, present and going strong to this day.

The discussion of the longevity of such initiatives, based on innovative technological means, could fit in Bruce Sterling's brief and striking *The Dead Media Manifesto* (1995). Roughly speaking, the text calls on interested parties to publish a book with notes on technological initiatives that did not make it and, therefore, ended up not surviving the present times, as a way of remembering those who were part of paving a path to other technologies that came later.

Interesting is the context of when it emerged, precisely at the end of the millennium, in the face of the rise of technologies such as the CD-ROM itself. It creates a dilemma around obsolescence and how we live this same process in an increasingly accelerated way. In the manifesto itself, the author mentions the Japanese saying *mono no aware* (物の哀れ), which deals with the issue of impermanence and, according to his analysis, could be applied in the same way to the ephemeral characteristic of technologies.

[...] they usually expand wildly in their early days and then shrink back to some protective niche as they are challenged by later and more highly evolved competitors. (STERLING, 1995)

With Machado's passing, attention was turned to his production, leading us to find a copy of the forgotten CD-ROM in its latest version, beta, still unfinished with audiovisual researchers. Working with a sort of digital archaeology, we got an old computer and operating system to run the device, which offered us a small sample of what went through the brilliant mind of this researcher, and which represents only a small piece of his vast production widely disseminated in the academic environment.

When dealing with this object of study, we seek not to focus on the media itself, which carries its relevance and the context of history, but above all on Machado's artistic and essayistic enterprise, combining technologies. Even if





### **Audiovisual references**

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BRONENOSETS Potemkin (*Battleship Potemkin*). Sergei Eisenstein, URSS, 1925.

IVAN Groznyy (*Ivan, the Terrible*). Sergei Eisenstein, URSS, 1944.

IVAN Groznyy. Skaz vtoroy: Boyarskiy zagovor (*Ivan, the Terrible – part II*). Sergei Eisenstein, URSS, 1945.

**submitted in: July 11, 2021 | approved in: Nov 12, 2021**