

Electroludic Experience - Integrating Narrative To Digital Game Design

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ABSTRACT

A common dilemma in the digital gaming media is the conciliation between rigid narrative structures and player control over the virtual world. Based on this issue, the following paper proposes an evolution to the MDA Model [11], integrating narrative to the process of designing a digital game. Thus, as part of the evolutionary process of any media, this research agrees that the development of formal elements is important for media consolidation. For this, this research provides a theoretical basis on narratives, narratives in games, the conflict between dramatization and agency and concludes designing a new framework model.

Keywords: Digital game; Video game narrative; MDA Framework; Game design.

1 INTRODUCTION

The videogame, a young media sprouted in the 1950s [15], went through changes, and from simple games of pure logical system, began to manifest increasingly complex narratives. But this manifestation revealed a problem - a conflict between interactivity and drama.

The alliance between traditional narrative and the game faces inherent conflicts of each expressive plane. As Ferreira [6] notes, "A first and simple definition for narrative is that of narrating, reporting, referring to a particular history or event," it is readily inferred that a narrative describes past actions, that primal feature is incoherent, at first, with the experience of playing, since playing is about the present, it about performing actions at the moment of play [17].

This disparity is present in games emerging in the form of inconsistency between narrative and gameplay, a deficiency found in many games, more even in big budget games, which due to the launch pressure and high production costs of the current market, decide for focusing efforts on the mechanics of the game. This dynamic occurs because there is a need to perform games that follow the market standard, and the enormous number of corrections to be made before launch, along with several other problems, bury the relevance of the story, as pointed out by Celia Pearce [17]:

The first (and most important) thing to know about games is that they are focused on playing. [...] Game designers are far less interested in telling stories than in creating a compelling framework for playing.

It is common then that either the production of a game, from its conception, does not prioritize the narrative, or prioritizing, during the development stages its relevance is undermined by the importance of an efficient mechanics.

Another conflict that designers encounter in the production of a game is the dilemma agency vs. drama, caused by the rigidity that narrative needs to be structured and the freedom that the player must have within the game universe [10], generating a conflict that many games cannot solve.

Having such disposed elements - rigid narrative structure and mechanics as a priority -, this research assumes that the

transposition of narrative structures in their traditional form should be reviewed, understanding that as an expressive plan in development, that is, through its formal elements and cultural context, video games should look at themselves and by themselves establish a narrative structure coherent with its environment and, nevertheless, as a media mainly based in the area of the design, it is proposed that the design should be the tool used to solve this conflict. Therefore, this research presents a design model as a form of solving the conflict between narrative and mechanics, seeking to provide a full electroludic experience, that is to say, a state to which the player has an emotional and symbolic connection with the game.

Still, the research objective in seeking a conciliation is legitimate when it comes to human nature because, as says Barthes [2], there is a prodigious number of narrative genres that are divided in countless media, so that they all work to tell the stories of mankind.

Therefore, this article offers the first results of a design model that integrates the narrative to the process of developing digital games, from the study of this media and the boiling of its narratives. The structure of the article presents the following topics: MDA model, narrative definition, the conflict between drama and agency, narratives in the games, evolution of the MDA and conclusion.

2 THE MDA FRAMEWORK AS BASIS

In order to justify the design model present in this research, two priorities were defined: the use of a design based model; And the use of an iterative development process (design methodology based on cyclical processes of testing, analysis and refinement), allowing a better control of the product.

Thus, it was chosen as a base structure the MDA Framework, taught by Hunicke LeBlanc and Zubek [11] at a workshop at the Game Developers Conference between 2001 and 2004. Its acronym stands for Mechanics, Dynamics and Aesthetics. Using an iterative method, the authors argue that their approach presents an approximation between the development of the game and game design, in order to facilitate the relationship between the teams and improving the development process, showing the importance of the project methodologies and reinforcing the importance of the iterative method in the product creation

The MDA seeks to solve the impossibility of predicting all actions that players take during the gameplay, formalizing the user's consumption structure, separating it into different components, in order to match them to the game design process [11].

Hunicke et al. then define the terms:

Mechanics: describe the particular structures of the game by statistical representation and algorithms;

Dynamics: describe the behavior of the mechanics in real time before the input and output of data in the interaction with the player;

Aesthetics: Describes the desired emotional response when the player interacts with the game. The nature of the game is then reaffirmed as an apparatus of behavior, in this way one can understand the game as a system that constructs behaviors through

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interaction, this behavior is given by Aesthetics, that is, by the emotional response produced in the player [11].

It is this two-way street that the authors point out as necessary for the development of the game. It is important to consider the vision of both the designer and the player, since from the perspective of the designer, in a traditional way, the project begins with its mechanics that underpin the dynamics that lead to aesthetic experience. When looking at the consumer's bias, the aesthetics defines the theme of the experience, indicates a game concept that will guide the whole project, this concept gives rise to dynamics and the dynamics are made of mechanics, so when starting a project looking at its aesthetics, it is easy to identify future problems and encourages a player-oriented design [11].

From this concept, the authors define eight generic aesthetics that can guide the production of a game. Challenge: play as a sequence of obstacles; Discovery: play as an unexplored territory; Expression: play as a form of self-knowledge; Fantasy: game as make-believe; Narrative: play as drama; Sensation: play as a pleasurable experience; Fellowship: play as social interaction; And Submission: game as a pastime.

It is important to stop looking for the classification of games by the concept of "fun". It is a concept that limits the type of experience that games can provide, view them as an aesthetic experience expands the media limits, allowing the designer more freedom.

With the basic methodology defined, it is possible to start the investigation of the essential elements for the foundation of this research. With this, the following is the study on the concept of narrative and which elements make up its structure.

3 NARRATIVE DEFINITION

As Murray [14] argues, narrative is an inherent form of expression for humanity, used in building societies and affirming community, it is a cognitive tool for understanding the world, it is a survival tool. Storytelling is the most present characteristics in man and comes in different ways, in different means.

According to Rollings and Adams [7], the narrative alludes to a part or a whole of a story to be transmitted, which, therefore, is an account told by something or someone. Under a hermeneutical prism, "narration" takes on another meaning - the act of presenting - though not in any way, but through chained events, transmitted in the form of words or images that have meaning.

Thus, there is elements that determines the behavior of the narrative [8], elements that is relevant to the development of this research, so a brief study of this basic characteristics is found in the next item of this research.

3.1 Narrative Elements

The earliest studies of this structure are found in Poetics, a work in which Aristotle addresses his dictates about narrative - for him, tragic myth - by introducing mimesis, Greek term for imitation. Aristotelian tragedy places the imitation of actions as the most important part of the composition, this imitation must be the imitation of an action with principle, middle and end, logic that introduces the sense of causality [1]. This causality must be constructed so as to be understood by the interlocutor, which confers its fictional characteristic [8], since its elements are organized in favor of the narrative and not as a chronological account.

Aristotle still points out another relevant factor so that the narrative is not sub-understood to a dimension of chance: to be apprehensible to memory in the necessary time defined by the plot [8]. The perception of causality becomes present with memory, being essential, it makes clear the path traveled from the beginning. The details of the plot must be measured not to commit excesses or to make the plot empty, it being imperative to check what is relevant to be exposed and at the same time deal with the

information that exposes the plot, since not all are necessary to understand what is being told, some information may be removed from the main action for a latent position and which can readily be revived by lines and implied meanings. It relevant to point that some games may last for many hours and in this case, the capacity of memorizing every event may be lost.

The relation between the elements of the narrative is essential for the construction of the plot, because it refers to questions of order of origin that allow notes such as: where is the beginning of the plot? To what extent is it possible to reiterate that any event did not occur by a causality determined prior to its inception, but which had consequences? Therefore, the narrative construction is made of the choice and recombination of elements in order to reach an objective in which the susceptibility to the causal is intelligible. This construction is non-existent a priori of the author's choice, thus constituting a list of forged consequences, so any narrative relative to the order of the real or the imaginary is necessarily configured as fictional [8].

With this addition, it is possible to point out three essential elements in the Aristotelian narrative: Action (mimesis), causality and memory. This seminal structure has not been lost over time and is found and referenced in current narrative studies. In addition to narratives being defined as a chain of events that obey a cause-and-effect relationship, these events occur within a limited space of time and environment. This conception adds two factors to the narrative elements: time and environment.

An important movement worthy of note is the greater appreciation of the character within the elements of the narrative, a relevant change when the narrative finds other means of expression, such as the video game. Salen and Zimmerman [18] demonstrate this when they affirm that a narrative cannot be only a series of events, but that these events need to be personified with a mediator. Field [7] names this mediator as the Character, and associates with him the chain of events that form a story.

Returning to causality, for it to occur, a driving force is needed, this force is conflict, it is the confrontation between forces and characters that gives movement to action and develops the plot. Without conflict, there is no action, there is no drama [7]. This sequence of conflicts (drama) implies the element already presented: time. According to Juul [13] the time in a narrative can be divided in two parts: the "time of the narration" and the "time of the history". The first refers to the time used to transmit to the reader the events according to the order of presentation, while the second talks about the time in which such events occurred within the story in chronological order. This connection between drama and time gives rise to dramatic action, which Comparato [7] defines as a chain of facts that are part of history. To this, we can add that the dramatic action uses the anticipation of conflict as a tool that gives more power to action.

As commented before about the memorization of events in long video games, not every element present here are translated in the same way in the digital media, as such, they often are adapted by the game designers.

So far, this research has explained which are the elements that constitute a narrative, demonstrating its development with the passage of time, however, these elements still need an organizational structure that disposes them in order to better build a narrative. It is the way in which history will be told, where are the conflicts and how they are [7], arranged in a structure of beginning, middle and end, or as it names Comparato [7], first act, second act and third act. However, it is not the purpose of this research to focus on this part of the narrative, since such elements concern, to a large extent, the narratives of other media, whereas the videogame, as previously exposed, must seek its own narratological identity. Following this motto, the structures of the traditional narrative are

not approached in this research, being present, then, the study on the conflict between drama and agency.

4 DRAMA AND AGENCY: THE DILEMMA OF THE NARRATIVE GAME

As one of the most volatile means of expression and promoter of new technologies, digital games increasingly seek fidelity to the real, trying to create ever more detailed and rich worlds of elements that entrust to that dimension a "parallel reality" based on the "suspension of disbelief", all in favor of immersion, providing the interactor with the feeling of being part of the world and that their actions reverberate and generate changes.

Immersion is one of the main aspects that constitute playing, and as such has an intimate relationship with agency. Novak [12] points out immersion as the creation of a universe in which its elements create a rich and consistent atmosphere and sensation. The agency is granted through interactivity and is its existence in the experience of playing that guarantees meaning in the actions performed by the interactor. However, a key part that generates meaning by action is the ability to influence the world, it's the transformation of cyberspace through agency that relies on credibility and immersion. Agency is not an exclusivity of the games, it can be defined in the digital media or not, existent narrative or not, but it's in the virtual worlds that its capacity is more explored, it's where that the aesthetic experience can be justified by itself [14].

This research starts from the concept that the agency is fundamental part to understand how the narrative can be integrated to the game mechanics, understanding that it's its capacity to generate meaning and consequently a narrative that, congruent with the immersion, forms a fundamental part in the construction of the virtual world and the representation of the interactor in this world. Gomes [10] is still complete, emphasizing that:

[...]although Murray cites the immersion process as something that does not necessarily require the capacity for agency, we take this as the process of immersion through participation. Not any participation, but one that makes the interactor a part of the narrative universe.

What this research seeks is the experience of a complex narrative that has causality, where the fictional elements were organized artificially to generate meaning and guide the user's perception in order to build a plot with conflict and drama. This search for a complex narrative is found in many games, both in narratives and in simulators, however, for this the agent power within the virtual dimension must be more than an action with logical consequences, but must possess the capacity to generate a dramatic aesthetic experience. Or as complemented by Gomes [10]:

[...] On this phenomenological universe, an extra layer of meaning must be constructed, transforming the space-time universe [*Chronotope*]¹ in the diegetic universe [...].

Video games are a relation of constant interaction between system and agent. The interactor acts actively in meeting objectives through actions that are received by the system and quantified with a possible result expected within that system. Therefore, it can be said that a game is only "game" when this relationship is active, there is an axiomatic conditional of incompleteness in the nature of the game, only fulfilled when someone interacts with it, that is, the player is an essential and full agent and it's only through it that not only the system, but the world and the history of the game are embodied. Consequently, the story within a game, despite the differences between emerging and embedded narrative, is generally emergent. On the other hand, the traditional narrative is a top-down structure, because the interaction takes place with the exhibition.

¹ **Chronotope**, concept of union between time and space coined by Mikhail Bakhtin

As Aristotle points out in Poetics, the author will construct a story that makes sense obeying a structure and this story will be presented to the public through the characters, who endowed with personality and thought that differentiate them, speak and expose the plot. Those who receive the message will interpret it and become aware of the actions that make up the plot and the tragedy [17]. Distanced from Aristotle, the narratives that developed later replicated these characteristics, the modern novel, cinema, theater and television transmit meaning in an expositive way and the public is a passive agent. But in video games it's not like this.

In video games, the player is invited to a virtual world and, thanks to the processing capacity and flexibility of the media, the construction of rich and diverse worlds occurs with the invasion of several other media and means of expression that unite to generate a credible world, this world attracts the player and invites him to participate through the representation that entrusts actions and responses to these actions. However, this mixture entails changes on both sides, what was once a literature of pure exposition, when transposed in computers and the internet, gains interactive aspects, such as hypertext, in turn, games, rather pure and abstract structures as Pong (1972) and Tetris (1985), acquire less freedom in exchange for credible characters who simulate complex human beings with the use of artificial intelligence.

This given, the dilemma that the games face when looking for this narrative dimension is the apparent inability to promote total freedom to the interactor and produce a complex plot at the same time, because for this, a minimally rigid structure is expected that can generate drama. In this sense, the plot pre-established by the author conflicts with the unforeseen actions of the player who ends up breaking with this narratological structure by generating situations that escape the plot. As Gomes [10] pointed out, games have always tried to use complex narratives, but are faced with the impossibility of making these participatory narratives (one of the essential points of immersion), since the player's actions are not likely to be probable or necessary for causality to generate conflict or drama, and when games try to fit the player into this structure, they reduce the universe of possible actions.

However, this has never been an impediment to the performance of such games, so two scenarios arise: on the one hand games with a heterodox narrative structure and not dramatic, prioritizing the participation of the player, as a good part of the simulation games; On the other are the games that attempt to erect a minimally dramatic narrative structure, but for this part of the interactor's freedom is constrained, limiting the interactivity of the game [10]. In this apparent impossible search for a reconciliation between narrative and interactivity, this research proposes an approach based on the design bias, presenting in the next chapters, a design model that contemplates both elements from product conception.

5 THE SEMIOTICS OF THE ELETROLUDIC MEDIUM AND ITS NARRATIVE MANIFESTATIONS

To embark on a semiotic approach to the game is essential for the understanding of the electroludic experience and, as Ernica [9] shows, this movement "implies shifting the focus from what is normally understood as such", that is, the game as commercial product, as a system of fixed rules so as to observe its enunciative manifestation and to understand the values transmitted by its signs. It must be seen as a semiotics of the act of playing, of the interaction that transforms systems and rules into an expressive and meaningful phenomenon [9]

One can apply the semiotic vision in several aspects of the game, but we decided by the focus only in the production of meaning in

the act of playing before the context of meaningful play, to then approach its narrative manifestations.

Greimas and Fontanille [8] point out that the creation of meaning is based on a body in which, before becoming an intelligible object (characteristic of thirdness according to Peircean² semiotics), it feels and this sensitization translates the semiotic act. Salen and Zimmerman [18] still point to four characteristics of the sign found in Charles Pierce's definitions: 1) a sign represents something beyond itself; 2) signs are interpreted; 3) sense is generated when a sign is interpreted and 4) context shapes interpretation.

We can then see that the semiotic act is a union between the medium of expression (the game) and the cultural context that shapes the interpretant, so a semiotic act cannot be realized without a cultural bias, an argument that agrees with Fontanille [8]. In this way, it is possible to understand that an expressive medium, through its formal elements and cultural context, compose an expressive plane, where the interpretant, familiar with the medium, is able to deduce meanings and to host the semiotic act in a minimally predictable way.

For this, it is necessary to better understand the production of meaning in the game. Salen and Zimmerman [18] reiterate the difficulty of identifying the meaningful play, since games have varied ways of being performed. Therefore, the act of playing is not only a result of the game itself, but of the way the interactor becomes an agent in the system, thus, mechanics and systems are not meaningful, meaning comes from the relationship between player and game and context in which this relationship is established.

The authors then point to two ways of generating meaning [18]:

Descriptive: objective result of the relationship between interactor and system;

Evaluative: interpretive result of the relationship between the interactor and the system.

The second definition allows us to consider a relation between action and result through interpretation, classifying it as meaningful or not, as point out Salen and Zimmerman [18]:

Meaningful play occurs when the interaction between actions and results in a game are both discernible and integrated in the context of the game. Generating meaning in the act of playing is the goal of a well-designed game design.

Here the definition is much closer to an emotional and psychological experience, but it is the term "integrated", which is responsible for the generation of immersion and meaning, since it is the component that requires the coherence of in-game relations with its larger context.

There are several elements that a designer needs to take into account when developing a game that has its elements integrated to generate a meaningful experience, one of these elements is the narrative, the focus of this research. A game of narrative pretensions needs to have its plot integrated into the system so that there are no conflicts that contribute to loss of immersion and significant experience. Salen and Zimmerman [18] point out this need and also highlight the differences and difficulties that each of these elements requires to design a digital game.

To point out how this integration of narrative in the general scenario should work, we must understand in what ways this element manifests itself in the media. The next item describes such manifestations.

5.1 The Four-Dimensional Electroludic

In the universe of narrative games, the worlds are full of details, their figurative construction evokes various feelings and the player processes various visual information that can guide his way, warn

of dangers and even tell stories. In figurative systems, the plot is present as an important immersion apparatus that not only situates the player but also influences the credibility of the world, bringing meaning and weight to an artificial reality, which from that moment, becomes endowed with past and present, therefore there are stories to be discovered, the narrative will provide the interactor with dramatic data, facts and context in varied ways, broadening the meaning of the electroludic experience.

Therefore, it is assumed that there are different structures through which the narrative is transmitted in the video game. Theorist Henry Jenkins [12] begins his propositions on narrative structures presenting two precepts that support such structures - the narrative space and the narrative environment. For when considering a digital game, one must first understand it as a space of engagement, a space designed in order to enable diverse activities that are powerful of narratives.

From this element, the author uses the ideas of the designer Don Carson [12] on the construction of theme parks and how the environment of these places tell stories to substantiate the term narrative environment, a tool that provides the conditions for a immersive narrative experience that can manifest in four plot structures taken from the author's following phrase: "narrative space can evoke preexisting stories; Can provide a terrain where narrative events can happen [Enacted]; Can embed narrative information in the mise-en-scène; Or provide resources for an emerging narrative"[12]. Therefore, we can define these four structures.

Evocative Narrative: refers to the preexisting stories of a plot or franchise in what concerns his universe. It is the larger context in which a plot unfolds, not alluding to the context constructed in the narrative itself, but to that a priori of the narrative.

Enacted narrative: occurs in the interaction with the elements of the game, whether it has access to past stories, cut scenes, pre-rendered sequences or during the game. It occurs through the direct experience of the interactor with the universe of the game, through goals, conflicts or small incidents, also called micronarratives, by Jenkins [12]. This leads to the contention of some critics who point out that good stories are those constructed with strongly interconnected elements in which the author has full control, but in cyberspace stories are told through exploration and the plot is controlled by the objectives and conflicts that drive the player to the end of the narrative. Thus, the construction of the plot is concerned with the design of the world and how it conveys such a plot [12]. The author also draws attention to the long expositive cut scenes that deliver the story and context in long sequences, asking designers to use more sophisticated means of conveying the narrative [12]:

"As inexperienced storytellers, they often fall back on rather mechanical exposition through cut scenes, much as early film makers were sometimes overly reliant on intertitles rather than learning the skills of visual storytelling. Yet, as with any other aesthetic tradition, game designers are apt to develop craft through a process of experimentation and refinement of basic narrative devices, becoming better at shaping narrative experiences without unduly constraining the space for improvisation within the game."

Embedded narratives: they are constructed by means of the retroactive deduction of the player who, capable of remembering the facts, develops a narrative coming from the space traveled, objects and artifacts that have become familiar and come to meanings. In this sense, it resembles the spectator of a movie that from the "plot" constructs a "narrative" when interpreting the events of the film [5]. Embedded narratives are not limited only to what the author intended, but also the changes in the digital

² Charles Sanders Peirce. *Semiótica*. São Paulo: Perspectiva, 2005.

environment caused by the interactor, such as tire marks on a racing game that reminds us of where we went on the last lap [5].

Emergent Narrative: occurs when the player is the "author" of some story resulting from their interaction with the system. One example is *The Sims* (2000), in which its creator, Will Wright, often described the game as a "dollhouse," suggesting that it is a sort of authorial plan in which the player defines his own goals and writes his own history [5]. The emergent narrative is the combination of mechanics that form a dynamic not planned by the designer, resulting in actions interpreted as "story" by the interactor. It is interesting to note the proficiency that simulation games find in this environment, because unlike the others (not excluding them), they are usually governed by complex rules systems that can be combined in different ways in order to generate new experiences.

Finally, this four-dimensional capacity in which the narrative can manifest itself in the videogame is not definitive, although traditional. Its importance for the understanding of what we call expressive plan is seminal and constitutes the most solid dictates of the media and have within it the principles defended by this research, regarding the relevance of the interactivity in the access to the plot and its integration in the game design. In addition, we approach two less objective perspectives on narrative, but that have a different approach that becomes relevant in the enrichment of the subject addressed.

5.2 Saturation and Open Narrative in The Aesthetics of Incompleteness

Here we need to return to the semiotic process within cyberspace, discussed at the beginning of this chapter, and the ability to interpret the sign and deduce narratives. Therefore, it has been postulated that every sign 1) represents something beyond itself; 2) are interpreted; 3) sense is generated when a sign is interpreted and 4) context shapes interpretation. We can then follow the development of this concept with Ernica's [8] studies on saturation and open narrative.

When an expressive plane conveys meanings that do not appear textually, but are accessed through the semiotic act, there is a narrative being constructed by the subject that we will call narrative information. One can conceive this concept by observing as more traditional media provide this type of information, as in the makeup of the actors of the movie *Star Trek* (2009), that serves to differentiate the diverse races that exist in this fictional universe. In this sense, makeup also serves as an amplifier of this universe, it is a sign that offers extra narrative information that the film could not formally present, expanding the boundaries of this world.

This inability of the plot to convey all the possibilities of its universe generates the sense of incompleteness, but it is in charge of the narrative information to extend its possibilities, creating an illusory expansive sense to the fictional dimension. This sense of incompleteness, lacking content, reflects the fact that the plot is not saturated and is the use of latent objects of narrative that fills this void, there being a point where the reader feels satisfied or saturated.

It is noted here how these manifestations vary according to the medium, just as the cinema will use audiovisual devices and even more to expand its expressive plane, the video game will use its own means of formal expression in this construction. Thus, based on Murray's theory [8] on the construction of cyberspace, the author argues in favor of the structure of open narrative as a way to generate meaning so that it can create experiences where the interaction functions as a tool for access to narrative information that complements this dimension and allows saturation.

This use of saturation receives a new meaning when translated into cyberspace, allowing new modes of storytelling, not limiting the presentation, but requiring the interaction of the interactor, allowing a multiplicity of paths against traditional narratives of

traditional structure, allowing so a refusal of the end through understanding, as Murray [14] explains in using the hypertextual novel *Afternoon* as an example, since the work:

[...]does not offer a general summary of its contents nor a clearly marked end. Instead, [Michael] Joyce tells his readers to decide for themselves when the story ends [...]. In other words, the electronic conclusion happens when a work structure, although not its plot, is understood.

That is, the work approaches a different form of pleasure found in the traditional narrative, for it itself is not resolved, but becomes complete in the reader's mind. There is not necessarily a rise to climax or closure as required by the Aristotelian tradition, there is only the change from unknown to known.

But to better understand how this saturation allows a sense of completeness to the player, even if it does not reach the end of the narrative, Ernica resorts to Ricoeur [8], who asserts that the construction of a subject's identity is based in a cognitive process of progressive elaboration through memory and promise, especially since the subject is recognized as such through a series of causal connections that form a narrative of his own. In this sense, understanding man as a naturally narrative being, it can be said that when using an expressive open plan that presents narrative potentialities, the subject will naturally fill the gaps with more stories and develop his own plot, generating the sense of saturation necessary, so that at some point this is satisfied and voluntarily opts for the end of that narrative, thus denying the conclusion.

The open narrative and the use of saturation allow the development of the aesthetics of incompleteness, a format of aligning game that takes advantage of the multiplicity that the cyberspace offers.

To study the aesthetics of incompleteness, Ernica [8] uses as an example *The Elder Scrolls V: Skyrim* (2011), a comprehensive and open-world RPG that can be considered more of a game system than a game. Soon after the introduction and choice of character, the player is free to explore the province of Skyrim and perform various tasks, such as secondary quests, hunt, sell, evolve their various attributes - such as magic, archery, persuasion, stealth, use of heavy weapons, use of armor, etc. - build your own house, adopt a child, join the various guilds - thieves, murderers, warriors, etc. - each of these activities functioning as a network, interconnected to the same game and accessed freely. In this way, it is reasonable to imagine that the player will reach the level of saturation without having to access the linear narrative (such games are not necessarily devoid of rigid narratives) that the game presents, developing its own history and giving satisfaction to the end of this process [8].

In the end, Ernica [8] complements that this open narrative model is much better suited to so-called emergency games, free and aligning experiences that rely more heavily on the interactivity of the player to construct their narrative (emergent narratives) than on more as progression games that follow a structure of well-defined phases. On the other hand, in games where their worlds are vast, the aesthetics of incompleteness is important in making this dimension feasible as pleasant and factual in the experience of the interactor.

5.3 Electroludic As Procedural Rhetoric

The last study on narrative manifestations in this research is based on the concepts of procedural rhetoric coined by the philosopher and game designer Ian Bogost [4]. First, it is necessary to understand, separately, what the author considers by rhetoric and procedural.

The term "rhetoric" has undergone many changes over the centuries, originally referring to the persuasive form of discourse, first appeared in Plato's work, *Gorgias*. With the public acceptance of this technique, more and more speakers studied the utilities of rhetoric, and various methods were developed, moreover, in

response to Plato, Aristotle defined rhetoric as the practice of persuading correct judgment. Several other authors have addressed the term and, as early as the twentieth century, rhetoric was no longer primarily a practice of persuasion and turned to communication, seeking the elegant and more creative way of transmitting information. As George A. Kennedy [4] has defined, rhetoric "provides ways of emphasizing or making ideas alive." However, it is with Kenneth Burke, an important rhetorical theorist, that Bogost finds the connection he needs. Burke expands the concept of persuasion into rhetoric and suggests the term "identification" as more relevant, defending humanity as creators and consumers of symbolic systems, in this way the concept expands and is no longer limited to one form of expression. Both the non-verbal domain and new or upcoming means of expression. This concept allowed the application of rhetoric in the digital environment and, consequently, in videogame.

In the meantime, the procedural term has its greatest application in the programming and creation of rules in systems/software. As far as the subject is concerned, they are processes in which representations are constructed to generate the space of possibility, condition of an environment that can be exploited. Janet Murray [4] uses the term "procedural" as references to computers and their ability to perform a series of tasks. In this sense, proceduralism alludes to software authorship, that is, an author's ability to construct a code composed of algorithms that govern a series of behaviors, this code is then covered by a figurative layer, this layer is what we see on the screen of our devices. The main issue is that as a reproducer of behavior and rules, software carries sign, it generates meanings understood through the interaction with its algorithms. Following this bias, video games are the most prolific forms of proceduralism when compared to other computer programs, thus a powerful form of communication and transmission of discourse.

Finally, procedural rhetoric is the way to use processes and systems to persuade, just as classical rhetoric is the way to use oratory to persuade. Further, procedural rhetoric also encompasses modern forms of rhetoric in order to be able to convey ideas more efficiently. It is a subcategory of procedural authorship, since its discourse cannot be formed by words, but by the authorship in rules and behaviors of dynamic systems, being the authorship in the system code, in its programming. The author argues that the need for this concept is similar to the motivations of other types of rhetoric, such as visual rhetoric, in which photography, animated images, illustrations, etc. became pervasive in society and discourse producers. Videogame and as such is important to enable criticism and judgment regarding the systems we deal with daily [4].

The production of meaning and discourse in these systems works with the construction of models interconnected by specific dynamics, these dynamics define rules and behaviors that govern the whole system, but as models that relate, their limitations and obligatoriedades depreend meanings that produce discourse. Not only do they produce speech, but because of the affinity that video games have with the interactor, this discourse is much more efficient in its argumentation, penetrating and easily internalizing the user. Bogost [4] then introduces some ways of using procedural rhetoric (which we will not go into detail), as an ideology producer, as an argument and as a teaching method, however, for practical purposes we will use the example that begins the author's work, the game *Animal Crossing* (2002).

Animal Crossing is a kind of "simulator of a village of animals", made for *GameCube* and *DS*, Nintendo's platforms. The character that the interactor commands has just moved to the small village that, without money, must face the expenses of life. Soon an important character is presented, which is an integral part of one of the main dynamics of the game, the tycoon real estate and

merchant, Tom Nook. The trader then offers a home and a job to the player, plus it's the one who will sell consumer goods such as furniture, decorations and food. Aside from this, as a simulator, the game features several mundane and simple activities, such as fishing, gardening and insect hunting, as well as interaction with other animals that live in the village [4].

What makes *Animal Crossing* the best example of procedural rhetoric is one of the most present mechanics in the game: mortgage payment. When receiving Nook's house, the player is in debt with him, but his work and effort guarantee him the conditions to pay the debt, however, when paying this debt, the tycoon offers him the opportunity to expand his house, to have more rooms and space for decoration, everything the player wants most when immersed in that world and so he accepts and a new mortgage is made. The dynamic that is done here is the constant renovation of the mortgage for an ever-larger house, with more furniture, more objects and more space and consequently more work to pay such expenses.

Soon it is necessary to collect more fruits, to obtain more fish, to look for more fossils, to hunt more insects and etc., however the game never shows the punitive sense of this dynamic, filling the rewards interactor and then he finds himself trapped in an interminable dynamic that it feeds itself and needs to deal with the dilemma between spending your money on decor and goods or paying the mortgage. It is also important to note that with each mortgage paid, Nook renovates its store, getting bigger and offering more consumer goods.

In the end, it is possible to understand *Animal Crossing* not only as a simulator of social interactions in a small village but as a model of dynamics that focuses on the materialistic consumerism of modern life. It serves as a study plan for ways to work on personal wealth because as the player strives to pay off debts and buy new objects, the other animals show no interest in new houses and for more money, they have a form of much more immediate and unconscious desire - they do not sell or buy new goods, other than food, they like to walk, sleep on the grass, watch the fisherman and eventually ask for an exchange - they are almost the opposite of the protagonist.

Animal Crossing is a game about a village, about caring for your home and about making friends, but it's also about long-term debt, about repeating work to sustain a costly life for your style and material possessions, but the game never puts into words these dynamics, never moralize these relations, it only mimics one of the characteristics of modern life in a system that, only using its dynamics, manages to construct an argument and draw attention to a certain theme [4].

What procedural rhetoric shows is the potentiality of systems, and videogame, in its purest nature, is a system. Bogost's studies go back to the beginning of this chapter and reaffirm the condition of mechanics as producers of meaning as platforms of experience of the semiotic act, in addition to allowing us to say that mechanics and systems not only generate meaning but generate narrative. It is the process of interpreting the dynamics and relationships mimicked by software, which in itself is a producer of history, divergent from the classic plot structure, but which generates meaning.

Finally, in this chapter we discussed the relation of man to signs and how the production of meanings is made, moreover, it was exposed how video games can manifest narratives in various forms. It is interesting to note that the forms of narratives dealt with here are neither exclusive nor complementary, but there are many other forms that have been left out, but which must be added in this research in the future. Nevertheless, one of the main arguments of this research is to understand such narratives and show how one can combine their use in order to create a better user experience.

6 EVOLVING THE MDA

As already mentioned, the development of games has a great focus on mechanics, whether for practical reasons, market or design, resulting in products that have disparate meanings between narrative and mechanics. The proposal for an evolution of the MDA is necessary because the methodology proposed by its authors does not contemplate the narrative and many other aspects of the media.

As postulated by Silveira Duarte [19] in an article in *Gamasutra*, MDA became very influential in the industry, and as such was adopted by the industry and several areas of the academy as a game analysis tool, however the model assumes that the player always accesses the game first by the Aesthetic route, following to the Mechanics in the sequence. Although this is a reality for most games on the market, this is not an absolute rule, and as Silveira Duarte points out, this is not the case for strategy games such as *Europa Universalis III* (2007) or simulators like *Silent Hunter III* (2005), who need the player to access the rules before Aesthetics, to understand the game minimally. Nevertheless, the author still discusses how MDA does not apply so naturally to board games and others that are not in the digital domain.

The debate about the efficacy of the model has only recently been raised, with several articles attempting to analyze and critique the MDA approach, as W Walk *et al.* [20] recalls, so that some topics stand out, such as the great focus on mechanics and the incompatibility with "gamified" content or any design focused on the user experience. Finally, the author points out the total inability of the structure to offer ways of working the narrative, being necessarily understood as a component of Mechanics.

As defined earlier, this research focuses on the game as the creator of meaningful experiences, and as such we understand that to succeed in immersion, the electroludic experience must be full and coherent in all its elements. For this, one of the first changes that we propose to the MDA is found in the critic made by W Walk *et al.* [20] concerning the term Aesthetics, which according to the author, in philosophy has two different uses: in phenomenology, trying to answer how we perceive things and in aesthetics, trying to answer what is beautiful. Going further, it is said that:

[...] "aesthetics" is also a psychological term that refers to how different people can and often perceive the same color, sound, melody, image or text in completely different ways, including trying to understand the reasons and implications behind these differences. What in ours determines the volatility of our perception? Finally, "aesthetic" is also an everyday synonym of "beauty" [...].

Therefore, it is not only confusing, but also counterproductive, to use this terminology to describe a player-system relationship that sticks to the user's experience, and it is much more practical to use the term Experience to designate what the name itself says, thus aligning the nature of the model to the focus of this research - generating meaningful experiences.

Thus, we propose the following definition for Experience, the first step of this new design model: it is the desired emotional response when the player interacts with the game. This response should exist as soon as the user contacts the product (insert, installation and interface). The generic aesthetics defined by HUNICKE *et al.* [11] as guides to the next steps are still relevant here, now under the custody of Experience.

With that defined, we can follow to greater change that promotes the relevance of the narratives during the production of a game. It is proposed then that within the process the Narrative is added, which here has the function of structuring the plot of the digital game. In this way, Narrative describes narrative and story structures and how they interact with the player and the game. Stating as in the figure below the new structure of the design model:

MDA FRAMEWORK



MDNE FRAMEWORK



Figure 1: MDNE structure

As already said, the game is understood as an apparatus of behavior constructed through interaction, this interaction begins with Experience - the emotional response - and in this new model, when the player comes into contact with the Dynamics, they must have been mediated by Narrative, who's in charge of the plot, narrative structures and themes, point out directions that the project must follow, serving to narrow the Aesthetics in the narrative dimension in order to prevent conflicts to come. Although this new step within the model is not part of the general plan, because it does not refer properly to a stage of the player's perception process in product assimilation, this approach is chosen to reiterate the importance of the narrative plan within any project. Productions with focus or not in this dimension and avoiding a possible levity if this new step were coupled within any of the other stages.

One of the objectives of this research was to analyze the narrative structures present in the games and to understand their relationship with the mechanics, so that they can serve as models or structures that help in the search for the integration between narrative and mechanics. These structures will be used as the generic aesthetics defined by Hunicke *et al.* [11], and will compose the Narrative stage, allowing us to guide the development path of a digital game. With this, we defined four narrative structures that, inspired by their definitions, were elaborated in a way that adapts to the methodological objective of guiding the project, not necessarily being exact transpositions of the original concepts, in this sense such structures defined for Narrative are in the next item.

6.1 Narrative Structures

As already pointed out, the following are the first narrative structures defined for the Narrative stage within the Model MDNE.

Narrative environment: In the definition of Jenkins [12], the "narrative environment creates the conditions for an immersive narrative," such conditions are divided into four classic structures of narrative. Nevertheless, a much more specific use of the term in *Portal* (2009) (remembering that this finding does not obstruct the first use of the term and its subdivisions), in which the environment itself is full of narrative pieces that provide clues to past events and future challenges. This is not an unusual feature in digital games, its environments are offering small pieces of stories at all times, however we decided to demarcate this feature because in *Portal* it has too much relevance in the construction of the plot to be configured as an element among so many which constitute the structure of enacted narrative. Thus, establishing itself as the first design attitude proposed by this research, we defend a second use with a second definition of the narrative environment - this, therefore, is the purposive and structured way of constructing a narrative through its playful and interactive environment which, in a passive way and endowed with narrative fragments, will provide the information interactor so that it builds a story. This second definition is important because it throws to light an old characteristic found in digital games and that sometimes is underused with small complements that do not lack in the total experience of the player, thus seeking an appreciation of the potentialities that the cyberspace has.

Emergent narrative: some of the structures present in the Jenkins [12] concepts would not constitute proposals in themselves, since they refer to much more abstract structures, such as enacted narrative which, similar to the narrative environment as regards obligatory occurrence, does not dictate a path of development, but it is a feature of any symbolic meaning-producing system, much more concerned with a global form of how entanglements are captured by the interactor. The same happens with the narrative built in, this being a retroactive construction that passes the player in forming his conception of history based on previous events. In the meantime, the embedded narratives refer to preexisting histories of shared universes or because they are adaptations, and it is not possible to translate them into a narrative structure useful to research. On the other hand, emerging narratives define mechanics and an entire ecosystem, dictating the complexity of systems for a more organic and personal experience that is not predicted by the designer. It is a technique widely used in simulation games, but we have already warned about the constant mix of genres and styles, which is another incentive to this inevitable process, as we see in *Journey* (2012) while creating a narrative based on the Hero's Journey and a complex dynamic that allows you to navigate this journey with the help of other players, generating new stories shared only by these players.

Incomplete Narrative: incomplete narrative structures the digital game according to the definitions of the aesthetics of incompleteness [8] and, similar to the complexity found in systems where experience is mainly emergent, this design method demands vast systems that constitute a fictional universe curd of narrative information that entertains the interactor of varied forms and provides narrative content so that it constructs a plot and is able to understand that world being able to reach the point of saturation, where the conclusion is by understanding and not by climax, as Murray [14] explains. This world may still have a linear content, but can be accessed in an aligned and fragmented way among its various systems.

Procedural rhetoric: it is a system that uses the procedurality of its dynamics to ground and construct a persuasive argument. As Bogost [4] argues, the algorithms of a system have authorship, this authorship is felt in the total plan of this system, that potent producer of signs, is experienced and interpreted by an interactor that internalizes this experience and absorbs its message. Thus, procedural rhetoric can only be constructed if the system on which it rests is structured in such a way that its different segments and dynamics connect and are amenable to understanding. In a game, it is the dynamics, derived from the mechanics, that while separated provide activities to the player, but that in a general aspect, when absorbed and understood as part of a single system, are translated in an electroludic experience that is producer of a certain persuasive argument built by the designer.

Nevertheless, as part of a research in development and in its beginning, such structures of narrative are far from definitive and new proposals, dependent of future studies, are necessary and important for the development of this research.

7 CONCLUSION

This research aimed to integrate the narrative into game design. The means by which this research sought to achieve this integration was to develop a design model that contemplated and equated both focal elements - narrative and mechanics - and for this purpose an evolution was proposed to the MDA Model that carried out such integration.

For the full understanding of how the MDNE works, it's important to be implemented in a prototype, but with limited time and resource, it was not possible, but it is true to say that this research must continue, the experimentation of the new MDNE framework needs data to confirm the solution of the main problem

of this research and it is in the interest of the authors to continue the experiments, providing enough material so that at some point the success of this new model can be defined and, as part of this objective, the use of the model by third parties is important and encouraged. In addition, it is true that this research presents a interesting approach in its theme, seeking to solve its problems through a design bias, characteristic behavior of the area of the design to which the authors are, thus creating an original way of approaching the goal of the research in the academic world.

What can be concluded, at the end of this research, is that the relationship between different media is inevitable, the interaction and mixing of these is a natural and gradual process, and that, because it is recent, lacks knowledge and studies. However, this research demonstrated that it is possible that video games contain stories, demonstrating that the narrative is a capacity present in any expressive medium and as such should be studied by those who captivate it, should be included in this pantheon of expressive diversity that is the video game, but for this, new researches must be done so that this expressive plan develops and that at some point can be affirmed as a means of conscious expression of itself and its surroundings. And this research is only a small step in this direction.

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