

Choice and Disbelief: Revisiting Immersion and Interactivity

The interplay between immersion and interactivity was widely discussed by Marie-Laure Ryan at the beginning of the 21st century. Since then, even though these terms have been studied by several scholars—Grau, Ryan, Zimmerman, Calleja, to name but a few—they have been considered imprecise or too broad, and a shadow of doubt has been cast upon their value as theoretical tools. Nevertheless, both of them continue to represent the kind of contact established between reader and device(s). Companies such as Sony (more precisely, the Immersive Technology Group and Sony Interactive Entertainment) have been using these words to describe the kind of contact established between users and devices. Similarly, although these terms have been turned into advertising buzzwords,¹ scholars continue to use them to describe exchanges between computers and users. For instance, the following adjectives are used to describe the New Media Writing Prize: “Innovative, Interactive, Immersive.”²

Many authors, some of them cited in this essay, have already created comprehensive lists of levels and types of interactivity and immersion. However, because “immersion” and “interactivity” are so deeply ingrained in the discourse devoted to human-machine relationship, I would prefer to describe the different appropriations of these terms and the multiple contexts in which they appear. Hence, the way “immersion” and “interactivity” have been used in texts dedicated to electronic literature will be, as far as the space allows, examined in this essay.³ I believe that by focusing on these features, we are given the opportunity to address both content and form of digital texts. Moreover, because the analysis of “immersion” and “interactivity” demands the contribution of knowledge gathered by different disciplines, it allows us to establish a link with electronic literature’s antecedents, as well as seemingly opposing fields of research.

1 Immersion vs. Interactivity

By the end of the nineties, Ryan stated that immersion “was either ignored or dismissed as the holdover of a now-discredited aesthetics of illusion.” As for interactivity, Ryan considered it “the triumph of postmodernism’s aesthetic ideals of a creative reader, an open text, and a ludic relation to language” (Ryan,

“Immersion vs. Interactivity” 111). Interactivity was used to offer freedom of choice and the opportunity of co-authoring the text, even though, as it is known, readers were not allowed to make any changes to the text’s structure and design. As for immersion, this concept was related to the feeling of losing oneself in the story or as the result of a reading experience based on a “willing suspension of disbelief,” as suggested by Samuel Taylor Coleridge, and thus, constrained by authorial intention. Therefore, interactivity was largely regarded as an antidote for reader’s immersion in the text. Since narrative was often related to coherence and linearity, the fragmented and combinatory nature of these works seemed to foster a “clash between ergodic and narrative layers” (Eskelinen 104) of a text. Yet, the expansion of the World Wide Web and the emergence of new software and mobile devices suggested new reading and writing experiences. Emergent technology added multiple ways to tell a story or create a narrative. As computers could now provide an environment where different types of media were able to thrive and prosper, age-old or additional debates began to (re)surface. Immersion-interactivity theory demanded an inclusive perspective: one that could address the multimodality of electronic literature.⁴

In an effort to accommodate several “climatic changes” (2), Ryan has recently reformulated her book, *Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media* (2001). This essay also argues for the need to revisit Ryan’s thesis, especially at a time when augmented reality, tracking or locative devices are increasingly being applied to create further reading experiences. In line with Ryan, I will demonstrate how both immersion and interactivity can be regarded as interdependent. To accomplish this task, I will gather the invaluable knowledge produced by several theorists and create a link between perspectives often regarded as essentially incompatible. Besides focusing on text behavior (or on what the text can do), this essay will describe texts as matrixes of possible worlds and as fertile grounds where meaning can be disseminated. In so doing, I will argue for the need to consider “interactivity” as an expressive feature which allows (rather than forestalls) reader’s immersion in the text. In this essay, interactivity will represent the contact established between reader and text and the kind of negotiations taking place while (or after) reading a text. As for the term “immersion,” it will be used to represent not only the reader’s suspended disbelief, but also the cognitive processes (and level of attention and concentration) which allow us to keep contact with a fictional world and to understand a text.

2 Background Process

Works created with Storyspace software such as Michael Joyce's *afternoon: a story* (1989) are often cited to pinpoint the beginning of electronic literature. In fact, according to Judy Malloy, Storyspace was "one of the first authoring tools to be written specifically for writers of new media literature" (35).⁵ However, if we consider the use of computers as tools for literary creation as a point of departure, literary experiments with computers can, for instance, be back-tracked to Alan Turing's and Christopher Strachey's love-letters generator. Storyspace was launched by Eastgate Systems Inc. in 1987.

Interactive fictions represent other important antecedent. According to Nick Montfort, interactive fictions "have clearly influenced software engineering, interface design, online communities such as MUDs and MOOs, and other forms of digital and nondigital media" (Montfort 2). Montfort adds that they have also influenced the "style of at least one important work of hypertext fiction, Stuart Moulthrop's *Victory Garden*" (226). Hypertext fictions written in Storyspace and interactive fictions were predominantly verbal. However, as mentioned above, following the expansion of the WWW, digital texts became multimodal artifacts encompassing different semiotic languages. Readers of digital works could now find multiple figurative dimensions (Zuern) that were unavailable to readers of earlier hyperfictions.⁶ Works such as Brian Kim Stefans' *Dream Life of Letters* (2000), where letters are turned into dynamic shapes, or Ingrid Ankersen's *Cruising* (2001), a cinematic flash poem which "is an excited oral recitation of a teenager's favorite pastime," demonstrated that a text, besides literary, poetic or narrative, could also be defined as responsive or animated. A vast array of texts produced with new software, and read or experienced through new devices demanded the knowledge and critical tools gathered by different research areas, from computer science to film studies. These texts also challenged the notion of a literary text as exclusively verbal, and undermined any hierarchical relations between word and image. Nevertheless, as we know, long before the emergence of electronic literature, a clean-cut separation between word and image had already been compromised. From medieval manuscripts, William Blake's illuminated printing, to concrete poetry, the kind of contact between letter and image was already one of fusion, rather than division. With electronic literature, we witnessed an extension of this practice under which mechanisms and surfaces of inscription continue to be thoroughly reworked in order to convey stories and ideas.

As Ryan explained, because it was often coupled with the need to assemble the text or respond to multiple challenges, interactivity was believed to hinder reader's immersion in the story.⁷ The kind of vagrant⁸ or participatory reading often related to the presence of interactivity was believed to settle the

disruption of the narrative's thread. However, we know that a narrative can no longer be described as a plot clearly divided into beginning, middle and end. Long before electronic literature was named as such, a line of modernist and postmodernist texts had already dismantled this idea.⁹ Furthermore, I would like to emphasize that a text can be comprised of a disrupted or hindered narrative, and thus, the reader (or interactivity) cannot be held responsible for the text's dismemberment. The text's fragmentation is not urged by the reader's "participatory role" or by the reader's choices.

The idea that interactivity and immersion are incompatible features of a text is deeply connected with the assumption that "interactivity" (or, in its fundamental sense, the need to activate or assemble the text) is at the basis of the text's disruption because the reader is asked to split the attention between the manipulation of the text and the reading of the suggested narrative path(s). The belief that this feature promotes textual fragmentation (and consequently, a disrupted reading) stems from the fact that interactivity is often regarded as a result of reader's intervention, and not as the result of a set of decisions made by the author. Any failed attempt to see the text as a whole or to follow the narrative's thread is creatively and intentionally planned by the author (or designer). Moreover, as we shall see further on, a text can be comprised of narrative elements, for instance, characters, events or narrator(s) that may provide clues to the presence of a narrative.

Another trend that seemed to foster the antagonism between immersion and interactivity was matching interactivity with physicality. As for the concept of immersion, it was often related to cognitivity, as well as passivity and submission to authorial intention. In "Peeling the Onion," an essay published in 2005, Marie-Laure Ryan identified four layers of interactivity and four modes of participation. Ryan linked level two of interactivity to hypertexts and to the possibility of choosing between "several pre-defined stories." In level three of interactivity, "the system grants him some freedom of action, but the purpose of the user's agency is to progress along a fixed storyline, and the system remains in firm control of the narrative trajectory" (Ryan, "Peeling the Onion"). Adventure games, shooters and mystery-solving games represented this level of interactivity. The activities executed by the reader (who, in the third level of interactivity, becomes a "player") were described as follows: "the actions available to him are not merely abstract ways to see more of the text, but represent a physical engagement of the avatar with the surrounding world, such as moving, jumping, building, shooting, killing, picking up objects and looking around" (Ryan, "Peeling the Onion"). In this description, Ryan conveys the idea that interactivity increases as soon as the text begins to resemble a game or as soon as the reader is asked to perform (although simulated) physically demanding activities. By contrast, the consultation of external documents

is matched with interactivity level one. The focus on physicality seems to be directly related to the special attention given to embodiment in theoretical and literary works created between the end of the 20th century and the first decade of the 21st century. For instance, the activity of sewing or assembling lexias, was thoroughly explored by rhizomatic works such as Shelley Jackson's *Patchwork Girl* (1995), where the reader would have to sew body parts together to read the text. It was also later explored by *Fitting the Pattern* (2008), where the reader is provided with sewing patterns and "is the tailor who must bring it all together to complete the pattern and make the narrative cohere" (ELO Collection 2008). The primacy given to reading as a bodily or manual experience was partly promoted by the need to demonstrate that electronic literature, inscribed in the dematerialized world of cyberspace, offered an embodied experience of the text. Some of these texts were also deeply influenced by feminist theory as envisaged by Donna Haraway, and sought to undermine the mind-body dualism by focusing on embodiment. However, reading has always been a physical activity, whether we are touching the pages of a book or reading from a computer screen. Considering a digital text "immaterial" meant to ignore a set of practices inscribed in the physical world and overlooking the role of the medium in the production of meaning. What is more, materiality is not merely a characteristic of the observable and tangible, but is also represented by the way ideas and stories are conveyed and perceived while making use of medium's affordances. The acknowledgement that something like "material metaphors" may exist indicates that a shift in the study of materiality took place. According to Hayles these metaphors "control, direct, and amplify this traffic between the physical actions the work calls forth and structures, and the imaginative world the artifact creates with all its verbal, visual, acoustic, kinesthetic, and functional properties" (48). In this description, Hayles points out that the text mechanics and any semiotic systems involved work conjointly (as intrinsic and equal parts of the text) to create an "imaginative world."

The focus on physicality¹⁰ was also motivated by the belief that an increased sense of interactivity (often by allowing the reader to use his hands to assemble or customize the text) would transfer more power from the author to the reader, as envisaged by postmodernist and poststructuralist theory.¹¹ Whereas interactivity may no longer be linked with the attempt to free the reader from the author's control, it certainly remains focused on creating innovative reading experiences which allow the implication of readers in the construction of the text.¹² Thus, experimentation with the medium is still a central feature of electronic literature, and technology continues to be used to convey ideas or to tell stories in an unprecedented way.

Aarseth once claimed that "[t]o declare a system interactive is to endorse it with a magic power" (48). Because electronic literature depends on software

and technological advancements, a tendency to conflate interactivity and technology's marvelous potential to create alternative reading experiences still lingers. In so doing, focus is placed on what a text can do and on the way software is used to create the element of surprise. Nevertheless, as it will be demonstrated, "interactivity" might have a specific role other than involving the reader in the dismantlement/assemblage of the text. Instead of focusing exclusively on a text's mechanism and considering a digital text as a toolbox, we could perhaps benefit from considering a text as multilayered and analyze how its mechanism is built to convey meaning. This essay can be considered as a preliminary gesture, and an invitation, to rethink the way we study interactive or ergodic texts. By departing from "immersion and interactivity debate"—and thus, by bringing together the knowledge gathered by disciplines such as narratology, cognitive sciences, literary theory, media studies and game studies—I aim to demonstrate the importance of including interpretation of content and expressive features in the analysis of digital texts.

The notion of a text as strictly verbal, the idea of narrative as circumscribed by closure or by a linear plot, as well as the notion of interactivity as dependent on physicality, are at the basis of the dichotomy between immersion and interactivity. We will now focus our attention on another widely propagated idea: the belief that interactivity grants the reader a reading experience in a collaborative mode.

3 The Illusion of Choice

In the intro to the game *The Stanley Parable* (2013), the reader faces a first challenge: "the story doesn't matter, it might not even be a game, and if you ever actually do have a choice, well let me know how you did it." During this game, the reader is often reminded (parables serve a didactic purpose) that there is no freedom of choice. Every time readers try to disobey, they are redirected to an initial stage of the game and their possibilities of action are frequently taken away. While the game loads, the reader can read the following sentence "The end is never the end is never..." This parable is not a game of action but a game that challenges the limits of fiction or the notion of narrative logic, coherence and closure. Because it is comprised of events, characters and a narrator, *The Stanley Parable* can be considered as a narrative.¹³ Nonetheless, this parable is a narrative based on the challenge of its own foundations. To Markku Eskelinen, hypertextual fiction and some postmodernist fiction are "potentially narrative" (Eskelinen 104). To Gordon Calleja, during a game, there seems to exist an "experiential narrative" (Calleja 116), or a narrative shaped by the mind of the reader. Instead of an *antinarrative* or a *sabotaged* and *reluctant* narrative,

Aarseth has identified the existence of a “game of narration” (Aarseth 94). These scholars acknowledge the presence of an underlying or imminent narrative. *The Stanley Parable* seems to play the game of narration, as described by Aarseth, in order to produce what I have described elsewhere as a “projected narrative,”¹⁴ or a narrative that repeatedly undermines and postpones the production of a story and, in that process, lays bare the foundations of a narrative.

The distinction between “story” and “narrative” has fueled many debates within the field of narratology (Eskelinen 277), partly because these terms have often been used interchangeably. Because of its metafictional tone and self-reflexive stance, *The Stanley Parable* might offer us a blueprint for narrative. *The Stanley Parable* allows us to consider “story” as the content of a building named “narrative.” Except that, in *The Stanley Parable*, the building was evacuated, and the reader will only be able to find empty corridors leading to dead ends. *The Stanley Parable* also allows us to understand that the reading of a narrative is not delayed or prevented by interactivity, but by the author’s and programmers’ decisions. The inability to follow the thread of a story—or to know a story at all—is part of the expressivity of this game, and it is not a consequence of the reader’s ergodic effort to traverse the text. This parable encourages the reader to participate, but continuously usurps the reader’s freedom of choice. Both the illusion of participation and the illusion of choice are explored by this interactive fiction.¹⁵

The Stanley Parable enacts a metalepsis and invites the reader to participate imaginatively in the construction of the story. However, as Janet Murray once claimed, “interactors can only act within the possibilities that have been established by the writing and programming” (152). Similarly, Astrid Ensslin noted that the “users respond to the textual tools and structures created by an author, rather than creating their own narratives independently” (14). These scholars, distanced by thirteen years, seem to conclude the obvious, but the participatory role of the reader in the construction of the story is often treated as irrefutably connected to interactivity. Instead of pursuing this perspective, I would like to underline that readers are only allowed to revisit or reconstruct the story or proceed according to the author’s or programmer’s plan. Certainly, what the reader does after the contact with the story (for instance, literary analysis, appropriation, fan fiction, retelling or synopsis), escapes the author’s control and broadens the scope of a work. In that case, a distinction between two conditions of a text needs to be made: the text as it is being read (or the *text during a reading session*), and the text presented as a singular artifact available online or stored in a device (the *text between reading sessions*). The first cannot be altered or reformulated; the second can be easily manipulated, suffer endless alterations and give rise to entire different objects. Yet, texts such as Ian Hatcher’s *Opening Sources* (2008) which has been changed by readers since its publi-

cation, were created to resemble authoring tools. The surface of this text shapeshifts permanently but its principle remains the same: the reader is expected to replace sentences and change the surface of the text collaboratively.¹⁶ Here, the kind of interactivity described by Zimmerman, even though exclusively related to “linear” texts (or, as stated by Zimmerman, “linear media”), may be useful. Zimmerman has identified a “meta-interactivity” which he defined as follows: “This is interaction outside the experience of a single text. The clearest examples come from fan culture, in which readers appropriate, deconstruct, and reconstruct linear media, participating in and propagating massive communal narrative worlds” (Zimmerman). By identifying this kind of meta-interactivity, Zimmerman acknowledges that this feature is not exclusively related to a set of actions performed by the reader while in contact with a text. In fact, interactivity can exist outside (and posteriorly to) the reading of a text. In *Opening Sources*, because the reader is given the chance to contribute with words, meta-interactivity becomes the text’s central theme. *Opening Sources*, as the title indicates, is open to manipulation and the reader is invited to “Change (...) to: (...)” The sentences inserted by the reader are used to collaboratively accumulate changes, causing the text to shapeshift between reading sessions, but adding nothing to its structure or foundations. In *Opening Sources*, meta-interactivity is, in its turn, used to explore themes such as authorship and access to information in a digital age. It also allows us to identify a link between *Opening Sources* and experimental texts (or antecedents) which depend on collaborative work and make use of techniques such as the *cadavre exquis* or the *cut-up*.

Interactivity is often depicted as a set of new textual responses that offer readers the chance to become co-authors. The word “participatory” is frequently used in conjunction with “interactive.” However, this word seems to communicate, without any possible refutation—especially in electronic literature, where interactivity was once used to undermine the author’s power—that the reader can co-create or generate a text while reading it.¹⁷ In this regard, I would like to stress that this participatory role attributed to the reader is not an inherent characteristic of interactivity but an illusion promoted by the text, and thus, one of its expressive features.

Ryan linked the fourth level of interactivity to the construction of stories in real-time but adds that these stories do not yet exist. Therefore, in *Narrative as Virtual Reality* (2001), Ryan does not aim to address the expressive or figurative potential of virtual reality, but to use this technology as both a critical tool and a space of reflection. Ryan’s work is a groundbreaking analysis of an emergent technology. It also represents an attempt to include narratology in the study of digital texts. Therefore, it may be regarded as an effort to grasp virtual reality’s potential as a technology and an artistic or literary tool. In Ryan’s text,

this technology is used to imagine what would happen if readers could penetrate a virtual world which is being built by them in real-time. In so doing, the “reader” becomes the “user” to avoid the read-it-while-you-write-it paradox. If we consider interactivity as an expressive feature or as a trope and metaphor, this paradox is replaced by an aesthetic experience. Our attention becomes focused on the message, on the layers of meaning, and not exclusively on the behavior of the text. By focusing on content I do not aim to argue that text’s behavior (Aarseth) should be excluded from the analysis of a text. What I intend to demonstrate¹⁸ is that there is a tendency to consider interactivity as a by-product rather than a specific expressive feature. If our focus remains on the kind of actions a work might allow us to perform (or what the work can do), the singularity of interactive works run the risk of being ignored. Furthermore, the actions the reader is allowed to perform or the text’s behavior are assumed as the work’s defining characteristics. In order to analyze an interactive text, the way media affordances are used to convey meaning also needs to be contemplated. Works such as Young Hae Chang Heavy Industries’ *Nippon* (2003), whose reproduction cannot be paused, rendering the text (almost) illegible, help us realize that just because a text is dynamic it does not mean that it is interactive. By the same token, Jason Nelson’s *Game, game, game and again game* (2007), which cultivates the “illusion of clean lines and definitive choice” (Jason 2007) allows us to conclude that, just because the text is interactive, it does not mean that readers will be endowed with the power of choice.

4 Gamers Love Stories Too

Ryan once claimed that most gamers are not interested in the story and that they usually play “for the adrenaline rush of competition and for the thrill of beating the game.” Moreover, “as long as they get stunning graphics and their dose of fast action, they are satisfied with the same old storyline clothed in different themes and visual motifs” (Ryan, “Peeling the Onion”). However, according to Gordon Calleja, the story may play a central role in games: “The promise of an interesting scripted narrative can attract players to the game in and of itself. This attraction can vary from the general appeal of a particular setting and genre to a specific expectation of an intriguing story that players can participate in” (Calleja 131). Calleja makes an interesting distinction between *scripted narrative* (“pre-scripted story events written into the game”) and *alterbiography* (“the story generated by the individual player as she takes action in the game”). The relationship between both is described as follows:

If the alterbiography . . . meshes well with the scripted narrative, players will tend to care enough about the game world, its events, and its inhabitants to want to return to the game in order to find out more about them and to see where the scripted narrative will lead. (131)

The distinction suggested by Gordon Calleja allows us to identify what keeps a player concentrated on (or attached to) the game during and between sessions. However, the story cannot be “generated” by the readers’ actions, nor can readers participate in the story being told. The story was fully (and not partly) pre-determined by the authors (or a team of designers and programmers). All that is left to do is to explore the game’s surface, its multiple endings and, if any exists, try to reconstruct the story. Players can, of course, subvert or fight against rules and predetermined endings. However, any insurgency will always be tamed by game’s architecture and programming.

In *The Stanley Parable*, the voice resembles a narrator from a novel. The personal dilemmas introduced by the narrator of this parable (he often loses track of the story and he frequently restarts the game to deal with conflicting episodes) set a metafictional tone. Some gamers have indicated the use of literary language¹⁹ as one of the most appreciated features of this game. If we visit forums or read reviews about this parable, it becomes clear that players are not attracted to *The Stanley Parable* due to the promise of (inter)action, but because of the way this parable is conveyed to the reader/listener.²⁰ For instance, in the *Hardcoregamer* webpage the following comment can be found: “The writing is smart and the narration is excellent, so much so that I usually found myself stopping any time the narrator had something to say just to make sure I didn’t miss anything.” According to this player, *The Stanley Parable* is a game with “limited interactivity” (interactivity is again linked with the opportunity for action) and its value is “in discovery and experimentation.”²¹ Another player claims the following:

. . . it’s exciting to play again and again, because the choices you make can take you down such wildly different paths, and because the narrator’s commentary is so smartly written and its delivery so hilarious that finding ways to trigger new bits of it is as rewarding as discovering a secret area containing precious treasures in a great adventure game.²²

For a game with basic set of actions, *The Stanley Parable* was extremely well received by the gaming community, which means that gamers might be not only interested in the story, opportunity of action or collaboration, but also in theoretical riddles²³ or intellectual challenges suggested by the designers or authors of this game. In this case—and also in the case of games that include a wide

range of actions or demand the execution of multiple and simultaneous tasks—immersion can represent the level of concentration and the degree of attention dedicated to a text.²⁴ Therefore, besides succumbing to the lure of fiction, a reader may be immersed in a text in order to maintain contact with a fictional world or to respond efficiently to challenges posed by the text. Ryan reminded us of the “complex mental activity that goes into the production of a vivid mental picture of a textual world.” Because “language does not offer input to the senses, all sensory data must be simulated by the imagination” (Ryan, *Narrative as Virtual Reality* 11). I would like to take this idea one step further. Although seen as a passive and acritical activity,²⁵ immersion entails several cognitive processes, such as decoding, interpreting, speculating, reviewing and creating mental images, which are represented by an *imaginative effort* invested while reading a text. All of these allow the reader’s immersion which, in its turn, simultaneously fosters and is dependent on interactivity. Here, interactivity is not only represented by the actions performed by the reader, but by exchanges between reader and text taking place at the cognitive level. In the next section of this essay, I will describe how imaginative and ergodic efforts cooperate so that readers can experience and understand a text.

5 Imaginative and Ergodic Effort

5.1 Ergodic Effort

Espen Aarseth has produced a model which helps us to describe the relationship between user and text. Even though the concept of “interactivity” was undermined by Espen Aarseth, I believe that it is possible to find an interesting dynamic between “interactivity” and the “ergodic effort” described by this scholar. Before describing this dynamic, I would like to focus attention on the concept of *cognitive interactivity*. At the basis of the ergodic work done by the reader which is here represented by the configurative, explorative, textonic *user functions*, there is a cognitive work which enables the reader to understand the text. The idea that interactivity can be related not only to a participatory role in the construction of the text or to physical agency, but also to the cognitive work done by the reader, might bring immersion and interactivity closer together and may help us analyze interactive texts in their full dimensions.

Besides displaying a narrative or presenting the possibility of interaction, a text can also be considered as the matrix of possible worlds. These can only be accessed through a *cognitive interactivity* which was once described by Eric Zimmerman as a set of “psychological, emotional, hermeneutic, semiotic, reader-

response . . . kind of interactions that a participant can have with the so-called ‘content’ of a text” (Zimmerman). Here, I have adopted this concept to represent the cognitive work performed by the reader and the interpretation of the texts mechanics and the “content of a text.” I believe that interpretation is the origin and product of the reader’s *user functions* because, in order to perform an action, the reader needs to understand what is asked of him. The reader is urged to interpret the result of his actions so that he can improve his skills, create a strategy and react to the text in an informed and efficient way. Similarly, the reader is asked to gather information and configure the text so that he can interpret it. For this reason, I argue that the *interpretative function* which, according to Aarseth, “is present in all texts” (64), should not be placed side by side with other *user functions* but as follows:

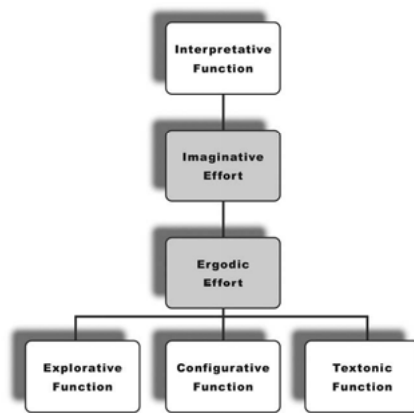


Fig.1. Imaginative and ergodic effort: *user functions* interplay.

This graph does not represent a hierarchical model and it merely aims to demonstrate that *user functions* are interdependent. In fact, an analysis of a digital text can begin by selecting any element of this graph. Because it is dependent on the interpretation of data and the ergodic effort invested by readers, *cognitive interactivity* enacts a fusion between all of the mental and physical activities performed during reading. This kind of interactivity also enables us to see immersion (usually linked to cognitive processes) and interactivity (usually linked to physical activities) as cooperating features.

I believe that Aarseth’s model is open-ended, and thus, allows the critic and researcher, albeit within certain limits, to expand the range of each function. Aarseth is interested in the text’s mechanics and he believes that a cyber-text is “a mechanical device for the production and consumption of verbal

signs” (21), but digital texts are not exclusively verbal artifacts. The reader may be asked to activate the *interpretative function* to understand icons, pictures or moving images or, as claimed by Hayles, “material metaphors.” Aarseth’s *explorative function* is focused on the selection of paths, which indicates that, when he envisioned this model, Aarseth was thinking about multilinear and hypertextual works. When analyzing ergodic texts that make no use of rhizomatic paths, this function could refer to the exploration of the text’s surface or its expressive features. It can also be related to the exploration of a game’s different spaces or sceneries.

By expanding Aarseth’s model, I wish to bring expressive and mechanical features together and to build a bridge between multiple fields which allow us to address interactive texts. These texts demand close collaboration among disciplines such as game studies, narratology, literary theory, media studies or aesthetics. In order to analyze these texts, critics need to adopt multiple approaches, some of them considered as incompatible. By bringing imagination and ergodicity together, interactive texts become more than a set of textual responses, paths or tools made available to the reader. Interactive texts can be considered as irregular fields where meaning emerges according to different processes and, as such, demands multiple procedures to be grasped. Thus, only by applying the invaluable knowledge gathered by different disciplines and by creating an open and productive dialogue between them, will it be possible to successfully address interactive texts.

According to Aarseth, the *configurative function* is analogous to the selection or creation of textons. Yet, it can also be associated to the way the reader organizes and displays information in order to read and interpret the text. Readers can configure the text but cannot co-create it: they can only reconstruct it imaginatively. Because readers cannot add something to the structure of a text—in *Opening Sources*, for instance, readers are allowed to accumulate changes, and thus, contribute for the proliferation of meaning, but cannot change the text’s mechanics—the *textonic function* would have to be excluded from this reading of Aarseth’s model. However, textons exist in a (what if) potential state. Readers do not know what shape textons will assume. Textons offer keys to possible worlds and the reader needs to perform a *textonic function* to be able to explore those spaces. In other words, the reader needs to create a “strategy” so that textons are turned into scriptons. Let us take the example of the work *The Intruder* (1999) by Natalie Bookchin.²⁶ This work is comprised of a set of games such as *Space Invaders* or *Pong*. In one of the games, the reader is urged to collect several objects to keep the narration flowing (or to play the “game of narration,” as suggested by Aarseth). The *textonic function* is, in this case, activated by the need to turn the objects into a sequence of narration. Only after understanding how this is done, and only after designing a strategy

that enables the reader to transform the textons into scriptons (or performing a *textonic function*), will the reader be able to access the story and interpret it. Nevertheless, during the reading of the story, the user needs to permanently adopt the *interpretative function* to formulate or improve a strategy. This function enables readers, not only to understand the figurative strategies of the text but also to understand the result of their actions in order to continue reading. The *interpretative function* becomes an invaluable tool to understand and interact with the text.

5.2 Imaginative Effort

Schäfer and Gendolla have claimed that gamers only unravel the mystery in detective stories if they respond successfully to the challenges of the game. To fulfil that goal, they need to resort to imagination:

In games and net literature, the mystery is unraveled if and only if the readers/players' actions, which have been inspired by their *imaginative analysis* in the course of the reception, turn out to be in accordance with pre-scripted solutions that have been programmed by the game designers and implemented into the rules and computer operations. (Schäfer and Gendolla 98; emphasis added)

In order to read a text that asks the reader to sew a corpse, to grab objects, and follow a trail of clues, the reader needs to invest what I consider to be an *imaginative effort*. According to Zumthor, imagination is a “poetic” faculty that departs from “a deeply concrete apprehension,” but needs to be supported by a “reconfiguration of the perceived elements” or “perception and imaginary reconstruction” (Zumthor 196–197). Imagination is not a mental process disconnected from reality. In fact, it is used to apprehend or understand the world. However, this faculty cannot be equated with the possibility to participate in the construction of the text. Imagination is based on a subsequent process in which the creative work done by the writer, programmer or designer is appropriated and reconstructed. In stories or games, the reader needs to follow the rules created by authors. This means that increased interactivity by means of an expanded range of actions, does not necessarily offer an increased amount of power or freedom of choice to the reader.²⁷ As the guard fields used in hyperfictions or the scheduled actions in online works allow us to conclude, there are multiple and powerful ways to circumscribe the reader’s movement across the text. If readers, gamers or users feel that they are participating in the construction of the story or assisting the author(s) in generating it, this happens because an *imaginative effort* is being exerted, not because the story is being

built or generated on the go. The ability to co-create a text or the opportunity to participate in its construction is the product of reader's *imaginative effort*. The text may be gradually presented to the reader as a consequence of reader's actions, but both the text and the story existed previously to the process of reading or playing. "Meta-interactivity" allow readers to tell stories based on their playing experience or game session, and even to create versions of games. Yet, while in touch with the game, the user's range of actions, as well as the text's properties, are limited to those planned by the creator(s) of the game.

In *The Intruder*, readers need to suspend or suppress disbelief so that they can beat the enemy, take a walk on the fictional world or trade objects for a piece of narration. At a certain point, the reader is asked to shoot an opponent. *The Intruder* is based on a short story written by Jorge Luis Borges, in which two brothers share a woman. The competition between these two characters (or between the reader and the computer) is illustrated by the back and forth movement of the feminine figure between the two shooters. The reader's desire to win the game or listen to the story—which can be compared to the reader's voracity, or struggle to reach closure—puts the female character in danger. Details such as these enable us to see that interactivity (or the possibility of interaction) has its own meaning and that this feature is, in fact, dependent on the *interpretative function*. I would like to emphasize that this function is not only hermeneutical, but is also applied to explore and configure the text, and thus, to understand it.

To perform a function, the reader of an ergodic text needs to invest an *imaginative effort*, which means that the reader has to formulate strategies, focus and manage attention, as well as "fill in the gaps" (Iser).²⁸ In this sense, *imaginative effort* not only allows readers to impersonate a character, but to speculate about future outcomes and to adjust to unpredictability or fragmentation. Without the contribution of an *imaginative effort*, the reading of an ergodic text would be limited to the reader's manipulation of what is presented on screen (or other kind of surfaces). Fictional worlds would crumble and poems would be emptied of their metaphors, since the reader or player would be prevented from getting in touch with them. Ultimately, the reader or player would be incapable of understanding the text. The sense of participation and agency is an illusion sustained by the text and, without an *imaginative effort*, the reading of an ergodic work would not be possible.

Therefore, suspension of disbelief does not correspond to a passive role played by the reader but becomes the matrix of cognitive interactivity. This feature is linked to the *imaginative effort* applied by readers, which is vital to understand the text. The reader's ability to suspend disbelief is instrumental and decisive to read and operate a text. As for immersion in the fictional world (which is related to the reader's suspension of disbelief), it is dependent on the

ergodic effort invested by the reader to maintain the contact with the text. Therefore, as hinted before, immersion is not only related to the possibility of permeating a fictional world, but also to the level of attention invested (namely required by *user functions*) to maintain contact with a text.

A digital text is not a mere set of opportunities for interaction. What is more, the reader's expectations are not always fulfilled. In fact, they can be severely thwarted. At a certain stage of *The Intruder*, the reader is asked to fall down bottomless pits in order to win an excerpt of the narrative. In a sense, readers need to fail, so that they can continue listening to the story being told. Aarseth once described the situation of the cybertext's reader as unstable: "The cybertext puts its would-be reader at risk: the risk of rejection" (Aarseth 4). This sentence is particularly interesting because Aarseth acknowledges that the text can exist in a potential state ("would-be reader") and that, although ergodic, the text is not designed to bend to reader's will. Moreover, it can offer resistance and keep the reader immersed in a quest for meaning. To Aarseth, the creation of an "individual outcome" may be illusory. I would add that it is dependent on reader's *imaginative effort*.

6 Conclusion

The inclusion of an *imaginative effort* enables us to overcome the paradox "writing a story while reading it" and—by recognizing that the reader's participatory role is the result of imaginative reconstruction and, simultaneously, part of interactive text's expressivity—to back claims such as "the text is generated by the reader."

To conclude, I would like to present one last example. While interacting with a statue in a gallery in Emily Short's *Galatea* (2000), the reader is invited to imagine that an actual conversation is taking place. *Galatea* is based on ELIZA (1966), a chatterbot created by Joseph Weizenbaum.²⁹ If we ask the right questions (or insert the correct commands), Galatea will reply. Once readers enter the interactive fiction/the gallery, a narrator intervenes and "an *interactive conversation* with Pygmalion's statue" (Short; emphasis added) is initiated:

You come around a corner, away from the noise of the opening. There is only one exhibit. She stands in the spotlight, with her back to you: a sweep of pale hair on paler skin, a column of emerald silk that ends in a pool at her feet. She might be the model in a perfume ad; the trophy wife at a formal gathering; one of the guests at this very opening, standing on an empty pedestal in some ironic act of artistic deconstruction. You hesitate, about to turn away. Her hand balls into a fist. "They told me you were coming."³⁰

Galatea demonstrates that, if an *imaginative effort* is not invested and if disbelief³¹ is not suspended, actions such as “talk[ing] about objects present in the room,” as suggested by Emily Short, are deemed impossible and *Galatea*’s fictional world becomes inaccessible.

In a computer game, the player needs to suspend his disbelief and apply an *imaginative effort* in order to jump off a cliff. When the player or the reader are welcomed as characters in a fictional world, they are invited to imagine that their actions have consequences in an alternate world, or else the interaction with other characters is impracticable. Nevertheless, interactivity is not a mere way to offer the reader a chance to manipulate the text, nor a manifestation of technological prowess. Interactivity strongly contributes to the production of meaning, and thus, it is not a tool to co-create the text or to unravel a narrative. This feature of digital texts was once used to transfer the authorial power to the reader. However, as emphasized in this essay, this was an illusion (the illusion of choice) sustained by interactive texts. Even though all has been pre-programmed, readers of an ergodic work need to imagine that they have a participatory role in the construction of the text to keep the story or narrative unfolding. Therefore, suspension of disbelief cannot be confused with a passive or distracted reception of a work of art (Benjamin). To feel immersed (or concentrated) in a text and to inhabit its textual world, readers need to activate their imagination.

Since *imaginative effort* also involves speculation to predict the next step or formulate a strategy, it is also needed to understand and maintain the contact (or any kind of interaction) with a text. The same holds true for print novels, interactive fictions, games or virtual reality. Thus, immersion in a virtual world is allowed not only by the technological resources being used, but also by the *imaginative effort* invested by the reader.

As stated before, immersion is also linked with the degree of attention demanded by riddles and intellectual challenges suggested by texts such as *The Stanley Parable* (2013) or *The Intruder* (1999). During reading, different *user functions* are required to assemble and understand the text. Because interactivity is linked not only with physical actions, but also with cognitive tasks performed by the reader, interactivity is enabled simultaneously through the affordances of the medium, the text’s properties or expressive features, as well as reader’s immersion in the text.

By taking into account an *imaginative effort*, the conflict between narrative and ergodic layers of a text (Eskelinen) can be brought to an end. Interactivity is seen as an aesthetic feature of the work. Consequently, it can be considered as part of the text’s expressiveness, and not as a tool to dismantle the text’s stability, interrupt the narrative arc or to defy the author’s ruling.

Interactivity is often related to physicality, to the reader's participatory role and to the amount of textual responses displayed by a work. These perspectives turn the text into a set of challenges and magical tricks and the reader into a paths' selector and a shuffler of possible outcomes. In order to operate and understand these textual machines, the user must activate an *interpretative function* which is both the origin and result of the *textonic*, *explorative* and *configurative user functions* (Aarseth). Cognitive processes and physical actions are thus interconnected through joint imaginative and ergodic efforts. As demonstrated, both cooperate in handling the resistance, multimodality and aesthetic richness of digital texts.

Notes

- 1 The tendency to consider "interactivity" as a self-explanatory word has been criticized by Aarseth: "This trajectory is typical of industrial terms appropriated by analysts of technoculture (a more recent example is the ubiquitous "virtual") and shows how commercial rhetoric is accepted uncritically by academics with little concern for precise definitions or implicit ideologies" (48).
- 2 Cf. <<http://newmediawritingprize.co.uk/>>. In NMWP webpage is stated that: "Interactivity is a key element of new-media storytelling" <<http://newmediawritingprize.co.uk/the-prizes/>>.
- 3 This essay is based on the doctoral research developed at the University of Coimbra (Portugal), as part of the *Doctoral Programme in Materialities of Literature* (2010–2014). All translations were done by the author.
- 4 I have claimed elsewhere that the immersion and interactivity debate, because it demands the participation of several disciplines and a multiperspectival view, allows us to depict the emergence and development of this field.
- 5 In fact, Judy Malloy is the author of *Uncle Roger*, a pioneering work published serially in 1986, and as an interactive hyperfiction in 1987. Malloy is also the developer of the authoring software BASIC Narrabase (1986). The history of *Uncle Roger* is available at <<http://scalar.usc.edu/works/pathfinders/history-of-judy-malloys-uncle-roger>>.
- 6 In her reformulation of *Narrative as Virtual Reality*, Ryan mentions the "loss of the prominence of hypertext" and states that "hypertext is no longer perceived as the narrative use of digital technology but only as one of many possible such uses" (2).

- 7 In *Narrative as Virtual Reality*, Ryan claims that “narrative coherence is maintained at the cost of interactivity” (256). Ryan also notices an “anti-immersive effect of interactivity” (280).
- 8 I have described this kind of reading in the PhD dissertation *Imersão e Interatividade na Ficção Digital* [Immersion and Interactivity in Digital Fiction] (2014). The adjective “deambulatória” [vagrant] was used to describe the aimless and random, even frustrating, reading promoted by multilinear and open-ended texts.
- 9 Espen Aarseth has associated “interactivity” to a “new technology” which has overshadowed pre-existent ones: “This word [interactivity] has long been associated with the use of computers that accept user input while a program is running, as opposed to ‘batch’ computers, which process only preloaded data without interruption.” According to Aarseth, “interactive thus came to signify a modern, radically improved technology, usually in relation to an older one” (48). Jessica Pressman has described the existence of a digital modernism or a “strategy of renovating modernist aesthetic practices, principles, and texts into new media” (2). According to Pressman, writers exploring digital modernism refashion tradition in such a way that “simple designations of ‘new’” become difficult to employ (96). Similarly, I believe that interactivity represents expectations and techniques common to several art and literary forms. For this reason, even though the link with computer science is undeniable, it is difficult to consider interactivity as the result of technological innovation or as truly “new.”
- 10 A link between physicality and interactivity continues to be explored by several authors. For instance, while describing interactive metalepsis, Ensslin claimed the following: “It involves mostly digital and interactive media that require the user’s physical interaction with its hardware and software” (1).
- 11 Here I would like to refer to the texts written by Roland Barthes, “La mort de l’auteur” (1967), and Michel Foucault’s “Qu’est-ce qu’un auteur?” (1969).
- 12 In *Narrative as Virtual Reality*, Ryan claims that hypertext authors have exacerbated some features of postmodernist theory: “hypertext authors conceived the strange new gift of interactivity as a way to free the novel, even more radically than postmodern works of the print variety had done” (264–265).
- 13 In fact, this work is often described as an interactive fiction. Cf. <https://en.wikipedia.org/wiki/The_St Stanley_Parable>. See also the following re-

view <<http://www.telegraph.co.uk/technology/video-games/video-game-reviews/10443454/The-Stanley-Parable-review.html>>.

- 14 Cf. “Entre textões e escritões: a narrativa projectada” [Between textons and scriptons: the projected narrative], in *Narrativa e Media: géneros, figuras e contextos* (2017). Available at: <<https://doi.org/10.14195/978-989-26-132-4-6>>.
- 15 According to Emily Short, some interactive fictions “sharply constrain player agency and make that constraint an important part of the message of the story” (Short 290). For instance, Short claims that interactive fictions such as Adam Cadre’s *Photopia* (1998) make “a ‘win’ state impossible,” and “reproduces the denial, bargaining, and acceptance of grieving as experienced through the player’s attempts to replay the work for a better ending and the inevitable failure of those attempts” (290). As in *The Stanley Parable*, interactivity strongly contributes to the expression of an idea, and thus, cannot be exclusively considered as a tool to co-create a narrative.
- 16 This text can be read at <<http://openingsources.com/>>.
- 17 This ambition has been present throughout the history of electronic literature and is often related to the project of achieving an authentic and unmediated experience or reaching the transparency of the medium. As we know, this same desire can be identified in art and literature in general.
- 18 In *Narrative as Virtual Reality 2* (2015), Ryan also identifies a change of perspective and considers that “[i]n the heyday of structuralism and deconstruction, it became heretical even to mention the phenomenon of emotional response” (107) and now “it is acceptable again to talk about content, mimesis, reference, emotional involvement with characters, and immersion in fictional worlds” (2).
- 19 Here I relate literary language to the use of third person singular, extensive descriptions of events, the careful choice of vocabulary and the use of a formal register.
- 20 Graphics are not a strong feature of *The Stanley Parable*. In fact, they are rudimentary and monotonous, and work as a discouraging element.
- 21 This review is available at <<http://www.hardcoregamer.com/2013/10/1-7/review-the-stanley-parable/58895/>>.
- 22 This review is available at <<http://www.gamespot.com/reviews/the-stanley-parable-review/1900-6415481/>>. Adventure games such as *Zork* (1977) emerged during the seventies and are often considered as antecedents of electronic literature (Cf. Montfort).

- 23 While describing the literary riddles suggested by the Latin poet Symphosius and *The Exeter Book*, Nick Montfort claimed that: “[b]y presenting a metaphorical system that the listener or reader must inhabit and figure out in order to fully experience, and in order to answer correctly, the riddle offers its way of thinking and engages its audience as no other work of literature does.” According to Montfort, “interactive fiction is related to the riddle because the interactor is “also an writer.” Nevertheless, as Montfort points out, even though “useful,” the interactor’s contributions basically consist of commands such as “go north, jump off the roof, or eat a peach” (Montfort 4).
- 24 Different types of attention are demanded during the reading of an interactive text. This subject has been explored in *Imersão e interatividade na ficção digital* [Immersion and Interactivity in Digital Fiction] (2014).
- 25 Ryan believes that: “The self-explanatory character of the concept is easily interpreted as evidence that immersion promotes a passive attitude in the reader, similar to the entrapment of tourists in the self enclosed virtual realities of theme parks or vacation resorts” (Ryan, *Narrative as Virtual Reality* 11).
- 26 Some documentation about this work can be found at the author’s page <<https://bookchin.net/projects/the-intruder/>>.
- 27 For instance, in 2003, Nick Montfort hoped that interactive fictions could “provide even more appealing possibilities for the interactor” and that technology could allow the production of “works of greater power” (5).
- 28 In fact, Wolfgang Iser considers that the act of reading can convey the impression that the reader was given a participatory role or that it has been welcomed to a fictional world: “The dynamic interaction between text and reader has the character of an event, which helps to create the impression that we are involved in something real” (Iser 67).
- 29 This chatterbot emulates the behavior of a Rogerian psychiatrist. In an ACM communication, Weizenbaum explained the reason for using a therapy session as a model: “ELIZA performs best when its human correspondent is initially instructed to ‘talk’ to it, via the typewriter of course, just as one would to a psychiatrist. This mode of conversation was chosen because the psychiatric interview is one of the few examples of categorized dyadic natural language communication in which one of the participating pair is free to assume the pose of knowing almost nothing of the real world. If, for example, one were to tell a psychiatrist ‘I went for a long boat ride’ and he responded ‘Tell me about boats,’ one would not assume that he knew nothing about boats, but that he had some purpose in so di-

recting the subsequent conversation. It is important to note that this assumption is one made by the speaker. Whether it is realistic or not is an altogether separate question” (Weizenbaum 42).

- 30 Cf. <http://collection.eliterature.org/1/works/short__galatea.html>.
- 31 In *Narrative as Virtual Reality* (2001) Ryan mentions the existence of a “ELIZA effect” which is equated to “the user’s willingness to suspend disbelief in the humanity of the computer.” The conversation with ELIZA can lead to illogical replies and to episodes of “graceful degradation” (314). For Ryan, “[i]t did not matter that ELIZA did not understand a conversation. . . . To the user willing to play a game of make-believe with the computer, ELIZA was the perfect prop” (313). Yet, in the case of *Galatea*, readers are also invited to reconstruct what is being described (readers can “move” across a room), and thus, to invest an *imaginative effort*. Jonathan Lessard considers ELIZA an example of procedural literature. For Lessard, “[t]he main interest of procedural objects is their ability to generate varying content in response to changes in input and setting.” However, “[t]he complexity of even the simplest human interactions makes interesting procedural texts very difficult to design” (407–408).

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Part Four: Teaching the Digital

