Towards a conciliation of ludology and narratology in computer game studies. An analysis of *Valheim*

Para uma conciliação da ludologia e da narratologia nos estudos sobre videojogos. Uma análise de *Valheim*

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Abstract. This article presents, firstly, an overview of the recent field of Computer Game Studies, drawing on works of major importance so as to explore the two most prominent theoretical approaches which were adopted in video game research after the publication of Espen Aarseth's pioneer study *Cybertext: perspectives on ergodic literature* (1997): ludology and narratology. An acute debate ensued between opposing scholars supporting each perspective and, taking this into consideration, this article aims to focus on the contributions of these scholars in order to suggest that a conciliatory framework not only offers a comprehensive solution to analyse video games but is, in fact, necessary to understand, and thus properly study, this hybrid and deeply multifaceted digital medium. Secondly, by exploring *Valheim*, a survival video game released in 2021, this study intends to demonstrate how different aspects focused typically by either narratology or ludology are, in fact, inherently connected, influencing each other and having an impact on how players react to the game's narrative, interface and mechanics.

Keywords: Computer game studies. Video game. Narratology. Ludology.

Resumo. O presente artigo apresenta, em primeiro lugar, uma visão geral da recente área de estudos denominada por Computer Game Studies (ou Estudos sobre Videojogos), recorrendo a obras especialmente relevantes para explorar as duas mais proeminentes abordagens teóricas adoptadas na investigação do videojogo após a publicação do estudo pioneiro de Espen Aarseth, intitulado *Cybertext: perspectives on ergodic literature* (1997): são estas a ludologia e a narratologia. Tendo surgido um acutilante debate entre académicos que apoiavam cada uma destas perspectivas, este artigo considera diversas contribuições inseridas neste contexto especial com o intuito de sugerir que uma abordagem conciliatória não oferece apenas uma solução abrangente para a análise do videojogo, como se revela necessária na devida compreensão e estudo adequado deste medium digital híbrido e extremamente multifacetado. Através da análise de *Valheim*, um videojogo publicado em 2021 e inserido no subgénero *survival*, será demonstrado como diferentes aspectos geralmente focados apenas pela narratologia ou pela ludologia se encontram inerentemente associados, influenciando-se mutuamente e provocando um impacto na forma como os jogadores reagem à interface e à narrativa do jogo.

Palavras-chave: Estudos sobre videojogos. Videojogo. Narratologia. Ludologia.

1. Computer Game Studies, ludology and narratology

Computer Game Studies, as a fairly recent field in academia, accompanies the growing sociocultural significance of the video game, with numerous scholars conducting research on this medium and producing quite a few works considering it as an autonomous academic object of study. In the midst of these studies, the theoretical-methodological tradition of Computer Game Studies has revealed itself to be little extensive when compared to well established and older fields of knowledge, such as Literary or Cultural Studies. However, stemming from the recent and rapid evolution of digital media, "a shift in entertainment patterns has been observed", which "has not escaped the attention of cultural critics" (Kokonis, 2014, pp. 1-2). As such, a development of distinct theoretical approaches has been made as an attempt to fill the existing gaps in the academic analysis of the video game.

Pioneer studies problematising the study of video games and developing a theoretical framework and methodology for their study date from the last decades of the 20th century. Espen Aarseth's *Cybertext: perspectives on ergodic literature* (1997) distinguishes itself as one extremely prominent study. In this work, Aarseth discusses the categorisation and study of hypertext, cybertext and of video games, considering that the latter do not present themselves as literary texts in the same way a literary work presents itself as a literary text (1997, p. 3), admitting, however, that an interconnection exists between these two objects: "To claim there is no difference between games and narratives is to ignore essential qualities of both categories...the difference is not clear-cut, and there is significant overlap between the two" (Aarseth, 1997, p. 5). Drawing attention to the differences, a comment is made on the relationship between player and reader with their respective medium:

> A reader, however strongly engaged in the unfolding of a narrative, is powerless. Like a spectator at a soccer game, he may speculate, conjecture, extrapolate, even shout abuse, but he is not a player. Like a passenger on a train, he can study and interpret the shifting landscape, he may rest his eyes wherever he pleases, even release the emergency brake and step off, but he is not free to move the tracks in a different direction. He cannot have the player's pleasure of influence. (Aarseth, 1997, p. 4)

It is the idea of overlapping and interconnection between games and narrative, but simultaneously the consideration that video games are capable of being analysed independently, that is especially relevant presently, and which is still supporting interdisciplinary and multifaceted research.

Following Aarseth's pioneer research, theoretical approaches to the study of video games have typically fallen within two distinct perspectives: ludology and narratology. These two perspectives have been subjected to an intense – and sometimes misunderstood and oversimplified – debate, which ensued as an attempt to establish which one would offer the ideal methodology to be adopted in video game analysis. This conflict came to occupy a large part of the discussion and research published in the first years of the development of Computer Game Studies.

Ludology, a term popularised essentially by Gonzalo Frasca in 1999 in his article "Ludology meets narratology: similitude and differences between (video)games and narrative", came to define one of these conflicting approaches. Frasca (1999) begins by mentioning the importance of narratology and literary theory in understanding video games, admitting that these share, indeed, many elements with stories, including "characters, chained actions, endings, settings". The author considers, however, the existence of a dimension that, at the time of publication of his article, was being thoroughly forgotten: the construction of a specialised and dedicated framework for the analysis of this particular medium. Frasca (1999) suggests, thus, a change of paradigm, proposing that video games should be explored through a specific theoretical apparatus to be solely applied in this context, stating that its objective should not be to substitute narratology, but to complement it. The lack of definitions and theoretical apparatuses in game research would thus call for a discipline that could take charge of these issues. As a result, Frasca (1999) proposes the term "ludology", derived from the Latin word *ludus* (game), to name this discipline, which would be dedicated to the study of different kinds of ludic activities, taking a special interest in their specificities and how they differ from a more traditional and recognisable conception of narrative, both ontologically and interaction-wise.

Ludology helped consolidate an analysis of the video game more focused on gameplay issues, game mechanics, and the technical aspects of the video game in order to explore player experience. Ludologist Jesper Juul's master's dissertation, entitled *A clash between game and narrative: a Thesis on Computer Games and Interactive Fiction* (1999), contains controversial statements which have furthered the gap between ludology and narratology. The author directly states that video games cannot in any way tell stories, since they do not present themselves as a narrative medium (1999, p. 1); he further adds: In actuality we are facing a conflict between game and narrative: they are two separate phenomena that in many cases rule each other out. (Juul, 1999) To support this argument, Juul points out that narrative, with its linear and fixed sequences, inevitably clashes with video games, since these possess an interactive component that necessarily undermines this linearity, being, therefore, incapable to offer an experience similar to that which is provided by a book or a film (Juul, 1999, p. 76). However, already in 2001, Juul's article "Games telling stories?", published in the first issue of *Game studies: the international journal of computer game research*, conveys a less radical perspective, with the author recognising the narrative dimension of video games like *Space invaders* (1978) or those featuring characters and "quest structures" (2001), admitting that it is indeed possible to establish a connection between video games and narratives:

> ...games and narratives do not live in different worlds, but can in some ways work together: A narrative may be used for telling the player what to do or as rewards for playing. Games may spawn narratives that a player can use to tell others of what went on in a game session. Games and narratives can on some points be said to have similar traits. This does mean that the strong position of claiming games and narratives to be completely unrelated (my own text, Juul 1999 is a good example) is untenable. But we also have to look at differences. (Juul, 2001, s.p.)

Markku Eskelinen, one of the most prominent voices within ludology as well, has also come to consider that literary theories do not offer satisfactory models for video game analysis, and has challenged the hegemony of narratology by calling attention to its limitations (2012, pp. 209-210). This had been previously advocated by Aarseth in *Cybertext: perspectives on ergodic literature* (1997, pp. 14, 76, 107-108), however, the term "ludology" was not yet disseminated in the academic debate. In the aftermath of these claims, ludology came to be challenged and accused of radicalism in its supposed rejection of narrative in video games, a perspective originated in multiple assumptions which several ludologists later clarified.

As for narratology, the term designates an autonomous theoretical and methodological area which considers narrative as both a literary and non-literary mode of representation; as it progressively strayed away from its structuralist conception, narratology came to consider narrativity as the fundamental aspect that encompasses the formal structure which organises the human experience of temporality, thus making it possible to establish approximations and distinctions between great and different semiotic systems, taking into consideration diverse media and how each relates with the phenomena of temporality and narrativisation (Padeira & Bello, 2006, p. 1). The narratological perspective in the context of Computer Game Studies gains prominence with scholar Marie-Laure Ryan. Narratology, then, comes to contrast with ludology by applying traditional models of literary analysis to video games, focusing mainly on their potential as a medium that conveys stories. Ryan's article "Beyond myth and metaphor: the case of narrative in digital media", published, like Juul's "Games telling stories?", in the first issue of *Game studies: the international journal of computer game research*, emphasises the role of narrative in video games, claiming that narrative does not possess a purely aesthetic function but, instead, a substantial one, dictating the player's immersion in the story (Juul, 2001). Likewise, in "Will new media produce new narratives?", a chapter from *Narrative across media: the languages of storytelling*, the author states that "…texts supported by digital media…may produce creative alternatives to a narrative experience, but they do not and cannot change the basic conditions of narrativity" (Ryan, 2004, p. 354), demonstrating not only how narrative is extremely versatile, but also how it is inherently connected to all different kinds of media. Additionally, Ryan argues that, if one takes into account the history of narrative, one may see that it has survived the transition from orality to writing, from manuscript to print, from book to multimedia, and from the stage to moving picture, and each of these technological innovations has, in fact, liberated new narrative energies and exploited new possibilities (Ryan, 2004, p. 356).

The previously mentioned debate which opposes ludology and narratology has been marked by a notorious misunderstanding of the arguments and discussion brought about by various scholars. In his work *Cybertext poetics: international texts in critical media aesthetics*, Markku Eskelinen mentions that many positions within the debate are not well understood, despite several attempts to partially summarise them; many of these attempts, in turn, situate scholars in inaccurately constructed positions, either without quoting them at all or without quoting their core arguments (2012, p. 210). Gonzalo Frasca offers a similar input in "Ludologists love stories, too: notes from a debate that never took place" (2003), stating:

> …this debate has to be resolved, as it is of no help to the cause of establishing Computer Game Studies as an autonomous and independent academic field. We will accept that this debate came about due to misunderstandings and misconceptions, as it usually happens in the beginning of a new phenomenon, like the appearance of computer games on the cultural scene. (Frasca, 2003, pp. 174-175)

As it is, generic research in video games is still a recurring tendency, with a considerable number of studies still focusing on the categorisation and definition of several terms and concepts related to video games, as well as attempting to obtain a satisfactory model for their analysis. However, there has also been a noticeable evolution regarding this tendency, coinciding not only with the advance of this area of studies in time – which is gradually freeing itself from its foundational issues enshrouded in many misunderstandings and personal accusations –, but also with the attenuation of the ludology versus narratology debate. Due to the long-lasting persistence of this discussion, there is still, despite the favourable evolution, a certain negligence concerning the primary objective underlying the conception and development of these various theoretical-methodological approaches, i.e., the specialised analysis of the video game, with a solid framework to support it.

Thus, in order to contribute to continue developing advanced research on video games, it is necessary to overcome the fracturing debate, which continuously hinder scholars in their search for a complete and satisfactory way to carry out in-depth research on video games. Janet H. Murray, a renowned American scholar who has greatly contributed to the development of Digital Humanities and educational programmes in the field of digital media, published the highly acclaimed work *Hamlet on the holodeck: the future of narrative in cyberspace* in 1997, addressing the influence of digital technology in the development and transformation of narrative and storytelling. It is, however, in the preface to the most recent edition, dating from 2017, that the author comments on the impact of her work in the context of the ludology versus narratology debate. At the time of its publication, *Hamlet on the holodeck* became controversial for exploring the video game *Tetris* taking into consideration a certain cultural context, thus freeing it from a purely aesthetic and mechanical analysis and, subsequently, inserting it in Cultural Studies. On this issue, Murray not only defends her position, but also comments on the ideological and political motivations of the debate, which, she affirms, has not always been conducted in an objective and cooperative tone, stemming from academic turf wars between the European departments of narratology and the new practitioners of Game Studies, who were attempting to assert their autonomy by identifying games as a separate field (2017, p. xiii). In this context, criticism to her work resorted to a personal and accusatory rhetoric which sought to delegitimise rather than engage with it in a productive way, thus reflecting a biased approach related to issues of nationality and gender (Murray, 2017, p. 190). The author is pleased, however, to notice that "…since publication, …many of the proponents of these critical positions have shifted perspectives. I enjoyed seeing former print-loyalists embrace the web, hypertext-loyalists embrace video games, and prominent ludologists embrace narratology." (Murray, 2017, p. xiii).

Murray's perspectives advocate an open, interdisciplinary and cooperative approach to video games in academia, which should be open to changes and conciliations. In this spirit, two more studies are worthy of attention: the previously mentioned "Ludologists love stories, too: notes from a debate that never took place" by Gonzalo Frasca and "Intermediality between games and fiction: the ludology *vs.* narratology debate in computer game studies: a response to Gonzalo Frasca" (2014) by Michalis Kokonis.

The first one complements what Frasca had written in his previous article ("Ludology meets narratology"), responding to a set of assumptions which sought to accuse the ludological approach of radicalism, supported by the idea that the role of narrative in video games was being thoroughly rejected by this approach. The author states that, as a ludologist, he does not favour narrative as a privileged means of understanding and analysing video games (2003, p. 92). However, he does not reject it completely and considers that the definition of ludology as the approach which opposes the analysis of gameplay and the analysis of video games as narratives corresponds to an undesirable oversimplification of its true meaning (Frasca, 2003). Moreover, Frasca claims that the narratology versus ludology debate originated in a set of misconceptions which, in turn, provoked reactions from several scholars: Marie-Laure Ryan called for ludology not to discard the concept of narrative, and also proclaimed the need to develop a new ludology that would include it (Frasca, 2003, p. 95; Ryan, 2002). Similarly, Rune Klevjer, a known researcher in the field of digital media, considered that scholar Markku Eskelinen supported what may be termed "ludological radicalism", effectively stating that Eskelinen considered stories as uninteresting ornaments in video games so that focusing on them is a waste of time and energy (Klevjer, 2002, pp. 191-192). Regarding this last statement, Frasca explains that Klevjer does not take into account the whole of Eskelinen's arguments, who considers stories as such in a very specific context:

> ...Klevjer's quote is incomplete.... The scenario [Eskelinen] was referring to is the one provided by elements for game analysis that he previously mentioned on his text. In other words, it seems that he was referring to what the focus of game scholarship should be. (Frasca, 2003, p. 95)

Looking at Eskelinen's article Klevjer critises "The gaming situation", also published in *Game studies: the international journal of computer game research*, in 2001), it is possible to note that the author outlines a set of elements he considers essential in video game analysis and, subsequently, his statement regarding the role of stories falls within that specific context, contrary to what Klevjer's text might suggest. However, it is also quite prominent how Eskelinen constantly advocates a clear separation between narrative and video games, claiming that studying the latter from the perspective of areas of knowledge such as Literary, Film, Drama or Theatre Studies is erroneous, corresponding to a colonisation of video games by these fields, which constitutes an obsolete practice and a precarious knowledge of the object of study (2001). Although Klevjer's arguments may, in fact, raise doubts due to the decontextualisation of his arguments, it is equally important to pay attention to Eskelinen's almost obsessive attempt

at excluding the analysis of any narrative aspect in video games, thus rejecting narratology as a theoretical approach. Such perspective is especially counterproductive when the video games being analysed possess a significant semionarrative component or a special focus on the transmission of a story and/or the reinterpretation of a literary work, privileging this dimension to that of the practically uninterrupted interaction which does not require a special attention to the plot, if there is any plot at all. A more moderate position of Eskelinen is, however, later presented in *Cybertext poetics: international texts in critical media aesthetics*, when the author states that he does not identify himself with the ludological radicalism of which he had been accused, stating:

> ...Game ontologists and ludologists (Aarseth; Eskelinen, Frasca; Juul) made an ontological argument (games are not narratives or stories) that was misread as something completely different: a claim that games could not or should not contain stories or narratives or narrativity. (Eskelinen, 2012, pp. 211-212)

Returning to "Ludologists love stories, too", it is also worth mentioning its undeniable importance in clarifying the purpose of ludology as a theoretical-methodological approach, especially due to Frasca's privileged position as its precursor. The conclusion of the article clarifies that research developed from a ludological perspective does not reject narrative nor does it intend to advocate the suspension of the narrative dimension in video games; it intends to demonstrate, however, that video games are not narratives and that the differences between the two should constitute the focus of the research built around this object of study, in order to contribute to its independence and specificity (Frasca, 2003, p. 97).

The second article which was previously mentioned, "Intermediality between games and fiction", authored by Michalis Kokonis and published in the journal *Acta universitatis sapientiae, film and media studies*, suggests that a conciliation between ludology and narratology is extremely beneficial on a methodological level, allowing for the consideration of the hybrid nature of the video game, instead of isolating it in a single perspective which will, inevitably, exclude an important part of it. Promoting a conciliation, like Frasca (Kokonis, 2014, p. 174), the author first of all stresses the need to take into account the intermediary context of the video game, which is, in itself, a recent cultural artefact that combines elements of more traditional art forms with the innovation brought about by digital technology (Kokonis, 2014, p. 175). A different and conciliatory approach is then proposed, which allows the use of narratology and ludology – as well as other frameworks – in game analysis: semiotics. In this regard, Kokonis writes:

> What is needed is a wider, more flexible theoretical grid that it would incorporate both the narratology and the ludology perspectives, as well as other theoretical tools, for the comprehensive study of computer games. I would suggest semiotics to be used as an umbrella theory scheme which would allow for a revision of the narratological aspect of story in computer games, as well as the application of ludology for the role of the play and game element in the structures of gameplay and an assessment of the user's interaction with the game. In this way, we could

arrive at a better understanding of the nature of playin computer games and comprehend them as a cultural form of expression. (Kokonis, 2014, p. 176)

Thus, semiotics makes it possible to explore the narrative component and gameplay in video games, aspects which are focused, respectively, by narratology and ludology. Additionally, other equally important dimensions can be explored through semiotics, namely the musical, aesthetic, representational and interactive ones. Accommodating all these issues and allowing them to be addressed is essential, moreover, to allow their study from the most varied points of view, areas of knowledge and expertises (Kokonis, 2014, p. 177). A perspective that echoes that which is conveyed by Kokonis is the one previously hinted at by Julian Kücklich, when he refers, in his text "Perspectives of computer game philology" (2003), that there are a number of disadvantages in adopting only the more traditional theories of the literary domain to the analysis of video games, since the dynamism and the novelty that studies on video games represent within academia require the adoption of more comprehensive and versatile theoretical perspectives (2003).

Taking into consideration this state of affairs, the present article aims to demonstrate that methodological radicalism has no benefits in video game analysis. Instead, it is suggested the use of a broader methodology which conciles narratology and ludology, demonstrating that paying attention to aspects focused by each of them is beneficial and can provide scholars with the necessary basis towards a better and more complete understanding of the video game as a digital and interactive medium containing narrative elements. As Marie-Laure Ryan states: "The ubiquity and multiple manifestations of stories in human societies mean that the relevance of the theoretical concept of narrative extends to all the disciplines concerned with human experience..." (2017, p. 517), a perspective shared by Ana Rita Padeira and Maria do Rosário Lupi Bello, when it is stated that the narrative impulse, be it the origin or the result of the artistic expression, is human and, suffering expressive alterations of the most varied order, still remains as a fundamental fact of the human experience (2006, p. 23). It is presently considered, then, that video games (and, consequently, the fields of knowledge which conduct research on them) are, indeed, an important part of human life. Playing games (digitally or not) and developing this ability and the production of games, independently of the medium and its specificities, is part of the human experience, in an individual and sociocultural scope. Then, it is necessary to resort to narratology to carry out game analysis. However, to neglect specific aspects of the video game, commonly focused by ludology, would be to limit their study and ignore their potential as a medium which does differ from other artistic forms.

Therefore, to briefly illustrate how both ludology and narratology can be simultaneously used in video game analysis, this article will explore the video game *Valheim* (2021) in order to demonstrate that hypertext and the interface presented to players is influenced by its narrative dimension, i.e., the story arc. In turn, how much of the lore is made available to players and how it is available is determined by the specific way in which the players can interact with what is being presented on screen, through the particular mechanics of the video game. By articulating the narrative arc with the game's

mechanics, developers can also enhance the player's immersion in unexpected but efficient ways. Thus, it becomes particularly evident that analysing video games by drawing attention to the narrative arc alone (narratological approach) or to the more technical aspects (ludological approach) is limiting its study, since narrative and mechanics are intertwined and both are equally relevant.

2. *Valheim*: A case study

Valheim is a Nordic inspired survival video game developed by Iron Gate Studio and published by Coffee Stain Studios, intended to be played online by several players, who should work with one another to survive in a harsh environment. It was released in 2021 and, at the time of writing, it is still in early access[1], with new content being added periodically. This video game has been chosen presently not only due to its recency and incredibly extensive player base (which may be attested by the innumerable fan forums which were established in several social networks, aggregating a complex, ever-evolving community), but also, and mainly, because it offers a reinterpretation of two foundational texts in Medieval literature, providing new readings, meanings and interpretations adapted to a digital medium. Thus, narratology will provide the necessary tools to address the narrative dimension and ludology will, in turn, aid in the explanation of how this dimension is connected to game mechanics and the hypertext.

This article will, then, refer to two Medieval Icelandic works – the *Prose edda* (early 13th century) compiled by Snorri Sturluson, and the *Poetic edda* (inaccurate dating; *circa*10th century for most poems) comprised in the manuscript *Codex Regius* – to explore the story arc of *Valheim* and the narrative conveyed to the player, as well as its connection with the game's mechanics. These texts are the main sources of skaldic tradition in Scandinavia, as well as Nordic mythology and Germanic legends.[2]

Immediately after the start of the game, the following text appears on screen:

> Long ago, the allfather Odin united the worlds. He threw down his foes and cast them into the tenth world, then split the boughs that held their prison to the

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[1] In video game industry, "early access" refers to the availability of the game before its development is concluded, thus allowing for consumers to buy it in its pre-release stages (e.g., beta stage). Players can then, progressively and through regular updates, have access to newly developed content until the game is properly finished. Through this process, developers are not only able to use the revenue to continue developing the game but also receive feedback to improve, include or exclude features and solve issues of various kinds.

[2] Carolyne Larrington, in her Introduction of the renowned Oxford University Press edition of the *Poetic edda*, argues: "…the poetry of the Edda gives some of the best evidence for the religious beliefs and the heroic ethics of the pagan North before its conversion to Christianity around the year 1000." (2014, p. ix). As for the *Prose edda*, Jesse Byock writes:

> The Prose Edda is Scandinavia's best-known work of literature and the most extensive source for Nordic mythology. In straightforward prose interspersed with ancient verse, the Edda recounts the Nordic creation epic and the subsequent struggles of the gods, giants, dwarves and elves in that universe. …The Edda also tells heroic stories about legendary warriors and their kin, stories which incorporate shards of ancient memory. (2006, p. ix). Byock also attests the influence of this text in popular culture by setting forth several examples, namely Richard Wagner's *Ring cycle* and *The lord of the rings* saga by J. R. R. Tolkien. (Byock, 2006)

world-tree, and left it to drift unanchored, a place of exile...For centuries, this world slumbered uneasily. But it did not die...As glacial ages passed, kingdoms rose and fell out of sight of the gods. When Odin heard his enemies were growing once again in strength, he looked to Midgard and sent his Valkyries to scour the battlefields for the greatest of their warriors. Dead to the world, they would be born again...in Valheim! (Iron Gate Studio, 2021)

The virtual character controlled by the player is, then, dropped in a grassy land by an anthropomorphic bird. It becomes clear, at this point, that the setting is inspired by Nordic mythology and the strange bird is, in fact, the mythological creature commonly known as valkyrie, these being described in the *Prose edda* as women who "serve in Valhalla" – the hall presided by the god Odin –, bringing "drink and see[ing] to the table and the ale cups." (Sturluson, 2006, p. 44).[3] From this point onwards, it is safe to assume that the gameplay of *Valheim* will be influenced by this setting, since this information is presented even before the player is allowed to control the virtual character (from now on designated as Warrior).

Once the player progresses through the initial stage of the game – focusing essentially on surviving by collecting food and supplies –, a myriad of building options become available, as well as an interface displaying, among other information, skills and trophies (Figure 1, a]). Through a mouse click on two different symbols functioning as hypertextual buttons, the player can access the skills achieved until a given moment in time (such as fishing or jumping) and the trophies collected so far (these being dropped by enemies once they are successfully defeated). It is important to note that the symbol used to access the skills section is a valknut. The valknut is depicted in several Nordic artefacts, including the Stora Hammars I stone in Gotland, Sweden (see Figure 1, a] and b]) and the Oseberg ship discovered in a Norwegian burial mound, both dating from the Viking Age (early Middle Ages, *ca.* 800–1070). Although its original denomination and meaning remain unknown, with several theories proposing distinct approaches (Boyer, 1997, p. 33; Langer, 2003, p. 105; Westcoat, 2015), the valknut is, undoubtedly, a Nordic symbol. Thus, the video game's narrative is influencing the mechanics, which dictate the player's interaction with the interface, hence the choice of the valknut as a button. Similarly, players cannot access information about the symbol directly through the video game's interface, as the developers did not intend it to be part of the game's lore, even if, for any *connoisseur* of Nordic culture, the symbols and story arc of *Valheim* are clearly inspired by it.

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[3] This is confirmed by Valheim's official website, which reads as follows: "The valkyries have ferried your soul to the tenth norse world as a custodian…" (Iron Gate Studio, 2022).

Figure 1. *Valheim* screenshot: Skills, Trophies and the Valknut.
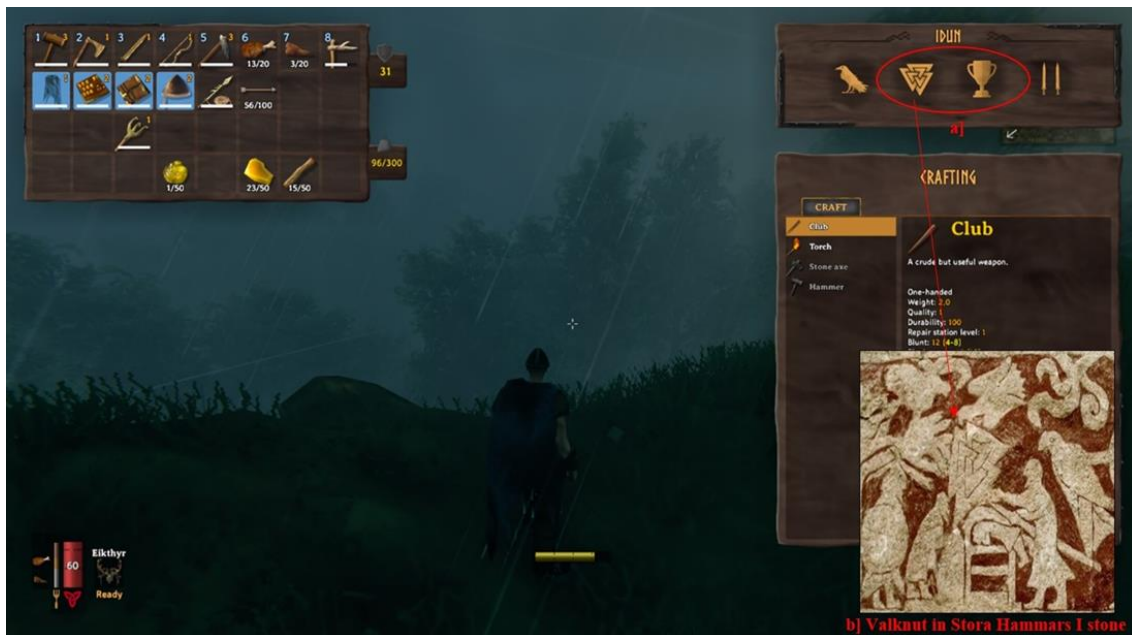
Source: Author's own screenshot.

This interconnection between hypertext and narrative manifests itself in the game's interface in several other instances. The "rested effect" applied to the Warrior after sleeping on a bed or standing near a fire, improving health and stamina regeneration and conceding a skill experience boost, appears in the upper right corner of the screen and is represented by a traditional triquetra in Viking knotwork, a symbol carved in many Nordic runestones, namely the runestone U937, found in Uppsala, Sweden, and dating from the 11th century (see Figure 2, a] and b]). "Eikthyr's power", which grants the Warrior less stamina drain during certain activities, is represented through a stag's head in the bottom left corner that can be activated through a mouse click (see Figure 2, c]), and is clearly based on "…the stag Eikthyrnir [Oak Antlers], who stands on top of Valhalla and chews on the branches of that tree." (Sturluson, 2006, p. 48). The "Megingjord effect", which allows the Warrior to carry more weight and appears next to the "rested effect" when it is equipped (see Figure 2, d]), is a reference to Thor's belt of the same name: "His second great treasure is his Megingjard [Belt of Strength]. When he buckles it on, his divine strength doubles." (Sturluson, 2006, p. 32). Finally, one of the five markers which the player can place on the map is a white silhouette resembling Mjolnir, Thor's hammer (for a collection and discussion of the hammer's representation in literary and archaeological sources, Beard, 2019).

Figure 2. *Valheim* screenshot: Rested Effect, Megingjord and Eikthyr's Power.

Source: Author's own screenshot.

The way players are reacting to the extraordinary diversity of customisable options (*Valheim* features an open world in which is possible to construct almost without restrictions, providing a menu with building pieces such as walls, floors, roofs, beams and poles) also reveals this interconnection between narrative and the game's mechanics. While not necessarily limited by Valheim's Nordic setting, players are showing a remarkable tendency to create content based on Viking Age society and culture. Prominent YouTubers, responsible for the game's astounding promotion, dedicate their channels to disseminate elaborate tutorials on how to build several Nordic inspired buildings, the longhouse holding pride of place (The Pilgrimz Project, Flomin, Vetlive, Versaugh), given its sociocultural significance: "The archaeological record clearly establishes that the major dwelling type of the Vikings, not only in Norway but in Scandinavia and the diaspora at large, was the Scandinavian style longhouse." (Eriksen 2019, p. 43). There is a considerable variety of building materials available to players. Some are, indeed, typical of Viking Age constructions: so far, some of the roofs which can be built are made of straw; birch trees are the only providers of a building resource named "fine wood"; and houses, regardless of their size, require a smoke-opening so the Warrior does not suffocate and lose vitality. These characteristics may promote the construction of Viking buildings, as they are associated with them. Marianne Eriksen, when defining longhouses based on several archeological findings, declares that these had, most likely, roofs thatched with turf, straw or birch bark and smoke-openings to facilitate the main ventilation (Eriksen, 2019, p. 47). However, there is nothing preventing players from building structures typical of other time periods. Though a considerably rarer phenomenon, some players have ventured forth and defied Valheim's physics by trying to build colosseums and even rollercoasters (Deppentreff). But these are exceptions to the rule, which can be attested by a simple YouTube or Google search.

This reveals that, even though players are not, in any sense, limited by the narrative of *Valheim*, they are, nevertheless, deeply influenced by it. One must not forget that the main premise of the game – as enunciated by its introductory text – is to succeed in defeating Odin's enemies in the tenth Nordic world, *Valheim*. However, the Eddas make no reference to a tenth world. "Seeress's prophecy", included in the *Poetic edda*, references only nine: "I remember nine worlds, I remember nine giant women,/the mighty Measuring-Tree below the earth." (Larrington, 2014, p. 4). Similarly, in an episode describing Loki's offspring and how Odin seized them for fear of Ragnarök – a series of events which would dictate the end of the world –, the *Prose edda* states: "Hel he threw down into Niflheim and made her ruler over nine worlds." (Sturluson, 2006, p. 39); the work also mentions that Niflheim and Muspellsheim existed before the god Odin and his brothers used the giant Ymir to create two more worlds: Midgard and Asgard (Sturluson, 2006, pp. 15-18). Thus, *Valheim* is not a concept existing in Nordic mythology, but players are still impelled to play in the ways that have been stated, attesting the substantiality of the narrative arc and the acceptance of a reinterpretation of said mythology.

Attention can also be drawn to the virtual agent presented in this video game: Hugin. Hugin is a raven and possesses a similar function to that of the valknut button which was previously mentioned. This time, however, the button is animated, though it serves a similar function. The raven, which ocassionally flutters and perches on nearby buildings or runestones, has no other function than to present a tutorial to the player; it only appears when progress is made through different stages of the game (e.g., when an enemy is defeated or when a new resource is gathered). This virtual agent[4] is not a question mark or a written tutorial due to Valheim's developers' choice to design it according to the game's setting. To consider Hugin a character in Valheim's narrative arc seems too far-fetched, since the raven is not too different from the well-known Clippit[5], offering help with Office features or searching for solutions for several issues. However, in *Valheim*, this virtual agent is not a paperclip, but one of Odin's ravens: "Two ravens sit on Odin's shoulders, and into his ears they tell all the news they see or hear. Their names are Hugin [Thought] and Munin [Mind, Memory]." (Sturluson, 2006, p. 47). Instead of a tutorial that could potentially be unappealing and exhausting, Hugin presents the player with an animated button which appears ocasionally and for short periods of time, making it a reliable source of information by providing nonextensive pieces of advice while fitting perfectly within the narrative arc.

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[4] The term "virtual agent" is being used to define a software program or video game mechanic which uses artificial intelligence (AI) to provide guidance to humans in a virtual world. According to Ijaz and Trescak, virtual agents can be used in a virtual world as tutors, to provide necessary support (2016, pp. 3-4), e.g., in a virtual world targeted at "…improving students' academic performance and motivation…" (2016, p. 1), where these agents can substitute human teachers or provide an addition to them. Although *Valheim* is not a project aimed at improving education, it was deemed useful and practical to appropriate this idea of the virtual agent in order to better understand and explain Hugin's role in the game.

[5] Clippit is a Microsoft Office assistant included in Microsoft Office for Windows (97 to 2003). Its representation resembles an anthropomorphic paperclip, and it was designed so as to assist computer users navigating the various Office features, providing relevant information, tips and tricks to optimise the users' experience.

As the story helps shaping the hypertext and game's mechanics, so does the latter help the player become more immersed in the story. An example of this added degree of immersion is present beyond the edges of the map[6] in *Valheim*. So far, the player is able to move the Warrior in a virtual world divided into six developed biomes: Meadows (green pastures teeming with boars and deer), Black Forest (a dense forest in which pines and firs abound), Swamp (shadowy bogs where poisonous creatures are easily found), Mountain (snowy peaks which require the Warrior to find additional protection against the cold, such as drinking mead or wearing a wolf fur cape), Plains (similar to prairies and featuring Stonehenge-like structures) and Ocean (self-explanatory). There are, additionally, three biomes which will not be considered presently, since they are not yet fully developed, despite already having a designation (Mistlands, Ashlands and Deep North).

Considering the appearance of this world, attention is drawn to what can be defined as the sky, which looks rather similar in all biomes: blue and starry. Its most remarkable feature, however, is the giant tree branch which the player cannot fail to notice when travelling through *Valheim*. This branch, which extends itself in the sky, is outside the reach of the player, since the highest peaks the Warrior can access are found in the Mountain biome. As it is an area out of reach, developers could opt to design it without features (e.g., a single tone of blue). However, in order to improve the players' experience, as well as to define the spaces occupied by them, developers chose to introduce this gargantuan branch, which is, in fact, part of Yggdrasil, a central trope in the *Prose edda*:

> Where is the central or holy place of the gods?
> High answered, It is at the ash Yggdrasil. There each day the gods hold their courts.
> Then Gangleri asked, What is there to tell about that place?
> Then Just-as-High said, The ash is the largest and the best of all trees. Its branches spread themselves over all the world, and it stands over the sky. Three roots support the tree and they are spread very far apart. (Sturluson, 2006, p. 24)

as well as in the *Poetic edda*:

> An ash, I know that stands, Yggdrasill it's called,
> a tall tree, drenched with shining loam…. (Larrington, 2014, p. 6)

In no instance is this branch referred to, in the game, as being Yggdrasil, but the setting of *Valheim* implies so, especially considering the game's presentation in the

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[6] As Gareth Griffiths (2022) explains, "edges of the map" refer to the areas which developers do not intend the players to go. In order to stop them from visiting certain areas of the video game which do not exist (or are yet to be developed, which frequently happens in early access games), developers use various techniques to block the players' paths. Two clear examples of this are shown, for instance, in the well-known *The Witcher 3: Wild Hunt* and the *Assassin's Creed* saga: the first one presents the player a message stating "You have reached the world's edge, none but devils play past here" once the player reaches the edge of the map, followed by an automatic response from the game, which opens the map interface so that the player is forced to travel somewhere else; as for *Assassin's Creed* games, once near the edge of the map, a wall appears, invoking the Animus simulation in which the virtual character finds itself.

official website, which mentions the Warrior's ultimate objective: "…to prove yourself to the Allfather…" (Iron Gate Studio, 2022). Since Odin welcomes the warriors fallen in battle in his hall, Valhalla (Sturluson, 2006, p. 31), it is safe to assume that, once the Warrior destroys all the enemies in *Valheim* – thus overcoming Odin's trial –, he/she is going to be able to reach Valhalla, possibly through this enourmous branch. This possibility, even if it remains to be implemented by the game's developers in the future, helps the players define goals and spaces, set an intended state of mind and determine, even if subjectively, what can be achieved and the possible consequences and outcomes of their course of action. In short, it promotes a "…state of deep mental involvement …", creating an experience of "…disassociation from the awareness of the physical world due to a shift in [the] attentional state." (Agrawal et al., 2019, p. 1).

By drawing attention to a few of Valheim's features, it was this section's purpose to demonstrate that:

a) the game's narrative arc influences its interface, namely the design of the buttons in which the player can click, how the tutorial is presented and the symbols which refer to particular systems of interaction and conveyance of information;

b) even though players are not limited by the numerous resources and building options at their disposal, they are still impelled to play in accordance to the game's setting, attesting the relevance of the narrative arc;

c) the game's mechanics, properly articulated with the narrative arc, have the potential to improve the players' degree of immersion and help make sense of the game as a whole.

3. A conclusive note: towards a methodological conciliation

This article summarises, firstly, the ongoing debate between two major theoretical frameworks within Computer Game Studies that attempt to provide analytical tools for video games as academic objects of study. By referencing prominent authors that support either of these approaches and briefly exposing their positions, it was intended to denote that, while their contribution is of the utmost importance, the narratology vs. ludology debate has been fuelled by misunderstandings and ideological motivations between the scholars working in the field, which hinders the development of Computer Game Studies as a whole and its primary goal, which is to find and develop an appropriate methodology for advanced research on video games. Valheim's brief analysis is expected to demonstrate how a conciliatory approach is not only a plausible method of exploring video games, but it is also, in fact, extremely helpful in understanding this digital medium in regards to its origins and hybrid nature, while also taking into account its tremendous diversity, quantity and availability. It is understandable that one shortcoming of this study may be its focus on a single video game; however, it is expected that the article contributes to further research on other video games as well, as explained below.

As was demonstrated, this methodology proposed to search for interferences and connections between the narrative elements of the chosen video game and its interface, mechanics, gameplay, and hypertextual buttons. By registering these interrelations, it

became possible to verify how they are inherently connected, influence each other and, ultimately, have an impact on how the players react to the game's interface and the decisions made while playing. Thus, a conciliatory approach offers a comprehensive way of understanding how video games function, preventing scholars from disregarding the similitude between digital games and traditional narratives, i.e., literary works and similars, and allowing their differences to be taken into account likewise. With this theoretical framework in mind, it becomes possible to research on any given topic and specific video game, taking into consideration the medium itself, its narrative arc and its reception by the audience.

Future venues of research may attempt to explore the intricacies of these relationships by analysing other prominent video games in which the narrative dimension is shown to be connected to the game mechanics and the interface, and vice versa. One may think of the diegetic UI (User Interface) elements in *Subnautica* (2014) and *Fallout 4* (2015) – the PDA (Personal Digital Assistant) and the Pip-Boy, respectively – which are designed in accordance with the narrative that is being conveyed by the game, while allowing the player to access numerous functions, buttons and options; similarly, in 2017's *We need to go deeper,* the HUD (Heads-Up Display) contains gauges in the top corners displaying the player's vitality and depth, featuring an aesthetic which complements the game's Vernesque theme. These may all constitute very interesting areas of inquiry and analysis through the suggested conciliatory approach.

Furthermore, an assessment of the players' (and scholars') experience with these games (for instance, through carefully crafted surveys) might also offer promising insights regarding the ways they are impacted by the narratives and interfaces which are displayed on screen as, undoubtedly, all these aspects may influence the players' agency within the most diverse game worlds and virtual environments.

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