The expressive power of the possible worlds theory in video games: when narratives become interactive and fictional spaces

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Abstract

The philosophical concept of possible worlds (Lenzen, 2004; Lewis, 1986) has been used in literary studies and narratology (Dolezel, 1998; Eco, 1979) to define the way in which we conceive different narrative possibilities inside the fictional world. In Game Studies, some authors have used this concept to explore the relationship between game design and game experience (Kücklich, 2003; Maietti, 2004; Ryan, 2006), while Jesper Juul (2005) has studied the fictional world evoked by the connection between rules and fiction. In this paper we propose a new approach to video games as ludofictional worlds - a set of possible worlds which generates a game space based on the relationship between fiction and game rules. In accordance with the concepts of minimal departure (Ryan, 1991) and indexical term (Lewis, 1986), the position of the player character determines his/her actual world and the next possible or necessary world. Lastly, we use this model to analyse the video game *The Elder Scrolls V: Skyrim* and show that the possible worlds perspective provides a useful, flexible and modular framework for describing the internal connections between ludofictional worlds and the interactive nature of playable game spaces.

Keywords

Video games; possible worlds; narrative; game space; fiction

Introduction: the possible worlds theory in the context of philosophy

Among many other consequences, the emergence of postmodernist thought in contemporary societies over the course of the twentieth century has had a major impact on the way in which we see the world. Since the advent of digital technology and new forms of interactive expression, the notion of narrative linearity has been seriously compromised. Thus, openly non-linear forms and structures have not only called into question the Aristotelian trinity in classical and formal structure (i.e., the more or less rigid discursive structure of a beginning, a middle and an end of a possible story, over and above any other method of organisation), but have also had a decisive impact on our current conception of what a story actually is. Suddenly, the central plot has been surrounded by other potential discourses that as a rule, have emerged hidden from our view (Branigan, 2002: 110). This multiplicity of narratives is not merely limited to explaining one or more stories, but rather shapes and gives prominence to a possible, coherent and autonomous world (McHale, 1987: 10; Harvey, 1990: 48).

As a result of this possible world consisting of multiple narratives, spatiotemporal structure has also been profoundly challenged, in this case by the notion of contingency, in other words, by the possibility that all things might or might not exist. Thus, new

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digital media such as video games or the most innovative film techniques have propelled the fragmentation of space and time through modular narratives, where the discourse is structured around modules that are independent from one another (Cameron, 2008), and the aesthetics of databases (Bizzochi, 2005).

In the cultural context of non-linearity and the emergence of possible worlds, philosophy has adopted these perspectives in order to redefine some of the classical concepts. Thus, David Lewis (1986), one of the most important philosophers in contemporary times, was inspired by the work of the German philosopher Leibniz (1710) to analyse the reasons for classifying our world as actual, as opposed to all the others. Lewis's proposition, called *modal realism* (1986), does not support the distinction between being and existence because for him, *everything that is, exists*. However, not everything that exists, is or may become, actual, in other words, present. In this sense, all possible worlds do in fact exist, but only a few manage to be actual. Hence, Lewis used the concept or perspective of *indexicality* to relativise the notion of actual (1986: 92-93): all worlds exist, but it is this one which is actual, because we live in it, in the same way that other possible worlds are actual for the people who live in them. The statement "the post office is near" is true in relation to the speaker's physical position in the world, and thus ontologically speaking its actuality is relative. If spoken of another subject, it is his/her position which will determine whether said post office is an integral part of his/her actual world or not, assuming that in any event, it will be merely possible for others unless they are standing next to him/her. Therefore, in Lewis's modal realism, all worlds are ontologically equal, they are on a par. There is no reason to ascribe, as a natural and preconceived feature, the ascendancy of one world over another. The only criterion for considering any world as actual is based on the always relative position of the subjects who populate that world. It consequently follows that all worlds are relatively actual.

The possible worlds theory in the literary and narratological context

In the fields of literary studies and narratology, this notion of possible worlds has been discussed by such renowned authors as Umberto Eco (1984), Thomas Pavel (1986), Marie-Laure Ryan (1991), Tomás Albaladejo (1998) and Lubomir Dolezel (1999), among others. In particular, Umberto Eco (1984) has summarised the notion of a possible world using a set of defining characteristics, as follows:

> "(i) a possible world is a *possible state of affairs* expressed by a set of relevant
> propositions where for every proposition either p or ~p;
> (ii) as such it outlines a set of possible *individuals* along with their *properties*;
> (iii) since some of these properties or predicates are actions, a possible world
> is also a *possible course of events*;
> (iv) since this course of events is not actual, it must depend on the
> *propositional attitudes* of somebody; in other words, possible worlds
> are worlds imagined, believed, wished and so on" (Eco, 1984: 219).

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Based on these constitutive properties of the notion of a possible world, the Spanish author Albadalejo has proposed three models of worlds or "referential structure groups" (Albadalejo, 1998: 58-59). Type I refers to those worlds which are constructed in response to objective reality, i.e., to our world. These adopt the rules of the objective and effective world, and thus generate historical or journalistic type texts. Type II is associated with plausible fiction texts, in other words, with a world that contains semantic elements which do not belong to the type I world but could plausibly exist — and therefore its constitutive rules are similar to those of type I. Lastly, type III concerns implausible fictional worlds, those which do not exist in type I nor do they have similar rules to type I, and thus correspond to texts of a fantasy or science fiction nature.

Meanwhile, Ryan has attempted to elucidate how the traditional possible world is connected with the actual paradigm of virtual reality (2001: 99). Thus, she has proposed a model of relationships between possible worlds and the real world that, unlike Albadalejo's approach, is not based on an objective reality but rather on the multiple interpretations — actual worlds — that each person makes of this reality and which tend to overlap. Non-actual possible worlds are those which we believe could exist but do not do so in reality: their distance from and relationship with actual worlds depend on what is termed "accessibility relations".

Access from our reality to a fictional universe implies that this latter must be "recentered". Hence, when we open a novel or watch a fiction film, we inevitably enter an objective reality created for the work, in which the various possible worlds are organised and which is separate from the objective reality we inhabit. Similarly, Eco (1984) supported this position of recentering, considering the real as an encyclopaedia and the possible world as a cultural construction. The example of *Little Red Riding Hood* is very instructive in this respect: the tale establishes a setting determined by the events, characters and properties intrinsic to its world. However, when the text refers to Little Red Riding Hood as a girl, it does not detail all her characteristics (female sex, two legs, etc.) but rather, such knowledge is assumed to exist in the reader's internal encyclopaedia, i.e., the tale seeks interpretative cooperation between a intensional fictional reality and an encyclopaedic knowledge that acts as an extension. The exception occurs when the cultural construction must correct the knowledge in this internal encyclopaedia so that the latter adapts to this possible world: the tale must establish that the wolf can talk — intension — because otherwise the reader's knowledge of reality would deny this — extension.

THE APPLICATION OF POSSIBLE WORLDS IN GAME STUDIES

The emergence of video games as a subject of multidisciplinary study has generated considerable controversy among different areas of knowledge. Over the course of the academic debate between Game Studies and Narratology, the Theory of Possible Worlds has been gaining ground as a valid methodology to analyse the fictional worlds of video games.

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There is a very short but interesting scientific tradition that has tried to transfer the philosophical and literary construct of possible worlds to the digital and game context of present day video games.

Julian Kucklich (2002, 2003) was the first to conduct an academic study in the specific context of video games, and he identified a set of six possible game worlds determined by semiotics. Furthermore, he used three key concepts to define these worlds: intratextuality, intertextuality and transtextuality (Kucklich, 2003: 103-107). Intratextuality is embodied in the relationship between the user and the entire audiovisual system, whereas the specific phases of intertextuality and transtextuality refer to the construction of game theories and the internalisation of the game's strategies and characteristics.

Together with Kucklich, the Italian semiotician Massimo Maietti (2004) has applied much of Eco's semiotic theory (1984) to video games in order to highlight the interactive nature of these particular possible worlds (Maietti, 2004: 151). In turn, the semiotic perspective can determine part of the structure of the game's world, its aesthetic properties — distinguished from the former by their lack of direct involvement in the interaction with the game — or, in the case of accidental properties, also some of its processes. For example, Maietti analysed a very singular fictional game piece: the magenta rectangle in the game *Tetris* (Pázhitnov, 1984). For the author, some of this piece's most remarkable properties are (Maietti, 2004: 154-155):

A. Its rectangular shape, in which one side measures 1 and the other side measures 4

B. Its magenta colour

C. It can be moved left and right

D. It can rotate 90 degrees on its own axis

E. Its appearance alternates with that of the other game pieces in a ratio of 1/7

F. It falls at a determined rate

G. The user can accelerate the speed of the fall.

Of all the properties mentioned above, only A, B and F are essential since they have a fixed value, whereas C, D and G are accidental because their values are changeable. Although belonging to the same category, E has no interactive capacity and is limited to a simple statistical result. Its position as an interactive property of the system, the aesthetics or the process remains to be established. In this case, the properties A, B, E, F are structural in relation to the game's world, and furthermore, the property B is in turn an aesthetic property. Lastly, C, D and G are defined as interactive and thus belong to the dimension of the game's process. Consequently, a possible video game world can be analysed using semiotic categories that prioritise the essential property/accidental property axis and the structure/aesthetic/process triad.

Lastly, Jan Van Looy (2005) took Ryan's *virtual recentring* as his starting point for an analysis of how possible video game worlds generate their own self-referential spaces. In line with Aarseth (1997), Van Looy identified three communicative stages, *intrigue*, *intrigant* and *intriguee,* as constituent actantial elements of the world of fiction-based games.

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Intrigue constitutes the fictional proposition presented to the user, while the *intrigant* is a non-narrative administrator who could be likened to the implicit author of the fiction. Meanwhile, the *intriguee* — the element closest to the traditional narratee — is not only the main target of the *intrigant* but is also the essence of the fictional world itself because without him/her, there would be no game.

As can be seen, application of the Theory of Possible Worlds to video games is still in its infancy, but has nevertheless demonstrated great potential for both theoretical and practical approaches. Therefore, in the following section we will describe a particular idea of the — possible — fictional world of video games that renders it possible to determine the main features of the interactive game environment and also serves to link Lewis's concept of an indexical term with the general structure of games and progression through the different game phases.

Towards an analytical model of the ludofictional world

The notion of a ludofictional world

In the context of the various theories of possible worlds discussed so far, the ludofictional world (a neologism coined by the author to denote the interactive *ludus* of the game and the traditional fictional world) can be defined as a system of connected possible worlds that generates a game space determined by fictional content and closely related rules.

This ludofictional world represents a broad fictional framework which contains various worlds, each with different functions. As will be discussed below, some of these worlds display a structural hegemony — for example containing main adventure levels — other less important — hidden levels and side-quests —, as well as levels that fulfil other functions, such as those that contribute to the narrative.

As regards their fictional content, ludofictional worlds have inherited the legacy of the fictional worlds inherent in literature and film, but are totally different in terms of their proactive and transformative capacity in relation to the user. Thus, these worlds are endowed with an intrinsic semantic content that enables them to encompass different types of characters, objects, spaces and temporalities which are nevertheless necessarily associated with the influence exerted by the game rules on the game. This relationship between *ludus* and fiction is established by the notion of a dynamic playable world that enables the passage from one possible world to another without in any way challenging the overall structure of the system.

Therefore, the main and most important feature of ludofictional worlds is their capacity to generate a macrostructure of possible worlds that are connected to each other. Each of these possible worlds becomes autonomous by means of an internal game structure composed of a quest, the resolution of this and the final outcome of results. Thus, games on traditional platforms use a number to designate each of the possible worlds in the macrostructure (Level 1, Level 2, etc.), and define their quests and solutions internally

(e.g., reaching a castle within an allotted time, as in *Super Mario Bros*). Sometimes, this progression between worlds is not only limited to increasing difficulty (i.e., the game is repeated in the same world but becomes more difficult) but may even become impossible to achieve: some games such as *Tetris* or *Space Invaders* are impossible to solve.

As seen previously with Marie-Laure Ryan's system of worlds, all fiction is linked to the reality from which it stems. In other words, fiction does not exist completely independently of the real world. Ryan called this property the minimal departure point (*principle of minimal departure*) (Ryan, 1991: 48-60), and it operates in a similar manner in ludofictional worlds. Thus, while fiction still remains potentially unlimited, the game configuration in the game rules does not. The possible worlds that make up the ludofictional system are limited and predetermined; hence the structural principles and the gameplay cannot be extended indefinitely.

The macrostructural perspective

All video games are endowed with at least one possible world in which to engage in adventures and enjoy the gaming experience. In line with Ryan's proposals, we have termed this minimum element through which the game assumes meaning, the *principle of the minimum ludofictional world*. This minimum ludofictional world, in turn consisting of the previously mentioned trio of quest/resolution/outcome, must necessarily deploy a series of elements in order to be able to endow the gaming experience with meaning. These elements include characters, game spaces, narrative or dramatic elements and different game strategies. Some of these elements not only belong to the first possible world, but can also (and usually do) remain more or less unchanged in successive possible worlds. Thus, in *Super Mario Bros*, each possible connected world (each level) provides different experiences but with one common element: the identity of Super Mario. This is an example of the application of *inter-world identity:* a connection between the different worlds that maintains the integrity of the identity of each of the characters, objects and spaces. However, inter-world identity is not a fixed and static element but rather a proactive property which is updated as the player participates in each of the worlds; points are accumulated to win games, the hero obtains weapons and powers, and future scenarios can be affected by present decisions.

Therefore, the ludofictional world is configured as a network of different possible worlds that remain static until the player intervenes, and it is only when the player intervenes that a transition occurs and the various quests in the game evolve. In other words, the world exists prior to the game, and by overcoming challenges, the user progresses through and abandons different worlds, while leaving behind the quests that he/she has successfully resolved or not. This brief definition of the system entails two important conclusions. First, all the possible worlds exist in so far as all of them have been provided to a greater or less extent by the designer, and second, the changing position of the character — through user control — establishes relative actual worlds. Therefore, the existence of the possible and the relativity of the actual inevitably leads to the philosophical theory mentioned earlier: the theory developed by David Lewis.

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To recap Lewis's proposition: *everything that is, exists, but not everything that exists is actual*. The actual world is the one in which we live now, it is relative to our position and is named an *indexical term*.

Ludofictional worlds can be subjected to Lewis's fictional operator, by means of which true propositions are established. For example, as a proposition, the phrase "Sonic, a very fast blue hedgehog, must collect rings and save endangered animals" can only be subject to the ludofictional world. In addition, given these pre-existing worlds, the player's role in propelling the action forwards places the character within the fictional world in a position of relative actualism: having overcome level 1, the character enters level 2 and expects to enter level 3. Regardless of this however, according to the indexical term, the "past" world is level 1, the actual world is level 2 and the "possible" world — relative depending on the conditions of successfully completing level 2 — is level 3. Obviously, this linear structure is an example, since nothing prevents access to different worlds simultaneously — for instance, accumulating a main quest line and several side-quests — but nonetheless, there is always an actual position for the main character in each of these worlds.

Therefore, the pivotal element of the game experience in a set of possible worlds is determined by the indexical term. Nonetheless, all possible systems are defined by the distinction between that which is merely possible and that which, being possible, is also necessary (in relation to the objectives of the game). Thus, a macrostructural system is defined not only by the "order" in which each of its possible worlds has been placed, but above all, by the relationship between the actual (according to the indexical term) and the necessary possible worlds.

Besides knowing whether a world is actual or not (which, as we have seen, depends on the indexical term or actual position of the character in a given world), it is also important to determine whether the worlds connected to it are, in turn, possible. For a world to be possible, certain conditions of accessibility from the actual world must exist. For example, if a merely possible world is only accessible by means of a key that opens a door, then the player must find this key in his/her actual world in order to gain access. However, it should be noted that the possible nature of a world should be understood in two senses: due to the conditions inherent to that world (for instance, the case of the key that allows access or not) or due to its position in the network of the ludofictional model. Thus, a world may be non-possible because we do not have the key that allows us to gain access. But a world may also be non-possible due to structural or categorical questions: level 1 leads to level 2 but can never lead, as such, to Level 8.

On the other hand, the requisite nature of a world not only positions it within the logic of the possible/non-possible, but also endows it with an element of gaming importance. A necessary world is one which constitutes a basic part of the game experience. For example, if a dragon must be killed in order to save a princess, then the possible world in which the beast must be slain is absolutely necessary for the game.

The possible worlds of the ludofictional model can be defined on the basis of the relationship between the actual or indexical term, their possible/non-possible nature and the quality of being necessary as follows:

Necessary Actual Possible Worlds (RAPW): in these cases, the possible worlds have all the active categories of modal logic. These are game spaces that constitute the pivotal element of the game journey, and are therefore necessary in order to progress through the game. Furthermore, because they are necessary, they are also possible. However, the element that best defines their position is the actual nature of this kind of world. The indexical term, i.e., the position of the player character in the ludofictional world, is located in this level of the game in particular. It is important to remember that the actual world is always one and no more than one, and therefore it is a temporary situation. Each world must potentially have the capacity to be an actual world, although the very definition of game means that as soon as the character leaves one world, another connected world is entered.

It is important to emphasise that certain games do no more than comply with the principle of the minimum ludofictional world, since they only incorporate one actual possible world. In these cases, the limitations of the game itself (specifically sought by the designer) mean that the necessary actual world cannot be abandoned for another necessary world, since only one exists. A good example of this is the successful series of strategy games, *Civilization*. In these cases, civilisation is controlled from a general map, a single spatial level, and although this will be physically transformed over time, there is never a leap into another, analogous space. In games with a single necessary possible world, this always becomes actual, although this does not preclude occasionally going to other merely possible worlds (and, therefore, not necessary).

Necessary Non-Actual Possible Worlds (RNAPW): besides games with a single necessary possible world, most other games (whether more or less linear) are endowed with a network of worlds waiting to be updated. For example, the worlds in the film noir video game, *Max Payne*, are completely linear and all of them are necessary. Max updates the world of the New York subway as he flees through it, while the necessary past worlds (the family home) and the future worlds (the bars and brothels) either no longer need to be updated (the past) or are waiting to be updated (the future).

Restrictions on the passage between these worlds are defined by narrative motifs that provide the rationale for the game's design. For example, one common feature of video games is that it is not possible to return to the necessary previous world that the player has just abandoned. If a major enemy's hideout collapses after he has been vanquished, it is logical that the player will not be able to return to that same hideout. To establish this inter-world restriction within the game, a frequently employed device is the use of physical features; thus for instance, a collapsed roof will cause a passageway to cave in, or a door becomes impossible to open. Sometimes, the device is simply a guard who controls access and warns the player that there is no longer anything to see there.

However, these restrictions do not only apply to the past necessary worlds that have now been updated, but also to the worlds which are yet to come. Therefore, it is common in the role-playing game (RPG) genre (with games such as *Dragon Age* or *Baldur's Gate*) that the possibility of updating a possible world depends on solving a specific task such as, for instance, saving a farmer's relative, killing some bandits or obtaining a specific object of special value. Thus, the leap of the indexical term between a possible word and another past world necessarily depends on compliance with the narrative of

the experience ordained in the game. This inter-world continuity and the challenge that compliance with it entails, constitutes the main interactive and entertainment value of contemporary video games.

Merely Possible Worlds (MPW): this category consists of possible worlds that although possible, do not under any circumstances fulfil the condition of being necessary. In other words, they are elements of the game that complement the game's central structure without having any particular impact in its conformation. Therefore, they are auxiliary worlds that endow the game with greater narrative intensity by enriching the world or the characters. Such worlds are very common in genres where the fictional worlds and their narratives carry an enormous weight in terms of providing the rationale for the players' actions. Consequently, these worlds usually provide more detail about the experiences and values of secondary characters, or even serve to enhance the attributes and goals of the main character. These worlds are popularly known as *side-quests*, and consist of small adventures with a final reward that always reveal interesting aspects of the world the player inhabits and of the heroes who accompany him/her. They are very common in *sandbox* type games and, in particular, in the RPG genre.

One of the most interesting features of these worlds is their dramatic potential when they are combined with a strongly ethical design perspective. In other words, although merely possible worlds do not affect the hierarchy of worlds or the envisaged resolution of the game, they do add a series of attributes that to some extent can modify the gaming experience from the perspective of ethics. A good example of this is found in the *Mass Effect* series. The merely possible worlds in these magnificent games released by *Bioware* are not limited to enhancing the attributes and goals of the main character and his/her companions, but also pose extreme debates that exert a certain level of influence on the outcome of the adventure. These worlds are defined by extremely dramatic events, such as ending the life of a companion for a higher good or the eradication of entire galaxies and species, which also endow them with a new and very interesting game status.

Non-Possible Worlds (NPW): the impossibility of accessing a world leads us to propose a set of subcategories based on the type and intensity of this prohibition on access.

First, as has been discussed previously, access to many possible worlds (both necessary and not necessary) tends to be restricted by means of various narrative and design strategies. Therefore, impossibility can, in this case, represent a mere transitory status that can be overcome by the player's action: many worlds are non-possible at the outset but change to another kind of world after certain conditions have been fulfilled.

Second, some worlds are always impossible to access, here understood as lack of interaction. The most common and typical examples of these are cutscenes or event scenes, which interrupt the gaming experience to depict a series of narrative elements in the traditional way. However, even within the context of cutscenes, non-possible but actual worlds should be distinguished from those which are neither possible nor actual.

A cutscene type non-possible actual world arises from a world that has been updated by the indexical term and which immediately thereafter interrupts the player's interaction in order to present a video sequence. This video, called an in-game cutscene, does not

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abandon the world of the indexical term, but rather uses the video game's graphics in that world in order not to interrupt the sense of aesthetic continuity. In contrast, a cutscene type non-possible, non-actual world does abandon the world of the indexical term to present a CGI video that uses a different aesthetic and spatiotemporal framework. While in-game cutscenes weave together two different worlds (for instance, showing the death of a boss enemy that the player has just killed, which takes the player to the beginning of the next level), CGI videos embody a much greater leap (for example, a flashback, a long interlude or a change of focus between characters). Therefore, in-game cutscenes in fact constitute temporary suspensions of the gameplay in order to draw different worlds together through narrative, whereas CGI videos present the world in general and tell the player about major events that exceed the interactive capacity of the worlds. Cutscene type worlds have provoked profound controversy since they do not allow interaction and gameplay in the world they show (Eskelinen, 2001; Klevjer, 2002); nevertheless, they continue to be a very common narrative strategy. In order to attenuate this problem, the technique of quick time events has been incorporated into contemporary video games, a formula which permits limited access to this type of world through the use of given buttons at certain times to influence, to a greater or lesser extent, an in-game cutscene.

Two specific categories have been discussed so far: (I) non-possible worlds that can change status after certain access requirements have been fulfilled and (ii) cutscene type non-possible worlds. It is in this last category to be defined here that the most rigid level of impossibility appears: non-possible worlds that are located, a priori, beyond the ludofictional model. Such worlds are not scripted by the designer and access is therefore forbidden. The true potential of these worlds lies not so much in their extraludofictional nature, but rather in what happens when they are entered. Because they have not been provided by the designer, they do not form part of the game structure (they do not support the development of an adventure, nor are they aimed at improving the gaming experience), but nevertheless, they can have a major impact on the evolution of the game. These are worlds that are updated when they should not be: graphical errors that allow the player to walk through walls, errors of physics that enable the player to fly or become immortal, and similar problems. There is an important distinction between the non-possible actual world defined by an unforeseen error and modification of a given world by means of unscripted ruses or stratagems. In the latter case, although the use of cheat codes is usually frowned upon or even prohibited, particularly in online games, such modifications are not unexpected by the designer. A world that can be modified by ruses has been envisaged by its creator, whereas a world modified by an error has not.

Having defined the possible worlds involved in the ludofictional model according to the criteria of actuality, possibility and necessity, we will now analyse the game called *The Elder Scrolls V: Skyrim* from this macrostructural perspective.

Possible worlds in *The Elder Scrolls V: Skyrim*

At present, role-playing video games — RPG — are one of the most popular genres and at the same time, one of the most complex types of game to design. Thanks to the

rise of 3D and the power of today's computers, classic pencil and paper games such as *Dungeons and Dragons* have been taken to increasingly spectacular technical levels, spawning a vast series of games that include, among others, such famous titles as *Pool of Radiance* (SSI, 1988), *Eye of Beholder* (Westwood Studios, 1990), *Baldur's Gate* (Bioware, 1998), *Icewind Dale* (Black Isle Studios, 2000) and *Neverwinter Nights* (Bioware, 2002). Sandbox games and the ability to explore vast physical spaces have enabled RPGs to become increasingly larger and richer. Huge cities and large valleys and rivers form the backdrop to epic quests and heroic battles against creatures of all kinds. Together with this exaltation of fiction, role-playing games enable the gradual construction of the player character, encompassing aspects such as race, profession and aesthetics through to abilities, powers and, sometimes, ethical and ideological frameworks.

All these features are present in *The Elder Scrolls V: Skyrim* (subsequently referred to as *Skyrim*), the fifth instalment of the hit series *The Elder Scrolls*. Set 200 years after *The Elder Scrolls IV: Oblivion* (Bethesda Game Studios, 2006), *Skyrim* immerses players in a fantasy world ravaged by a civil war between the Imperial Legion and the Stormcloak rebels. In this context, the return of the dragons together with their leader, Alduin, forces peace between the factions and leads the player character — called Dovahkiin or the Dragonborn — to discover his true destiny.

On a macrostructural level, Bethesda's adventure locates the game space itself in the heart of the action. All possible worlds are inscribed on the physical plane in the Nordic region of Skyrim, which is to say that all are accessible, according to their particular conditions, as geographical areas within the same vast map, although each of them plays a different role depending their hierarchical relationship.

Necessary possible worlds

The necessary possible worlds are grouped into three main acts that form the pivotal elements of Dovahkiin's experiences, from his escape due to an attack by the first dragon through to the death of the god Alduin.

It should be noted that *Skyrim* does in fact have a linear structure from the point of view of the general gameplay (i.e., there is a central quest that provides the narrative rationale for the player's presence in these territories). The sandbox model and the vastness of the setting does not in itself imply a non-linear narrative or profoundly emergent model, but rather a potential distribution of worlds between those that are necessary and those others that are defined as merely possible. Thus, it is important to distinguish between the physical limits of *Skyrim* and the potential necessary and merely possible worlds it contains. The physical space of the fictional content is actually a system connecting the different necessary possible worlds, rather than a single necessary possible world that evolves. Consequently, the main distinction between the *Civilization* series (discussed previously when defining necessary possible worlds) and *Skyrim* is that in the former there is only one possible world, which evolves without providing access to other analogous worlds, whereas in the latter, the physical space does not determine a single necessary possible world, but instead constitutes the space for crossing between worlds.

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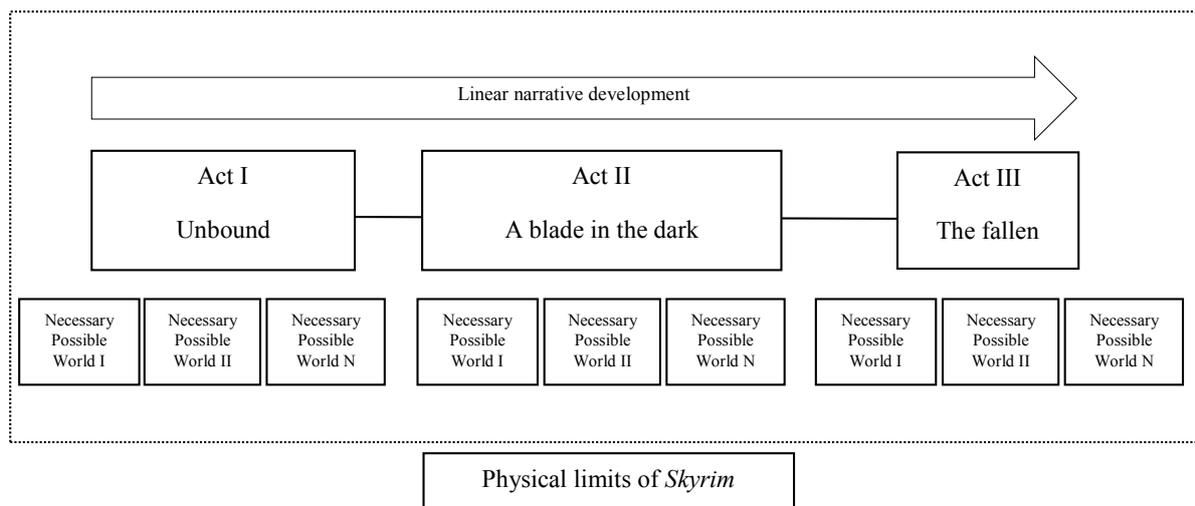
Figure 1: Necessary Worlds in *Skyrim*
Source: By the authors.

Merely possible worlds

Unlike other, more rigid ludofictional worlds, in *Skyrim* the hero can temporarily abandon the main quest line and enter a series of merely possible worlds (side-quests) constructed around various factions. The factions consist of organisations which the player character can join in order to complete quests and attain the highest experience level. The structure of these merely possible worlds is determined by the particular fictional intent of each of the factions, and therefore the characters and objectives will be different in each of them. The main factions, and consequently the principal groups of merely possible quest-type worlds are the College of Winterhold (an association of mages), the Companions (an association of fighters), the Dark Brotherhood (an association of assassins), the Imperial Army (the military of the Empire of Tamriel), the Stormcloaks (rebels who seek to secede from the Empire of Tamriel), the Thieves' Guild (an association of thieves) and the Bard's College of Solitude. As can be seen, each faction provides different merely possible worlds without affecting the fictional significance of the other worlds.

However, the possibilities of the world of *Skyrim* are not exhausted by successfully completing all necessary possible worlds and the other merely possible quest-type worlds. Bethesda has incorporated a new mechanism for randomly generating possible worlds termed *Radiant Story*, which creates unlimited new quests depending on the past and present actions of the player character. Thus, the system continuously and randomly generates different possible worlds within the fictional framework, based on either necessary or merely possible worlds. This form of generating new game experiences not only endows the game with a novel flexibility but also helps to revitalise a game world that could become rapidly exhausted after the resolution of all the possible worlds provided by the creator. Thus, *Skyrim* only reaches its limit when the player decides to abandon the continent of Tamriel.

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College of Winterhold	Merely possible world I, II, N....	
the Companions	Merely possible world I, II, N....	
the Dark Brotherhood	Merely possible world I, II, N....	
the Imperial Army	Merely possible world I, II, N....	Random possible worlds (Radiant Story)
the Stormcloaks	Merely possible world I, II, N....	
the Thieves' Guild	Merely possible world I, II, N....	
the Bard's College of Solitude	Merely possible world I, II, N....	
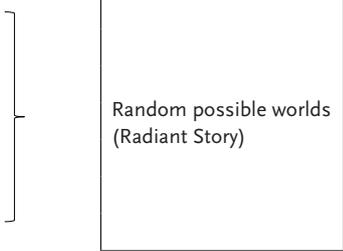
Table 1: Merely possible worlds in *Skyrim*
Source: By the authors.

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Ludography

Alekséi Pázhitnov (1984), Tetris®

Bethesda Game Studios (2011), The Elder Scrolls V: Skyrim®

Bioware (2009), Dragon Age: Origins®

Bioware (2007), Mass Effect®

Bioware (2002), Neverwinter Nights®

Bioware (1998), Baldur's Gate®

Black Isle Studios (2000), Icewind Dale®

MicroProse (1991), Sid Meier's Civilization®

Nintendo EAD (1985), Super Mario Bros®

Remedy Entertainment (2001), Max Payne®

SSI (1988), Pool of Radiance®

Taito Corporation (1978), Space Invaders®

Westwood Studios (1990), Eye of Beholder®

Bio note

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