

Journée portes ouvertes 2024



Mémoire de Licence 3 LEA

À partir de la rentrée 2024, les étudiant·e·s de Licence 3 LEA doivent rédiger un mémoire de fin de parcours afin d'obtenir leur diplôme. Cette tâche dite « complexe » est censée être valorisante avant tout : l'étudiant·e choisit un sujet en rapport avec son parcours d'études et son projet professionnel et le traite en détail, d'un point de vue pratique mais aussi scientifique, en situant les questions abordées dans un contexte aussi bien intellectuel que professionnel.

Ce travail implique un temps de réflexion, un temps de recherche et de lecture et, dans de nombreux cas, un travail de terrain, afin d'observer son sujet en détail et/ou de collecter des données. Il est tout à fait possible, mais en aucun cas obligatoire, de focaliser le mémoire sur une question en rapport avec le stage (ou expérience professionnelle équivalente) qui doit aussi être effectué pour valider le diplôme de Licence LEA.

Le travail de mémoire représente aussi l'aboutissement des enseignements qui portent sur la méthodologie du travail universitaire (à partir de la Licence 1) et sur les méthodes de recherche scientifique (à partir de la Licence 2). En Licence 3, un cours spécifique est mis en place pour apporter les outils nécessaires à la rédaction d'un mémoire et le travail de chaque étudiant·e sera suivi pendant l'année par un membre de l'équipe pédagogique.

Le mémoire peut être rédigé soit en français, soit dans l'une des langues étrangères étudiées, et viendra constituer un élément de portfolio pouvant être utile pour des candidatures en Master ou pour un futur emploi. Dans un monde qui évolue rapidement, il est plus important que jamais de développer des compétences en matière de recherche et de rédaction, et c'est (aussi) ce que l'Université peut apporter à une formation orientée vers le monde professionnel.

Le mémoire obligatoire est nouveau pour 2024, mais des cours expérimentaux organisés des dernières années ont permis de réfléchir à ses modalités. Sur les pages qui suivent, vous pourrez découvrir un mémoire rédigé en anglais, réalisé dans le cadre du [module « Applied Research in Interactive Narratives » \(ARIN\)](#) proposé comme option en Licence LEA/LLCER en 2022-23 et 2023-24, avec le soutien de [RITM-BFC](#) et de l'alliance européenne [FORTHM](#).

(Ce cycle de cours prend fin à l'été 2024, mais d'autres options seront proposées à l'avenir et, nous espérons, inspireront d'autres travaux de recherche.)

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**Nathan
BOURGOING**

**LEA-3
4th Semester**

**THE QUEST FOR REALISM
IN OPEN WORLD VIDEO GAMES**



**Why Escape Reality to Experience a
Virtual One?**



2022-2023

University of Burgundy

Résumé des commentaires sur Dissertation - Nathan Bourgoing_WN.pdf

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Nathan, this is an outstanding piece of work that many final-year MA students would be proud of. Your writing is a pleasure to read (a few very minor points of expression marked) but also very convincing, with your literature review, survey and case study combining to give a well-judged slice of an analysis that could quite easily form the basis of a MA or PhD dissertation. I have made a few suggestions in the comments below but will stress that these are not points I normally have occasion to bring up with students completing their BA degree. Please keep it up.

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Introduction

For about ten years, we have seen the development of video games that stand out for their realism. Indeed, developers seem to be trying to create open worlds that are closer and closer to our real world for the pleasure of the players. In addition, technological advances such as virtual reality, motion capture, and high-definition graphics have pushed the limits of possibilities in the creation of realistic worlds. But as the industry aims to meet market demand, we can ask ourselves why gamers are so attracted to this "quest for realism" in video games? What drives developers to invest so much time and money in creating these new-generation universes? Is realism really linked to the enjoyment of gamers, and does it really allow for a better experience?

In this paper, we will study in depth the different facets of the notions of "realism" and "immersion" as well as the relations they have with each other in order to understand the role they play in the success of open world video games. Through a survey carried out for this paper, the other objective will be to identify the frontier between "realistic game" and "simulation", that is to say the moment when a video game represents a reality that has gotten too far realistically to fulfill its primary goal: to entertain. This study will finally be illustrated by the game *Red Dead Redemption II* (Rockstar Games) whose level of realism was very surprising at its release in 2018.

Literature review

Many studies have been conducted on the issue of realism and immersion in video games, although some authors such as Wilcox-Netepczuk (2013, pp. 94-95) or Rogers et al. (2022, p. 17) noted that the very recent, dynamic, and complex nature of this field made it difficult to draw solid conclusions. Still, since realism is a very broad notion, several perspectives were explored in depth by the authors. It's the case of Low who proposed already in 2001 a study focused on the different forms of realism expressed in the field of video games, Bowman et al. (2023) who offer a reflection focused on the impact of the faith of historical representations in a game on the player's experience, or Iacovides et al. (2015) who deal with the effect of non-dialectical elements on the immersion of the player. Thus, while I will use their studies as basis, I will not specifically address all of these aspects in this paper. I will restrict my reflection only to the notions of "graphical realism", "enactive realism" (which we will take the time to explain later) and "immersion". I will only be interested in open world video games in order to remain in a more precise sphere of the field, and I will not deal with VR video games which I consider too far from the traditional open world game from a technical point of view. Moreover, it should be noted that Vanderhoef and Payne (2022) have already been able to propose a study on *Red Dead Redemption II*, more specifically on the way the notion of time is treated in the game. Thus, I will try to address other aspects of realism expressed in the latter. Finally, I will take the opportunity to compare the data from my own investigation with that of other authors (Bowman et al., 2023;

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Another useful reference point here would be Jesper Juul's book *Half-Real* (2011), which I recommend taking a look at. Clearly, many things have changed since then, but this would make for a very useful baseline to "update".

Iacovides et al., 2015; Polson, 2012) regarding realism to see if our results agree on the idea that a realistic game may or may not be more effective with players.

I) Realism and immersion

Realism(s)

First of all, it is necessary to explain realism precisely in order to better understand how it can be represented in a video game. In a very general way, we could first say that realism corresponds to a faithful representation of aspects of reality in a convincing way and to the way these aspects are expressed in the virtual world of the game. Of course, we could think of visual elements, such as high-definition graphics, credible light and shadow effects, as well as smooth and natural animations. This can also include audible aspects, such as realistic sound effects and suitable soundtracks. The other more general facet of realism lies in the game mechanics, where the actions and reactions of the characters and the environment are designed to behave in a plausible way that is consistent with what we would observe in the real world.

Now, much more specifically, Ribbens et al. (2016) identify five different dimensions of "realism":

- Social realism, which represents how the events and behavior of the game characters correspond to what can be observed socially in the real world.
- Perceptual pervasiveness, which encompasses all the elements that can have an impact on the player's overall perception of the game environment and experience. We can think for example of audiovisual effects such as sound effects or graphics that can contribute to a more compelling game experience.
- Character involvement, which refers to the emotional, psychological and affective involvement of the player with the game characters. This can include the emotional attachment the player develops to these characters by understanding their backstories, personalities, motivations and relationships with other characters.
- Freedom of choice, which is the way the choices you can make in-game resemble those you can make in the real world. This allows the player to feel more involved because the choice situations presented to them are similar to those they can face in real life.

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Constructive criticism: you don't necessarily need to define concepts from first principles beyond what is necessary to make your argument work. Here, you have done a good job of getting quickly to the point at hand.

- Simulational realism, which represents the ability to simulate realistic situations, environments, and phenomena in the universe to create a more believable gaming experience for the player. Some examples could be the creation of realistic physics, dynamic weather, realistic interactions with the environment and characters, or resource management systems such as hunger, thirst and fatigue. The goal is thus to faithfully reproduce the conditions and mechanisms of the real world in the virtual game world.

Then, it is the duty of the developers to choose on which types of realism the game will be based in order to give it the desired image. However, if the aim of video games is to bring us on a virtual journey to a new reality that is by definition "imaginary" and often different, why would we try to create universes that always look more like the real world?

Indeed, Low (2001, p. 1) claims that developers are constantly seeking to improve the graphics of their games because they consider this aspect to be their main selling point. Similarly, gamers and specialized magazines often complain about the lack of realism in games or, on the contrary, compliment them. He adds, however, that this concept is not easily defined, as what is considered "realistic" can be contradictory, because gamers are often able to ignore many clearly unrealistic aspects in video games without complaining about them. But in that case, if gamers are able to enjoy a game while ignoring certain rules of realism, is it really necessary to strive to respect real-world principles?

Why is realism important?

First and foremost, I would like to note that the point developed earlier by Low was only about graphical realism. Thus, he implies that the visual aspect, or "perceptual pervasiveness" (Ribbens et al., 2016), is the one that seems to be the most important in allowing the game to be successful.

Indeed, according to Rogers et al. (2022, p. 16), the reason for this is that humans have a dominant visual sense. They perceive more visual information and are therefore more sensitive and receptive to the elements they can see. Thus, visual realism tends to determine the overall quality of the visual appearance of the environment and characters in a video game. Graphical details such as textures, shadows, colors, and lighting must be realistic for the environment to be considered believable to the player, much more than social or simulational realism which are less impactful.

In other words, the preponderance of visual aspects in realism is a logical consequence of our dominant visual sense, which is essential to perceive the world around us. But is developing the most realistic game enough to make it a good game? It is unlikely, because I believe that if it were the case, the most successful simulators would far more successful than the current popular

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Yes. This also potentially raises questions about the relationship between realism, immersion and accessibility, which it might be worth following up in future.

video games that do not necessarily stand out for their visual beauty. Perhaps the truth lies elsewhere.

Behind the hierarchy of the types of realism that we have seen exists an essential notion: immersion. This term, which is very often linked to realism, can be divided into three **levels** (Iacovides et al., 2015, p. 3):

- "Total immersion", which corresponds to the state where the player feels completely absorbed in the game universe, where the limits between reality and fiction are blurred. This experience is generally considered the most satisfying possible in a video game because the player is no longer simply playing the game, he is living it. This state obviously requires great focus, and it can only be achieved if the game itself has the required qualities.
- "Engagement", which is the level of involvement and interaction between the player and the game. In other words, it is the degree to which the player feels involved in the issues of the story and the game mechanics.
- "Engrossment", which focuses more on the emotional investment of the player for the characters in the game, such as empathy, anger or joy.

Another concept that needs to be defined and that comes directly from immersion is the notion of "presence". According to Jih-Hsuan and Wei (2015), this term refers to the feeling of "being there" in the game, even through we are playing through a screen. This feeling is often considered to be somewhat less advanced than immersion; the player's attention is simply grasped by the game to the point of feeling like they are there, but their mind still manages to differentiate between the real world and the virtual world more easily.

As we can see, these definitions follow similar paths but with different degrees of implication, even if it is sometimes difficult to define a real border between these concepts. Let's rather say that they function in an intertwined way, to eventually form a whole: immersion. From now, I will use this term to refer to the global idea that the player feels strongly involved and captivated while playing the game.

However, one could argue that these definitions of immersion do not really take into account the visual realism of the game and seem to imply that we should focus more on how the player feels to be immersed, not on what they see. On this point, Wilcox-Netepczuk (2013, p. 92) supports the idea that graphics, or the overall visual quality of the game, is a key element in attracting the interest and emotion of the audience. He argues that games that offer good graphics tend to capture the player's attention and keep them immersed in the game world, so this would be the reason why developers are constantly looking to improve game graphics to create more immersive and captivating experiences.

Are these levels hierarchical or are they simply different aspects of the concept?

This idea is supported by a study (Bracken and Skalski, 2006) aiming to examine the impact of the visual quality of video games on player immersion. Participants were divided into two groups, one playing on low-quality screens and the other on high-definition ones. The results of the study showed that the participants playing on high-definition screens experienced a higher level of immersion than those playing on low-quality ones. In fact, good graphics allow gamers to feel more captivated in the game world, through a more realistic and detailed environment.

At this point, we can keep in mind two important elements:

- Realism is not a simple aspect of a video game, it encompasses several facets that can affect the player in different ways. The one that seems to be the most valued is graphical realism because humans are more receptive to visual stimuli and will therefore be more affected by graphics that offer authentic environments.
- The primary objective of realism is to allow the player to be totally immersed in the game they are playing. Indeed, in order to feel fully involved in the universe, it seems that it needs to look visually credible.

The problem is that this latter idea does not help explain why the most successful games are not simulators, which are still extremely faithful representations of our reality. In her definition, Wilcox-Netepczuk (2013, p. 92) mentions a subtle nuance by saying that visual realism is only a "capture attention" way to "increase immersion", not necessarily create it, at least not completely. In that case, what are the elements other than visual authenticity that contribute in making a game immersive? Furthermore, if visual realism is only seen as a secondary means of maintaining immersion, does it mean that this type of realism is at the end not essential?

The role of the player: a key factor

In order to better understand how immersion is created and what links this concept has with realism, it is time to introduce the notion of "enactive realism".

According to Jih-Hsuan and Wei (2015), this concept refers to "the player's interaction with the game via the interface and controller as well as the player's interaction with other characters in the game that makes the player feel as if he or she is actually participating and acting out in the mediated environment." We can first note that this definition seems to combine the notions of "simulational realism" and "freedom of choice" seen previously (Ribbens et al., 2016), the former referring to the ability to simulate realistic physical situations and phenomena in the virtual environment, and the latter corresponding to the choices the player can make to impact the game world as they wish.

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One further question might be whether this question applies to a greater/lesser/different extent to different game genres and perhaps platforms. For a short study like this one, one way to address the issue would be to state what types of game you are (and are not) interested in. Comparing genres would no doubt be interesting, but that means another variable and another dissertation :)

Moreover, the authors specify that "enactive realism" is different from "presence" in the sense that, above all, it implies a form of proactivity of the player on the virtual world, whereas "presence" simply refers to the feeling of being part of the world in a more passive way. This element seems to play an important role in immersion and thus in the global quality of the game, because contrary to visual realism, it takes into account an essential aspect of video games: the action of the player.

We can consider that the most important thing when playing a game is not to move in realistic environments, but to feel the impact that our actions have directly on the environment. Sommerseth (2007, p. 767) gives a relevant explanation by stating that the more control the player has over the game, the more realistic the game seems. She adds that, unlike cinematic conventions where the viewer is a mere observer, video games involve an active player who interacts with the environment and makes decisions that affect the events, which corresponds to a form of enactive realism. Therefore, video games cannot be simple artificial representations of the world (perceptual pervasiveness) as with cinema, because the role of the player is essential and creates a different, interactive and thus more immersive experience.

For Sommerseth, a video game is defined as an experience that depends on "an iterative feedback between a real body and a virtual world" (p. 766). In other words, she implies that video games offer a gaming experience that combines both real-world elements (such as body movements) and virtual-world elements (such as images and sounds). This combination creates a "half-reality" (p. 765), where the player feels as though they were interacting with a world that does not actually exist, but is realistic enough to create a strong sense of immersion. Thus, this immersive experience is made possible by the constant feedback between the player's actions and the game's responses, which allows the player to adapt to the virtual world and feel more engaged in the overall experience.

From this explanation, we can note that enactive realism plays a crucial role in the immersion of video games, much more than visual realism, because it takes into account the very essence of video games: interaction. While the audience of a movie is composed of simple spectators "undergoing" the events, the audience of a video game is composed of real actors of the story and its universe, so they naturally need to feel the direct impact they have on the environment to make them constantly aware that their presence counts.

There are different ways to do this, such as multiple-choice games that usually have several alternative endings depending on the player's actions and decisions. The prime example is *Until Dawn* (Supermassive Games, 2015) whose enactive realism is strongly based on the fact that every decision counts and every mistake could turn out to be deadly for the characters of the story.

Another form of enactive realism is the one described by Low (2001) through the idea that "objects are recognized through action" (p. 4). He explains that, in video games, objects only come to life if they respond to the player's actions. If an object cannot be manipulated or

damaged, it loses its value in the context of the game. This is why some developers strive to create interactive game environments that respond to the player's actions, as it generates a more immersive and engaging experience. An example could be the destructible environments in the *Far Cry* series (Ubisoft), where the player can move or break a large number of objects in the game world.

We can therefore imagine that the realistic interactions that the player has with the virtual universe are more important to create immersion than the visual realism of the game, meaning that the latter is not indispensable and only allows to maintain it.

However, we have talked until now about realism as if it were a faithful representation of our world, which may seem logical since it should be easier to immerse ourselves in a virtual universe that resembles the real world, with concepts that we already know. But I don't share this point of view. I think that we have to make a distinction between realism which simply corresponds to the strict realities of our world (graphically, physically, socially...), and realism in the sense of coherence, that is to say a reality different from ours which possesses and respects its own principles to the point that the player adheres to these new rules without feeling disoriented. [1] calls back to Sommerseth's (2017, p. 265) idea of "half-reality", which takes as an example the fact that a game can very well respect the physical rules of our world (gravity, movement, fire that melts ice...) while making us fight a dragon that does not correspond to the reality of our universe.

In fact, immersion is not limited to games that perfectly respect the principles of the real world, but to those that completely respect their own logic. For example, Ojeda (2007) carried out a study aimed to measure the immersion rate of the participants by making them play more or less realistic games. The results showed that for the *LEGO Star Wars* video game (Traveller's Tales, 2005), even though some participants had rather low initial expectations or interest for the game and its universe, they eventually found that the "cartoonish" visual style had a positive impact on their experience and overall immersion (p. 69). [2] In the contrary, some participants did not feel engaged and immersed at all in *Sid Meier's Pirates!* (Firaxis Games, 2005) because "the game world did not seem believable" (71). In the end, realism is not necessarily a factor of immersion, the most important factor is coherence. But in order to create a credible and therefore immersive universe, with its own rules and its own degree of realism, it is necessary to start from a reference point.

Realism: a matter of reference

The basic idea is that we should always consider the realism of a universe in relation to its "self-created context". Wages et al. (2004) argue that in video games, "the term 'realism' is [...] used to relate to a reference point. For example: If the reference point is a fantasy world equipped with trolls, dragons and magic, the appearance of a tax man from a fiscal authority like in our real world would

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... also to a very long tradition of non-digital art and literature in which the relationship between reality, realism and imagination has always been fluid?

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Sidenote: could we compare this example to more recent examples such as *Monkey Island* or *Pirates of the Caribbean*, or to a longer tradition of pirate narratives, where 'believability' has usually taken second place to entertainment?

be regarded as extremely unlikely and unrealistic” (p.3), as it does not fit the internal logic of this fantasy world. Instead, they explain that if we talk about realistic graphics in a game, the reference point will be the visual impression we have of the real world, and the graphics will be compared to that visual reality. In other words, realism in video games is often defined in relation to a specific frame of reference, whether it is a fantasy world or the visual reality of our world.

If a video game brought us to an imaginary planet through a spaceship, and the landscape of this planet **was not corresponding to** what we can see on Earth, the game could still be considered realistic as long as it would respect the “reality framework” it would have taken the time to establish, so that the player could adhere to this new reality. Moreover, this game could very well be considered realistic from a visual point of view even though it throws us on an imaginary planet with elements and creatures that do not exist in our reality. To be visually realistic, the important thing is not to reproduce real elements that we know in our world, but to produce elements that look like what they would if they existed in our world. This is why *Minecraft* (Mojang Studios, 2011) is considered functionally realistic, because its mechanics and features make sense in relation to the established universe. Baking bread with a bucket of lava is realistic if we take the *Minecraft* universe as a reference point, which is a necessary condition for the player's immersion. On the other hand, it seems totally unrealistic if we consider the game in relation to the coherence of the real world, although many features of the game are taken from rules of our reality, such as creating glass by burning sand for example. From a graphical point of view, since the reference point for visual reality will be our perception of the real world (Wages et al., 2004, p. 3), *Minecraft* will necessarily be considered unrealistic since it represents a cubic and “coarse” world that is totally out of phase with the representation of our reality.

On this point, Sommerseth (2007, p. 766) gives a somewhat different opinion by stating that video games are “autonomous and closed systems”, which means worlds created from scratch that do not refer to any external reality. She explains that, unlike cinematic representations that often seek to faithfully reproduce the real world, video games present imaginary scenarios that have no direct correspondence with physical reality. Although the graphics may be very close to visual reality, they remain artificial constructs. She therefore claims that video games do not seek to reflect reality as it is, but rather to create a fictional universe and allow players to immerse themselves in it through an experience that is often very different from real life.

While I agree with the fact that each video game universe should be considered independently and not systematically compared to our reality in order to determine whether it is realistic or not (as in *Minecraft*), in the case of open world games, it cannot be said that they are totally isolated from any physical principle of our reality. Most open world games are necessarily based on laws from our world. For example, gravity, the representation of imaginary creatures whose overall morphology mimics the one of living beings on Earth, or social interactions that are also inspired by our human relationships. Of course, an open world video game can ignore some of the fundamental rules of our real world to establish its own version of reality, for example the ability to walk on clouds. But the very fact that you can walk is a principle taken from the real

world, so this game will still be based in part on realistic rules. If the movement of the character's legs corresponds to the action of walking forward but the character physically moves backward, this will break the immersion because it will go against the fundamental physical laws on which the "unrealistic" game world is based. Conversely, walking on the clouds can be perceived as immersive and "realistic" within this reality as long as the game proves to us that it is consistent and logical in this universe.

This example thus shows that, no matter how far a universe decides to move away from the principles of our reality, it will inevitably be attached to some degree of realism of our world. It cannot therefore be considered as having "any analogue correspondence to remote physical reality" (Sommerseth, 2007, p. 766). Instead of trying to detach or completely attach to real-world principles, Wages et al. (2004) consider that we must find the right balance between the two. They explain that "reducing the number of features while exaggerating certain ones can have a stronger effect than a genuine stimulus [and that it] should be exploited for the creation of believability, empathy and immersion" (8). According to this principle, a sort of caricature of reality should be created, adapting each element in order to anchor the universe in a part of reality while ignoring some rules that could slow down immersion. For example, if in the game, the character could fall every time he stepped on a sidewalk, it would break the immersive aspect because the level of realism would be too high compared to the player's tolerance. Indeed, realism is often seen as an advantage, but as we have seen, it can damage the quality of the overall game if not used correctly.

Downsides of realism

First, Wages et al. (2004, p. 6) develop a very relevant hypothesis concerning the negative effects of realism by explaining that, by nature, the human mind always seeks to identify representations of real elements in what it perceives, which the authors call "recognition of reality". A good example would be pareidolia, when we think we recognize familiar shapes in elements that represent nothing, such as seeing a face formed by clouds. However, when we play a game, our mind will try to decipher the meaning of the shapes that appear on the screen in order to understand the interactions between each element. This process of evaluating and interpreting what we see is what Wages et al. call "wardens of reality", because the brain always needs to find a meaning to what it perceives, and it is constantly trying to define whether an element is real or not in order to process it correctly. The problem is that if a video game tries to visually imitate our reality, our mind will "instantly detect the incongruities and for example judge facial movements as spastic. Hence an increase in realism might paradoxically lead to a decrease in believability." Conversely, if the video game has intentionally unrealistic graphics (as in *Minecraft*), our mind will understand that the representation it perceives is not meant to mimic real-world visuals in detail and its judgment will therefore be much less negative. It means that, when creating a realistic world, the risk is that we try to get too close to the authenticity of

the real world and thus obtain a result that does not satisfy the players' "wardens of reality" requirement.


However, Wages et al. (2004, p. 4) also support the idea that "simply copy nature" is useless as more than 90% of the information contained in the stimuli perceived by the player is filtered out and ignored by their mind as being "non-essential". In other words, according to them, reducing the difference between the created virtual world and the real world does not make a game more realistic or more immersive because the player's mind will not take into account the "useless" details added to the game. They won't be efficient enough to "fool" the perception of the "wardens of reality".


From my point of view, I don't agree with this idea because I consider that details are essential elements for immersion and realism. Just like in real life, we are surrounded by elements that we never noticed, but if you take the time to look closely at your environment in the game, you can quickly be impressed by the efforts made by the developers to make a universe realistic down to the slightest detail. I think that it is the accumulation of small details that can help to anchor the player in a state of immersion, because by focusing on any aspect of the environment, the player's mind will be constantly stimulated by "bits of realism" (such as grass moving with the wind, clouds moving, or footprints left by the player) that will prevent it from being aware that this is a virtual world. However, it should be noted that Wages et al.'s hypothesis was formulated in 2004, when games were still very far from the degree of realism that can be achieved today. It is true that the environments created at that time offered a representation of reality that was much less credible for the player's mind. They would then have more difficulty immersing themselves in this virtual illusion, even if, as we have seen, immersion is not only a question of graphics.

Secondly, if we consider that the aim of video games is above all to be entertaining, we must take into account that reality is sometimes boring. If we try too hard to make a game realistic, we risk transferring the painful aspects of real life into an environment that is supposed to entertain us. In this context, Ojeda (2007, p. 72) notes in the results of his study on immersion that the repetitiveness of certain actions in a video game could make it less immersive because it is too boring. However, while real life is also made up of very repetitive tasks, this is in fact an aspect of realism that we are trying to avoid when playing video games. This shows that in creating a realistic video game, the priority is to make sure that all the actions the player will be asked to perform correspond to the player's expectations: to be fun and diverse.

Thus, by putting together the points of view of various authors, we have been able to draw some hypotheses concerning the definition and the role of realism in video games, as well as the link that it has with the principle of immersion. At this stage, we can see that realism can be divided into two main categories:

- Visual realism, which concerns the faithful representation of the appearance of the environments, in relation to what they would look like in our reality. It especially allows

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in-game stimuli?

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Yes. This point could perhaps offer a way to analyse distinctions between game genres, including the 'walking simulators', derided by many gamers, for which (aimless) immersion in a gameworld is more important than any end goal.

to maintain the attention and the feeling of immersion through detailed visual elements capable of captivating the player's mind (if the graphics are sufficiently successful).

- Enactive realism, which corresponds to the realistic and coherent interactions of the player on the environment. This dimension takes into account the player's proactivity by allowing them to act and see the result of their actions on the game world. This factor is the most important to create immersion because the best way to feel integrated in a universe is to observe the repercussions that you have on it.

But although realism seems to be positive for creating an immersive universe, we have also seen that integrating elements that are too realistic in an open world game risks to bring negative aspects of real life into the game, which can make it boring and therefore less immersive. It is the duty of the developers to find the right balance between "realism" and "fun" so that the player feels anchored in the universe without having to suffer the irritating aspects of the real world from which they are trying to escape.

However, there is still one main question to be answered: is immersion an essential factor to make an open world video game fun? This would explain the current trend towards creating more and more realistic and immersive universes.

II) Survey

To do so, what better way than to ask directly the people concerned? Indeed, as part of this paper, I conducted a survey in the form of a questionnaire that I then shared with various communities composed mostly of gamers. Moreover, I relied on the work of Drachen et al. (2018), which allowed me to formulate relevant and effective multiple-choice questions. The most recurring question model contains response options ranging from "Strongly agree" to "Strongly disagree", which provides a clear and organized representation of participants' overall opinion on a specific statement. By examining the most relevant results of this survey, we will be able to compare them with the conclusions we have drawn previously, and we will also try to elucidate the questions that remain to be clarified. I chose to create the questionnaire in French and English to make it accessible to more people, and I was finally able to obtain the responses of 155 participants, which I have combined in the graphs below.

Analysis of the results

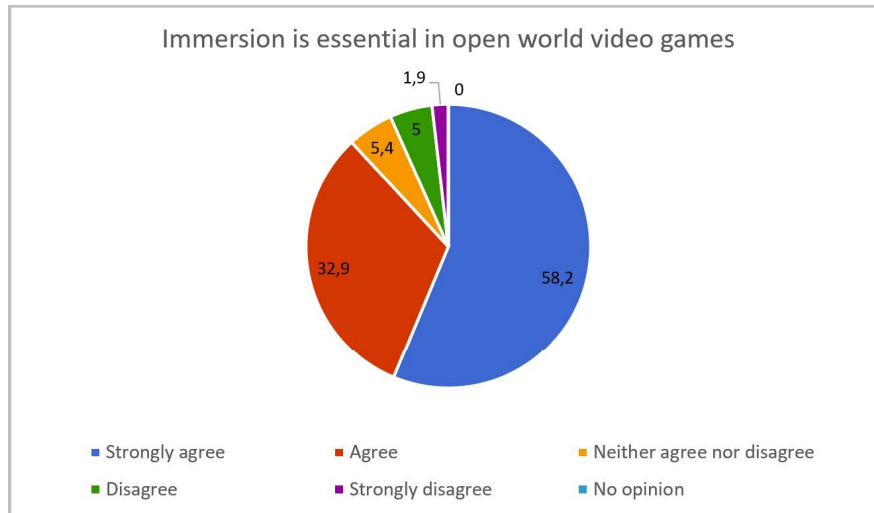


Fig. 1. Graph of 155 participants' responses to the statement: "Immersion is essential in open world video games."

This first graph (Fig. 1) shows that nearly 90% of players believe that immersion is an indispensable element in an open world video game. This is quite logical since the primary objective of this type of game is to explore the map in a totally free way. Eventually, the completion of quests can become secondary, and a player can have fun simply walking around the world. It is in that context that immersion takes on its full meaning, because the pleasure of simply exploring the map can only be accessible if we feel totally immersed in this virtual universe. As for the remaining 10%, I think they are mostly players for whom the real pleasure of playing an open world game does not lie in the feeling of immersion it provides, but rather in the action and other much more dynamic and direct aspects such as quests, fights or cinematics.

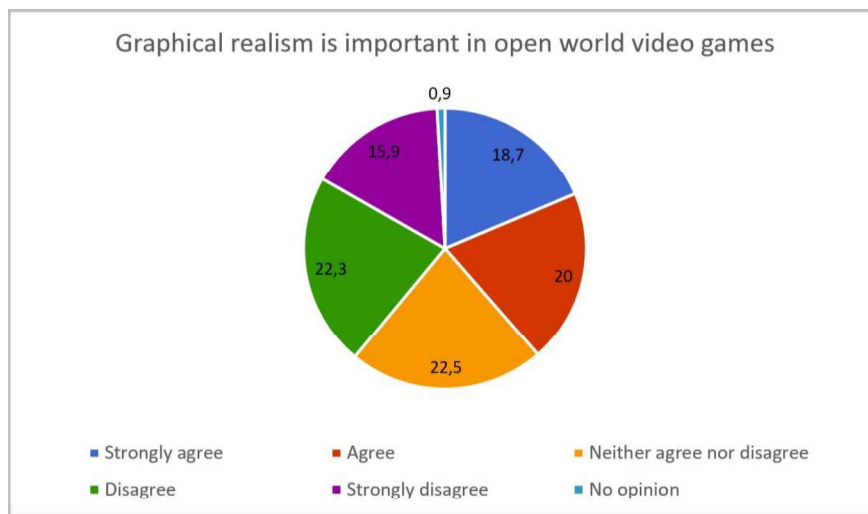


Fig. 2. Graph of 155 participants' responses to the statement: "Graphical realism is important in open world video games."

Are there any clues to this in your results? (And, as a sidenote, any significant difference in results by target group or language?)

In this second graph (Fig. 2), we notice much more disparate opinions. Indeed, almost 40% of the participants mainly think that visual realism is an important element in their gaming experience, while 40% of the others think the opposite (the remaining 20% having no precise opinion). I think that, unlike immersion, graphical realism in open world games is a much more subjective factor, meaning that gamers' sensibilities about the visual authenticity of the world to our reality vary. It should be noted that this result is consistent with the hypothesis established earlier that graphical realism is not an indispensable element for creating an immersive game. Otherwise, the results would have been much more similar to the previous graph (Fig. 1).

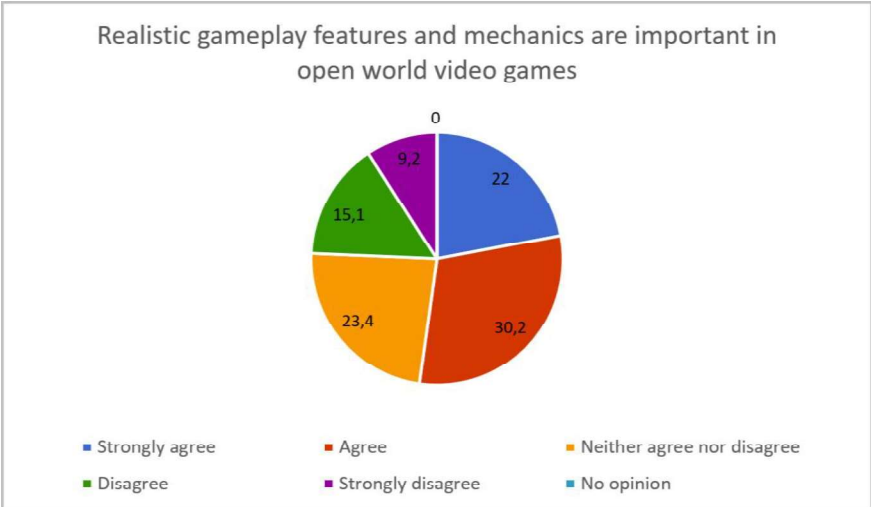


Fig. 3. Graph of 155 participants' responses to the statement: "Realistic gameplay features and mechanics are important in open world video games."

The results of this graph (Fig. 3) complete the idea we have just developed. Indeed, more than 50% of the players consider this time that the realism of the game mechanics is essential in this kind of universe. This type of realism corresponds in fact to enactive realism since the features and the gameplay include all the interactions the player have with the environment and all the ways in which the world reacts to the player's actions (for example, the possibility of climbing a cliff, burning vegetation, or breaking the glass of a window). We can therefore deduce that if more than half of the participants give importance to enactive realism, they consider it to be more valuable than visual realism in the overall experience of the game and in immersion. This observation supports the idea saying that to make a game immersive, it is necessary to focus more on the diversity and authenticity of the interactions the player will have with the environment, rather than on the visual appearance of this environment.

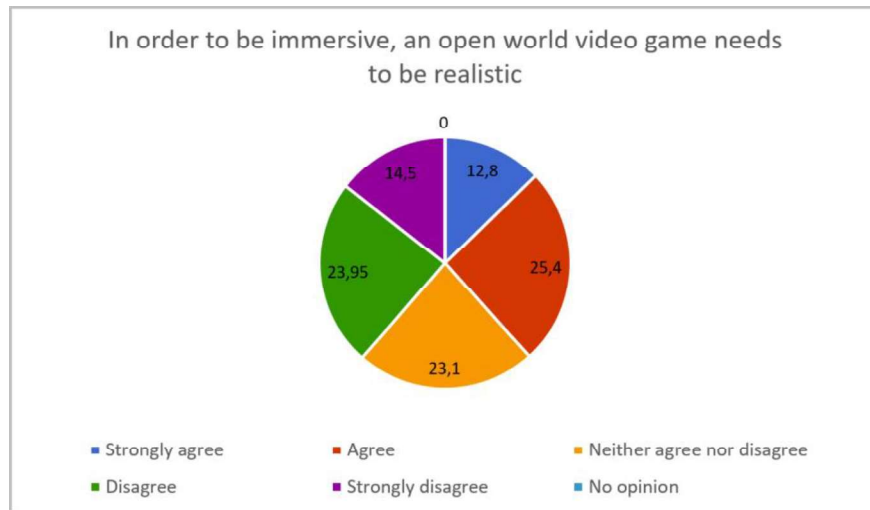


Fig. 4. Graph of 155 participants' responses to the statement: "In order to be immersive, an open world video game needs to be realistic (both in terms of graphics and mechanics/features)."

As for the results of this graph (Fig. 4), they can also be quite representative of the hypothesis we formulated previously. We notice an almost perfect equality between negative and positive opinions (38.4 and 38.2 respectively), which we can explain by the fact that in the question, the term "realism" is used in a global way, including both graphical realism and enactive realism. But as we have seen above (Fig. 2), the opinions concerning the importance of visual realism are ambivalent, as many consider that it is not a primary element of the quality and immersion of the game. That explains this new divergence (Fig. 4), as a large part of the participants think that the whole game does not necessarily need to look extremely real, as long as it allows the player to interact freely with the environment in an authentic way.

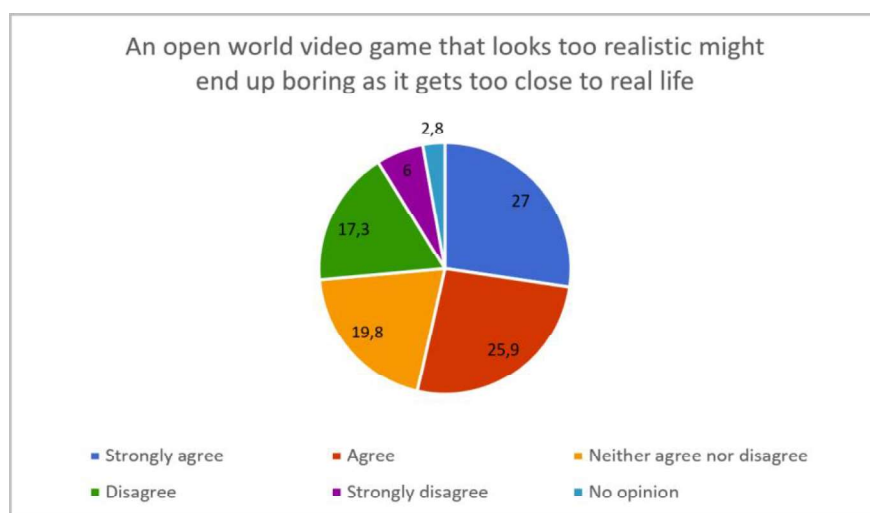


Fig. 5. Graph of 155 participants' responses to the statement: "An open world video game that looks too realistic might end up boring as it gets too close to real life."

With this graph (Fig. 5), we can see that the players' opinions tend to validate the other hypothesis according to which a too high level of realism in an open world video game could risk reproducing the negative aspects of real life (such as the repetitiveness of certain actions or the lack of dynamism). Indeed, almost 53% of the participants believe that a video game that seems too realistic prevents them from escaping sufficiently from real life through immersion, thus forcing them to suffer the irritating parts of the reality they are trying to escape.

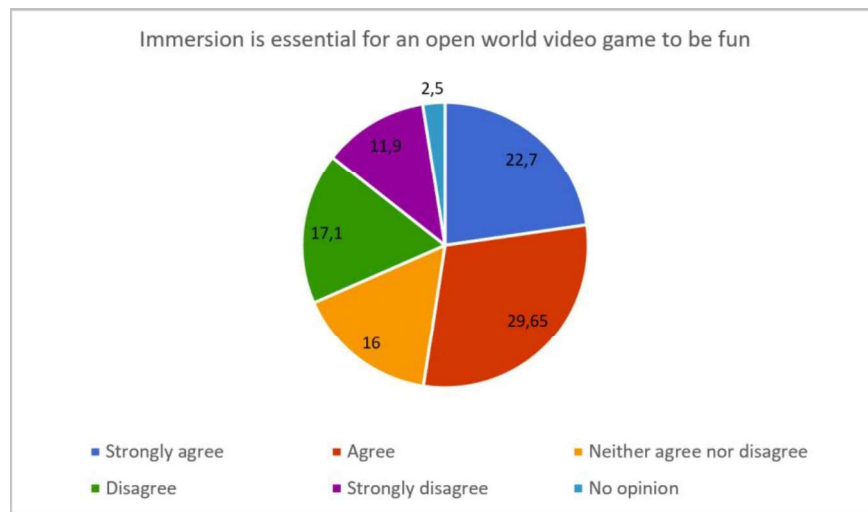


Fig. 6. Graph of 155 participants' responses to the statement: "Immersion is essential for an open world video game to be fun."

We now get to a point that we still need to determine: the role of immersion in player enjoyment. In this regard, Bowman et al. (2023) conducted a study to identify the elements that make a game more fun according to the participants' opinions. The most notable results that they first observed are the aspects of "competition, control and character customization, and character identification" (p. 4). Indeed, we take more pleasure when high stakes are involved (competition) because in this case, success offers a feeling of merit, reward and increased accomplishment. Moreover, the customization of the controls avoids creating a feeling of frustration in the player. It allows them to adapt their preferences so that they can enjoy the video game experience in an optimal way.

The rest of the results also indicate that, for participants who played *Assassin's Creed Unity* (Ubisoft, 2014) and *Syndicate* (Ubisoft, 2015), enjoyment levels were increased by "social realism" and "freedom of choice" (p. 9). At the beginning of this paper, we went through a theory saying that social realism was less useful than visual realism in the success of a game. However, after exploring other possibilities, we came to the conclusion that graphics were generally not the most important element, and that the focus should be on enactive realism. Thus, since social realism concerns the authenticity of the interactions that the player can have socially with other characters, and since freedom of choice allows the player to impact in a more diverse way the

virtual world in which they are, we could deduce that the results observed in the case of *Assassin's Creed* games correspond to a form of enactive realism. This concerns the interactional factor of the player with their environment. In conclusion, according to Bowman et al (2023), this type of realism, which is one of the most important elements in the creation of immersion, does indeed also increase the enjoyment of players.

Moreover, another study by Polson (2012), which aims to identify the elements that make a First-Person Shooter game fun, confirms this idea since she observes in her results that "the ease of gameplay and a more realistic and immersive environment both help in creating an enjoyable FPS video game for this study's participants" (p. 43). It should be noted, however, that an FPS game and an open world game may not correspond to the same expectations of the players, but we can still consider that immersion can have a very important effect in both cases.

Finally, we can see in this last graph (Fig. 6) that the majority of participants seem to agree with this observation (almost 52% of positive responses to the statement). **In my opinion**, the reason for this is that since immersion gives the impression of really experiencing the events of the game, the player has the impression that their actions are more impactful since they feel concerned and integrated into this universe. To this extent, they will take much more pleasure in playing immersively since they will be emotionally more involved in their adventures. Concerning the 29% of negative answers, I think that, as for the first graph (Fig. 1), it corresponds to players who find pleasure elsewhere than in immersion, for example in satisfying gameplay elements.

Conclusion of the analysis

Thus, the observations made from this study are very satisfying since they reinforce the hypotheses we had put forward. It allows us to confirm that the quality of open world video games lies for most players in their immersion, since it allows them to escape from the real world and to experience pleasure by feeling involved in a new universe. This immersion is however dependent on the realism of the interactions between the player and the game environment; this enactive realism allows the player to experience his presence and to evaluate the impact he can have on the said world, and thus to feel immersed. Finally, we have seen that, although graphical realism could play a beneficial role on immersion, it was not perceived as an essential factor.

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To play Devil's advocate, here and elsewhere, how could you investigate this idea given sufficient time and resources? Where would you situate the limits of your current study?

III) Case study: Red Dead Redemption II (Rockstar Games, 2018)





The final step of this paper is to look at the overall specificities of *Red Dead Redemption II* (RDR2) to see whether or not our findings apply to this open world game. We will mainly rely on the work of Vanderhoef and Payne (2022) which consists in the study of the way time is managed in this universe, although we will also deal with other aspects of the game.

A (too) realistic game

The first thing we can say is that *RDR2* is characterized by an **amazing** enactive and visual realism. The credibility of its environments, the authenticity of the player's interactions with the rest of the world, and the multitude of details it contains have greatly contributed to its success. As Vanderhoef and Payne (2022) explain, this game "earned nearly universal praise from critics and fans for its technical achievements made on behalf of its perceived commitment to realism."

However, this quality can also constitute the biggest threat to the player's enjoyment, and therefore to their immersion. Indeed, among the visual or technical details that the two authors have pointed out, we can note the "complex recipe and clothing crafting systems", the fact that "item searches requiring players to open and close furniture drawers one by one", or even "dynamic weather and wildlife systems", which at first glance would increase the level of immersion of the game. The problem is that a lot of the details and features are, according to the players, not very interesting compared to the time they waste. Vanderhoef and Payne explain that "one of the biggest complaints in the discourse surrounding RDR2-as-cowboy-sim is that its commitment to verisimilitude frequently slows gameplay to a crawl, detracting from its more conventionally fulfilling actions like combat or exploration." We are thus dealing with a game that treats the notion of time in a different way from "hegemonic game time", which is the way other games tend to handle time, for example by making sure that searching a chest does not trigger a long animation of the character, but simply opens the player's menu. On the contrary, the two authors point out that "nearly every in-game action is linked to canned animations that leave the player waiting for the game to catch up to their intentions", which goes against the "hegemonic game time" that most players are used to.

Thus, *RDR2* stands out from other games by its very high level of visual and enactive realism. However, we **had** seen with Ojeda (2007) and through our investigation that a **game too realistic** could harm the immersion because it reproduces negative and boring aspects of our world. In the case of *RDR2*, the fact that almost all actions require a significant amount of time to complete compared to standard video games makes it feel more like playing a real-life simulation, where every action that we would normally do in reality must also be performed in the game. For example, according to **players**, having to open every drawer in a cabinet to search it is unnecessarily over-realistic. Indeed, the possibility to search the whole piece of furniture

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Try to get out of the habit of using words that imply value judgements in academic prose, as they detract from the otherwise (very convincing) analytical dimension of your argument.
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a too-realistic game (correct but less common)
a game that is too realistic (more common)
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which ones?
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through only one of its drawers would not negatively impact the level of immersion of the game, and it would especially avoid the players to "waste their game time".

Non-diegesis in RDR2

Another point we can address is diegesis and non-diegesis. Iacovides et al. (2015, p. 2) explain that "in films, diegesis is used to describe the world that the characters exist in while non-diegetic elements, such as titles or the musical score, are only available to the audience." They add that in video games, "interfaces are both diegetic and non-diegetic, where the former relates to the narrative of the game, e.g. what the player-character can see and interact with; and the latter does not, e.g. classic heads-up displays (HUDs) showing health, maps, etc."

The importance of these two principles lies mainly in the idea that non-diegetic elements tend to negatively alter the player's level of immersion (Iacovides et al., 2015, p. 3). The most relevant example concerns the fact that "the removal of the HUD [is] seen to increase immersion" (p. 8) since the way this system conveys information directly to the player (health bar, time, map, etc.) does not match the way in which the character becomes aware of this information in-game. It thus makes the player's experience less grounded in the reality of their character.



Fig. 7. Display of the different HUD elements in RDR2.

Although *RDR2* has a large number of non-diegetic elements such as music, subtitles or HUD (Fig. 7), it should be noted that it is possible to disable most of them in the game settings. Similarly, it is possible to change the character's point of view to play in first person, which allows for a better immersion (Low, 2001, p. 6).

The problem is that it is not possible to disable certain non-dialectical elements such as the health bar or the contextual notifications that appear on the top left of the screen. This kind of information is directly addressed to the player and not to the character, which has the effect of forming a barrier between the two universes and thus damaging the immersion. Concerning the health bar, a more immersive alternative could for example be the system used in the *Call of Duty* game series (Activision), which consists in displaying blood stains that are more or less significant depending on the player's injury level (Fig. 8). This allows to easily convey this information to the player in a way that is more anchored in the reality of the game, since it is the blood of our character, a diegetic element that they also perceive directly in this universe.



Fig. 8. Graphical representation of the player's health level through the display of blood stains on the screen in the game *Call of Duty: Black Ops Cold War* (Activision, 2020).

Thus, although *Red Dead Redemption II* is extremely realistic from a graphical and enactive point of view, the fact that it's always trying to resemble the real world in the slightest detail can have a negative effect on the level of immersion and of enjoyment. As we saw, realism is not always adapted to the main objective of video games: to entertain. Since *RDR2* relies on elements that are sometimes too realistic and therefore too boring, it can end up creating frustration and take the player out of their state of immersion. Moreover, the game contains some non-dialectical elements that cannot be deactivated and that may alter the immersion as they constantly remind the player's mind (the "wardens of reality") that they are still in the real world, in front of a screen. Apart from these negative points, the level of detail and the care given to the visuals, dialogues, interactions and soundscape still allow this game to stand out and provide a very immersive and pleasant experience.

Conclusion

Through this study, we have been able to explore the question of realism in open world video games and have managed to draw some answers that allow us to better understand the "quest for realism" that we have been observing for several years in this field.

After having considered and compared the opinions of various authors on this subject, we came to the conclusion that realism in video games **was mainly relying** on two fundamental principles:

- The first is graphical realism, which corresponds to the realistic representation of the game environments, in accordance with our visual perception of the real world. However, we brought a slight nuance to this principle by stating that the important thing was not to limit the game visually to what exists in our reality, but rather to strive to create visuals that correspond to what they would look like if they existed in our reality. So, the goal is not to respect graphic fidelity, but to achieve graphic authenticity.
- The second one corresponds to the enactive realism, that is to say all the direct or indirect interactions between the player and the virtual world in which they are. However, we have seen that the realistic aspect of this concept depends mainly on the reference point chosen, which allows to justify and make credible certain elements of the universe that would not be so if the events took place in the real world.

Then, we deduced the idea that realism (in the broad sense) in open world video games was an essential element of immersion, which is the state in which the player is when they feel completely absorbed and involved in the game universe, as if they were there. This aspect seems to be the main objective of the developers. Thus, they tend to try to make their games more and more realistic to reproduce this phenomenon. However, we have observed thanks to the opinion of the authors and my survey that the most important aspect to make a game immersive is to focus on the player's proactivity (enactive realism), because the best way to feel present in a virtual universe is by observing the repercussions of our actions on it through interaction. On the other side, graphical realism can be counterproductive in the creation of an immersive world if it is not good enough. In fact, the lack of visual credibility prevents the player's mind from considering what it perceives as reality. However, if it is successful, as in *RDR2*, it brings a higher degree of authenticity that will help make the game immersive and therefore more fun.

The last point observed is the fact that making a game too realistic constitutes a risk of also implementing unpleasant elements of real life. The objective is then to make compromises by finding a level of realism that remains faithful to the chosen reality while keeping in mind that some aspects of the real world may be inappropriate or boring, and will negatively impact the final immersive experience.

mainly relies (unusual from the point of view of a sequence of tenses, but since your results apply to the present, accuracy is more important than style)

On the other hand, I would say that there is still a lot to be explored in this subject as it is still a recent and constantly evolving field. Indeed, when writing this paper, a new game called Unrecord (Drama, 2023) was released, with outstanding graphics quality, where the border between real and virtual can barely be distinguished. It will be very interesting to see how the treatment of realism in video games will evolve along with technical progress in the coming years.

Finally, although I have obtained consistent results, I have not taken into account a very important element which is subjectivity. It is difficult to define which elements allow to create a decent realistic and immersive video game, since these factors depend mainly on the individual's appreciation. As Wilcox-Netepczuk (2013, p. 93) explains, "gamers may be far more immersed depending on personal tastes, and acclimatization to genres, making a flight simulator hugely non-immersive to some gamers and as immersive as a game can become for others, based on their skill set and familiarity with the genre." Nevertheless, I believe that the conclusions we have drawn can be considered in a global and objective way, and it will be up to each individual to adapt these realism factors in their own way to achieve a product that corresponds to their idealistic realism level.

This is very good, though I would suggest adding a sentence or two to try to nail down where you think the limits of your study are.

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An excellent list of sources that you have used well. Ideally, I'd recommend sharing your complete survey data as an appendix, potentially in the form of a link.

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