

Charles University, Faculty of Arts  
Institute of Information Studies and Librarianship

## **MASTER THESIS**

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# **Reflection on Environmental Issues in Mainstream Video Games: Asking Players**

Reflexe environmentálních problémů v mainstreamových videohrách:  
hráčská perspektiva

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I declare that I carried out this master thesis independently, and only with the cited sources, literature and other professional sources, and that this thesis was not submitted as a fulfillment of study obligations within another degree programme, or submitted for defense in another university degree programme, or to obtain another or the same degree.

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# 1. Introduction

The present thesis is interested in furthering the current discussion on the role of video games as a medium relevant to current issues, specifically those related to the climate crisis.

Efforts in this area of research and game development concerned with the video games' answer to the climate crisis have been previously concentrated around the genre of serious games, game-based learning or gamification. Attempts at explicitly informing, persuading and teaching in and outside of school settings using (video) games have been pursued with varying success and critical acclaim (ECO, ImagineEarth, World-WithoutOil, Fate of the world).

Recently - both in Game Studies as well as amongst the game development community - efforts have surfaced to open a discussion about mainstream video games - commercial critically acclaimed video games which are not specifically designed for teaching or persuasion - and their "implicit" culture-changing potential.

Previous research criticizes serious games dealing with environmental issues for frequently being too explicit in their agenda. It has been argued that, by implying that they are designed for classroom settings, serious games do not reach critical acclaim comparable to non-serious or mainstream video games. In this sense the ideas they aim to raise awareness about do not reach wider audiences. As a solution, current research proposes exploring the potential of commercial video games in this regard.

Such recent work has been focused on creating more environmentally conscious mainstream video games which challenge the player and offer opportunities for critical reflection on the state of the world and the place humans occupy in it, or analysing how existing mainstream video games can depict possible futures where the climate crisis can be mitigated and adapted to. Most of the academic work dealing specifically with the connection between video games and the climate crisis is based in an ecocritical perspective. Ecocriticism aims to challenge the status quo of depiction of the human-nature relationship. This approach advocates for the creation of entertainment media, which redefines the manner in which we think about ecology from *human* and *nature*

*as something other than human to human as a part of nature.* Some of the reviewed work either proposes that existing (mainstream) video games already contain elements which challenge the status quo, or it critiques the ones that do not, or attempts to describe options for video games to become more climate-conscious.

The goal of this thesis is to bring attention to a lack of inclusion of the perspective of those who are expected to be the receivers of the proposed messages - the players. Much of the reviewed work in this field focuses on the game's content only. It either does not consider the player's ability and/or desire to notice such messages, or it mentions it as important, but nevertheless, not the focus of the particular paper. For this reason, this research takes inspiration from previous player-oriented studies on how video games trigger reflection on the issues of our reality.

Specifically, the present thesis aims to understand how certain players see certain video games and what the (explicit or implicit) environmental aspect of the video game means to them in the context of their own experience. Interviews with players of selected mainstream video games were conducted and their contents and their structure was analyzed to explore this. The following video games were selected: Red Dead Redemption II, Death Stranding, Horizon: Zero Dawn, Frostpunk and Cities: Skylines. By conducting this research, I hope to put previous work under player scrutiny which may highlight how the proposed potential of climate-conscious video games can be realized.

First, the previous work briefly mentioned earlier is introduced in Chapter 2. Chapter 2.3 summarizes the reviewed literature and presents the research questions. The methodology is described in Chapter 3, along with short introductions to each of the selected video games. Chapter 4 presents the results and discusses them in the context of current research. Chapter 5 offers a summary of the most important takeaways of the thesis.

## 2. Theoretical background

This chapter serves as an introduction into the theoretical background I was able to accumulate as a starting point for this study. It summarizes efforts of people from various fields attempting to acknowledge and understand the role of video games in the climate crisis - developers and researchers alike. In chapter 2.1, I introduce some notable efforts on the side of developers, talk about some video games I find important to note, and finally discuss eco-conscious design practices and the meaning of their inclusion into mainstream games. Chapter 2.2 discusses the current state or research into this topic - both specific studies and more general works on reflective experiences in games. In chapter 2.3 I briefly summarize my findings and introduce how the review influenced my methodical approach during the study.

### 2.1 Mainstream, the game industry & the climate

This chapter deals with the efforts of various interested parties to make sense of how the video game industry should address the climate crisis. I believe taking the work conducted in this into account by researchers, game makers, journalists and others together is vital for being able to see the whole picture, and to open pathways to apply research in practice. This chapter serves to acquaint the reader with "the industry side of things". However, I aim to show throughout this thesis that the industry and research are not two sides of the same coin, but rather aspects of the video game discourse sharing many similarities, (which are) connected and connectable.

#### 2.1.1 Nudging to play for the planet

The relatively newly formed initiative under United Nations, the Playing for the Planet Alliance (also PFTP for future reference) attempts to connect anyone involved in game making or the industry interested in the connection of climate action and games. In the year 2019, it gained members of various size and importance (among them Microsoft, Ubisoft, SuperCell, Niantic Inc or Google Stadia), who have committed to reducing the

impact of their businesses on the climate and promoting the mission of the alliance: from reducing plastic wrappings, energy consumption and carbon emissions to engaging their communities and using their platforms to heighten awareness of the climate crisis (Patterson & Barrat, 2019).<sup>1</sup>

In addition, the Playing for the Planet Alliance calls for designing to "nudge" players in the direction of more sustainable behavior (these are referred to as "green nudges" in the the booklet by Patterson & Barrat, 2019). The booklet they provide as a companion for their campaign, written by Patterson and Barrat, however, does not yet provide any specific guidelines on how this can be done, as these seem to be a subject of an ongoing informal discussion among engaged developers and other interested individuals. The International Game Development Association has also established its own Climate Special Interest Group. Lately, various persons involved with games, be it developers, researchers, journalists, or others, have been gathering under the joined forces of the Alliance's efforts and The IGDA Climate Interest Group. The community attempts to deal with introducing more eco-conscious thinking into the daily life of people involved in the industry. Should the reader be interested in the specifics of these efforts, the community operates on a dedicated discord server.<sup>2</sup>

A prominent figure of this establishing movement is the game designer Hugo Bille (author of the video game Fe among others). In one of the first iterations of his talk throughout the year 2019, at Sweden Game conference 2019, he has introduced eight possible ways to design for impactful games:

Firstly, he acknowledges the power of video games as complex simulation machines as tools to model complex systems - complex ecologies - such as the ongoing process of climate crisis, and making them understandable and accessible to the human mind. This ability of games has been studied and applied in games (games like ECO, ImagineEarth, WorldWithoutOil, Fate of the world and others).

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<sup>1</sup>Patterson, T. & Barratt, S. (2019). *Playing for the Planet – How video games can deliver for people and the environment*. UN Environment/GRID-Arendal. Arendal, Norway. accessible at <https://unric.org/en/playing-for-the-planet/>

<sup>2</sup>the easiest way is to follow @HugoBille on Twitter and/or access this site for an invite link directly <https://hugobille.com/climate.html>

However, Bille (2019) also argues for other ways to make video games answer to the issue of climate crisis. These arguably propose a challenge in terms of understanding and implementation.

*"...most of my propositions [...] are about the art we create and how it shapes culture in the long term, but that's just my bias."* (Bille 2019)

Aside from introducing the existing themes of Climate Fiction (cli-fi) into games, and "interactive satire" of the unsustainable system, Bille (2019) also proposes creating virtual spaces where it is possible to spend time in nature (And he argues that existing research suggests spending time in nature has an impact on willingness to its conservation. This is also the case in some works of game researchers, see e.g. Zaradic, Pergams & Kareiva, 2009), and providing relief from climate anxiety (with "games that teach that failure is inevitable, but fighting is what we have"). Bille (2019) also talks about games that can normalize eco-consciousness (as an example, he mentions changing the next Mario Karts title vehicle to be electrified), games that introduce mechanics that "make it fun to have less" (promoting the denormalization of overconsumption), game economies that do not base success on "hoarding" materials. Lastly, he calls for games that connect individuals, normalize activism, collective action and caring for each other during difficult times (for example, he criticizes the trope of "the one hero, who has everything on his shoulders").

*Socially conscious* games are not a new concept. Similarly to other media like films and literature (cli-fi included), we should expect that video games are in no way exempt to being able to present *and* presenting their players with questions directly related to issues of the real world. The issue of how this can be done reliably is a question of an ongoing debate in the field of media studies and therefore not exclusive to reception of video game only content. I shall attempt to address this in chapter 2.3 covering the current research state.

## 2.1.2 Will (mainstream) video games save the world?

The purpose of socially conscious games is clear - to draw attention to a specific social issue, raise awareness, to inform, captivate and inspire action. When we consider these goals, we also have to mention the field of *serious games* - these are defined by Clark C. Abt as games which "have an explicit and carefully thought-out educational purpose and are not intended to be played primarily for amusement." (Abt, 1970:9). For example, some simulations and educational games have been called serious. Regardless the term, I draw distinction between the types of games that *have* or *do not have* learning or prompting critical reflection as their primary function, rather than entertainment.

These games for the most part have not garnered nearly as much popularity as mainstream games have. These are critically acclaimed and commercially successful. AAA titles - video games with high budget production with major publishers - often demonstrate the latest technology advancements in terms of computation or very often graphical representation. However, the rise of indie game development has been crossing these boundaries lately.<sup>3</sup> I do not wish to dwell on the distinction of mainstream and "something else". The only difference I consider relevant is whether the developer did or did not design the game in order to actively persuade/educate/prompt critical reflection.

It is not my argument, that serious games should strive to become more popular and that all mainstream games should make this agenda front and center, as both goals are unrealistic. While small budget serious games have relative freedom in expressing their agenda, bigger projects are notoriously not so able to make large statements or drastic changes to their design practices due to, among other things, financial obligations to investors, or the popularity race with other competing titles leading to "designing for the everyplayer" (Khaled, 2018). However, as several authors have proposed before me (all introduced in the next chapters), under certain circumstances, non-serious video games already can be read as pieces of media that inspire reflection as well. Games are a part of life for many, in small and larger scales.<sup>4</sup> What

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<sup>3</sup>Consider for example the game Hellblade: Senua's sacrifice, which puts its schizophrenia awareness goal in the front in their campaign

<sup>4</sup>According to Statista, there are 2.95 billion people who play games worldwide, source:

would happen if more development studios took the representation of environmental issues responsibly and aspired to make small changes in their design to improve the depiction of the ecological system we live in, to attempt to alleviate climate anxiety, to give hope and to inspire collective action?

This proposition is not by any means a new one, the Playing for the Planet Alliance (PFTP) calls exactly for this approach to future game-making, as I described earlier. Many researchers also advocate for the same thing in their works. The community of PFTP has recently made choices to include the research (and others') perspective into their efforts to make more environmentally conscious games.<sup>5</sup> These perspectives are not separate, but are beginning to cooperate. The responsibility to treat the climate crisis as the reality we live in does not by any means lie only on the game developers' shoulders. However, no part of the game industry is exempt from the climate crisis. Electric cars, a green nudge in itself, are the cars of the future, what should video games of the future look like?

### 2.1.3 People will not stop playing video games

According to the Alliance members and multiple researchers (e.g. Chang, 2019; Nguyen, 2017), the game industry needs to revisit its design principles to create more eco-conscious games, but perhaps more importantly, to address its impact on the planet's ecosystem. Most notably, carbon emissions associated with energy consumption of consoles have raised since the introduction of the new generation (PS5 and Xbox Series X), and that is before factoring in the manufacturing process. The supply chain information (e.g. the mining of precious minerals, and the treatment of devices at the end of their life-cycle) is not readily available, so there can only exist assumptions (as per Jackson Ryan's report from 2020).<sup>6</sup>

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<https://www.statista.com/statistics/748044/number-video-gamers-world/>

<sup>5</sup>e.g. the Doing our Bit podcast accessible at <https://anchor.fm/doing-our-bit>.

<sup>6</sup>Ryan, J. (2020, Dec 11). *PS5, Xbox Series X and the climate crisis facing next-gen video games*. cnet. retrieved on 2.4.2021 from: <https://www.cnet.com/features/ps5-xbox-series-x-and-the-climate-crisis-facing-next-gen-video-games/>

In 2020, The Verge has published Lewis Gordon's extensive article on the many ways the game industry affects the climate.<sup>7</sup> In addition, the measurement of emissions is further complicated by the fact that they are significantly influenced by consumer behavior. Joshua Aslan (2020) documented some surprising fluctuations (e.g. lower emissions when cloud gaming in games under 8 hours) and developed a method for measuring emissions more accurately.

#### 2.1.4 Closing remarks

Keeping all this in mind, the possibility of introducing small changes to the design practices of big budget games has its appeal. Bille (2019) brings to attention the more subtle ways of promoting an eco-friendly lifestyle and a different way of thinking about the world.

I have introduced the reader to some of the current efforts in making and advocating for making more eco-conscious video games. I have also attempted to stress that this thesis does not endorse calling for all (mainstream) video games to immediately refocus to climate change issues and to stop acting out an important role as relaxation devices and media that promote playfulness. The next chapter summarizes research in the area of games and ecological thinking, environmental issues and/or specifically the climate crisis.

## 2.2 Current research

I was able to identify only a handful of publications dealing specifically with this topic. These are covered in chapters 2.3.2. and 2.3.3. In addition, I believe a perspective on researching and designing for reflective thinking, learning and teaching in general using media would be helpful to include in the discussion. Due to constraints associated with the nature of a diploma thesis, I only briefly mention the possible branches of

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<sup>7</sup>Gordon, L. (2020). *The many ways video game development impacts the climate crisis*. The Verge. retrieved on 25.4.2021 from : <https://www.theverge.com/2020/5/5/21243285/video-games-climate-crisis-impact-xbox-playstation-developers>

perspective that I find important to note. My aim was to include these in the present research project as well, so as to explore these topics further and understand, whether and how adopting these perspectives, or at the very least, *not forgetting* about them when evaluating research data, may benefit in future research dealing with inclusion of ecological topics into video games.

Chapter 2.3.4 briefly touches on the discussions on the relation of constructed environments to reality. Chapter 2.3.5 covers selected work related to designing games for reflection. Throughout the review, I emphasize the factors which should be taken in consideration when attempting to understand reflection on climate issues in video games. These are all highlighted with **bold** text. Chapter 2.3.6 introduces an interesting intersection creating a framework which lead to the first piloting attempts of this research.

### **2.2.1 Where are all the climate change games?**

In the previous section, I attempted to describe the state of the game makers' perspective on the issue. In the academic literature review, similar ideas have surfaced in the very recent years. Some researchers also raised the question of the potential of specific commercially more or less successful video games to have influence on the acceptance of climate change (representation in video games) (e.g. Abraham and Jayemanne, 2017; Abraham 2018), and also on possible reevaluation of the human-nature (human-nonhuman) relationship as a contributing factor (e.g. Abraham and Jayemanne, 2017; Backe, 2017; Chang, 2013, 2019, 2020). The 2017 issue of the journal *Ecozona* (Vol 8, No 2) was entirely dedicated to this topic. The contributions' focus ranges from the perceived immateriality of video games and advocacy for video games to address their environmental impact (Nguyen, 2017), through modding as rebelling against "flat" game environments, video game case studies and their relevance in terms of ecological thought (e.g. Lehner, 2017; Rivera-Dundas 2017) to design ideas for triggering reflective thinking or study how it works (Woolbright, 2017; Backe, 2017), and games involving tentacles as a challenge to the relationship between human and non-human (Bianchi, 2017).

The reviewed research papers are mostly inspired by the methodology of literature analyses and assume an ecocritical stance in their work. They aim to describe and challenge the current prevailing style of depiction of nature in relation to humans in video games, and either propose existing (mainstream) video games to already contain elements that challenge this style, critique the ones that do not, or attempt to describe options for video games to become more fluent in this style.

In his brief historical overview of computer games from 2017, Hans-Joachim Backe finds that many games already "show a wide variety of ecological phenomena. One recurring, even ubiquitous topic is the relationship of human and non-human agents, which leads many mainstream games to deal with themes identified as central to ecocriticism" (Backe 2017:42). The research community uses the term "ecological thought/thinking" as a challenge to the current *anthropocentric* worldview. To think ecologically means to not see nature as something other than human, untouchable, pristine and unknown, but rather human being directly embedded in its systems. It means erasing the distinction between human and non-human and challenging the notion that humans are somehow exempt from the planet's ecological system

In their paper called *Where are all the climate change games?* (2017), Ben Abraham and Darshana Jayemanne write about the previously mentioned phenomenon called *cli-fi* (Climate Fiction) as literature's response to the climate crisis.<sup>8</sup> Similarly to Bille (2019), they discuss the possibilities of a parallel format in mainstream video games - games that do not have learning or prompting critical reflection as their primary function. Backe (2017), Chang (2013, 2019), Abraham (2018) and Abraham & Jayemanne (2017) argue for an alternative reading of games that involves evaluating their depiction and conceptions of the relationship between human and nature.

*"How might games contribute (or already be contributing) to developing ecological awareness that recognizes our interdependence with the non-human world, and our position within ecological systems that need to be maintained and protected for our future survival?"* (Abraham and Jayemanne, 2017: 76)

According to Abraham and Jayemanne (2017), there are four possible ways

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<sup>8</sup>a striking omission of the existence of Solarpunk

(they stress that this is not a fixed framework) in which humans relate to nature in existing video games. First, the environment can become a backdrop, the thing that is *being passed by*, e.g. the scrolling backgrounds in 2D platformers old and new (Jazz Jackrabbit) or the illusion of working public spaces in the GTA series (empty models of public buildings). The second treatment of nature is most prevalent in strategy and resource management games. Here the environment is used as a resource, or as *something to be exploited* (StarCraft, Age of Empires II). Third, the authors argue that the environment is also often presented as an antagonist in the game's narrative. It is *something to be beaten*, or an obstacle that needs to be overcome (in series like Tomb Raider or Uncharted). Lastly, the authors mention the use of environment in storytelling, therefore it being organized to become part of the text (Dark Souls' placement of items is significant to its story).

Abraham and Jayemanne point out that all of these cases of environmental representation in games show our anthropocentric view of nature. They say that in most games, nature is treated as something "other", something that is always subject to human activity. (Abraham and Jayemanne 2017: 84).

These ideas are shared among other contemporary ecocritically inclined work discussing video games. In most of her work, Alenda Chang criticizes the presentation as well as the lacking levels of interaction assigned to game environments. She raises questions about the implications this may have on how we perceive the human and non-human relationship. In her doctoral thesis from 2013, later reworked to a publication called *Playing Nature* (published in 2019), she argues that most mainstream games treat game environments as "simplistic vehicles for graphical spectacle or extractive research management" (Chang, 2013:1). Backe claims that environmentalist critique of video games often focuses on the treatment of nature as a backdrop and the privileging of human perspective and resulting anthropomorphism (Backe, 2017 :43).<sup>9</sup>

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<sup>9</sup>Backe goes further and echoes Espen Aarseth in that "*there are absolutely no natural environments in computer games - because virtual worlds are completely 'built', and as such, suffused with technical and strategic significance* (Aarseth, "Virtual Worlds")" (Backe, 2017:43).

”Typically, we think of nature as something outside human jurisdiction, something that we may observe, enjoy, and even harness to an extent, but that ultimately obeys laws not of our own making. Digital nature, like animal theme parks, wildlife documentaries, and landscape paintings, is patently a constructed entity, a realm designed by artists and engineers for a user’s exploration and enjoyment.” (Chang 2013:7)

Chang’s publication *Playing Nature* is a significant milestone in this field as it seems to be the first manuscript publication interested in games and the environment specifically.<sup>10</sup> The book explores the topics of her doctoral thesis in-depth and discusses the treatment of the environment in video games, also mentioned by Abraham & Jayemanne (2017), among them, e.g. the lack of interaction possibilities, resulting in the game environment acting as a backdrop that lacks agency.

In 2020, Chang has also published *Rambunctious Games: A Manifesto for Environmental Game Design*,<sup>11</sup> which builds on the *Playing Nature* book, and in many ways reminds the reader of what the reviewed researchers and Bille (2019) advocate for. In addition to critiquing the environmental impact of the video game industry, she illustrates what game worlds of the future should be within 10 points:

- ”1. Game worlds should be substrates, not vessels.
2. Games should suggest the power of nonhuman agency.
3. Game worlds ought to surprise us.
4. Games should entangle us.<sup>12</sup>
5. Games should support a wider range of player-environment interaction.
6. Games should leverage scale.
7. The people who make games should take into account the energy and resource demands of their games.

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<sup>10</sup>Alenda Chang in Doing Our Bit podcast, Feb 19 2021, accessible at: <https://anchor.fm/doing-our-bit/episodes/A-Manifesto-for-Rambunctious-Games-feat-Alenda-Chang-eqhcit>

<sup>11</sup>Not to be confused with *environment (game) design* which is a game industry specialisation. Artists as well as game designers are sometimes referred to as environmental designers - the job title may often lead to misunderstandings as of its content. In light of this, I do not think it an ideal choice of words

<sup>12</sup>i.e. games should pronounce our role and connectedness to the and through the ecological system

8. Games should take us outdoors.
9. Graphics shouldn't be everything.
10. Games should help us mourn."

### 2.2.2 Examples of game-specific readings

*"Once we broaden our concern beyond a narrow focus on games thematically or narratively about climate change, and include games that are conceptually about the same issues at the root of the climate crisis, we find a different and quite expanded picture."*  
(Abraham, Jayemanne, 2017:87)

Abraham & Jayemanne call to artists and activists to subvert the space outlined by the four modes of engagement they described in their work and suggest that "perhaps the most powerful climate change games are the ones that actively work to reconfigure our notion of the human-nature environment" (Abraham and Jayemanne 2017: 87). As examples of such redefinment, they mention Darius Kazemi's concept of "flat ontology" which concerns games like Katamari Damacy, or Everything. Katamari Damacy and Everything present a quality of "rollability" as a unifying ability of seemingly vastly different entities. We can find further examples mentioned in the reviewed literature. Backe describes, how Flower subverts the anthropocentric expectations by putting the player in the role of a presumably non-human entity, and even more so by using an unusual motion control configuration of the controller and refusing to anthropomorphise the entity's behavior (Backe, 2017:48). Farca and Navarro-Remesal talk about "the Sublime" in The Legend of Zelda: Breath of the Wild - the feeling of both awe and terror while facing the vast wilderness which "evokes in them reflections about life, nature, and culture, which gives way to new insights into existence", while the in-game world, which provokes this feeling, suffers from Ganon's "pollution" (Farca & Navarro-Remesal 2018). In this field, many more case studies concerned with this nature of video games of various commercial successes and critical acclaim are to be found (consider for example the 2017 issue of Ecozona mentioned earlier).

These authors appear to propose not only different mainstream video games to exist, but also a different **approach to playing games**. Chang's words may illustrate

the possible implicit hopes of many of the reviewed works:

*”When we play nature in a contemporary game like Red Dead Redemption or The Elder Scrolls V: Skyrim, we generally do so by taking advantage of the game environment and profiting from an inegalitarian relationship with its elements, but in theory we could also play in a less goal-directed, less instrumental, and more inquisitive way.”* (Chang, 2013:7)

### **2.2.3 Reflection: Games are not magic circles**

When attempting to connect video game content to reality, including inquiries into the role of video games in our lives and their culture changing potential is in order. The following text illustrates how the reviewed authors view the relationship of game worlds and the real world.

,Constructed environments are in danger of being perceived as not being much related to reality, in fact, they are commonly accepted as escapist fantasies. Daniel Muriel & Garry Crawford discuss ”radical separation between the reality we inhabit and the reality of the game world”. Between the year 2014-2017 they have dedicated their time to ethnographic research of video game culture. This resulted in publication of the book *Video Games as Culture (Considering the Role and Importance of Video Games in Contemporary Society)*. Muriel’s & Crawford’s research entailed playing games, participating in community activities, and interviewing players, developers, journalists and many others involved with video game culture. They conclude (among many other findings) that escapism is only one of the many aspects why games are played, and that video games are also mediation devices which allow experiencing situations we (would) have never found ourselves in (Muriel & Crawford 2018:138). They show that video games can and are connecting players to the real world by mediating experiences they might not have had otherwise.<sup>13</sup>

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<sup>13</sup>however, Muriel & Crawford stress that it is important to remember that game experiences may convey aspects of those experiences that they are recreating, representing, simulation, or re-enacting, and they are not the experiences themselves (Muriel & Crawford 2018: 138)

As an example they consider the video game *Papers, Please*. The game puts the player into the shoes of a government official overseeing the border of a fictitious country, whose job is to decide on allowing or denying entry to various people. Muriel & Crawford (2018:122) ask a simple question: "Is this the reality we want to escape to?" They suggest that the popularity of *Papers, Please* and other games can provide one answer to this question - "**there is a desire to explore other realities that are less fantasy but more closely tied to the world we live in**" (Muriel & Crawford 2018:122). They explain that players can seek connections to the real world through two mechanisms - **empathy and identification**.

*"I am more interested in more emotionally profound experiences [...], something that pushes those boundaries."* (Edward, 54, and anecdote in Muriel & Crawford 2018:122)

Similarly, Bille (2019) acknowledges, among other factors, the **power of good stories** and includes empathy in his proposal for games as a relief from climate anxiety. It may be a matter for discussion, whether climate anxiety relief should be considered escapism. In my opinion, this is merely a matter of releasing the concept of a healthy amount of escapism of any of its possible negative connotations. In addition, the phenomenon of escapism, or its at-first-glance apparent dominance among players as a primary function of games, cannot be ignored when researching and creating games that are to refer directly to real world issues, or that are to inspire thinking about them.

#### **2.2.4 Reflection: Designing for Conversation**

I believe it is beneficial for the emerging field to also draw from research interested in creating (critical) reflection in video games. By this I mean inquiries into how thoughts surface in players' minds, how this surfacing happens, and what may be the trigger for such thinking or critical reflection.

The question whether a particular game incites the player to reflect on social issues of our reality (or at least, normalizes their presence in player's mind), however,

may become very difficult to answer, as we approach different games with this specific agenda in mind - that is to read them as socially conscious. Is there a set of specific criteria for classifying them as such? The interactive/system-like/simulation nature of video games makes every playthrough a different experience, unlike any other audiovisual media or books. Is the author's intent the only factor we should consider? How do we get the message across?

I find it reasonable to search for answers to the above stated questions about author's intent in game design theories.<sup>14</sup> Alternatively, it is possible to study the so called effectiveness of video games designed for educational purposes, or serious games of any kind. This research area has been pursued previously. Usually such papers are focused on one particular video game. However, experiments on effectiveness of certain teaching practices are not the focus of this review.

The subtle normalization of eco-consciousness approach that e.g. Bille (2019) or Chang (2020) argue for, is one potential solution to the near-complete ignorance of the climate crisis in current mainstream gaming. It might be difficult to imagine an existence of a systematic set of design steps to ensure the game raises questions in the player's mind without having to center its entire narrative around it. The Playing for The Planet Alliance is working on providing guidance for developers interested in making their games more eco-conscious. It might prove even more difficult to assess the attractiveness and accessibility of these design steps to game developers.

In 2018, Rilla Khaled has introduced *Reflective Game Design*. A technique to design video games that inspire reflection in players as well as designers during the creation process. She promotes inclusion of the player perspective in the design process.

She criticizes the design principles of both serious games and mainstream games, that do not foster reflective experience. According to Khaled (2018), serious games fail to prompt the connection of their content to real world problem solving. This is due to the safe environment the player is inserted in, and the clear solutions to problems presented to them, all this often in the form of so called *stealth-learning*, where the player is ideally not aware they are learning at all.

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<sup>14</sup>or by simply designing games and watching what players do with the systems we create

Khaled (2018) criticizes entertainment (or mainstream) game design as well. According to her, these productions often place designers into a service role to "design games for the everyplayer" and tend to "quantify motivation" - rather than encouraging an action, a reward system is conjured, this strips the action of its sociocultural meaning and turns it into "a point maximisation exercise" (Khaled, 2018:12). Lastly, Khaled states that non-serious games prioritize immersion, a feeling of being absorbed in the game, therefore lacking the critical distance to its content needed for reflection. She notes that "deeply reflecting on a game experience requires engagement with levels of game understanding and complexities of insight approaching that of the game's designer" (Khaled, 2018, p.24) Therefore, to play a game reflectively, it is necessary to sacrifice some level of immersion.

In light of this critique and within the Reflective Game Design framework, Khaled (2018: 22-24) introduces four design principles:

1. *Questions over Answers* i.e. no answers or correct solutions. To promote reflection games should empower players to take up an active role in thinking about their own experience critically by presenting ambiguous dilemmas, player unfriendliness or problems with complex or no solutions.

2. *Clarity over Stealth* i.e. games that require conscious learning. Players are supported to connect the experience to the real world and know when and what they learned.

3. *Disruption over Comfort* i.e. games are to challenge players' beliefs by disrupting the status quo, therefore allowing for new ideas to emerge.

4. *Reflection over Immersion* i.e. players are to include the "fourth wall" even if it disrupts the experience of "being there". (Khaled, 2018:24)

Khaled places designing for immersion as equal to **favoring escapism over reflection**. She argues that the same as there are games that aim to trigger reflective experiences and games that do not, there are also **players that are responsive to these efforts and players that may reject them**. Like Muriel & Crawford (2018) found in their study report (see chapter 2.3.4), she also says:

“...games designed to promote reflection [...] are for those who want to know how to contextualise their game experiences back to the world, and who welcome the possibility of game experiences with complex meanings that endure beyond play.” (Khaled, 2018:23)

In the spirit of the Reflective Game Design framework, she calls for challenging the notion of what a game is:

“*Designing for surprise, player unfriendliness, ambiguity and multiple interpretation can push players towards reflecting on their play experiences, as can building gameplay around broken and recycled mechanics and open systems. Designing games for reflection involves rethinking the boundaries of what constitutes a game.*” (Khaled, 2018:22)

The element of surprise theme appears in some earlier work as well. In his book *Persuasive Games* published in 2007, Ian Bogost describes that video game processes, despite lacking predesigned outcomes and states, can be rhetorical (i.e. they use procedural rhetoric), and persuade the player to reflect on or reconsider their stance to e.g. a particular social issue topic. He calls this genre of games *persuasive games* and is also the founder of the development studio of the same name. In more relevance to the topic of this thesis, Bogost has introduced a concept of *simulation fever*. He describes it as a kind of crisis, which occurs when “there is a disparity between the simulation and the player’s understanding of the source system it models” (Bogost, 2007:332). Simulation fever may interfere with the supposed message of the persuasive game and result in the player completely rejecting the simulation and its relevance to the real world. Bogost argues that through procedurality, players are able to receive the designer’s intended message and respond to it, however, this only happens if simulation fever is avoided or resolved (Bogost, 2006).

The simulation fever concept may be evocative of ludonarrative dissonance, which is broadly defined as the phenomenon in which the game’s mechanics or available interactions do not align with the game’s narrative elements. This results in a sort of crisis of idea communication. The term was coined in 2007 by a game designer Clint Hocking. Backe (2017) claims that **ludonarrative dissonances are possible**

**triggers for reflection** in many non-serious video games, and Sengers et al. (2005) - pioneers of Reflective Design - work with **the effect of surprise on triggering reflection** in the user.

The proceduralist perspective is heavily criticized by Miguel Sicart. In *Against Procedurality* (2011), Sicart claims that the games which Bogost uses as examples in his work are only the ones explicitly stating their stance on the subject matter. In addition, according to Sicart, the proceduralist perspective excludes the player themselves as co-creator of their experience:

*"...proceduralism should be all about communicating ideas to players. But the missing part in the mechanism of procedural discourse is the player. Not the player as a configurator of the system, which is the implicit position taken by many proceduralist theorists and developers, but the player as a living, breathing, culturally embodied, ethically and politically engaged being that plays not only for an ulterior purpose, but for play's sake." (Sicart, 2011)*

Sicart (2011) goes on to say that "play contradicts the very meaning of authorship in games". Video games are not prerecorded experiences, but rather a space to play in. Play, according to him, is not a reception of a message, but rather a conversation (Sicart, 2011). In the book *Ethics of Computer Games* (2009) he argues for Game Studies to accept that games are played by living, breathing beings which "reflect, relate, and create with an ethical mind" (Sicart, 2009:4). The issue of authorship in game development is a broader concern. It is useful to mention that no video game is neutral. It is important to remember that players and designers themselves embed their values, either knowingly or unknowingly, into pieces of media they create or consume (this in e.g. Sengers et al.(2005), Kultima & Sandoval (2016)).

Ben Abraham (2018) also discusses the importance of "**where the player is coming from**" and the factors that play a role in potential rejection of the climate message of a game that explicitly covers climate change. As a solution, he proposes the aesthetics of video games to "skirt around the ideological resistances players may have against accepting more didactic modes of engagement with the highly charged and ideologically contested reality of anthropogenic climate change." In particular, he

mentions that Ian Bogost's concept of simulation fever has a higher chance of occurring while interacting with a game dealing with the topic of climate change (Abraham 2018:82).

Abraham (2018) stresses "*the importance of cultural visions of the future and their political impact on our conceptions of what is possible*" (Abraham 2018:74).<sup>15</sup> In Abraham's work (2018), the idea, that non-serious games, or games that do not deal with climate explicitly, could challenge our notions of what is possible, is illustrated with ARMA 3 - the entire island appears to be running on renewable energy. There are wind turbines scattered across the land and a solar power plant dominates one area of the game. Abraham calls this a vision of a sustainable future that challenges our notions of what is possible.

### 2.2.5 An ecocritical/ethical framework

In his essay from 2017, Hans-Joachim Backe claims, that previous research has been limited in terms of methodology, sample size and selection. He critiques researchers for choosing video games for their analysis that represent opposite sides of a spectrum and using anecdotes as backing for their arguments. He proposes a framework for exploring what he calls ecological thinking in video games, that is usable for analysing a larger number of video games, and argues for a wider selection across the history of digital games in future research. I consider Backe's work as an important contribution to the field, as it critiques the rather narrow way of doing research work on the topic, and he actively searches for connections between the ecocritical perspective and other branches of Game Studies that are interested in the processes involved in consuming games and thinking about them.

Backe takes themes central to ecocriticism, many of which were mentioned in the papers reviewed above, and joins them with an ethics-based approach based on Sicart's *Ethics of Computer Games* (2009) to create a framework that includes the user's perspective. This is an attempt to combine existing ecocritical critique of an-

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<sup>15</sup>e.g. the rising representation of queer people in mainstream media is without a doubt shaping the world we live in

thropocentrism in video games with an approach that focuses on how processes can be used to teach or persuade the player, he calls it "An Eco-Ethical Analysis Framework." (Backe, 2017:46).

The framework includes 6 questions for a researcher inquiring about a digital game's ecological dimension and how it is communicated to the player. The questions are:

1. *"Is the natural environment engaged with semiotically—that is, audio-visually and discursively—as well as ludically?"* A game has to refer to a natural environment (through mechanics, audio-visual or verbal cues) to prompt players to perceive elements in this dimension (Backe, 2017:47).<sup>16</sup>

2. *"Do the three modes of engagement with ecological questions cohere or create friction?"* According to Backe, this question is explored by answering the following three. These are designed to focus on identifying **ludonarrative dissonances** as sources of deeper critical engagement with the game (Backe, 2017:47).

3. *"Is the treatment of ecological topics explicit and central or rather implicit and peripheral?"* For this question, Backe provides an example: *Batman:Arkham Asylum* features an ecoterrorist without any further reference to climate, while *Spec Ops: The Line* presents cataclysmic change of the natural environment while making use of the sand dunes as part of gameplay (Backe, 2017:48).

4. *"Is the treatment of "nature" specific and informed?"* This question deals with realistic depictions of the natural environment. Backe, again, raises the question, if wildly inaccurate constructed ecologies, should even be considered as nature simulations.(Backe, 2017:48)

5. *"Are game mechanics or semantics anthropocentric, or do they offer alternative perspectives?"* Central to ecocritical works reviewed above is the prevalence, or

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<sup>16</sup>It is of note, that this question would describe *ARMA 3* as a game that does not engage with the environment in all three of these modes, and would therefore, according to the framework, have smaller chances of inspiring critical engagement. Abraham himself mentions that his paper is not meant to prove that *ARMA 3* will persuade each and every player that engages with it, or, in fact, any (Abraham, 2018:88). However, this realisation raises an interesting question of what do we consider as a climate game in terms of this framework and in terms of ecocritical research in this area.

even exclusivity, of the human perspective. This question inquires, whether a game offers other than anthropocentric perspectives. Backe mentions the game Flower, which puts the player into a non-human perspective and aids the experience by a special control scheme, as mentioned earlier.(Backe, 2017:48)

6. *"Is the treatment of ecological topics affirmative, critical, or ironical?"* This question searches for the general tone and its relation to the elements within the game. Backe stresses, that this dimension is highly interpretative, and provides examples of ludonarrative dissonances creating Sicart's "unethical game design" (A hunting simulation Deer Hunter Tournament (2008) presents a punishable possibility to hunt endangered species, while the hunting mini-game in Resident Evil 4 (2005) rewards the player for killing snakes and birds without contextualisation)(Backe, 2017:49).

While Backe's framework is certainly more user-oriented compared to previous research, it is primarily meant to be used by a researcher analysing a game and its content. Although, he further demonstrates its use on two games: Red Dead Redemption II and Dishonored, he describes his essay as a proof of concept more than anything else. Many of the framework's questions are described by one or two simple examples of specific games.

Modifying Backe's framework for the purposes of a user (player) study would perhaps allow us to better understand the essence of the "sources of critical engagement" it searches for. However, after piloting this approach, I have decided to take a more exploratory route. I describe the reasons for this in the next chapter.

## **2.3 Summary: Where are all the player studies?**

The literature review revealed a lack of inclusion of player studies, or rather a lack of research work that would explore the player as a part of the process of "green nudging", while a few papers critique this state of affairs. Although, all studies acknowledge the need to explore this issue in user studies, the discussion on this perspective is oftentimes very short, or involves possibilities for considering this perspective, which have not been tested or discussed with the player base yet.

It is no surprise, as the field finds itself in its beginning stages. Studying such abstract concepts as ecological thinking and reflection on complex issues, with no guarantee of a controlled experience (when studying commercial games and their players, as opposed to serious games for example, we can hardly contain all the possible factors that have more of an impact on one player's experience and less on the other) and with no set framework as to *what* to ask the players, appears unrealistic.

I have tried to draw similarities among researchers' and developers' thoughts on the design of eco-conscious video games of the present and the future. A set of any actual steps to achieve an environmentally conscious game is still subject to an ongoing discussion. Similarly, the "effectiveness" of the proposed potential effects have not been yet explored by many studies. The review has also briefly touched on possible interferences in the discussed potential mentioned by previous research. What if the suggested practices, instead of its desired impact, turn the player away (as e.g. Abraham (2018) suggests happens with the occurrence of Ian Bogost's simulation fever)?

How can we expect players and developers to regard video games as something other than an escape from reality? How do we ensure, that players "notice" the aforementioned efforts in video games that are not (serious games) specifically designed for explicit persuasion or education. For example, is the aesthetic depiction of a future running on renewable energy in ARMA 3, discussed by Abraham (2018), something that the player takes note of? What does it mean to them in the context of the game? Abraham (2018) echoes what Gee already stated in 2003:

*"what ensures that a person plays video games in a way that involves active and critical learning and thinking? Nothing, of course, can ensure such a thing."* (Gee, 2003, p. 46).

On the other hand, is the player "noticing something" a requirement for that something to be effective? Is the "noticing something" conditioned by the existence of ludonarrative dissonance, a surprising ingame event, or a challenge to the players beliefs? Backe (2017) says that ludonarrative dissonances create opportunities for critical reflection, Sengers et al. (2005) assign this effect to surprising events in the game experience. Abraham (2018) argues that the aesthetics of "climate futures" are

more powerful tools, because they have a chance of bypassing the player's ideological preconceptions of what is possible, while Bille (2019) calls for challenging what is normal, and at the same time, for normalizing a possible sustainable future.

For future research, it is, in my opinion, necessary to include the player perspective, and to test, whether our theories on a particular nudge functionality, or the aesthetics, or ecosystems simulation of a particular game really are accessible to players on some scale. Armed with the ideas proposed by the research in this new field, and hopefully benefiting from other research areas not specifically involved with climate change, the research community can now attempt to understand how the proposed ways of making gaming environmentally conscious are received and interpreted by the very people these ways aim to reach. For this reason, I chose to focus on the player perspective and reflection opportunities in a few selected games and ask these questions:

1. *Are these games capable of triggering reflection on the environment, the relationship of humans to the planet, the climate crisis, or anything related?*
2. *How does that happen? Is the reflection connected to specific elements of the games or of the player experience?*
3. *What is the player perspective? Do players reflect on these topics? Are they interested in thinking about games in this way?*

Backe's ecocritical/ethical framework appeared to be a suitable entry point for this research. Its adaptation was my first attempt when piloting for this study. However, I quickly found out that following a set framework not designed as a user study was more hindering than fruitful. The player's understanding of what the game is and how it works seemed to drastically differ from how researchers analyze them.<sup>17</sup> I briefly describe what I learned from the pilot in chapter 3.5.

For this reason, I decided to assume a more exploratory approach. One which takes inspiration from Backe's questions about the game's reflective potential, leaves space for players to express their views, and, at the same time, is informed by possible pitfalls and areas of interest based on the review of other works dealing with reflection

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<sup>17</sup>how very reminiscent of the game developer - player perspective on games!

triggering not only on this topic.

The data was collected using in-depth interviews with players/journalists/researchers in an effort to understand how they relate to the topics mentioned above - as players of video games which were proposed to be examples of these topics, or to contain ideas aligned with them. My effort was to incorporate the factors I thought could be active forces in the process of reflection on these topics. These include questions like: where is the player coming from - **culture, age, relationship and approach to games, relationship to nature, relationship to climate change issues** - whether they remember an occasion of **ludonarrative dissonance** or **something surprising to them** and had subsequently reflected on the game events in a new light, or **how do they perceive the game's portrayal of climate change/ecological systems** and **how central do they consider it to be to their experience, and the game in general?** Of course, these are all factors which should ideally be studied individually and this research has little hope of reasonably understanding them in full, rather, they serve as points of departure for the interview structure, as well as for potential future research.

# 3. Method

This chapter describes the chosen methodological approach. Chapter 3.1 talks in detail about the video games included and provides arguments for their selection. Chapter 3.2 introduces the participants. Chapter 3.3 and chapter 3.4 describe the interview strategy in-depth and the method of analysis, respectively.

## 3.1 Description and discussion of the chosen games

For the purpose of the study, several video games we may consider mainstream were chosen as entryways for the interviews. Most of them were suggested by previous authors in relevant literature as examples of games that deal with climate issues to some extent. I then describe each of them and their relevance to the topic of the thesis. Some of the games I selected based on their recent release dates, current popularity and gameplay mechanics, in order to cover a wider area of game genres and possibly different types of players.

### 3.1.1 Red Dead Redemption II

Red Dead Redemption II (also referred to as *RDRII* in the following text) is an action-adventure video game developed and published by Rockstar Games and released on October 26 2018. The game is set in the year 1899 across a few fictionalized states inspired by the North American frontier in the West. It tells a story of Arthur Morgan and the decline of a gang of people roaming the frontier trying to get by in a world that rapidly changes. The wild west era is ending and industrialization is the main force driving that change.

We can argue that Red Dead Redemption II is not as overt in terms of its environmental commentary. While this game undeniably stands out from others in the list, I found it rather helpful to have conversations with its players. **This was mainly for two reasons:**

One - as mentioned previously, the game was and still is praised for the real-

ism of its environment, realized through not only aesthetic depiction, but also lifelike animation, interactivity of the world and detailed virtual ecology. Different weather has an effect on the game world and animals hunt and can be hunted by the player and other wildlife. There is a possibility of overhunting in certain areas resulting in decreased population of wildlife. This realism as an aspect of cli-fi is suggested by Abraham and Jayemanne (2018) and Backe (2017). In this sense, the environment in RDRII can be viewed as more than a backdrop, or a resource. These "ecological lenses" were also noticeable in a series of articles of VICE (Zacny, 2018<sup>1</sup>; Gordon, 2019<sup>2</sup>). Similarly to the case of Legend of Zelda: Breath of the Wild, there are fan made nature documentaries set in the game's environment (Evans, 2018).<sup>3</sup>

The second reason for including of RDR II in the game selection has a much more practical origin - it makes the purpose of the study much harder to guess when looking for players of these games online. At the same time, the game is still relevant to the topic and provides a different perspective on reflection on any social issues, not limited to the one this thesis is focused on.<sup>4</sup>

### 3.1.2 Horizon: Zero Dawn

Horizon: Zero Dawn (also referred to as *Horizon* in the following text) is an action role-playing video game developed by Guerilla Games, published by Sony Interactive Entertainment, and released in 2017. The game is set on Earth in the 31st century. The land, presumably North America's West and South West region, is populated by scattered human tribes and machines roaming the wild. The story follows Alloy as she

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<sup>1</sup>Zacny, R. (2018). *Weather Systems Took on a New Meaning in 2018*. VICE. accessed on 24.4.2021 at <https://www.vice.com/en/article/3k9mvv/weather-systems-took-on-a-new-meaning-in-2018>

<sup>2</sup>Gordon, L. (2019). *Gaming's Climate Dread in a 4K Streaming Ecosystem* VICE. retrieved on 24.4.2021 from : <https://www.vice.com/en/article/wjvkby/gamings-climate-dread-in-a-4k-streaming-ecosystem>

<sup>3</sup>Evans, S. (2018). *The Wild West — A Red Dead Redemption 2 wildlife documentary — RDR2 Geographic*. a YouTube video. accessed on 20.4.2021 at : <https://youtu.be/H8uxADJKm1w>)

<sup>4</sup>throughout its storyline, the game involves issues of racial discrimination - the oppression of Native Americans, and featured depiction of the KKK; or gender inequality - depicting the suffragette movement

investigates the strange virus or the "derrangement" overtaking the machines making them unusually hostile to humans. We eventually learn that the game takes place in the wake of an environmental apocalypse and that the machines were originally created and programmed to restore Earth to a habitable state and bring humanity back to life. the "derrangement" is said to be a malfunction on the side of the AI controlling the systems for terraforming Earth, which was orchestrated by one of the system creators themselves, because they had lost hope in the project and the survival of humanity.

The game was widely critically acclaimed for its lush environments and game-play, which focuses mostly on open world exploration and combat with the machines. In academia, it was suggested by some authors that its portrayal of the machine-human relationship is in line with the ecocritical perspective on the intertwined relationship of human and nonhuman agents, while also contradicting it by heavily presenting the machines and humans as two opposing sides (Paquette, 2019; Woolbright, 2018). Alexandre Paquet (2019) praises the way the game handles rebirth of life on Earth, as a simple passing of time, thereby challenging the common apocalyptic tragic narratives and the anthropocentric perspective on life on Earth.<sup>5</sup>

### 3.1.3 Cities: Skylines

Cities: Skylines was developed by Colossal Order, published by Paradox Interactive, and released in 2015. The game is a city builder game. Its simulation has been proposed to be useful for learning and raising awareness about the principles of urban planning (Haahtela et al., 2015; Olszewski et al., 2020). The game includes various possibilities of powering the city, ranging from coal power plants, through wind turbines and solar plants to fusion based energy sources. The player plans out the city by placing down zones e.g. commercial, residential and industrial. The industrial zones are of special interest in the context of this thesis. Their specialisation can be changed to "Generic", "Farming", "Forestry", "Oil", "Ore". All zones have a specified level of ground or noise pollution usually balanced with a certain amount of tax income. The pollution is communicated graphically and mechanically. The ground changes color and smoke

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<sup>5</sup>i.e. the world ends if humanity goes extinct

envelops the area. The level of pollution affects the attractiveness of the area for potential residents. Colossal Order has also released a DLC for the game called "Green Cities". It adds a number of assets to the game which serve the purpose "to build earth-friendly towns".<sup>6</sup>

The discussion on the usefulness of the game in education had also revealed its shortcomings - the game focuses heavily on personal transportation management. Automobiles are the main means of traversing the city. Journalists and urban planners have pointed out that the simulation is a simplified abstraction of how a liveable living city operates, and can reinforce the perceived importance of the automobile transportation over quality of life and other travel solutions like city bikes ("*Amateur planners are using video games...*", 2019).<sup>7</sup> It has also been proposed to promote gentrification (Douglas, 2017; "*Designing Cities with Computer Games...*", 2019).<sup>8</sup>

Cities: Skylines, along with Frostpunk, was chosen for the study to balance the attention turned mostly to single player action games which heavily rely on narratives and open world design to convey their messages. The game directly refers to reality of building cities and has potential in explaining the processes of urban planning, but is also criticized for their simplification. I consider it to be fruitful to involve such a game in the discussion.

### 3.1.4 Frostpunk

Frostpunk is a strategy resource management game developed and published by 11bit Studios in 2018. The game is set in a dystopian steampunk future on Earth, following a climate disaster. Most of the world has been encased in ice and frequent snowstorms. Low temperatures are threatening the lives of the last humans escaping cities to build

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<sup>6</sup>source: Cities: Skylines Steam store page

<sup>7</sup>*Amateur planners are using video games to fix our broken cities.* (2019). Wired. accessed on 20.4.2021 at: <https://www.wired.co.uk/article/cities-skylines-sim-city-urban-planning>

<sup>8</sup>Douglas, D. (2017). *Cities: Skylines Is a Gentrifier's Dream.* Paste. accessed on 20.4.2021 at <https://www.pastemagazine.com/games/cities-skylines/cities-skylines-is-a-gentrifiers-dream/> ;

*Designing Cities with Computer Games: Simulating Citizen Participation.* (2019). Parcitypatory. accessed on 19.4.2021 at <https://parcitypatory.org/2020/07/26/cities-skylines/>

a new life and survive. In addition to being overt about the state of the game world, Frostpunk also dives into the possible social implications of such future. The player is tasked with managing the city and keeping it warm as long as possible by having the workers mine coal in the surroundings. In addition, the player is given the power to rule the inhabitants lives by imposing controversial laws in order for the settlement to survive. Such decisions involve e.g. a decision on the whether children are to enter the workforce or not - the latter choice makes the game more difficult for the player. In addition, many predesigned specific moral dilemmas are presented and require a choice. These usually follow the management decisions the player has made in the past and are framed as consequences to their actions.<sup>9</sup>

Frostpunk has clear connections to climate change, and in addition, attempts to show how a global catastrophe affects singular civilian lives. 11bit Studios have created video games, such as Frostpunk or This War of Mine, which attempt to allow their players to put themselves in the shoes of others living through catastrophic events, to connect the events they witness ingame to reality. For this reason, the fairly recent release date and the genre of the game differing from action AAA games, I chose to include Frostpunk in the study.

### **3.1.5 Death Stranding**

Death Stranding is an action game developed by Kojima Productions and released in 2019. The game was included on suggestion of some of my player friends during preliminary discussions about the thesis topic. It takes place in North America following a cataclysmic event which disrupted the flow of time on the planet and severed most means of communication. The player assumes the role of Sam Porter-Bridges who acts as a delivery person and the only communication link between the remaining human settlements nestled in underground facilities. As a player, we do not meet many people in person, but rather through virtual means e.g. holograms and calls. The game direc-

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<sup>9</sup>, e.g. if the "Radical Treatment" law is signed by the player, the health centers will attempt to cure every gravely ill patient, employing amputation and invasive procedures. The signing of this law triggers a story arc event involving a patient refusing amputation. The player has to choose to let them die of gangrene or perform amputation against their wishes.

tor Hideo Kojima confirmed that the intent was to portray the disconnection we face on social media. The game stands out among others mainly for its gameplay, which involves tedious delivery work across the empty landscape, and a semi-multiplayer mechanic, which allows players to leave messages and help out each other in rebuilding the communication and traversing lines across the land without ever seeing each other ingame.

The game has been the centre of discussion among the gaming community regarding the fun aspect of the gameplay. Many called the game a walking simulator in the derogatory meaning of the word. The game was, however, praised for its beautiful realistic natural environments created in the image of Icelandic nature, and gained popularity not only due to the game designer's and director's reputation, but also for featuring famous actors (Norman Reedus, Mads Mikkelsen, Léa Seydoux and others). Among this, *Death Stranding* shows a vision of the future contaminated by a black substance resembling tar, and builds its world around the apocalypse which caused the ghosts of long dead persons (enemies to avoid) and destroyed city structures to emerge in encounters within the zones affected by the disruption of the flow of time.

Some online publications have framed the game in this context and argued that *Death Stranding* is as much about disconnection as an ecological catastrophe (Gordon, 2019; Trhoň, 2021).<sup>10</sup> In 2020, researcher Lukáš Likavčan and Digital Earth creative producer Leonardo Dellanocce discussed the game's relevance to reality, climate change, and how video games affect culture.<sup>11</sup>

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<sup>10</sup>Gordon, L. (2019). *'Death Stranding' imagines the eco-horror of our future dystopia*. The Outline. accessed on 18.4.2021 at <https://theoutline.com/post/8300/death-stranding-review-eco-horror-annihilation-stalker>

Trhoň, O. (2021). *Kterak hra na poslíčka po apokalypse zachycuje environmentální úzkost*. ctart. accessed on 28.5.2021 at <https://art.ceskatelevize.cz/360/kterak-hra-na-poslicka-po-apokalypse-zachycuje-environmentalni-uzkost-FBUrJ>

<sup>11</sup>Likavčan, L. Dellanocce, L. (2020). *It seems Kojima is the director of the game called reality* accessed on 20.4.2021 at <https://www.likavcan.com/articles/playing-against-extinction>

## 3.2 Participants

The participants were recruited via a Twitter and Discord servers. An open call was posted searching for "players interested in discussing one of the games in question in depth". 11 interviews in total took place - 3 for Red Dead Redemption II, 3 for Death Stranding, 2 for Horizon: Zero Dawn, 2 for Cities: Skylines and 1 for Frostpunk. Due to one failed recording attempt during one of the interviews about Horizon:Zero Dawn, the contents of the particular interview are not included in the analysis, however, I make use of the few notes I made in the discussion afterwards. The remaining participants were of similar age group apart from one (27, 27, 27, 28, 30, 31, 32, 32, 33, 48) either born and living in Czechia (7), the US (3), or born in Czechia and living in Great Britain (1). All the participants play video games often. See Table 1. for the full list of basic information about the participants and their relationship to games in general. For the purpose of the study, the data were anonymised. Code names were used to refer to specific players in this study.

This is, of course, by far, not a representative sample of any players of any video games. However, due to the exploratory nature of the study, I would argue it does not need to be representative, nor it realistically can be. The sampling is biased in many ways. The participants have lived most of their lives in either US or Czechia, the study has included only participants who reached out to me and were willing and available to schedule the meeting. Some of them are direct affiliates of the IGDA Climate Special Interest Group, some are players or friends of these players.

Table 1 - relevant information about the participants

Codename	Age	Game	Lives in	Relationship with games	Hours played	Last played
Bourne	48	RDRII	US	writer, engaged in PFTP*	circa 50 (completed)	1 year ago
January	27	RDRII	GB	game design student	circa 50 (completed)	2 years ago
Lewis	27	RDRII	CZE	game developer, production	singleplayer 15, multiplayer 50	the day before
July	33	Death Stranding	US	game developer, musician, engaged in PFTP*	200	within a year
Simi	28	Death Stranding	CZE	game player	87	1/2 years ago
Clove	27	Death Stranding	CZE	game journalist, media theorist	46	3 months ago
Parka	32	Horizon: Zero Dawn	US	game developer, UX researcher, engaged in PFTP*	circa 50 (completed)	unknown
Sunny	32	Frostpunk	CZE	indie game developer	109	unknown
Mimi	32	Cities: Skylines	CZE	game developer, programming	40	1 year ago
Artemis	30	Cities: Skylines	CZE	game developer, programming	47	1 year ago
Poli (missing data)	31	Horizon: Zero Dawn	CZE	game journalist	missing data	2 years ago

Notes: The recording of the interview with Poli was lost. In this research, I am using my notes made during the session.

\*Playing for the Planet Alliance

### 3.3 Data collection - Interviews

The data collection was realized through in-depth semi-structured interviews with players of aforementioned games. The collection spanned across two months. The goal of the interview was to allow the participant to become comfortable by sharing their experiences in the game they wanted to talk about, and uncovering whether the participant was or is (during the interview) reflective about their own experience, what they think about in regards to the game, and whether their thinking process also includes critical thinking on environmental issues in any capacity.

One session with one player consisted of an interview split into two conceptual parts. It was crucial for the participant to not know that the interview is focused on reflection on climate issues specifically, and in the particular game that particular interview was about. At the start of the session, I informed them I was interested in their own experience, what they enjoyed, whether they learned something, what was interesting and what seemed important to them - this was an attempt to set the stage for the ensuing discussion.

All but one interview were done online through voice and/or chat meetings and took around an hour on average to complete. The nature of the recruitment pool and the wondrous ease of connection with various persons on different continents provided by the internet resulted in meetings that would otherwise be much harder to arrange. I believe these interviews could not be rushed as their productivity would be at risk. The session was long and mentally demanding on both sides, even more so, because it took place entirely online most of the time and included people who have never met each other before. However, I believe it is a good sign that most participants, if they were able, were happy to talk for much longer than we initially agreed. The following chapters describe the organisational patterns (or a very loose structure) I used as a guide in the interview.

The interviews were recorded using multiple software solutions. All participants were informed of the general objective of the interview beforehand (without revealing the focus on environmental issues, which they were briefed on afterwards) and consented to being recorded.

### **3.3.1 Interview - first part**

The first part was meant to draw reflective thoughts out about anything in the game, that the participant found interesting, thought provoking or fun. I tried to talk with the participants about their experience of the game, simulating perhaps a discussion with a fellow fan. This first interview part involved a set of topics, which served achieving a goal - to get the participant comfortable enough to share their experience, to understand their likes/dislikes and how they think about the media they consume. Here, it was never suggested to think about specific issues, e.g. climate change. The focus of the conversation was strictly guided by the participant. I took great care to not mention any specific topics prematurely and tried to guide the participant into a thoughtful state by asking questions and following up on what they talked about that seemed interesting in the context of the study.

More specifically, I attempted to answer fairly broadly defined questions about the player, their experience, and their thinking. These questions arose during the

review of past research and were either suggested by the authors discussed or by me in light of the reviewed literature. These topics have all been discussed in chapter 2.3 and summarized in chapter 2.4. What follows is a set of focus topics used as a guide for the interview:

1. *Where is the player coming from?* i.e. their age, nationality, experience and relationship with games, relationship with nature and opinion on climate change/environmental issues. Number of hours in-game and how long ago they played.

2. *How does the player see the game?* i.e. What do they enjoy about it, What kind of world does the game portray?

3. *What kind of players are they?* i.e. What do they like to spend their time doing in game - exploring, hunting, doing side quests or chasing the main story?

4. *What is their reflective experience?* i.e. what felt important for them? What message is the game trying to portray according to them, and what message did they take from it themselves? Understanding whether they experienced ludonarrative dissonance, whether they encountered something that sparked their interest that they wanted to know more about.

5. *Have they ever thought about the game like this before?* i.e. Did the interview bring new information or thoughts to light, was there something that changed? Were they reflective about the game before the interview and about which topic?

Of course, some of these questions are specifically about climate change and the relation of the game and other real world issues, which ideally in our situation should not be brought up by the researcher first. So, I followed a simple condition of whether the participant has already mentioned these topics themselves, if yes, I had the option of opening a branch of conversation related to these issues. This rule was used in case of the questions related to the participant's relationship with nature, their opinion on climate change (1.) and whether they were reflective about any particular issue before (5.).

The structure was never considered as a strict rule, rather a set of steps to guide the reflective thoughts and understand the player better. It was a surprise to me, that some participants were content with me asking questions, while others were ready to

talk about environmental representation and climate conscious games very early on in the interview, making the guide mentioned earlier obsolete.

### **3.3.2 Interview - second part**

The second part involved a closed card sorting research method. This part was included to turn the focus of the conversation towards the game's connection / disconnection to some of the most prevalent real-world social issues, with one card with the text "environmental issues" among them. Eventually, the plan was to reveal the topic of the study in order to offer to discuss the climate crisis. This method also allowed me to understand how central/peripheral the environmental topic was to the particular player's own experience and to the game in general according to them.

The activity consisted of presenting the participant with a number of cards using an online corkboard tool. Each card contained one of the most prevalent social issues of today. These were: poverty, racism, discrimination, violence, gender inequality, violation of human rights, and environmental issues. The task given to the participants was to sort the cards into three categories by how much the given social issue topic was covered in the game according to them. The categories had the following descriptions: 1. This topic was not represented in the game. 2. This topic was represented in the game to some extent. 3. This was a central theme in the game. Throughout the task I encouraged the participant to think out loud if they wanted to or were undecided on anything. I also asked them to explain why they sorted the cards in a particular way and to give examples on each of the sorting topics. The final sorting result was not particularly important, as the main purpose of the exercise was to allow discussion about these topics in the context of the game overtly and openly, as well as allowing the eventual focus on environmental issues.

I ended the interview with a free form discussion about climate change, reflection, and/or games commenting on environmental issues, depending on the particular person I was talking with and how much they were willing to engage in the conversation.

The first part and second part are an important point of the structure. Whatever the participant reflected on or decided to think about out loud in regards to climate

change or other real world issues in the first part, would be ideally (and idealistically) not prompted by any of my questions. Likewise, Whatever the participant reflected about in the second part I consider a reaction to my prompts, as the requirement to connect the game with real world issues was clear from the sorting cards. It is, however, necessary to keep in mind, that the interview itself is a reflection prompt and the setting's influence on the player's thinking cannot be underestimated.

In the end, many times we have strayed from the structure I created and either jumped freely between the topics<sup>12</sup> or started talking very early on about environmental topics and climate conscious games. If that happened, I attempted to pursue the topic without force and allow the participant to talk about something else if they wanted. I used this information in the end to shape the freeform discussion after the card sorting activity.

### **3.4 Data, Analysis - Grounded Theory**

As the player perspective has not been explored as a primary focus of previous research available to me, I chose an exploratory approach, employing Grounded Theory. Originally pioneered by Glaser & Strauss (1967), Grounded Theory emphasises inductive approach in research. The process of developing a theory is iterative, and involves creating theses throughout the data collection as well as the analysis period. In the spirit of GT, during the interviews and the subsequent analysis, I was allowing for new ideas, trends and theories to emerge and made notes of them. I constantly compared these notes with the data available to me to assure that the theses I was constructing were indeed representative of the data, or "grounded within them". Every new interview, every newly coded transcript and every new perspective I assumed, while looking at the data, contributed to the formulation of the overall conclusions, and of course, further complicated the matter in the process.

Regarding transcription, I chose to employ an assistant who transcribed all the interviews for me. They were briefed on the topic of interests and on the thesis objective. Since the interviews for the most part ended up being about 1,5 hours on

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<sup>12</sup>and due to the way they are structured, this was often natural

average long, I asked the assistant to transcribe the parts that were relevant to the topics of the thesis. While this may appear as dangerous in losing important data, we collaborated and took great care to consult any fuzzy situations. The finished transcripts contain everything that is relevant to the player's experience, including topics irrelevant to environmental issues.

While coding, I quickly realized it will be difficult to find common ground with so many people and different games, and that the interviews have to be regarded on an individual level as well. The flow of conversation was relevant to the analysis as much as the topics we touched on with each participant. Therefore, I found it useful to code the parts of the interview which I considered relevant to the topic of the thesis, and, in addition, executed thematic analysis of each of the interviews separately. For coding and notes, I used the software *F4 Analyse*, while a simple excel sheet document sufficed for the thematic analysis. Most of the topics that were not related to the environment, reflection, or connection to reality, were not coded. However, their existence and prevalence in the data was noted in the thematic analysis part. Their inclusion is crucial in order to make sense of how the participants saw the game in question.

In my opinion, it is useful to note that discussing the participant's game experience on a deeper level is made much more difficult without playing a major part of the game yourself. I found that sharing the experience of the game builds trust among the interviewer and interviewee and helps avoid spending time during the interview clarifying some basic mechanics or plot points of the particular game, which may be present in its later stages. This was most noticeable in the interview about Frostpunk. It became apparent that in my 6 hour playthrough I may have missed some plot points that were relevant to the overall experience of the particular participant.

### **3.5 Pilot**

The study was first piloted approximately a year before this project. Due to the pandemic just starting at the time, time and respondent resources were limited. However, the process still provided me with valuable insight I used while preparing the research strategy for the present thesis. The pilot involved 3 interviews with 3 players. One

player of *The Legend of Zelda: Breath of The Wild*, one player of *Horizon: Zero Dawn*, and one player of *Stardew Valley*. The purpose of this mock study was to attempt to explore avenues of approximating the ethical/ecological framework suggested by Backe (2017) for player research. Throughout the interview, I attempted to answer Backe's questions about the game's potential to trigger ecological thought (see chapter 2.3.6) by asking the players about how they see the game in this regard.

The main takeaways of the pilot were: 1. Attempting to ask slightly modified questions suggested by Backe (2017) often lead to the interview resembling a fact collection about the game. The impersonal nature of the encounter did not allow for transitioning into discussion more focused on the game's connection to reality and the player's understanding of it. Therefore, I concluded that if I were to discern the player perspective, I should consider them as not an expert on the game, but as an expert on their own experience. For this reason, I chose to abandon approximating Backe's analytical approach for the future iteration. 2. The selection of games included only one (*Horizon: Zero Dawn*) which overtly mentions climate issues. Thematic analysis showed that while all three players were willing to discuss these topics extensively, all three of them generally considered the game as fun first and foremost and did not think of it as having the potential Backe seeks. For this study, I used games which were previously suggested to have this potential, which also mention the environment/climate explicitly at least in some capacity.

## 4. Results and Discussion

This chapter guides the reader through the findings and their interaction and puts them in context of the reviewed literature. Chapter 4.1 summarizes general observations of how the players experienced the selected games and whether they reflected on environmental issues. In chapter 4.2, common themes that have arose across the interviews will be presented all in the context of how they may foster or inhibit the reflection process. I will discuss the limitations of my approach in chapter 4.3.

### 4.1 Player experience and reflection

While the players I interviewed were open to discussing the environmental question in relation to the game, and sometimes mentioned it by themselves, most of them did not seem to consider it as central to their experience. I came to this conclusion by observing that the larger part of the session was focused on what was seen as important, interesting or fun, which was often unrelated to **active (explicit) reflection** on environmental issues or ecological thinking. These topics included e.g. gameplay mechanics (all games), the story and characters (RDR II, Death Stranding), achievement hunting (Death Stranding, Frostpunk), strategies to win or *get good* (Frostpunk, Cities: Skylines, Death Stranding) or exploration (Death Stranding, RDR II). The relevance of exploration to the topic of the thesis may be more complex and is taken into account later in the text.

The games provided deeply personal experiences for the participants (not so much so for Mimi and Artemis, who played Cities: Skylines. This may be explained by the fact that the game is a simulation without a narrative or a character through which players could interact with the world and may therefore be immersive in a different manner).

January focused on the story in RDR II, while Bourne and Lewis had fun playing cowboys and testing the system. July experienced a sense of "connectedness" in Death Stranding and related the game to the passing of a loved one. Simi praised

Death Stranding for its unique gameplay mechanics and enjoyed completing all the achievements. Both found time to talk about the unique style typical for Hideo Kojima. Sunny enjoyed the moral dilemmas involved in situations, where humans are trying to survive the global crisis in Frostpunk. Mimi and Artemis had fun building and managing the traffic in Cities: Skylines.

The main reflection triggers in the interviews were questions about the game's world i.e. questions like "How would you describe the game's world?" or "What kind of world do you think the game portrays?".

The discussion about how the games handle their environments and whether this is related to the state of the climate in reality was plentiful and heterogenous in most interviews, taking place in the first (without my prompt) and/or the second part (with my prompt). The only game where the players consistently did not mention the environmental question was Red Dead Redemption II. Consequently, they were either not interested in talking about it further (January, Lewis) or were highly sceptical of its presentation ingame (Bourne). In Horizon, Frostpunk and Cities: Skylines, the environmental issue theme was mentioned by the players on their own (in the first part without prompt). In Death Stranding, the attitudes varied. I will put this information into context and attempt to explain the variability in the following chapters.

In the sorting card task, none of the players of Red Dead Redemption II sorted environmental issues as a central theme. In the case of Death Stranding, Horizon and Frostpunk, they were considered central. The players of Cities: Skylines were largely unsure and critical about what the game depicts and what it does not.

However, most of the participants did not explicitly connect their personal experience to environmental themes the game may be presenting. Fun appeared to usually be the most important part of the experience, while the environmental comments were an addition to it. This conclusion is based on observations of how the players spoke about the game, what did they enjoy talking about and how much of the interview was explicitly centered around the game's relevance to environmental issues. The players mostly talked about how they enjoyed the game, and *then* were prepared to read it as climate conscious without connecting their personal feelings to that aspect. There were

two exceptions to this: Clove (Death Stranding) and Parka (Horizon: Zero Dawn). Interviews with both of these respondents took a notably different structure compared to others. Both players considered the game and their own experience to be rooted in the climate crisis theme. I elaborate on this further in the later chapters.

Taking this general conclusion into account, the interviews confirmed that most of these players were interested in thinking about the games outside the boundaries of their game worlds. The research also offered an insight into how they thought about the games they played. Across the interview data which I deemed relevant to reflection (on climate issues), some common themes arose. These themes all appeared to be related to, contribute to, or interfere with the observed overall tendency of **connecting the game with reality** and thus, in line with the reviewed authors - Sengers et al. (2005), Khaled (2018) and Muriel & Crawford (2018) - presumably allowing for (critical) reflection. In the following chapter, I put my findings in the context of the reviewed literature and guide the reader through the conclusions by narrating my reasoning.

## 4.2 Reflection as connection to reality

This chapter groups common themes which I consider relevant to how the players connected some aspects of the games they played to reality.

### 4.2.1 Connections to real places, identification

All selected games were praised for the beauty of their environments, except for Cities: Skylines. Across the interviews, many players spoke about connections between the game and real places on planet Earth. Bourne feels a sense of pride of the US history and geography. Lewis mentioned that taking a walk in RDRII felt nice, but they mentioned that Kingdom Come: Deliverance's nature (set in the Kingdom of Bohemia in 1403) could have been a better fit for them because of the familiarity of Czech nature. Both Simi and July appreciated Death Stranding's photogrammetry technology and the inspiration taken from Icelandic nature to model the game's environment. The game's world reminded July of their time in the Sweden countryside. Simi expressed

uncertainty over whether the environment represents North America or Iceland better. Sunny spent a considerable amount of time ingame and online trying to piece together where on the planet do the events of Frostpunk take place (their current theory is Spitzbergen). Mimi mentioned a friend who used Cities: Skylines for a city traffic simulation project. Artemis remembered their time in the US, used their experience to critically reflect on the game's content. Both players mentioned how they had gotten more aware of traffic problems in the cities they lived or had lived in.

All of these occurrences hint at an option and a desire to connect these game worlds with real familiar places and memories, or to make them into them - to find something meaningful for one's self that makes the experience personal. The tendency for identification was also noted in the study of Muriel & Crawford (2018). Muriel & Crawford mention that players connect the game worlds to reality by means of empathy and identification. While these games offered opportunities to experience empathy and identification through their stories (July explained the "connectedness" metaphor in Death Stranding, Parka connected with Alloy's struggles to belong), my questions about the game's world often led players to a description of its environments and their connection to reality through their own experience with it.

*"So I lived in Sweden for close to five years and it's countryside and kind of environment is really well kept after in my opinion and quite beautiful and there are parts of this game that has like photogrammetry that's directly from northern Sweden and Iceland, and I find it so beautiful and the natural aspect about it is so beautiful, so to see it reflected in Death Stranding so beautifully was like it was very positive for me, very amazing I love seeing nature represented so nicely so it was something I knew I was interested in right from the get go of the game just because I knew the extend of the photogrammetry that was utilized in the game to make it appear like northern Europe."*  
(July, Death Stranding)

Bourne, who lives in the Pacific Northwest - an inspiration for the natural environments in RDRII - describes a unique bond to the setting. They praised the well done "replication of the feeling of the history of a place". In addition, they felt like they learned to traverse, navigate and get to know digital places as they would

real ones.

*“I mean the sense of place is like... if you’re in these worlds long enough you start to kind of feel like, ok I understand what it feels like to be there [...] like in St. Denis, like ok, I know how to get to the gun shop, I know how to get to the place that sells the goods, I know I gotta go through this market, I turn right and to this door, you know [...] it’s interesting to have almost like memories of places that are entirely digital, that are entirely invented, but feeling intimacy with those places.”* (Bourne, RDRII)

In light of these findings, I suggest this process of recognizing and getting to know places in these video games can work similarly to the process of **identification** which was proposed by Muriel & Crawford (2018) as a function of linking the game to reality. In the data, this is largely connected to identifying places in the game’s natural environments and relating them to real places on planet Earth. Some of those may have personal relevance (RDR II evokes pride in American geography in Bourne, July remembers Sweden while playing Death Stranding, Lewis mentions Kingdom Come: Deliverance has an advantage in winning them over for a nature walk compared to RDRII and its fictitious American frontier).

We may also raise a point that e.g. Bourne’s fascination with the places in RDRII does not stem from their desire to connect the game with reality, but rather to feel immersed. I.e. it is possible that the process of identification in this context acts as a direct opposite to triggering reflection. And instead, raises the player’s immersion in the game, making them lose the critical distance which e.g. Khaled (2018) and Backe (2017) argue is crucial for reflection.

Nevertheless, I found it was much easier and fruitful to discuss the game’s relation to reality at points in the interview where the participant recognized that the game itself was (implied to be) set somewhere on planet Earth, regardless of whether the participant knows the place personally. In this way, real places represented in games may be useful as points of departure for discussions on the game’s connection to reality.

## 4.2.2 Trueness to reality, aesthetics are not enough

Backe (2017) suggests, that a specific and informed treatment of the environment ingame may foster ecological thinking. In Red Dead Redemption II the environment has been praised for having detailed ecology and existing outside of player agency. According to the work of Chang (2019), Backe (2017), or Abraham & Jayemanne (2017), it seems not to act only as a backdrop but rather as the main ingredient in many player activities. The players mentioned that the world feels alive to them thanks to its detail in terms of the flora, fauna, but also the illusion of a daily life of the non-playable characters. January describes its story to be engaging and, not grandiose, but decidedly human, and Lewis praises the city life for "feeling real". The illusion of a realistic environment realized through aesthetic representation and accurate wildlife life cycles can be filled in with the realistic-feeling life of humans inhabiting the world. Meaningful conversations with characters throughout the story line may promote empathy towards the humans of the dying free West.

Abraham (2018) offered a solution for game's climate messaging and its potential rejection by the player. He proposes being implicit about the message and using aesthetic depictions of climate futures alone, such as putting a solar plant in one of the areas in ARMA III. January and Lewis both made a note of black smoke over the city and the industrialisation taking place in RDRII. Following up on Abraham's suggestion, we may consider RDRII as a good candidate for delivering a climate message through aesthetic depiction alone.

However, what the data shows, is that the game did not trigger any mention of reflection on the climate or ecology during interviews with January, Lewis, or Bourne. When directly asked in the sorting card task, none of them considered the environmental aspect as something explicitly acknowledged by the game.

In reaction to the sorting card with the prompt "environmental issues":

*"So I didn't feel like it was really explicitly environmental in any way, you know, you're in an environment, there is like oil company there, you know em but it didn't really... I don't think it really made you think about ecology beyond just being a rich background for your agency, to some degree."* (Bourne, RDRII)

*"wow, environmental issues? I don't know [...] logically, like some environmental problems are starting like a little bit, the industry... but I don't remember, if this was discussed in the game, that someone would be afraid that if we burn coal, for example, or something, that it could be a problem"* (Lewis, RDRII)

*"...there was actually a very nice moment like they came to that city and had never actually seen a city before and now it's just- so this is the future, and there a shot of the city and there just the chimneys as the smoke rises everywhere (laughs)"* (January, RDRII)

Apart from these comments, the RDRII sorting card discussion (before revealing the focus of the thesis) was centered mostly around racism, colonialism, sexism, or violence. According to Bourne and January, the inclusion of these indexes to our reality coupled with the open world detail give the game a unique depth. We discussed the limitations of how an AAA game can allow itself to comment on these social topics. The game's main connection to reality for all three players lies more in the social issues of the historical era.

At this point, we may ask, why the players were often commenting on these social issues, but not on the environmental pollution in the game. One explanation is that they were all presented within a context of certain clearly suffering *human* characters - the suffragettes, Native Americans, people who were denied basic human rights and others. In the case of environmental pollution, I was not able to identify such elements. In this case, the players may be missing a character to **emphasize** with in order to explicitly take note of the pollution as a prominent issue and relate it to their experience (as previously suggested by Muriel & Crawford in 2018). Even then, both Bourne and January saw the social issues in the game as just "being there", but not really having any significance to their experience apart from enhancing the reality of the world.

Lewis' interview illustrates another manner of connecting the game to reality. They marveled at the technological advancement and craftsmanship in the game contributing to its beauty and realism. Their critical distance in games appears to be focused on the technical aspect of gamemaking - which is explained by their background

as a developer.

*"...there are actually few games that deal with nature in such a way that is believable to me, only some are appearing recently. I often felt like it was some terrain that someone made by clicking a few times with their mouse without much thought. They made some hills that don't look like hills at all and placed them somewhere...like why should the hill be there, added some ugly trees around and so on, well, Red Dead is just nice, beautiful."* (Lewis, RDRII)

In Death Stranding, July, when asked, described the environmental issues as a strong visual theme. They noted the frequent presence of a tar-like substance and broken city structures which appear in "negative" situations and then are resolved into the "positive" baseline game state when the sky is clear. Clove mentioned how Death Stranding's apocalypse seems unusually clean, featuring clean technology for e.g. printing food and structures, while the environment is not entirely devastated.

*"you have this very polluted and oil kind of feeling and obviously when you finish the encounter [with an antagonist creature], all of that goes away you see the rainbow and the sky clear, so there is this positive reinforcement that's tied to like reinstating the environment as it was where everything is"* (July, Death Stranding)

In this research, it appears that the environmental themes in RDRII were not taken into account by the players on their own. Not even in the case of Bourne, who is involved in the Playing for The Planet Alliance activities and may therefore be more sensitized to the subject. Bourne and Lewis also mentioned, that the environment served more as a backdrop for them. July is also involved with the Alliance. However, even if they did not speak about climate-related topics in Death Stranding until the sorting card task, once asked, they chose environmental issues to be at the game's centre thematically. The other two players of Death Stranding talked about the game's climate relevance in more detail (Clove, Simi). Simi was mostly sceptical about the topic, but also perceived environmental issues in the game as clearly represented in the aesthetics.

*“And for those environmental problems, that’s where it’s clear, as far as the visual is concerned, it is a central theme, because basically the black thing, the matter, looks like oil and the landscape is completely destroyed and so on. But it’s more like a symbol of the fact that the society is falling apart, in my opinion or the whole world order let’s say, rather than telling you to recycle or something.”* (Simi, Death Stranding)

This may be explained by the fact that RDRII is at its core *not really about climate change* i.e. the climate crisis is not addressed explicitly. In contrast, Death Stranding features a postapocalyptic Earth, and visual reminders of pollution which have direct consequences on the lives of the characters. In this sense, the apocalypse serves as a vehicle for empathy with its survivors. In addition, RDRII is the only one of the games set *in the past*. All other game’s events are set either in the future (Horizon, Frostpunk) or the present (Cities: Skylines).

These observations put into context may suggest that aesthetic depiction alone without an additional ”nudge” (e.g. ones proposed by the reviewed literature - empathy, identification, explicit mention of climate change etc.) may not be enough for the climate message to become embedded in the player’s experience. Backe’s (2017) framework suggests more than one points in addition to aesthetic representation to be fulfilled for this purpose - one of them being the explicit treatment of the matter. And so, unless the player is possibly sensitized by other media or their own reflection (e.g. the VICE articles on the game’s ecology previously mentioned in chapter 3.1.1), other discussions, or this interview, RDRII has arguably smaller potential to provide points of discussion about the climate than the other discussed games.

The issue of explicitness of the environmental topic in the game appears to be crucial for that purpose when looking at the data as a whole. Before we address this in context of other games, let us examine the data from the interviews about the other game on the list, which, like RDRII, does not employ a climate disaster narrative.

### 4.2.3 Trueness to reality and dissonance

Cities: Skylines is the other game in this research - apart from RDRII - which is not set in the wake of a climate disaster. Still, the two respondents I talked with (Mimi, Artemis) chose to discuss the game's aspects relevant to ecology on their own - unlike the players of RDRII. In contrast to other interviews, Mimi and Artemis were both largely sceptical about whether the game handles its environment responsibly. Both of them describe the game primarily as a traffic management simulator. They also consider this the core element of why it is fun to play. Mimi understands the limits of the game as a simulation, but they are able to critically reflect on what might be problematic in regards to its environmental context. Both players criticized the unrealistic gameplay.

*"...it's a bit idealistic [...] you can just have a totally clean city, which in reality doesn't seem... you can do things that can't be achieved at all in reality, which I think is a bit of a shame. In a way you can create a total utopia. You still have the traffic problems, but you have the city completely clean and it is quite easy to make a completely clean city."*

*"But even if it's idealistic, one seems to realize a lot of things. You actually think about the urban planning, how it's done and how it works, so the relationship between that abstraction and that ... yeah, just between the fact that it's a game and a model as well, like plus or minus realistic, the ratio strikes me as good."* (Mimi, Cities" Skylines)

*"I think it's just weird, how there is a highway and the two roads lead to the empty field and that is where you start building a town. It's just something that has never happened in history, or maybe like in America somewhere, they have giant highways, but certainly not here in Europe, ever."* (Artemis, Cities: Skylines)

Artemis expressed disappointment over how the game treats the human-nature relationship. This polemic is central to the reviewed ecocritical literature (Chang, 2013, 2019; Abraham, 2018; Abraham & Jayemanne, 2017). We may consider it surprising

that Artemis is engaging in ecological thought while playing a game which these authors would probably deem as not ecologically relevant enough. In Chang's (2017), Backe's (2019) and Abraham's & Jayemanne's (2017) view, the environment in Cities: Skylines would probably be analyzed as acting as a backdrop to the simulation or a resource to be exploited without consequence. Artemis's critique also echoes what some media journals and urban planners have previously criticized about the game (see chapter 3.1.3).

*"it's interesting that it has such a mindset, a lot of games do actually, like colonialist. Like there's untouched nature here, that's wrong, we need industry here to make the most of it, have people settle here and make this greenfield into a nice town. There is no fauna, so no need to have to deal with protection of some animal species or to try to somehow integrate the city into the natural environment. It's just the approach of: wild nature, human organized, here I'll just put the squares nicely at right angles, and ... I don't know, so colonialist."* (Artemis, Cities: Skylines)

Artemis enjoyed observing the individual's lives and wanted to make the city into a better place to live. They were disillusioned by the citizens' lack of agency, empathized with them and disliked having to break down neighbourhoods when it was necessary to change the city structure - so much that they made conscious effort to avoid having to rebuild zones.<sup>1</sup> This empathetic perspective may explain why they were critical of the game in this context and refers to what Muriel & Crawford (2018) have suggested as means to assume critical distance required for reflection.

In this way, Cities: Skylines was capable of triggering critical reflection in the two players by being the opposite of realistic, by not involving crucial elements of ecology i.e. inclusion of a growing city into the natural environment and by relegating citizens to numbers, triggering a response from Artemis. This perspective is the opposite of what would be expected by most of the reviewed authors. This reflection may be based on a kind of dissonance (Backe, 2017), simulation fever (Bogost, 2007), or disruption (Khaled, 2018) both players felt. The key point to make is that this disruption was

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<sup>1</sup>In Cities:Skylines changing a zone's function results in the neighbourhood breaking down, people moving out and new ones moving in. The teardown is accompanied by sad face emoticons

probably not intentional in the game's design. Backe (2017) suggests dissonance to foster critical reflection. Artemis' reaction may also be explained by a lower level of immersion. Khaled (2018) places immersion directly opposite of reflection. The different level of immersion in a city building simulator as opposed to e.g. in a narrative-driven action game like RDRII, may have offered more distance between the player and the game and allow for reflection.

It is important to note that rather than the game triggering these thoughts, it may simply be the case that it presented Mimi and Artemis with more opportunities for reflection. Both may be already inclined to be critical of the media they consume. Artemis' implication that the game has a colonialist mindset, and comparing it to some others, points to them possibly already being sensitive to the subject, therefore often critically evaluating the games they play without further prompts.

I have not recorded many dissonant or surprising elements in other interviews apart from references to famous actors, product placement and other strange occurrences in *Death Stranding*. The players usually responded with a negative or a "I do not remember" to the question whether they encountered something surprising which might have disrupted their experience. The reason for this may be twofold: the formulation of the question may not be useful or the players simply do not remember such occasions because they have not played recently.

#### **4.2.4 Explicitness and the climate disaster narrative**

Neither the setting of *Red Dead Redemption II* nor the setting of *Cities: Skylines* includes a past or continuing climate disaster, unlike *Horizon* and *Frostpunk*. *Death Stranding* does not explicitly mention the climate crisis as we know it in real life. Nevertheless it features a postapocalyptic Earth and implies pollution and destruction of cities. *Horizon*, *Frostpunk* and *Cities: Skylines* were all evaluated by the players as having environmental issues as their central theme in the sorting card task. In the case of *Death Stranding*, the players were often not sure about their decision.

The climate disaster premise appears to make the environmental themes more accessible for discussion - from both the player and researcher perspective. In all

interviews about the games featuring the apocalypse, except for the one with July, the explicit environmental question was mentioned by the player themselves first. I also found it easier to talk to players about these games' relevance to environmental issues than in the case of RDR II and Cities: Skylines. While Mimi and Artemis opened the environmental topic themselves in interviews about Cities: Skylines as well, I consider this accounted for by the game's direct relevance to reality in the matters of urban planning as well as its unrealistic representation of them (mentioned in chapter 4.2.3).

The explicitness of the game's treatment of environmental issues often correlated with the amount of discussion on this topic the players were willing to engage in. This finding may support Backe's (2017) reasoning for analysing video games on a spectrum ranging from how the environmental issues in the game are made explicit and central to implicit and peripheral, with the explicit end favoring reflection.

Even then, the players' reasoning for choosing the game's environmental theme as central varied individually. The following chapters illustrate, how attitudes and previous experience with the topic may contribute to these players' perceptions of the games.

With Sunny, we talked at length about how games are perceived and consumed by the public. Sunny points out the importance of the game not hiding its messages too well for the message to be seen, and the deciding factor of whether the player is looking for it in the first place.

*"I think it [the getting of the message across] depends a lot on what the person is playing, because in a lot of games the message is too hidden. When you think about the game, you see it there, but most people don't see it there because they don't look for it. It's often the same for movies and series."* (Sunny, Frostpunk)

#### **4.2.5 Where is the player coming from?**

I mentioned that the majority (9 out of 11 including Poli) of the players did not appear to consider the environmental aspect of the game central to their experience. There were two exceptions - Clove (Death Stranding) and Parka (Horizon: Zero Dawn). These two players considered the environmental crisis in the games as one of the fundamental

aspects influencing their experience. I am basing this on the fact that they both entered the interview with this mindset, making the sorting card task unnecessary. Clove explained that Death Stranding is uniquely multifaceted in what themes it portrays (isolation, environmental crisis, story) and they enjoyed it as a complex work of art. Parka talked about the well created protagonist Alloy and the relationship of humans and technology in the wake of a climate disaster.

The way these two participants handled the discussion may be connected to the fact that they both are individuals already heavily sensitized to the topic. This theory is supported by their involvement within said topic. One of them is a journalist who has written about Death Stranding and climate anxiety and the other is a researcher engaged in activities of the Playing for the Planet Alliance on a daily basis. The theory may also be supported by my notes from the missing recording of the interview with Poli. Poli (31), a game journalist, played Horizon for review purposes. Their focus was mostly on the gameplay mechanics, the various possible tactics of taking down machines, the story, characters and the beautiful environments. While Poli agreed that the game is narratively about climate change, they did not share Parka's reflection focus on e.g. the relationship of technology.

In interviews about Death Stranding, the participants oftentimes argued that the game encompasses many themes and can therefore have multiple interpretations. Simi and Clove are friends. They had previously discussed the game with each other and found themselves disagreeing on the level of presence of environmental themes in the game. Both have mentioned the environmental aspect on their own (in the first part of the interview). However, while Clove was sure "the game has to be about the climate crisis"<sup>2</sup>, Simi argued, that they "did not see it in the game". Simi mentioned that prior to the discussion with Clove, they alone did not consider the climate crisis a central theme of Death Stranding. During the interview, Simi was sceptical about the game's connection to reality, but chose to sort the environmental card as a central issue arguing that out of all the cards, this one was the closest.

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<sup>2</sup>They also mentioned a friend who experienced climate grief through playing Death Stranding.

*"I guess in the end climate change really has to be the central theme, or at least it is based in the aesthetics of the situation, like it's a problem that everyone has to deal with. But I don't know, it's not that factories emit smoke into the air or something like that, it's something beyond human power, except for Sam being a sort of messiah. And like this is something different than global warming or environmental problems in reality, because [in reality] it is mainly a political matter."*(Simi)

While Simi was not averse to talking about politics and connecting the game to reality, it is apparent that both Simi and Clove do not think about games in the same manner. The approach of these players to games is different. Even though Simi initially did not think about Death Stranding in the context of the climate crisis, they mentioned it in the interview themselves because of previous conversations with Clove. Simi was happy to discuss the issue at length and provided a more sceptical perspective on Clove's reading of Death Stranding. The third player of Death Stranding, July, is also active on the Playing for the Planet Alliance discord. However, they did not open the environmental topic for discussion on their own.

Sunny explained they spend time thinking about their game experiences quite often, in terms of improving their playing skills, as well as in terms of the game's implications for reality.

*The game didn't change my opinion, I went into it with the same opinion as I came out, but that's because I agree with it."* (Sunny, Frostpunk)

These observations from the interview data suggest that these games may not function as triggers of reflection on ecological matters on their own. Rather, they may offer (additional) opportunities for reflection, to which the player could have been already sensitized in the past by other means (a research, a conversation, an article, other audiovisual media etc.). In most cases covered in this research, when the players was interested in the topic, or worked in the field close with it, they were much quicker to make it known that they see the game through these lenses unlike e.g. a person who is not used to discussing such topics. Even then, involvement in activities directly connected to climate change accommodation does not necessarily translate to expe-

riencing the game’s environmental themes as central, if the player considers another aspect of the experience more important (e.g. July and their strong response to the ”connectedness” theme and relationships of the characters) or is playing it to meet a different need - to relax for example.

The variability in perceptions of these games may be explained by the player’s background, attitudes, political beliefs and involvement in climate action. As per Sicart’s (2009) argument, the players in this research should be seen as co-authors of their own experience, as opposed to receivers of a fixed experience.

Parka, a researcher engaged in the Playing for the Planet Alliance, highlights the importance of inclusion of every voice. Those who have not been able to take the time to understand what is happening in terms of the climate crisis, might be able to engage with the complexity of it partly in games.

*“And this is why I think games are really powerful. Like a lot of what we see in the world is not because humans have an absence of empathy it’s not that they can’t like get to a point where they can understand what’s happening, contextualize it in terms of their own experience, and understand what another person is feeling. Except the systems that we have are so complex and so convoluted that we have not taken the time to enable everybody to understand it.”* (Parka, Horizon: Zero Dawn)

#### **4.2.6 Player comments: Explicitness, agenda, personal significance**

At the end of each interview I asked the players directly whether and how, according to them, can the particular game, and games in general could comment on and encourage reflection on environmental issues or foster reflection as a connection with reality in general.

Sunny expressed disillusionment about sharing conversations with loved ones about taking life lessons from the Star Trek series. Sunny used this example to illustrate their opinion that video games are primarily fun. They do not perceive this as a bad thing, however. They think players often consider games fun *only* and do not care for

politics in games, or outright refuse such inclusion.

*"Well, my mom doesn't see it there, so this ... we can watch Star Trek together with my mom and I can clearly show her, this is the politics and she says no, you're just reading into it too much"*

*"The problem lies in how each person approaches it. Some people just want to look at spaceships. Then again, I think that games ... games are primarily fun. Well, for games, this is probably even stronger, it's worse."*(Sunny, Frostpunk)

All the participants agree that games are primarily played for fun. Parka and Bourne argued for a low level of explicitness of the climate message the game should maintain in order to avoid lecturing the player. Bourne expressed a strong dislike for games which lecture their players and games which have transparent agendas. July and January praised the subtlety of Death Stranding and RDRII in the games' comments of real world issues. Clove explained how Death Stranding communicated its complex ideas implicitly by making the player experience what it has to say emotionally. Clove compares putting climate agenda into games to queer representation in games.

*"It's actually similar to the discussion about queer games, that on one hand you can have a game that's about trans people, now you play a game with trans people and they are there, and you know they are there - this is completely fine. And then there are games that do the queering on the side that it's like there is a trans that's like out or it's kind of like queering play it can be like a gateway, you don't suddenly start being queer, but it can somehow disrupt one's ideas of how the world works."*

Clove's thoughts evoke the distinction of explicit and implicit approach to creating climate conscious games described by Backe (2017). Backe argues that an implicit and peripheral treatment of the environment does not contribute to fostering reflection on environmental issues. However, it is clear that perception of the level of explicitness of the climate message may also be individual. Clove says the main strength in implicitness is when it is joined by information and sensitization from other media.

*"And I don't think these things work in such a way that you read a book and then you say wow yes, now I understand everything. But that you are exposed to a lot of media stuff and then at some point it all comes together"* (Clove, Death Stranding)

In contrast Bourne and Mimi were sceptical about games and their connection to reality. When asked, Mimi disagreed with Cities: Skylines encouraging ecological thinking. They argued that there was little connection between the game and reality. For example, the mechanic of pollution was simply something the player learned to work with by placing the factories far away from residential areas. Mimi and Parka both place emphasis on the personal significance of the experience.

*"In other games you are the particular person who has to make the specific decisions that affect you. In Cities: Skylines you are like a manager who can still reverse everything relatively easily, there is no one big challenge, you are just building and you are either good or bad at it."* (Mimi, Cities: Skylines)

Many players argued that, in video games in general, once the agenda becomes clear to them, they feel as if being lectured, in this case the agenda backfires and has the exact opposite effect.

*"Any person who was looking to escape into another world, sometimes doesn't want to be reminded of the things that are happening in the real world. And when we are very explicit about the messages in a way that is not necessarily... it doesn't feel like personally relevant to the person who's experiencing it, they're gonna feel preached to and shut themselves off."* (Parka, Horizon: Zero Dawn)

#### **4.2.7 Players' comments: Disillusionment, disconnection**

A few of the players expressed disillusionment with the effectiveness of video games as messaging platforms. Many of them understand that games with more "climate awareness potential" will never reach the level of the critical acclaim of AAA games. Mimi talks about this in the context of the game Alba: A Wildlife Adventure, which

they played together with their child. Mimi believes that many games like Alba fail in representing the complexity of the issue.

*"...a fairy tale that forests should not be felled.. every child has heard that. And now the question is whether the fairy tale is just repeated over and over again, or whether you are trying to explain a more complex story. (Mimi, Cities: Skylines)*

*"...and I think em you know like how much more awareness you need to raise when you can't breathe the air outsides because of the wildfires every summer." (Bourne, Paragraph 294)*

Parka mentions the implicit green nudging that Hugo Bille and the Playing for the Planet Alliance argues for. The participant explains that video games can provide hope, which may have positive effect on the player's perception of climate issues in video games, and in real life.

*"If you provide those breadcrumbs, people tend to be much more willing to engage. But without that hope and without that vision for the future and without the ability to make that tangible, with games for example, well, people will just default to assuming it's not their problem, because they can't do anything about it. And then we have the same problems that we have and I think that's the worst feeling in the world." (Parka, Horizon: Zero Dawn)*

Finally, some of the players I have met expressed a desire to discuss video games in a similar manner to our interview with their friends. However, they said it was hard for them to find partners for this type of discussion, and therefore they often felt like they were the only ones having these thoughts.

Interviewer: *"Did you talk to anyone about Frostpunk? As in this context?"*

Sunny: *"No, most of the players I talk to don't see these contexts much in games or they don't care that they are like that ... I know a lot of people who say, I don't like politics in games, well, I like politics in games, I think there should be more of it." (Sunny, Frostpunk)*

I report these results, because I find it especially important for the academic community to be aware of them and stay connected to reality as well. Players, who are either not interested in responding to the breadcrumb pathway or who are disillusioned with video games for whichever reason, may not see games as worthwhile vehicles for understanding reality, as previous research on this topic proposes they are. The fact that some of the players feel alone in their thoughts suggests a divide in the gaming community between the players who wish to be responsive<sup>3</sup> to connections of games to reality and those who tend to reject the reality connection.<sup>4</sup> I find it imperative that this divide and potential animosity are not furthered by research not being inclusive of all players' perspective, or by privileging selected ones in studies of the potential of climate conscious video games. All parties can wish to escape into video games, experience new things, or play for fun. As Parka says, games are an excellent medium for inspiring hope and for being the thing players can find common ground amongst each other, regardless of how they play them.

### **4.3 Discussion on the limits of present research**

This thesis is not without its shortcomings. Theories which emerged from the analysis are based on interviews with players who are not informed about its true purpose in advance. Thus, even if I claim to not purposefully prompt the players with any questions leading towards what I am studying, it is important to keep in mind that the interview itself already acts as a prompt. It is an intervention in the player's usual thinking about video games, as they are asked to voice ideas which they may have never discussed with anyone prior to the interview. Alternatively, they may have had similar discussions before, but in a much more familiar and relaxed setting than with a researcher they have just met in a video call.

I attempted to create a friendly atmosphere and mimic a conversation one could have with a friend. Despite the danger of losing critical distance as a researcher, I was able to acquire contradicting perspectives on similar issues and thoughts I believe to

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<sup>3</sup>the term used in Khaled (2018)

<sup>4</sup>which - I cannot stress this enough - is a completely valid approach to entertainment media.

be honest. Therefore, I consider this research a successful probe into what further research may find worthwhile to focus on.

It is important to keep in mind that all the participants in this research were people, who have easy access to internet and state of the art technology to run some of the newest video game titles. They are also defined by the fact that they all responded to the recruitment call. Therefore, they wanted to discuss their experiences in depth, in other words, they wished to be reflective. Most of them have not played the game for some time (circa around a year ago), so the research findings are not based on reflections in reaction to an immediate experience, but rather the thoughts that have stayed on their mind for a longer period of time.

In terms of methodology, the relative impracticality of the research method has to be highlighted. Instead of focusing on one video game, I chose more titles as topics for discussion. While I believe this approach produced valuable findings, it made the analysis and finding common ground across the interviews much more difficult to navigate than if I were to describe various players' attitudes regarding one particular mainstream video game. The interview data were highly variable. Each player chose to focus on what was important to them. This illustrates how every player is different, but also introduces some difficulties in aligning each player's answers to my questions and comparing them. In some cases, there was simply no time or opportunity left to ask every player about everything I was interested in.

Adding to the common issue of qualitative research being time consuming, I chose to attempt arriving to the topic of climate change as naturally as possible during the interview. Again, I believe this approach to be of core importance in the methodology. However, I cannot deny the data collection was time consuming and emotionally and mentally taxing on both the participants and myself. These problems makes further research of a larger scale difficult.

Finally, I need to address the fact that my agenda is clear. However rigorously I may have examined my findings against the data throughout the research process, I am still biased towards finding connections between video games and reflection, which may not be *seen* by others. Further research would surely benefit from including more than

one interviewer, coder and analyst. In addition, the potential of formulating functional theories could be raised by these researchers not sharing the same perspective on the matter. For example, including those who are highly sceptical about climate-conscious mainstream video games as well as those who read games from an ecocritical standpoint would in my opinion increase the credibility of the findings of such research.

## 5. Conclusion

The goal of this thesis was to bring attention to the underrepresented perspective of players in studying climate-conscious video games. This research was focused on exploring if and how players reflect on environmental issues, the climate crisis and ecology in the context of mainstream video games. Five video game titles were selected as entry points for interviews with 11 players: Red Dead Redemption II, Horizon: Zero Dawn, Death Stranding, Frostpunk, and Cities: Skylines.

Throughout the interview, I focused on observing how players think about the video game they played and whether they open the discussion on environmental aspect of each game themselves, or only once asked about the topic directly. For this purpose the interview was conceptually split into two parts. In the first part I did not mention anything related to the environment unless the player opened the topic first. The second part consisted of an activity designed to make the environmental topic explicitly available for discussion. I believe this approach to be effective in acquiring an understanding of the player's own experience and their genuine attitude on, and relationship to, the topic of this thesis. The analysis of the interview data was carried out in line with the Grounded Theory approach. I aimed to answer the following research questions:

1. *Are these games capable of triggering reflection on the environment, the relationship of humans to the planet, the climate crisis, or anything related?*
2. *How does that happen? Is the reflection connected to a specific element of the game or of the experience?*
3. *What is the player perspective? Do players reflect on these topics? Are they interested in thinking about games in this way?*

The data shows, that most of the session was spent in discussing whatever the player considered important to their experience, which was in most cases (9 out of 11) unrelated to the environmental aspect of the game. I concluded that most of the players did not connect the climate aspect to their experience and therefore discussed it

as an addition to it. This was the case even if they, when asked directly during the activity, answered that the game's central theme was rooted in environmental issues. Some players mentioned the environmental aspect by themselves and some only once prompted by the activity. They were all to some level willing to engage in discussing the topic of environmental agenda in video games.

Some of the selected video games appeared to offer more opportunities for reflection than others. Notably, Red Dead Redemption II did not make any of its three players in the study reflect on climate issues on their own, the players of Death Stranding disagreed on whether the game is or is not about the climate crisis. At the same time, two players (Death Stranding and Horizon: Zero Dawn) considered the climate crisis central to their experience of the game and entered the interview with this mindset, making its structure much different from others.

I concluded that the content of the game matters as much as the approach the player chooses to take when playing the game and talking about it. Detailed analysis of the interview data revealed common themes occurring together with the environmental topic. Putting these themes into context with the reviewed literature resulted in description of possible factors which influenced the participants' reflection on environmental issues in the selected video games. I interpreted this in the context of Muriel & Crawford (2018) and Khaled (2018) who suggest that (critical) reflection is made possible by connecting the game with reality. All of the following factors appear to contribute to or interfere with the overall **tendency to connect the game to reality** when reflecting on its environmental aspect.

The players often related the video game world's environments to real places on planet Earth. These places were often of personal significance to the participant. The tendency to relate the game's world to familiar places may be explained by putting into context of Muriel & Crawford's (2018) finding that players often connect the game to reality through a process of identification. In addition, the link between the digital and the real served as a point of departure for deepening the discussion on environmental issues in the context of the game. I suggest, that players can link their game experience to reality through making **connections to real places**.

The extent of the player's engagement within the discussion on environmental issues in the video game's context appeared to be correlated with how explicit they considered the game to be about them. If they felt the game actively commented on the climate crisis, the discussion on its relevance to reality was made more accessible to both the researcher and the participant.

I discussed with players how a video game can be climate-conscious according to them. The majority of them criticized video games which are too explicit in their agenda and praised instead the usage of implicit messages. A climate conscious video game would be **explicit in moderation** - explicit enough to provide ground for further discussion and implicit enough that it does not overwhelm the player with its agenda and cause them to reject the opportunity to reflect.

The video game itself fulfilling singular environmental aspects, proposed by reviewed literature did not ensure that the player would on their own reflect on environmental issues in the game's context. I examined some of the ideas in the reviewed literature: realistic ecology of the game environment (see 4.2.2), dissonance encouraging critical reflection (4.2.3), explicitness of environmental issues in the game (see 4.2.4), identification helping to connect the game to reality (see 4.2.1). I also recorded some hints of players empathizing with the game's characters (in 4.2.2, 4.2.3). Abraham (2018) proposes aesthetics to be effective in triggering reflection without simulation rejection, Abraham & Jayemanne (2017) and Chang (2013, 2019) argue for more realistic ecology and the validity of the environment's existence outside the player's perspective. Backe's (2017) framework features more of these factors as contributions to a whole. This research has explored the possibility that future inquiries into these phenomena through player research may explain which factors (or their combinations) from previous literature are recognized and considered by the players themselves.

Notably, the **aesthetics and highly detailed ecology of the environment alone did not seem to be enough** to be relevant to environmental topics in the players' minds. This was most apparent with the players of Red dead Redemption II, as they thought it features very little explicit commentary on climate change. Two out of three players of Death Stranding attributed most of the video game's environmental commentary to aesthetics and both were sceptical about the game's climate theme as

something central to their experience. On the other hand, an inaccurate and incomplete representation of ecology in *Cities: Skylines* prompted its two players to critically reflect on these problematic areas.

This research has also shown that future studies ought to take the variability of player attitudes toward this topic into account and to reexamine the player's role not as a receiver of the game's content - which is the focus of most reviewed literature - but as a co-author of their experience as e.g. Miguel Sicart has already argued in 2011. The amount and content of reflection has varied not only by video game, but by the participant as well. It matters, **where the player is coming from** - their background, nationality, their attitudes and opinions, and the way they approach the medium of games.

Since the perception of the video game is influenced by the player's attitude, we can note that video games do not have to function as triggers of reflection on their own. They can function as a piece of a larger puzzle of emerging ecological thought prompted by other media consumption, conversation with peers etc. A climate conscious video game may become a point of departure for a discussion, just as it has done in this research.

Some of the players I spoke to were hopeful and some expressed **disillusionment** over video games functioning as messaging platforms. Previous research (Muriel & Crawford, 2018; Khaled, 2018) already suggested that there are players who wish to be responsive to opportunities of reflection by connecting the video game to reality, and players who tend to reject them. Some participants also felt **disconnected** and alone with their thoughts. I find it crucial for future research to be mindful of all perspectives on climate-conscious games and to not privilege one over the other. All approaches to video games are relevant and valid.

This research aimed to bring attention to the lack of inclusion of player perspective in academic work concerned with climate conscious non-serious games. It also presented some common themes in how players thought about the game's connection to reality. These themes may point towards what to focus on in future research of the design of climate conscious games, but also in finding a language for communicating

on these topics with players.

I propose that we widen the scope of our field to include the player perspective into it. This should be accompanied by a shift in the way we describe video games in research. Video games themselves do not do anything specific on their own, video games are experienced by a person and they have influence on that person's life. I propose that we bring the player's co-authorship of the experience front and center by making it explicit in the academic discourse on video game experiences. Thus, we can change "*this particular game depicts X and Y and does X and Y*" to "*this particular game features X and Y elements which the players may interpret in X and Y context as X and Y*". In the same manner, I can reformulate the present research question from "*Is the game capable of triggering reflection?*" to "*Does the game offer opportunities for the player to reflect?*".

Previously, I mentioned a divide between those players who choose to connect games with reality and those who do not. I suggest that future research includes inquiries into both types of players. For the former, to better understand the workings of such reflection, for the latter, it might examine the reasons why they reject such climate messaging. These perspectives should have equal weight in future research. It is also vital to stay realistic and aware of the potential limits of video game activism.

I propose that if the wish is to raise awareness about the complexity and urgency of the climate crisis through video games, it is time to turn focus on the player base. Mainstream climate conscious video games could act as a powerful catalyst for a culture-wide discussion.

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