Post-optimism: *Chants of Sennaar*, *Norco* and the Problem of Optimism in Environmental and Ecogames Gamestudies

Conor McKeown
University of Stirling
conor.mckeown@stir.ac.uk

ABSTRACT

Ecogame scholarship, the subdiscipline of videogame studies concerned with environment, has a shortcoming. I establish how ecogames changed from a deeply critical to a problematically optimistic field. Reflecting on recent developments I suggest ecogames must take a stance against optimistic climate rhetoric. I analyse two games: *Chants of Sennaar* (Moya and Panuel 2023) and *Norco* (Yuts and Gray 2022) arguing they highlight the potential and pitfalls of games as environmental texts. *Chants of Sennaar* suggests ways of living after climate catastrophe but promises a utopia. *Norco*, comparatively, makes no promises but risks inaction. Together they show that the games industry and game studies cannot just promise brighter futures but that an attitudinal shift is required. Ecogames and ecogames criticism should not operate under the assumption that climate problems can be *solved* but must look beyond unrealistic optimism, helping fellow climate survivors by rejecting desires for ideal lives, embracing instead a desire for least bad outcomes.

Keywords

Ecogames, environment, climate, migration, integration

INTRODUCTION

The Intergovernmental Panel on Climate Change (IPCC) started in the 1990s to produce papers collating research from 100s of researchers from over 25 countries to determine the extent of climate warming and the role humanity has played (Parker 2013). Since then, the goals have shifted somewhat, to the extent that the recent AR6 synthesis report in 2023 was more of a reminder that things were really as bad as many believed them to be (Calvin et al. 2023). Previously set targets aiming to limit warming under 1.5°C would not be hit, that catastrophic warmth would be seen somewhere between the late 2020's-30's (p. 12) and that the true impact of climate warming would be catastrophic.[1] However, focusing only on the IPCC would be very shortsighted.

---

[1] That said, it is often difficult to parse exactly what's meant by the IPCC's often evasive language of 'Climate Risks' that include 'Losses and damages related to climate change for humans and ecosystems' or with 3.6 billion people being referred to as 'highly vulnerable to climate change' and 'human and ecosystem vulnerability' being 'interdependent'. The most transparent language is arguably 'human and ecosystem vulnerability' being 'interdependent'. The most transparent language is arguably 'human mortality and morbidity'. This euphemistic language, put into plain speech, should

One reason for seeing the IPCC as short-sighted are its constant references to 'future' or 'near future' impacts that climate change will have. It is not impossible that the delaying language used in IPCC reports has contributed to the lingering misconception that climate crises are something that are coming; that they are on the way, in the future and maybe even avoidable. Looking at the – admittedly now dated – '2° Challenge' climate-calculator posted on CNN's mini site headed by John D. Sutter "Two°", there's a stated goal of stopping 2° warming lest environmental crises should ensue. This notion, that climate change is a preventable problem for the future, is arguably common as it appears as a held myth in popular sources such as the WWF's list of top 10 climate myths (WWF 2016) and in academic sources that suggest a correlation between findings that ~50% of a widely surveyed North Americans do not believe scientists can predict future climate, and inaction on reducing personal carbon emissions (Fleming et al. 2021).

One could be misled by popular reporting of climate targets and the evasive language of the IPCC. Hundreds of thousands of deaths can already be linked directly or indirectly with the impact of climate change (Donatti et al. 2024). Indeed, hundreds of thousands may be a conservative estimate of the deaths to climate disasters as delving deeper into the paper by Camila Donatti that utilises the Emergency Events Database from 2000-2020. Figures show billions of humans being affected climate-related disasters. In stark contrast to the IPCC we are seeing increased reporting of disasters on the ground level, such as in the wide-spread reporting of around 1,300 deaths during this year's Hajj pilgrimage (Haghani 2024; Loanes 2024). Concern over the increased danger of the Hajj is not new to academics, however, and those in relevant field have been warning of the need for increased awareness and – more importantly – preparedness for many years (Yezli et al. 2024).

Related to and resultant from these disasters is increased climate migration, and the creation of 'climate refugees' (though I will challenge this term below). Lawrence Huang's "Climate Migration 101: An Explainer" (2023), a systematic review of sorts, makes clear: while climate is often not the main reason for migration, it is often a hidden factor. People's across the world are moving because of a lack of resources, which is leading to increased prices, which is leading to wars. This is increasing the strain on the countries migrated to, and the resulting feedback loop is currently not benefitting anyone.

It is vital that western scholars understand that the deaths and increased migration we are seeing is far more complex than just a signal flare to the West that this climate crisis 'has begun'. We can see this more clearly reading through the lens of the people of Tuvalu that were so flippantly dubbed 'climate' or 'environmental refugees' (Rayfuse 2009). Some people of Tuvalu resist the banner of 'refugee' which was viewed by some as a pejorative term; as being indicative of being a 'second class citizen' (Farbotko and Lazrus 2012). Rather than seeking refuge from nations not as clearly affected by climate change, the people of Tuvalu have shown a desire to continue their complex and cosmopolitan seasonal migrations to and from their sinking island nation. Farbotko and Lazrus are quick to remind us that the displacement of those in extreme climates are not to be read as a canary in the coal mine to those that live in more moderate climates. Indeed, to do so is to misunderstand what living in a climate crisis is like: it is unlikely that there will be a pronounced and temporally bounded state of crisis comparable to what many experienced in the COVID-19 lockdowns. This same consideration should be extended to those who continue to pursue the Hajj; this is not a line in the sand that will straightforwardly impact other nations. Mecca, like Tuvalu, will not be moved in the minds of those that regard these places with significance. Instead, new relationships between

be translated as 'mass deaths, the loss of entire cultures, species eradication and an inability to sustain life in a way that would be recognisable to those of the early 21st century'.

peoples and places will emerge, likely in ways that trouble the comprehension of those that lack the cultural connections.

It is important, however, not to imagine shared climate beliefs between demographics and geographies. Just like those discussed above, there are reports of evangelical Christian sects in the USA holding "complex relationships between religious and climate beliefs" (Carr et al. 2012). There are crossovers between this demographic discussed by Carr and the supporters of Donald Trump reported to have collapsed due to overheating and dehydration in rallies in North America (Snow and Engle 2024). I will return to this in discussing *Sennaar* but, put simply, that humans are collapsing on pilgrimage to Mecca and, at a very similar time, at Republican American rallies, demonstrates the global impact of imminent climate collapse.

This section was meant to establish three things: that the planet is already facing an environmental crisis; that a side-effect of this crisis is increased migration; that this migration is a complex social issue in which those migrating do not necessarily see themselves as 'climate migrants'. I establish these three realities to better create a contrast against the current state of research into games and the environment that I will unpack below.

Ecogames and the Optimistic Turn

Although it has gone by many names, the subdiscipline of game studies dedicated to understanding gaming's relationship to the environment was recently dubbed 'ecogame scholarship' in the collection by Laura op de Beke, Joost Raessens, Stefan Werning and Gerald Farca (2024). Taking the name from the 1970 videogame/art installation, ecogame scholarship, or simply 'ecogames' as I'll refer to it, is useful for its brevity and recognisability. However, it may also be useful as a term for a specific approach to the study of games and the environment characterised by an emphasis on thinking about climate crisis as something in the future and emphasising the importance of 'hope', both of which are hallmarks of the most recognisable figures in ecogame studies, and both of which I aim to critique in this paper.

Becoming a tangible trend in academic debate around 2010, ecogames reached prominence due to Alenda Y. Chang – a now established cornerstone of ecogames – completing their highly influential publications.[2] At the same time, however, a much less discussed figure, William Sims Bainbridge, was also publishing several papers on games and the environment. Reading between Bainbridge and Chang's publications around 2010 is worthwhile, although few have done so. Neither mention the other's work, and comparisons of their work only begin to become visible in PhD theses and the like significantly later (McKeown 2018). This is relevant because while Chang and Bainbridge's work initially appears complimentary, drawing attention to the limitations of games as tools for

---

[2] It's worth mentioning that there were other scholars studying games and the environment at the time in passing fashions. Ian Bogost, for one, mentions the capacity of games to play a role in debates around environmentalism, drawing on an earlier 2006 Gamasutra (now Games Developer) article by Patrick Dugan. His work raises a much larger point about the capacity for games to have their own distinct rhetorical form (Bogost's concept of procedural rhetoric) (Bogost, 2007). Likewise, Jane McGonigal, mentions the potential of games to play a role in solving environmental problems, but does so only to prop up the idea that play and games can solve almost any problem. Chang mentions the work of both of these authors, so it's reasonable to state they had a role to play in the early stages of ecogames as a subfield. However, their roles have been supportive as both and many others have not sustained an interest in studying games and the environment.

environmental awareness and seemingly paving the way for a disavowal of the games industry (perhaps due to its material impact) this was not to be. What's more, in finding the distinctions between these two scholar's works, it is possible to see the seeds of ecogames' current optimistic discourse.[3]

Bainbridge and Chang both emphasise scientific studies of agriculture and the environment as the basis for their examinations, but their analyses are augmented through distinct theoretical frames. Yet their frameworks alone cannot account for their difference in interpretation of games and the environment. Bainbridge's studies largely take the form of an examination of the social ramifications of the subject matter. He discusses class and consumption, focusing on the real-world impact of games, going so far as to warn "virtual worlds could encourage people to abandon efforts in the physical world to preserve wilderness areas and biodiversity" (Bainbridge 2010b, 3208). His passing engagement with games and natural environments (Bainbridge still researches virtual worlds but does not appear concerned with environmental questions as much) is unabashedly critical. He notes how *World of Warcraft* (Blizzard, 2004) "would prepare people to reconceptualize conservation in terms of information, and facilitate a radical reduction of the scope of environmentalism, to merely ensuring clean air and water for human use, and letting much of wild nature die after it have been digitally documented" (Bainbridge 2010a) and doubts, even if there were positive lessons to be learned from games, whether or not they could transfer from one setting to another (Bainbridge, 2010b). Bainbridge draws on Cocking's work to imply it is unlikely that knowledge gained in one setting could transfer to another (Bainbridge 2010a, 150). He suggests that online games with ecological themes provide "many experiences to heighten environmental awareness in players" (150) but does not suggest this could have anything but limited value without also providing solutions in the real world.

Chang, by comparison, draws on literary studies and philosophy such as Leo Marx's *The Machine in the Garden* and Timothy Morton's work on ecological thinking (A. Y. Chang 2012). However, Chang's conclusions in this context are somewhat surprising. Given Marx's urge to look past media for solutions to environmental issues[4] (Marx 2000, 365),and Morton's unflinching acceptance of futures without humanity (Morton 2013, 94), Chang's conclusions seem oddly optimistic. She reflects "games may serve as both archaeology and premonition, warnings to the wise as well as evidence of past folly" (A. Chang 2013), and later "games in particular and digital media in general not only refashion other media but also have curative potential. Media are undeniably part of the problem […] but they may also present part of the solution" (Chang 2019, 234–35). Although Chang's first publications, developed alongside her PhD thesis, such as "Back to the Virtual Farm" criticised farming games' poor handling of natural resources and simplified farming to a harmful pastoral idyll (Chang, 2012) there remains a hopeful tone. Chang writes "we need game environments that respond to human agency and yet seem to possess life independent of player actions: this would constitute a radical but constructive decentering, as well as a call to wonder actively at the place of people within natural environments, both real and virtual" (15). The problem is not *games* to Chang: it's just *these games*. For Chang, it seems, that gaming itself is mired in the industrial complex (something Chang seems to be well aware of as they mention McDonald's sponsoring Zynga games)

---

[3] It's also worth noting, though briefly, there is no recognition of William Sims Bainbridge's work on games and the environment in the *Ecogames* collection .

[4] Leo Marx concludes his study of American writers up to the 20th century claiming they have served society well by "clarifying the situation" but that "to change the situation we require new symbols of possibility, and although the creation of those symbols is in some measure the responsibility of artists, it is in greater measure the responsibility of society" (365).

is not an unsurmountable problem: it's just that several games she happened to study happen to have got it wrong.

By the time Chang published her full-length book *Playing Nature* (2019) her argument for games seems to have shifted. While her thesis in her doctorate and publications could be viewed as sceptical of the games industry, there is no doubt that her full-length publication is prescriptive, squarely aimed at encouraging the creation of certain kinds of games: ones that effectively mediate a sense of scale or non-human planetary time, in a more immediate fashion, writing: "games need only a little encouragement to grow. Already, they are inherently multiscalar – melding the quantitative and the qualitative, the experiential and the analytic, the computational and the graphical – and a universe of questions awaits" (98). For Chang, the right games, made the right way, can play a role in raising 'awareness' about environmental concerns and perhaps even change players' attitudes in the real world.

Chang presents data from Nancy M. Wells, and Kristi S. Lekies that people rated the "many hours spent outdoors in natural habitats during childhood or adolescence" (Wells and Lekies 2006, 5) as well as media and books as reasons for holding environmental attitudes. However, no evidence is given to suggest their empathy leads to action. In truth, whether or not empathy for the environment leads to taking action is an ongoing sadly frequently overlooked debate around 'behaviour change' and the multitudinous factors that may contribute to it (Heimlich and Ardoin 2008); a debate that, I would think, has a simple answer, given that environmental problems are ongoing, not ceasing. In the wake of Donald Trump's re-election in 2024, the possible repeat of the withdrawal of the USA from climate agreements, the missing of climate targets the world over, it seems obvious to me that to the world at large the environment is not something people care about.

It's worth stating that Chang does not simply believe video games can 'save the world', such as Jane McGonigal, who promotes the idea: "If we want to solve problems like hunger, poverty, climate change, global conflict, obesity, I believe that we need to aspire to play games online for at least 21 billion hours a week". It would be doing a leading voice a disservice to imply as much. Chang's complex reading of Latour, Morton and Haraway, considering the posthuman and interspecies implications of games and play (p. 113). The fourth chapter of Chang's dedicated study of ecogames is dedicated to 'entropy' and encompasses a dazzling whistle stop tour through the materiality and planned obsolescence of games after James Newman (Newman 2013) to the material impact of cloud gaming and other forms of technology after Jussi Parikka (2013). Indeed, the chapter even includes observations on "recent scares over male infertility caused by excessive laptop use" making very material connections between games and the continuation of the human race (154). Arguably, Chang's work paves the way for Jaymanne and Abraham's work that asked "where are all the climate games" (B. Abraham and Jayemanne 2017) although perhaps more boldly, Abraham's own work, *Digital Games After Climate Change* (B. J. Abraham 2022) on the materiality of games and gaming that ask where all the games about environmentalism are but also considering the nature of the mining practices and carbon consumption that weave a web of human and other animal suffering throughout the world – Abraham's "periodic table of torture".

The Problem of Optimism

We can see optimism in scholars whose work extends directly from Chang, citing her work and extending the main assertions (Condis 2020) (Germaine) to those who extend her work in passing (B. Abraham and Jayemanne 2017) to those whose work now exists in a post-Chang context without

directly mentioning it (Hemmann 2021). Even Abraham, whose sobering examination of the direct impact of mineral mining in the production of games consoles and computers more generally, still seems to have a hopeful outlook, going so far as to threaten CEOs with the pithy "climate change is coming, but so are we" (B. J. Abraham 2022, 247). At the most basic, there seems to be an implicit understanding that criticisms of the environmental impact of games must also contain some degree of hope.

The idea that players should have 'hopeful' outlook after engaging with an ecogame is made explicit in the "Environmental Game Design Handbook" penned by Chang and others (2022). In the handbook, aimed explicitly at industry professionals, Chang et al claim that if a player of an ecogame is given "knowledge, pro-environmental attitude, efficacy, and hope […] they are highly likely to act in a pro-environmental manner" (7). It's worth noting, the researchers do not support this claim directly with any study. Indeed, we must go back to Bainbridge and Cocking to wonder aloud: can knowledge in one setting transfer meaningfully to another? It's not just Alenda Chang that is involved in professional consulting with games companies: Benjamin Abraham has also set out to become a consultant. This could work very well perhaps, as Abraham's knowledge of the material cost of gaming could translate to real-world impacts in game creation, though, given the enormous profitability of games, and the ascendency of Nvidia to one of the most profitable companies in the world following their current mineral mining depencies, I am extremely doubtful that they would adopt any meaningful climate actions if it meant sacrificing market share. It is not just Abraham either, as in Europe STRATEGIES is the short name for the Horizon Europe funded project Sustainable Transition for Europe's Game Industries. Their mission is to "support Europe's game development industries in making vital changes to their business and production practices in support of reaching the emissions targets of the European Green Deal". This has, so far, taken the form of the aforementioned *Ecogames* collection and the guide to making climate aware games.

The problem with this approach is that it suggests 'hope' in a manner that seems painfully neoliberal. It implies there must, not only, be a solution, but that it will be something participants will also enjoy. Forgive my cynicism, but if something seems too good to be true, it probably is. These 'hopeful' greening policies seem somewhat tone-deaf looking back on the very small sample of papers on environmental deaths and displacements I mentioned at the beginning of this paper. Ecogames, though undeniably coming from a morally upstanding place, may currently be performing the same greenwashing practices that several of its most prominent authors are critical of. As highlighted by Abraham throughout *Digital Games After Climate Change* games studios are not currently being held legally accountable for their energy consumption, are not subject to taxes in any way for encouraging the extreme energy drain of graphically demanding games. However, it is beneficial for corporations involved in the games industry to be aware of research and consulting solutions that provide the basis for *claims* that they are taking action to mitigate climate impacts, in the event that carbon taxes are ever suggested. In truth, this may be little more than marketing tactics when we reflect on the facts of gaming's carbon footprint as illustrated by Abraham's own studies. Games companies do not have meaningful solutions to climate change, but through ecogames have strategies in place for offsetting any potential future impacts to their earnings. And so, we are left with facing the 'Jameson/Zizek/Fisher doctrine': that it is "easier to imagine the end of the world than the end of capitalism" (Fisher 2009, 2).

In summary, while ecogames as an academic pursuit began as a deeply cynical one, it has matured into a system that may be upholding damaging practices as much as critiquing them. However, we do not need to stop exploring the relationship between games and the environment or attempting to make the industry as good as it can be (I am personally very actively involved in game play and

creation with industry partners). The problem is that the current discourse is overrun with attempts to 'align' (to use corporate jargon) an industry with a world that is already undergoing an environmental crisis. To address this balance we need, instead, to develop a healthy rhetoric of viewing videogames as tools for the world as it is. This is because we cannot stop global warming, climate migration, the wars and heartaches this is precipitating; we can only hope that games can play some part in helping to engineer people into welcoming the shifts in culture and society that will be required the looming future.

Chants of Sennaar

Chants of Sennaar is set in a world somewhat reminiscent of our own, but dominated by an enormous Babylon-like city in the midst of a desert. The city appears to be almost post-apocalyptic: the remnant of a once great civilisation or civilisations now torn apart by conflict. One of the striking losses caused by this conflict appears to be communication between the various cultures that inhabit the super-city. The city is home to a peaceful, music loving tribe of peasants, a warlike and fascist race of pseudo-Spartans, self-interested artisans, closeted academics and a collective of futuristic but wheelchair-bound media addicts. Each of these distinct cultures have lost their ability to communicate with any of the others with the consequence being the super-city is characterised by boundaries and division.

As the game progresses it becomes increasingly clear that the player's role is to bring these different cultures together by deciphering their various languages, restoring a shared means of communication and breaking down the city's barriers. Ultimately, the game appears to be a rallying cry for increased social integration and appears to be particularly critical of competitive gaming. In the game's final area, in which the futurist but zombified constant consumers of media dwell, the player realises they are the agent of one such future citizen who's making a valiant attempt to disrupt the constant stream of media keeping the city's most powerful Citizen's ensnared. The player's role is to learn how to read the various languages used by the city's tribes through a mixture of context clues and conveniently provided Rosetta stones that help narrow down the possibilities. While the core mechanics of *Chants of Sennaar* are simple, little more than a guessing game, the fundamental lessons being spoken to are fascinating. Rather than having the player learn a specific language, as one would through something like "Duolingo" for instance, the player must instead attempt to piece together meaning from more fundamental elements of these languages. Grammar and syntax; whether or not the tribe uses pronouns; word order in sentences… these elements must be fathomed with very little direct linguistic intervention on the part of the developers. Players are only infrequently told exactly what to do. In this, the experience is reminiscent of 'immersive' courses in language learning. That the player's learning the languages mirrors the increased empathy between social orders and tribes is a welcome bonus. The more we know, and the more capable we are of helping others communicate, the richer the world we inhabit is, and the easier it becomes to move through the world.

Chants of Sennaar is a timely game, as migration is increasing to an all time high across the world. There are many complex reasons for this as discussed about, though, climate is always playing a part. Much of this has to do with changes around birthrates, said to be 'declining' by many, though 'normalising' after the post-war agricultural revolution may be more accurate (Kramer 2013, 44). Women are excelling in educational contexts, entering the workforce and regularly seeking lives into which children would not fit (or not the required 'replacement amount') (Huber, Bookstein, and Fieder 2010). Susanne Huber's work also highlights how rising costs are making child-rearing seem

like a challenging expense (2010, 582), something that seems particularly visible when comparing resource available to education level. In this, we can return to climate as costs continue to rise in relation to increasingly monetised natural resources. So, naturally, nations within the G7, with dwindling populations, must turn to developing nations for an influx of citizens (Kamin and Langhammer 2024). However, this is – in the USA and Europe at least – being viewed tremendously negatively by citizens: migration was one of the main policies of Donald Trump's election campaign (Waldinger 2018) and it is a hotbed issue in central Europe (Schmidtke 2024). Yet, the fact remains – the societies we live depend on citizens and without migration the societies of today could well crumble. Looking at statistics from Poland, for instance, it seems highly likely that migration resulting from the ongoing war in Ukraine has had positive net effects on Poland's currently booming economy (Górny and Van Der Zwan 2024).

It should come with little surprise in this context that *Chants of Sennaar* is set amidst a sprawling desert. Focusing on this provides the player with a possible interpretation of the otherwise mysterious world in which the game is set. It presents a future in which many cultures are thrown together in reaction to dwindling natural resources but – initially – fail to get along. Being forced together does not result in harmony but increased tribalism and stronger senses of one's own culture as something to be understood in rejection of another 'I am what I am not'. It's possible to see this happening in the UK where our history of failed cultural integration projects, such as the "Full and Equal Citizens: A Strategy for the Integration of Refugees into the United Kingdom" that launched in 2000, has instead resulted urban areas characterised by single cultures and communities with little feeling of assimilation (Finney and Simpson 2009).

I am not proposing that all peoples moving to a new home must adopt the culture of their new state, of course and neither is the game in question. Rather, I am asserting that a processes of multidirectional growth is a sign of a society developing in a positive fashion. These are the tools the player must fathom and the sort of tools that work best in difficult cross community efforts. Looking at efforts like football where players of different backgrounds are brought together without a common tongue but shared rules of the game they are playing, suggests how fundamental, pre-linguistic communication skills are essential for building lines of empathy and community. This is exactly the type of game/tool that ecogames should be concerned with creating. As I have established above, migration is happening due to climate change. Society is changing because of the environment. It seems churlish to continue attempting to safeguard something (a western 'nature') when societal shift is already, complicatedly, underway.

Where *Chants of Senaar* unfortunately falls flat somewhat is in its ending. Once the player manages to decipher the various languages and assist the cultures in shared communication, the world around the player shifts. Formerly fascist hostiles are seen in the gardens of the peasants, the artisan class mingling with the scientists and so on. While undeniably heart warming and certainly a scenario to yearn for, this kind of seamless, easy integration is not the reality of social integration which is long and difficult and shifting. As such, *Chants of Sennaar* while being timely, ultimately makes promises about the value of shared communication that are simply disingenuous. Put simply, we do not know for sure what the outcome of enhanced tools of cross-cultural communication will be; it would be unethical to promote the notion that this one shared set of values could or would result in an enhanced, peaceful society.

Although *Chants of Sennaar* is a beautiful game, an ode to the power of prelinguistic communication and a timely reminder of the necessity for increased cultural integration in a resource scarce world, it overplays its hand and makes promises of a utopian future that, given the current results of attempts at cultural integration, do not seem likely. However, this is not a reason to give up on the

attempt. On the contrary, as I will argue below through *Norco* I think it is us that have the problem, in expecting solutions to unknown problems. An attitudinal shift is in order in which we come to accept difference as an acceptably positive outcome.

Analysis of Norco

The city and surrounding biome of *Norco* that makes up the game's environment is subsumed by an oil refinery that looms always just over the horizon. There are robots and strange alien lifeforms – the usual trappings of fantasy. The game's core mechanics will be familiar to anyone who played the point and click adventure games of the 1990s. Players control Kay – a young woman who left home to join a military group, travelling around America in the midst of an ever present war, that doesn't seem to have easily defined opponents. The game begins with a cut-scene. Kay's brother calls her, asking her to come home. Kay's mother passed away from cancer caused by Norco's toxic environment. On arriving, Kay can't find her brother. It is up to players to direct Kay through the world of *Norco* in an attempt to track him down. In doing so, the player will engage with some limited point and click combat mechanics, discuss the world with a range of odd characters, engage with a vaguely sinister but ultimately pathetic astro-religious cult before exploring their makeshift spaceship in Louisiana swamps.

Norco is so relevant to optimism in ecogames because it does not present itself as specifically a future allegory or even an alternative timeline. *Norco* is a vision of our present. Yes, it blends our present with elements typical of science fiction. But doing so only serves to conflate present and future, just as it brings the impacts of climate disasters still considered by some to await us years in the future into its story. *Norco* highlights just how many 'presents' there are, and how odd one would seem to people not currently immersed in it. This is made clear in an interview with the game's artist creator Yuts and photographer Richard Sexton. Sexton remarks of the real-world town of Norco Louisiana – a town that, in reality, lost its original name having had it replaced by the North American Oil Company that built their refinery there – "wow, I cannot believe that anybody lives here. Because all that you see is this looming metropolis past the swamp that is just a bunch of petrochemical and oil refining, and there'd also just been an explosion out there." To this, Yuts simply replies "That's right". Yuts is immersed in a land that has been reshaped by climate catastrophes already; he lived through the 'cat cracker' explosion of 1988 and the events of Hurricane Katrina. But Yuts does not consider themselves a 'climate refugee'. Yuts remarks "people living hard-up against fence lines, residential displacement by refineries, floods, natural disasters, coastal erosion, all of that—those are all things that are everyday realities in Louisiana, and yet, I don't think of Louisiana as a dystopia. I think of it as a complicated place."

An important moment in the game is when the player must attempt to gain access to the spaceship. There are various ways to do this though they generally revolve around the character's relationship with 'Bruce': a petrochemical 'nepo-baby' of the oil refinery's gentry that has joined a cult to get his father's attention. Distracting Bruce allows the player to gain entry to the spaceship and find Kay's brother in the first of 4 endings of the game. The menacing cult leader 'Pawpaw' is holding Kay's brother in an attempt to draw Kay to him – out of a potentially mistaken belief that she is a figure of significance in attracting an alien lifeform to the planet. While this is never confirmed or expelled, it's hinted at that it – largely – doesn't matter. The most accessible endings of the game are:

1. Kay walks away from the situation, jumping into the swamps of Norco, leaving her brother and the cult behind, with little having changed

2. Kay stays on the spaceship, only for it to explode in the swamp.

No matter the case, the oil refinery remains looming in the distance. The 3rd possible ending – although I'm ordering them somewhat arbitrarily – is not much more interesting, though much more difficult to accomplish. Should the player, in a flashback, record a man's voice (Bruce's father), this voice recording can be played to Bruce, prompting him to seek a reunion. This results in him leaving the cult immediately and, humorously, later results in Pawpaw having to leave Kay alone in the spaceship when he must investigate the impact of Bruce's exodus. Kay is then free to save her brother and her mother's body from the ship. Yet, this, again, does not cause any great revelation. Kay doesn't save the world. Indeed, her brother appears more shocked and traumatised than elated. He runs, we are told, 'like a hunted animal into the night' leaving Kay to 'chase him towards the refinery that burns in the horizon'. Ultimately, no matter what we do as players, the world remains unchanged in spite of our best efforts.

It's the 4th possible ending that really interests me. Although functionally similar to the endings that have come before, unlocking it is dependent on taking an action at the very beginning of the game – to collect Kay's childhood stuffed monkey toy from her bedroom. Although initially a figure of the game's absurd, somewhat grotesque horror/humour, the monkey is present in Kay's room and stares at the player in a foreboding manner. The player must 'fight' the money in a series of esoteric challenges, but should they 'defeat' the monkey in a staring competition, the player is given the option to take it with them. This initially seems to be a small joke – it is quite absurd to allow a sci-fi story to play out in its entirety while holding a stuffed toy monkey. However, similar to the tape recorder from before, this moment from the game's past unlocks possibilities. We are able to give the monkey to Bruce. An action he appreciates and cherishes. Yet, rather than giving us a new ending, some ideal ending where actions suddenly matter, nothing significant changes because of that. It is simply a nice to do.

What Norco's monkey reveals to me, though, is the promotion of a different set of skills that we must continue to practice in the face of climate annihilation: being open to the possibility of kindness. Not for the sake of overcoming and averting climate disaster, but precisely for the value of an end within itself; because we cannot know the significance of our solving small problems one at time through repeated acts of optimism.

Discussion

Comparing *Norco* to *Chants of Sennaar* we are shown a game of two halves. On the one hand, *Chants of Sennaar* is almost childishly optimistic in its portrayal of a world united by shared understandings and acceptance of many cultures and linguistic practices. On the other, we have a world where kindness *can* change the world, but no guarantees are given that this world is one that would be any better or worse than any other. *Norco* is not a motivating experience. And yet, it is *Norco* that I'm tempted to pay attention to in the midst of our reality marked by climate crisis. It is no longer viable to act on the planet in search of a simply definable reward. We cannot assume that our reasons for action will be improvement. Instead, *Norco* shows us a world in which we must remain open to possibilities in the face of uncertainty, without being sure that there is a reward, or that we can truly say for certain that what we managed to accomplish was an improvement.

Looking back on what *Chants of Sennaar* represents with real-world attempts to integrate communities and cultures in learning programs and mixed sports teams, from the perspective of *Norco* it's clear that we should not be holding out hope for a perfect world in which integrating more people into a society and culture will result in harmony. Rather, the future *is* going to be difficult. It

absolutely will not be a utopia, no matter what we do. That's the lesson to learn from *Norco*. However, there is still value in *Chants of Sennaar*, even from the vantage point offered by *Norco*. If we do not focus on the ending of the game as a terminal point, but instead on the game's early stages while keeping the ending in mind, it's possible to see that – whatever the outcome, it is better than where we are in those early stages. Attempting to navigate the hostile world of the militant fascists in the early stages of *Chants of Sennaar* we are shown a vision of the world where understanding is impossible, and where that lack of understanding results in persecution. Any growth towards understanding is, therefore, a shade of difference.

In Britain today, to take one example, there are endless potential real-world parallels to draw on where a lack of understanding and lack of cultural integration is leading to actions that result crime and death. But whereas fascist leaning groups within the UK would use this as a reason to abandon hope for integration, looking to the scientific data that began this paper, it's clear that there is no alternative. Humanity is undergoing a social shift in which migration is far more common than it was, but also, due to declining birth rates, far more necessary.

CONCLUSION

I take the position that the warming climate has changed humanity indelibly. It is a driving factor for many of the millions of people that are migrating throughout the world in the mid 2020's. While not always a direct factor in the forefront of migrant's minds, the warming climate is inextricably linked to resource shortages and disruptions to established markets that in turn motivate territory disputes and wars, not to mention ideological shifts. These processes have already begun and the death tolls are in the millions. I will provide a selection of references below to support this as concisely as I can, however, as this is an extremely complex discourse, with race and class attitudes impacting how climate disaster is construed, my list will not be exhaustive. For my purposes, I will only attempt to clarify that we are in the midst of a climate crisis, while highlighting that scepticism about this idea is largely due to middle to upper-class people the world over, being currently able to afford to avoid the impacts of climate disaster. Complicating this from the other end, however, it's important to recognise that people enduring the worst effects of climate change also incorporate these changes into their world-views in ways that cannot simply be disregarded. My reason for establishing this is simply to make clear that the disastrous consequences of warming are already underway, not looming in the future, and – moreover – that we cannot assume the climate crisis will motivate changes in attitude or behaviour. I want to establish that societies and their governments will not start acting more compassionately or taking the climate crisis seriously at some future point, because the climate crisis has already begun, governments have ignored it, and societies have shifted their beliefs to accommodate it.

All that said, however, I maintain that games have a role to play in the 21st century climate catastrophe. That role should be helping to build bridges between societies as in *Chants of Sennaar*, not attempting to *solve* unsolvable problems such as warming and emissions whether through direct engagement with game studio's practices or by raising awareness in players. To be as clear as I can, that does not mean ecogames scholars should abandon the pursuit of lowered industry emissions and more sustainable mineral sourcing. There's no reason we cannot pursue both goals. The problem is holding on to optimistic rhetoric that talks of solutions, fixes, and preservation of an industry appeasing status quo. What is required is an attitudinal shift, post-optimism, to a mindset in which hopes for the best possible world give way to a desire for a world that is the least-worst from a set of meagre options.

REFERENCES

Abraham, Benjamin J. 2022. Digital Games After Climate Change. Palgrave Studies in Media and Environmental Communication. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-91705-0.

Abraham, Benjamin, and Darshana Jayemanne. 2017. 'Where Are All the Climate Change Games? Locating Digital Games' Response to Climate Change'. Transformations: Journal of Media, Culture & Technology 2017 (30): 74–94.

Bainbridge, William Sims. 2010a. 'Virtual Nature: Environmentalism in Two Multi-Player Online Games'. Journal for the Study of Religion, Nature and Culture 4 (3): 135–52. https://doi.org/10.1558/jsrnc.v4i3.135.

———. 2010b. 'Virtual Sustainability'. Sustainability 2 (10): 3195–3210. https://doi.org/10.3390/su2103195.

Calvin, Katherine, Dipak Dasgupta, Gerhard Krinner, Aditi Mukherji, Peter W. Thorne, Christopher Trisos, José Romero, et al. 2023. 'IPCC, 2023: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (Eds.)]. IPCC, Geneva, Switzerland.' First. Intergovernmental Panel on Climate Change (IPCC). https://doi.org/10.59327/IPCC/AR6-9789291691647.

Carr, Wylie Allen, Michael Patterson, Laurie Yung, and Daniel Spencer. 2012. 'The Faithful Skeptics: Evangelical Religious Beliefs and Perceptions of Climate Change'. Journal for the Study of Religion, Nature and Culture 6 (3): 276–99. https://doi.org/10.1558/jsrnc.v6i3.276.

Chang, A. Y. 2012. 'Back to the Virtual Farm: Gleaning the Agriculture-Management Game'. Interdisciplinary Studies in Literature and Environment 19 (2): 237–52. https://doi.org/10.1093/isle/iss007.

Chang, Alenda. 2013. 'Playing Nature'. PhD Thesis.

———. 2019. Playing Nature: Ecology in Video Games. Electronic Mediations 58. Minneapolis: University of Minnesota Press.

Condis, Megan. 2020. 'Sorry, Wrong Apocalypse: Horizon Zero Dawn, Heaven's Vault, and the Ecocritical Videogame'. Game Studies 20 (3). https://gamestudies.org/2003/articles/condis.

De Beke, Laura Op, Joost Raessens, Stefan Werning, and Gerald Farca, eds. 2024. Ecogames: Playful Perspectives on the Climate Crisis. Amsterdam University Press. https://doi.org/10.2307/jj.10819591.

Donatti, Camila I., Kristina Nicholas, Giacomo Fedele, Damien Delforge, Niko Speybroeck, Paula Moraga, Jamie Blatter, Regina Below, and Alex Zvoleff. 2024. 'Global Hotspots of Climate-Related Disasters'. International Journal of Disaster Risk Reduction 108 (June):104488. https://doi.org/10.1016/j.ijdrr.2024.104488.

Farbotko, Carol, and Heather Lazrus. 2012. 'The First Climate Refugees? Contesting Global Narratives of Climate Change in Tuvalu'. Global Environmental Change 22 (2): 382–90. https://doi.org/10.1016/j.gloenvcha.2011.11.014.

Finney, Nissa, and Ludi Simpson. 2009. 'Sleepwalking to Segregation'? Challenging Myths about Race and Migration. Bristol [England] ; Portland, OR: Policy Press.

Fisher, Mark. 2009. Capitalist Realism: Is There No Alternative? Lanham: John Hunt Publishing.

Fleming, Whitney, Adam L. Hayes, Katherine M. Crosman, and Ann Bostrom. 2021. 'Indiscriminate, Irrelevant, and Sometimes Wrong: Causal Misconceptions about Climate Change'. Risk Analysis 41 (1): 157–78. https://doi.org/10.1111/risa.13587.

Górny, Agata, and Roos Van Der Zwan. 2024. 'Mobility and Labor Market Trajectories of Ukrainian Migrants to Poland in the Context of the 2014 Russian Invasion of Ukraine'. European Societies 26 (2): 438–68. https://doi.org/10.1080/14616696.2023.2298425.

Haghani, Milad. 2024. 'Climate Change Has Made the Hajj Pilgrimage More Risky'. 21 June 2024. https://www.unsw.edu.au/newsroom/news/2024/06/climate-change-has-made-the-hajj-pilgrimage-more-risky.

Heimlich, Joe E., and Nicole M. Ardoin. 2008. 'Understanding Behavior to Understand Behavior Change: A Literature Review'. Environmental Education Research 14 (3): 215–37. https://doi.org/10.1080/13504620802148881.

Hemmann, Kathryn. 2021. 'I Coveted That Wind: Ganondorf, Buddhism, and Hyrule's Apocalyptic Cycle'. Games and Culture 16 (1): 3–21. https://doi.org/10.1177/1555412019865847.

Huang, Lawrence. 2023. 'Climate Migration 101: An Explainer'. Migration Information Source (blog). 16 November 2023. https://www.migrationpolicy.org/article/climate-migration-101-explainer.

Huber, Susanne, Fred L. Bookstein, and Martin Fieder. 2010. 'Socioeconomic Status, Education, and Reproduction in Modern Women: An Evolutionary Perspective'. American Journal of Human Biology 22 (5): 578–87. https://doi.org/10.1002/ajhb.21048.

Kamin, Katrin, and Rolf J. Langhammer. 2024. 'BRICS+: A Wake-Up Call for the G7?' Cuadernos Económicos de ICE, no. 107 (July). https://doi.org/10.32796/cice.2024.107.7802.

Kramer, Steven Philip. 2013. The Other Population Crisis: What Governments Can Do about Falling Birth Rates. Washington, DC : Baltimore: Woodrow Wilson Center Press ; Johns Hopkins University Press.

Loanes, Ellen. 2024. 'Why This Year's Hajj Was so Deadly'. Vox, 25 June 2024. https://www.vox.com/world-politics/356624/hajj-mecca-heat-saudi-arabia-pilgrims-climate-change-prophet.

Marx, Leo. 2000. The Machine in the Garden: Technology and the Pastoral Ideal in America. New York: Oxford University Press.

McKeown, Conor. 2018. 'Videogame Ecologies: Interaction, Aesthetics, Affect'. PhD Thesis, Glasgow. https://theses.gla.ac.uk/8878/.

Morton, Timothy. 2013. Hyperobjects: Philosophy and Ecology after the End of the World. Minneapolis: University of Minnesota Press.

Moya, Julien, and Thomas Panuel. 2023. Chants of Sennaar. Videogame.

Newman, James. 2013. Best Before: Videogames, Supression and Obsolesence. New York: Routledge.

Parikka, Jussi. 2013. A Geology of Media. Minneapolis: University of Minnesota Press.

Parker, Geoffrey. 2013. Global Crisis: War, Climate Change and Catastrophe in the Seventeenth Century. New Haven: Yale University Press.

Rayfuse, Rosemary. 2009. 'W(h)Ither Tuvalu? International Law and Disappearing States'. UNSW Law Research Paper No. 2009-9. https://ssrn.com/abstract=1412028.

Schmidtke, Oliver. 2024. 'Migration as a Building Bloc of Middle-Class Nation-Building? The Growing Rift between Germany's Centre-Right and Right-Wing Parties'. Journal of Ethnic and Migration Studies 50 (7): 1677–95. https://doi.org/10.1080/1369183X.2024.2315350.

Snow, Chad, and Nate Engle. 2024. 'Over 100 Heat-Related Patients Are Treated Outside Trump Rally in Glendale'. KJZZ Phoenix (blog). 23 August 2024. https://www.kjzz.org/kjzz-news/2024-08-23/trump-set-to-speak-in-glendale-on-friday.

Waldinger, Roger. 2018. 'Immigration and the Election of Donald Trump: Why the Sociology of Migration Left Us Unprepared … and Why We Should Not Have Been Surprised'. Ethnic and Racial Studies 41 (8): 1411–26. https://doi.org/10.1080/01419870.2018.1442014.

Wells, Nancy M., and Kristi S. Lekies. 2006. 'Nature and the Life Course: Pathways from Childhood Nature Experiences to Adult Environmentalism'. Children, Youth and Environments 16 (1): 1–24. https://doi.org/10.1353/cye.2006.0031.

WWF. 2016. '10 Myths about Climate Change'. WWF (blog). September 2016. https://www.wwf.org.uk/updates/here-are-10-myths-about-climate-change.

Yezli, Saber, Salleh Ehaideb, Yara Yassin, Badriah Alotaibi, and Abderrezak Bouchama. 2024. 'Escalating Climate-Related Health Risks for Hajj Pilgrims to Mecca'. Journal of Travel Medicine 31 (4): taae042. https://doi.org/10.1093/jtm/taae042.

Yuts, and Aaron Gray. 2022. 'Norco'. Windows. http://norcogame.com/.