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# Premediating climate change in videogames

## *Repetition, mastery, and failure*

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**Abstract**

This article starts with the observation that growth-oriented, techno-futurist narratives are predominant in climate change videogames. It then accounts for the lack of variety by arguing that these videogames are privileged expressions of premediation. Premediation cultivates a multiplicity of future scenarios, while at the same time delimiting them to suit presentist concerns, evoking a sense of inevitability and predictability strengthened by repetition. The iterative, branching temporality at work in this logic is deeply ingrained in videogames, as the trope of mastery through repetition and its analysis requires attentiveness to the affective dimensions of gameplay. If videogames are to engage with the climate crisis more productively, they must develop different temporalities in which the potentiality of the future is preserved. In this article, I analyse the games *Fate of the World* and *The Stillness of the Wind* to demonstrate how videogames premediate climate change and how they can explore other temporalities latent in the present.

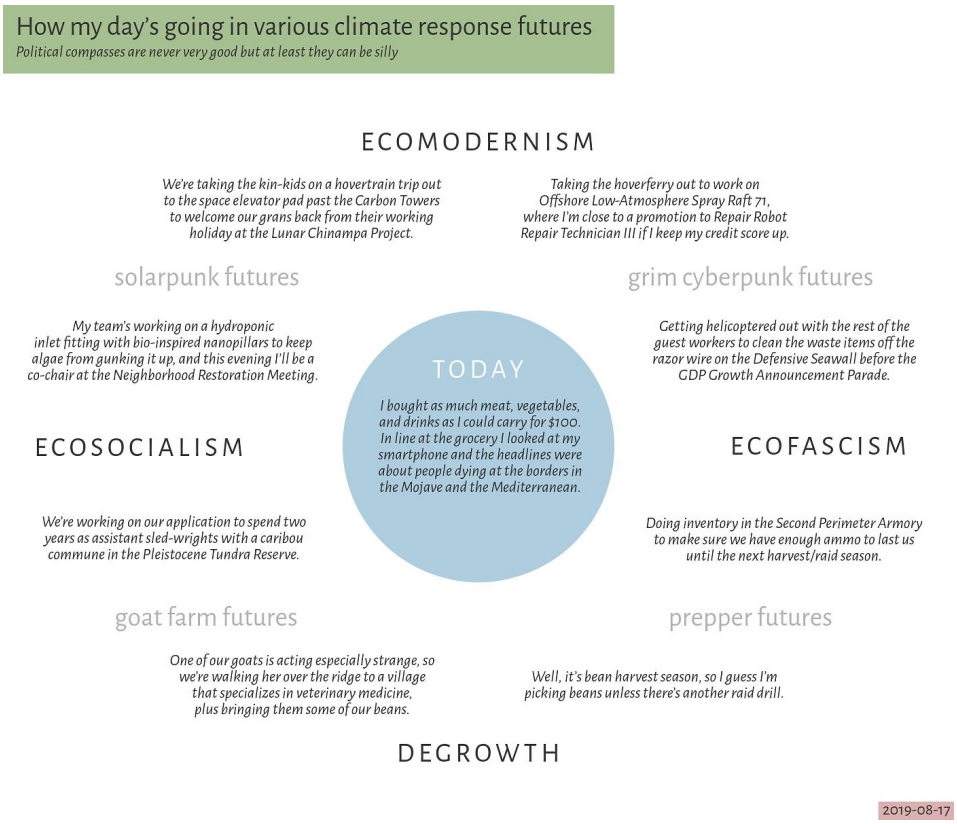
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## Introduction

"How is your day going?" Depending on different climate change responses, your future answer may be any of the variations collected in Charlie Loyd's diagram (2019) (see Figure 1). In a number of joking but astute vignettes, he plots his visions of the future along two axes that measure political ideology and technological or economic outlook. What may strike us as we read through them is that some of these futures seem more familiar than others. We know about prepper futures from American television shows like *Doomsday Preppers* (Madison et al., 2011–2014), and cyberpunk has been an established science fiction sub-genre since the eighties, popularised in novels like William Gibson's *Neuromancer* (Gibson, 1984) and films like *Blade Runner* (Scott, 1983).

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**Figure 1** Climate Futures by imagery specialist Charlie Loyd (@vruba on Twitter)




*Source:* Loyd, 2019

The ecomodernist futures in the diagram are some that feel especially familiar within this genre, with their robots, hover trains, and space elevators, but also – notably – their aerosol injections ("low-atmosphere spray") and carbon capture and storage infrastructures ("carbon towers"), which rely on technologies already being cautiously considered in climate change mitigation by the Intergovernmental Panel for Climate Change (Edenhofer et al., 2014: 484). In juxtaposition to these more familiar visions for the future, the "goat farm futures" in the ecosocialist, degrowth corner of the graph appear all the more mysterious. Where are they to be found in popular media? What television shows, what novels, what movies, and what videogames spring to mind?

This is where especially videogames come up short. As I have argued elsewhere, although many videogames are increasingly interested in engaging with environmental issues like climate change, they also display a "strengthening commitment to narratives of progress and growth" (op de Beke, 2020). This trend evinces a lingering sense of optimism about the time to come, induced by a techno-utopianism that is fast becoming outdated. If anything, the years since the Great Acceleration of the 1950s have demonstrated that techno-industrial expansion comes at a terrible price, to be paid by future generations whose lives

will be irrevocably marked by climate change. Aleksandra Wagner and Damian Gałuzka (2020) also find that many videogames reproduce rather than criticise hegemonic discourse on climate change and energy transition. In their study of the resource-imaginaries of 51 energy-themed videogames, they conclude that these games continue to associate fossil fuels with "stability and centralised control", while casting renewables as marginal to the resource landscape (Wagner & Gałuzka, 2020: 9 of 10). The representation of resource politics in games thus reproduces "a hegemonic discourse governed by neoliberal market logic, focused on control and individual profits. The better future is an extended present with new technologies and old rules" (Wagner & Galuzka, 2020: 10 of 10).

To account for the tenacity of these growth-oriented techno-futures found in climate change videogames, I argue for the overriding influence of a certain ludic temporality, one that Richard Grusin (2010) has dubbed premediation. Premediation involves the act of cultivating a multiplicity of future scenarios, while at the same time delimiting their scope and variety to suit notions of plausibility that are fed by deeply presentist concerns. Premediation satisfies the desire to control the unknowability of the future by imbuing it with a sense of inevitability. In this article, I read climate simulation games as specifically illustrative expressions of premediation. By doing so, I expose an important affective dimension rarely addressed in the more common kind of proceduralist criticism that is often applied to climate simulation videogames. My argument thus also includes a methodological intervention. Too often simulation videogames are read as purely rationalist arguments instead of deeply affective interactions. Consequently, throughout this article, I want to make the case that proceduralist readings of videogames must be complemented by methods that attend to the affective dimension of play. In such an approach, a focus on the temporalities at work in videogames – such as repetition, mastery, and failure – is crucial.

## Green media, green games

The study of climate change videogames is part of the larger field of green, or environmental, media studies. Following the rise of climate change fiction and its enthusiastic embrace by literary scholars (Johns-Putra, 2019; Trexler, 2015), a similar undertaking has taken off in the field of videogame studies, where questions about how videogames engage with the environment and environmental collapse are being asked more and more frequently (Abraham & Jayemanne, 2017; Chang, 2019; Chang & Parham, 2017; Condis, 2015; Kunzelman, 2020; Lundblade, 2020; Millburn, 2018; Raessens, 2019a, 2019b). Until a decade ago, however, videogames explicitly dealing with climate change were few and far between, nor did they garner very much commercial or critical success. Many of them were developed as edutainment and remained limited in their dissemination and appeal. But as concern about climate change grows, so does its prevalence in popular culture. Currently, we see climate change videogames pop up regularly

in game competitions which screen for games of social impact (e.g., Games for Change), in independent development – for example, *Imagine Earth* (Serious Brothers) and *The Universim* (Crytivo, 2018) – as well as in big budget production, such as *Sid Meyer's Civilization VI: Gathering Storm* (Firaxes Games, 2019).

Owing to the novelty of this surge in engagement, to date, scholarship on the topic of videogames and climate change remains limited, but what scholarship there is can benefit from pointing out the unique ways in which videogames are able to stage the issue of climate change. Videogames are interactive, procedural media objects, and they give players the ability to play around with ludic temporalities (Hansen, 2018). One could argue this gives videogames a certain edge: playful simulations can take as their subject processes as large and protracted as climate change without limiting their focus to an anthropocentric perspective of individuals or events. Additionally, simulation games often encourage players to play through scenarios more than once, allowing players to find and test different outcomes, making them apt tools with which to explore themes like contingency and responsibility. I suggest the kind of reversible, branching temporality they demonstrate can be described – following the notion of procedural rhetoric – as procedural futurism.

## Simulating climate change

Many climate change videogames fall into established videogame genres: the city builder, the god game, and the resource management game. While I do not have the space to introduce each of these genres at length, it is important to point out that they generally rely on the power of simulation to persuade and engage, as opposed to narrative intrigue. City builders, god games, and resource management games rarely feature developed storylines. Instead, they model, or simulate, existing or fictional processes in an interactive manner. For scholars who choose to engage with videogames as predominantly rule-based systems, and who in doing so may ascribe to the discipline of ludology, there exist a number of helpful heuristic approaches. Analysing a game's procedural rhetoric is one such approach. Coined by Ian Bogost (2007) in his book *Persuasive Games*, procedural rhetoric is a term used to describe the argumentative claims videogames make by simulating processes, for instance, climate change. In Bogost's understanding, videogames are able to provocatively simulate rules and outcomes, thus commenting on the way these processes unfold in the real world. Procedural futurism is a term that describes more specifically the way in which videogames argue for the viability of certain futures.

Take, for example, *Fate of the World* (Red Redemption, 2011), a videogame I refer to throughout this article. *Fate of the World* is a turn-based strategy game produced in collaboration with climate scientist Myles Allen; the game thus boasts a certain scientific credibility. It casts the player as the head of GEO, a global taskforce charged with keeping global average temperatures from exceeding a

3 degree increase over the years 2020–2200. What follows is a kind of digital card game. Every turn, you choose cards that represent policies in the fields of development, energy, conservation, and science research, for instance, researching biofuels, phasing out cars, or investing in smart electricity grids. Progressing to the next turn means skipping five years ahead and reviewing to what extent the cards you played impacted the situation. You can review this outcome based on a selection of global newspaper headlines, or you can choose to look at a set of graphs and statistics. Because of its ostensible realism, *Fate of the World* makes claims about the real-world efficacy of certain policy responses by shooting them down as ineffectual or bad strategy. The inverse is also true; by demonstrating the central role of a tax on currency trading (the Tobin tax) to fund climate change mitigation in developing regions, *Fate of the World* makes a strong claim for its applicability in the real world.

Simulation games lend themselves easily to procedural criticism. Their focus is not so much on telling an engaging or human-centred story as it is on building an intriguing interactive situation. However, proceduralism (or the emphasis of rules over other aesthetic modalities like narrative and audiovisual rhetoric) has been on the receiving end of some very cogent criticism. Pure proceduralism, Sicart (2011) argues, is reductionist. It assumes a central authority who encodes meaning into the game and who has omniscient knowledge of the way the rules play out. This assumption ignores the fact that videogames are often subject to unforeseen manipulations by players, which can undermine a developer's intentions. In other words, proceduralism does not acknowledge the player's role in the heuristic process. It assumes game rules are passively internalised by players, when in fact players always interpret, negotiate, and even appropriate the rules of a game. Finally, considering videogames as primarily rule-based systems downplays their fundamental audiovisuality – and leaves us at a loss for judging aspects like tone or register. Is the classic board game Monopoly a celebration of capitalism, or a scathing criticism? Without scouring textual and visual design for signs of, for instance, caricature, it would be very hard to answer this question.

Although it would be wrong to characterise Bogost as a pure proceduralist (hardly anyone is), procedural rhetoric has also been criticised for its supposed reductionism. For example, in his discussion of climate futures in videogames, Abraham (2018) points out that games aiming to convince players of the urgency or reality of climate change by simulating its processes, like *Fate of the World*, fail to recognise that this does not address any ideological objections players may have, which cannot be overcome by models, facts, or rational considerations. Abraham argues instead for the power of the more indirect influence of aesthetics, which bypasses potential conscious objections to provocative simulations. Aesthetic choices, like peppering a virtual landscape with wind turbines and solar farms (as in the sci-fi shooter ARMA 3) does not invite rational consideration of the viability of renewable energy. Rather, such a move harnesses the more subtle

power of alternative visions of the future, which do not present themselves as arguments but operate on a more subconscious, affective level, suggesting a mode of futurity that does not rely on calculation or probability. Martin Savransky and colleagues (2017: 5) argue that this is exactly the sense of the possible which we need to foster, because these rogue futures, "whenever one takes the risk of cultivating them, can escape the impasses of the present, and lure our practices of thinking, knowing and feeling to unforeseen possibilities".

Calum Matheson (2015: 464), too, faults procedural rhetoric for not acknowledging the "affective economy" that precedes and creates the circumstances for persuasion through simulation to occur. He argues that Bogost's understanding of rhetoric as persuasion is a limited one and could be supplemented by drawing on psychoanalysis. From a psychoanalytical angle, rhetoric serves not so much to convince others, but rather to convince the self in the face of a repressed trauma derived from a failure of signification. In Lacanian psychoanalysis, the world refuses to be understood, controlled, or predicted to our satisfaction, and so we use symbolic language, or rhetoric, to suture up those tears in the fabric of our perceived reality. These strategies of signification gain power through repetition, becoming tropes and stories. The details of these tropes and stories are less important than their evocation of a powerful sense of self. For example, the fort-da game observed by Freud (similar to peekaboo) allows the child "exercise of control over the conditions of presence and absence, [making it] essentially a simulation that permits agency over a situation in which the child must be passive" (Matheson, 2015: 472). Crudely put, videogames like *Fate of the World* can be understood as elaborate games of peekaboo, in which perhaps neither the simulation's rules nor its aesthetics are more important than the fact that the game allows players to repeatedly work through climate trauma from a place of power.

Following Abraham and Matheson, I conclude that any discussion of climate change videogames and the visions of the future they profligate ought to take into consideration the power of iteration, agency, and the significance of the affective context in which play unfolds. This necessitates a broader view of the way in which climate change is represented in popular media, and the circulating affects surrounding the issue. To help me better understand this media landscape, I draw on Grusin's notion of premediation, which describes a predictive media regime that became prevalent after 9/11, and which now, arguably, influences much of the coverage of climate change.

## Premediation and the war on climate change

In his discussion on the affective life of media, Grusin (2010) explains that affect infuses not just media content, but our interaction with media technologies more generally. Consider the affective relationship many people have with their mobile phones, which tie us to our loved ones and society and grant us a sense of security.

Similarly, playing a videogame establishes an affective feedback loop between the player and the game that is concerned not just with the affective content of play; there is also affective investment in merely maintaining the loop, which becomes evident when game-flow is rudely interrupted. Moments like these create bigger affective responses than stirring content, Grusin finds. He argues that this desire to be kept in the loop and to avoid the shock of the unexpected by dwelling on the near future is what governs the production and consumption of media after 9/11.

Although 9/11 looms large in his theorisation of premediation, Grusin (2015) acknowledges that its tendencies were already prevalent in American society before the attack, and that 9/11 merely caused them to surface and intensify. In his work on the related notion of "mediashock", he also flags an elaborate prehistory. I choose to follow Grusin's emphasis on 9/11, however, because it is the clearest way of presenting his argument, and because of the parallel I want to draw between the "war on terror" and the "war on climate change". That said, there are other ways of thinking about mediated futures, and one should not take Grusin's framework to be a totalising one. But there does seem to be some agreement, for example, from Ulrich Beck (2009), which highlights the importance of staging future catastrophes in steering present action, as well as the lucrative aspects of the manufacture of risk for financial or political purposes. It is Grusin's sensitivity to affect, however, that makes his work so valuable to me. After all, I am arguing that climate change simulation games operate not just on the conscious level of rational persuasion, but that they participate in wider affective regimes that orient people to the future.

According to Grusin, the immediacy and unpredictability of 9/11 and the way it was framed in the news gave rise to nothing less than full-blown televisual trauma. For Freud, trauma is the belated return of a suppressed memory which manifests in nightmares, phobias, hallucinations, panic attacks, and so on. Traumatic neurosis is thus characterised by the compulsion to repeat – to remember over and over again, compulsively and in a fragmented manner – something that was never lodged properly into one's consciousness. This repetition compulsion plagued news media in the hours, days, and weeks after 9/11, with news channels looping endless footage of the event and broadcasters often at a loss for words, illustrating trauma's resistance to language and narrative. In response to this trauma, tendencies that may already have been prevalent in society crystallised to form a media regime that cultivates a kind of defensive prescience. By anticipating, modelling, and exploring disasters to come, mediations of the future serve to evoke a false sense of control over its unknowability, at the cost of a pervasive, protracted low-level anxiety, which, in the context of the war on terror, was exploited to support the logic of pre-emptive war. As Grusin (2010) explains, the war in Iraq was the subject of intense speculation long before the decision to go to war was even taken. The sheer relentlessness and ubiquity of these predictive scenarios of war engendered a sense of inevitability; however, the US would choose to do it, they *would* go to war with Iraq. What makes premediation harmful, therefore,

is its potential foreclosure of alternative futures. The logic of premediation does not care whether the predicted scenarios are accurate or desirable. It only cares about "[linking] the future to the present in a way that tries to ensure that the future will continue to be connected to or grow out of the present", even if the present is unsustainable (Grusin, 2010: 48).

Premediation extends "beyond 9/11" (Grusin, 2010: 143). In the context of climate change, it rears its head in anticipation of natural disasters like heatwaves, hurricanes, and forest fires, as well as in the proliferation of imagined future cities, such as in the "postcards from the future" Andrew Baldwin (2015) describes. In *Fate of the World*, climate futures are represented as catastrophes in newspaper headlines: droughts, floods, and the extinction of the giant panda, among others. This allows players to steel themselves emotionally for the kind of news that might be waiting for them in the near future. But in familiarising ourselves with the catastrophes and solutions that the game foregrounds, what alternative futures are we not seeing?

Videogames are privileged expressions of premediation because of a shared formal logic: "premediation works something like the logic of designing a videogame, it is not necessarily about getting the future right as much as it is about trying to imagine or map out as many possible futures as could *plausibly* be imagined [emphasis added]" (Grusin, 2010: 46). Plausibility is a key word here. But plausibility is shaped by public opinion, which is subject to change. That which is politically viable or conceivable – as opposed to the radical or unimaginable – is up for construction. The problem with premediation is that it mostly picks up on – and quickly locks into place – that which seems plausible. For example, although *Fate of the World* offers a scenario called "Earth Day", in which support for GEO is ubiquitous, it also features levels or scenarios in which the basic constraints of the simulation have been tweaked to appease climate sceptics. In "Oil Fix it", climate change mitigation is financed by expanding the oil industry; in "Denial", global temperatures do not rise with the increase of atmospheric CO2; and in "Cornucopia", fossil fuels never run out. While these scenarios are perhaps not meant to be taken seriously, they are not differentiated from the more scientifically accurate ones. The reiteration of wishful scenarios like these – even if staged playfully – enhances their staying power.

In Grusin's argument, premediation paved the way for the war on terror. Currently, it is arguably feeding talk of a war on climate change. This is an idea taken up by environmentalists like Bill McKibben (2016), as well as proponents of the American Green New Deal (Drum, 2020; Stiglitz, 2019). Notably, the discourse of the war on climate change is less futuristic than it is an expression of nostalgia for a period of supposed American national unity, centralised planning, tolerance to austerity, and economic reform during World War II and the New Deal era. The example of the war on climate change thus exposes exactly the kind of futurity that regimes of premediation tend to propagate: a futurity that is limited by the known and the plausible. More ominously, the martial framework of the war

on climate change can also be used to downplay legal or democratic objections to the all-too-hasty implementation of controversial climate change mitigation technologies, as in Mills's (2010) defence of carbon capture technology as the latest weapon in the war against climate change. Mills compares the challenge of climate change with the Apollo projects and America's involvement in World War II, and in a tone of pure exasperation, he notes that "neither of those crash programmes would have achieved much had they been held up by legal challenges requiring that we go to Mars instead, or by protesters chaining themselves to the gates of aircraft factories" (Mills, 2010: 26). In short, regimes of premediation encourage martial attitudes intent on domesticating doubt, delineating the scope of contingency and limiting discord for the sake of continuity.

Many videogames operate within such a martial framework, including many climate change games. Smicker (2009) argues, much along the lines of Grusin, that these war games are against futurity, because they show us a future that has already been foreclosed by the capitalist, militarist concerns of the present: "These games are set in the present or near future, and present possible future interventions into present-day hot-spots [...] as necessary, unavoidable realities. They enact a particular mode of inevitable futurity" (Smicker, 2009: 113). "Proleptic wargames", as Smicker calls them, "and their policy counterparts, are part of a broader effort to contain and manage the futurity of the future – that is its openness, its unknowability, its potential for difference or change" (Smicker, 2009: 116). It makes sense to read *Fate of the World* and other similar climate change videogames as proleptic wargames, not only because they often represent climate futures as culminating in armed conflict – fuelled by competition for resources and markets – but because they imbue these futures with a sense of inevitability. Kunzelman (2020), too, identifies this as a flaw in many climate change simulation games – where climate change can be seen coming long before it arrives, and yet nothing can be done to prevent it from happening. *Civilization VI: Gathering Storm*, for example, presents climate change as a threat firmly plotted on a deterministic timeline from which you cannot stray. It "cannot model a sharp turn in the course of world history", even though that might be exactly what we need (Kunzelman, 2020: 108).

In summary, what we see in many climate change videogames is the overriding influence of a certain ludic temporality – one that, according to Grusin, has come to characterise media regimes more generally. Premediation follows the videogame logic of plotting out a range of future scenarios, while at the same time it is subject to the urge to limit that multiplicity for the sake of convenience and narrative control (often called "railroading" in videogames). What is more, there are other ludic temporalities at play in climate change videogames that compromise their ability to engage with the climate crisis in all its complexity. These are the ludic temporalities to which I turn next.

## Repetition, mastery, and failure

Players come to videogames with certain expectations. Most importantly, they expect games to be fair, and they expect failure to be temporary – a learning moment. In other words, they expect to fail forwards (Anable, 2018). As Hanson (2018: 111) writes in his book on ludic temporalities, "mastery through compulsive repetition is a familiar trope in games". Historical war games, he argues, allow players "to practice and perfect the past to satisfy ideological and social fantasies of control" (Hanson, 2018: 30). As I've explained, the same goes for mediations of the future. With each repetition, assumptions about what changes and what stays the same become more fixed, making the future seem more predictable and stable.

However, to achieve mastery, players must suffer failure. Although Hanson does not dwell so much on this aspect of the repetition-mastery dynamic, other scholars have (Anable, 2018; Juul, 2013; Keogh, 2019). Aubrey Anable (2018), particularly, writes at length on the affect of failure and its role in neoliberal culture and politics, which holds people individually responsible for failing to succeed. Most videogames mirror this neoliberal understanding of failure as a personal shortcoming. However, there are also videogames that can "shift our attention away from perceived personal failings and back to the failures of a larger ideological formation – say, a user interface, a digital platform, or even an economic system" (Anable, 2018: 129). These videogames may feature excessively difficult, opaque controls or situations that simply cannot be won. Rather than celebrate failure, Anable (2018: 129) argues, these games are invitations to "flail with [failure] for a while and learn its contours". I propose that *Fate of the World* is such a game to flail and fail with.

As existing readings of *Fate of the World* point out, the game is exceedingly, punishingly difficult (Kunzelman, 2020; Smith, 2017). Smith (2017) gleans a handful of responses from reviews that characterise it as sobering, scary, frustrating, and even humiliating. From a ludological perspective, modelling difficulty is part of procedural rhetoric (Frasca, 2003). By modelling difficulty, videogames operate with a unique granularity that can be used to argue for the viability of one set of choices as opposed to another. For example, by exaggerating their strategic importance, *Fate of the World* emphasises the controversial use of aerosol injections and carbon capture and storage as crucial assets in the war against climate change – following Allen's strong support of those technologies. However, this is not the biggest takeaway of the game, as only a handful of players will actually be able to reach its final stages. Most players will only struggle and fail. How do we make sense of this failure? And what does it mean to lose the war on climate change?

Smith argues that *Fate of the World*'s difficulty is unproductive, because it disempowers the player. Additionally, I would add, it might cause frustration and resentment to build up, which leads to dark play (Mortensen et al., 2015). Dark play occurs when players embrace morally reprehensible subject positions or oth-

erwise engage in ethically questionable play practices for the sake of destructive glee, or merely for the joy of being contrarian. Dark play is common in simulation climate change games. *Fate of the World*, too, acknowledges the destructive urge by offering a final scenario that unlocks after you've achieved all the other levels. In the scenario "Dr Apocalypse", you aim for a negative score – ramping up temperatures as much as you can to score a maximum number of casualties. Dark play illustrates how the accretion of failure prompts a certain violent affect to develop, leading to a kind of refutation of the game's premise. But what if the player's refutation of *Fate of the World*'s premise were to go even further? In my own multiple interactions with *Fate of the World*, I have never been able to beat its toughest levels. Rather than suffer these failures personally, though – asking what it is that I am doing wrong – I think it is more productive to ask what the game fails to do for me. Shifting criticism like this opens up a space to question the simulation's presumptions. If *Fate of the World* is so difficult that barely anybody can beat it, maybe we need a different way of managing climate change, one that the simulation fails to capture.

Throughout this article, I have read *Fate of the World* as an elaborate game of peekaboo, as a proleptic wargame, and, ultimately, as a game to fail with. Most importantly, I have tried to make explicit the way in which its engagement with climate change is affectively charged and preoccupied with managing anxiety over the future. There are better and worse ways to deal with this anxiety. Proliferating and thereby emotionally investing in only a limited set of responses born from presentist concerns only serves to close off the future. But flailing with failure can give us a much better understanding of the ways in which certain systems let us down, allowing us to become aware of our assumptions and expectations. In the final part of this article, I look at one more videogame to fail with, in order to demonstrate more convincingly how through failure we can learn that we already inhabit a damaged planet, and there is no going back from where we are. $CO_2$ takes centuries to be absorbed back into the sea and ground. It is important, not to look away from this mess by putting our faith in techno-fixes, but to stay with the trouble, as Donna Haraway (2016) writes, and to find ways to salvage better means of living amid the wreckage of the present.

## Goat farm futures

With a little bit of imagination, one could read *The Stillness of the Wind* (Cardenas 2019), which has all the trappings of a farm game, as a climate war game instead – except, unlike *Fate of the World*, this game gives you a boots-on-the-ground perspective. From such an angle, different concerns present themselves. Instead of trying to secure a sense of mastery over the future, *The Stillness of the Wind* asks its players to make peace with a present in which the future is unavailable to them. In doing so, our attention is turned to the here and now, snapping us out of the future-focused dynamic of premediation, revealing other latent

temporalities in the present, and thereby allowing us to participate in what Roy Scranton (2015) calls learning to die in the Anthropocene.

As a veteran, Scranton is a vocal critic of the notion of the war on climate change (2019). War brutalises people, and total mobilisation would entail social upheaval and political compromise, which runs counter to the myths of national unity and smooth transition that undergird the discourse of the war on climate change. In his own contributions to this discourse, Scranton emphasises that the most important thing being a soldier ever taught him was to embrace the inevitability of his own death in order to stay alive. In the age of climate change, he argues, this insight ought to be scaled up to make us realise there is no going on as we have before. This is not an expression of hopelessness; Scranton is after a creative destruction. Civilisation must die a kind of death in order for new possibilities to mushroom into existence. To do so, he argues that "we must suspend our attachment to the press of the present by keeping alive the past" (Scranton, 2015: 108). As I will explain, *The Stillness of the Wind* shares this thematic interest in memory as a way to reveal latent temporalities in the present.

At first glance, *The Stillness of the Wind* looks like a farm game, which typically introduces players to a virgin plot of land they are encouraged to develop by expanding production, amassing wealth, and investing in technology, while managing social ties with the local community. Farm games are essentially narratives of progress in which everything comes easy, and whose appeal rests in their ability to cultivate a kind of productive bliss. They often feature repetitive, rhythmical gameplay based on simulated diurnal and seasonal cycles. Because of these schedules, players are encouraged to develop carefully timed routines in order to optimise productivity: water crops, feed animals, weed gardens, eat, sleep – repeat. Every day is comfortingly the same, predictable, and easy to plan for. Unlike a typical farm game, however, *The Stillness of the Wind* opens on an existing, run-down farm, and the player's character is no strapping youth, but an old woman called Talma. Playing as Talma, you eke out a monotonous existence on a desert plain raising goats, making cheese, and reading mail from your relatives in the city – or on the newly built lunar colony (the only detail that flags this game as taking place in the future). There is no money to be made, no land to develop, and no goals to achieve. In fact, the game's principal narrative is not one of progress, but decline. However, as I found on my own first playthrough, old habits die hard, and the urge to be productive, to plan for the future – by milking the goats, making cheese, and filling up the storehouse for no obvious purpose – is very strong. What is more, playing for future gains only sets you up for disaster, because the more goods you have collected and the more you are calibrated to your daily routines, the more you stand to lose.

Every day Talma receives mail from her family in the city. At some point, these letters start reporting on a mysterious forgetting illness emptying out entire cities. Gradually, the tone of the game changes from serene to ominous. One day, Talma's brother and sister report that during a recent harvest festival, peo-

ple suddenly started collapsing, and even vanishing. There seems to have been a blackout, and Talma's estranged daughter Sola, who is on her way back to the farm and passing through the city, explains that she has "started losing pieces of [her] day. The memory of it". Then Talma's sister vanishes. For days there is no mail. Then the postman stops coming. Gradually and almost imperceptibly, the climate changes. Days grow shorter and darker. At night, the farm is harassed by wolves, and when you run out of shotgun shells, your goats inevitably get picked off one by one. Then the earth rots and your flowers die, while an oily black rain falls from the sky. The scene is apocalyptic. Strange dreams come at night: panning shots in greyscale of fields and fields of gravestones, suggesting the scope of the catastrophe extends far beyond the little farm. Finally, flickering embers are visible on the horizon, as if the Earth is on fire. The next morning, the farm is blanketed with a layer of snow, or ashes, and with nothing to do, and nothing to care for, you keel over and die. *The Stillness of the Wind* tricks you into following a particular generic script (that of the farm game): committing yourself to a kind of growth-oriented business model, an optimistic future outlook, and having faith in the rewards of labour. But this is exactly the kind of temporal narrative that has run its course in the age of the Anthropocene. There is no business-as-usual response to a calamity the scope and scale of climate change. Rather than continue with our routines, we must snap out of them and wake up to the present; or as the postman, against the fading light on his last visit to the farm, admonishes the player to give up their routine: "It is silly to dig up the earth when an avalanche is barrelling down the mountain" (Cardenas, 2019).

Rather than build up a herd that will inevitably be lost, on my second playthrough, I turned my attention to the more enigmatic aspects of the game, aspects that would have been too time-consuming or too frustrating to explore while also running the farm. After all, Talma's old-woman's pace means you can only do so much before evening falls. Time spent exploring, though slow and boring, reveals an interesting thematic investment in memory. Whether due to old age or the mysterious forgetting disease, Talma's memory seems to be fading. In front of a rock in the desert, she muses: "Somehow the scars on the palm of my hand match the edge of this rock". Talma's present is a mystery to her, and in order to make sense of it, we need to cultivate memory. This echoes Scranton's emphasis on the importance of the past. He writes that in order to cultivate memory, "[we] must inculcate ruminative frequencies in the human animal by teaching slowness. […] We must keep our communion with the dead" (Scranton, 2015: 108). Indeed, going slowly over the land, instead of rushing from goat to goat with your milking pail, allows you to discover and collect small statuettes that are linked to brief snippets of memory, which enable you to piece together an impression of what life on the farm was like when Talma's siblings, children, and grandchildren still lived there. This knowledge reframes the game's final image. After Talma dies, the screen fades to grey, slowly zooming out on a picture of the farm with the whole family in front of it and a big, beautiful tree where previously there was only a stump.

## Conclusion

Sensing a certain absence in popular engagement with climate change in videogames a few years ago, Benjamin Abraham and Darshana Jayemanne (2017) asked a provocative question: "Where are all the climate change games?" One way of revising that question for the present day would be to ask, in videogames, where the goat farm futures are. This question exposes that what engagement there has been with climate change in videogames more recently still lacks the kind of variety that would foster more pluralistic, pragmatic approaches to climate change mitigation. As Holly Jean Buck (2019: 48) writes, "so often, climate futures are described in terms of mathematical pathways or scenarios, behind which are traditions of men gaming out possible futures". Buck's choice of words here is not incidental. As I have argued, one way to account for the tenacity of militarist techno-futures is by pointing to videogames' participation in the larger media regime of premediation. The ludic temporality that rules this regime proliferates mediated futures, even as it narrows down their scope of the possible.

Other ludic temporalities, too, can get in the way of games' engagement with the climate crisis. Videogames are temporally forgiving, in the sense that failures often tally up to victories. This is deeply misleading in the context of the climate crisis: "How do we retain the freedom of replay and creative exploration that makes games so delightful, knowing that our safety net is also a false bottom conveniently hiding the depths of our indifference?" (Chang, 2019: 73). One response is to dwell in failure a little while longer. In this article, I have tried to do just that. In the case of *Fate of the World*, the repeated experience of failure to meet the scenario's victory conditions shifts doubt onto the simulation itself – which foregrounds techno-fixes as opposed to other, more systemic, solutions. Moreover, in *The Stillness of the Wind*, failure through character death is encoded into the narrative, and it points to the futility of the business-as-usual approach when the conditions have changed fundamentally. In *The Stillness of the Wind*, failures do not tally up towards a final victory. Players do not fail forwards; but, one could argue they fail sideways, as I tried to do in my second playthrough, where I failed, but this time with more awareness of the way the past feeds into the present. It is this kind of temporality that videogames can cultivate to mediate climate change more meaningfully.

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