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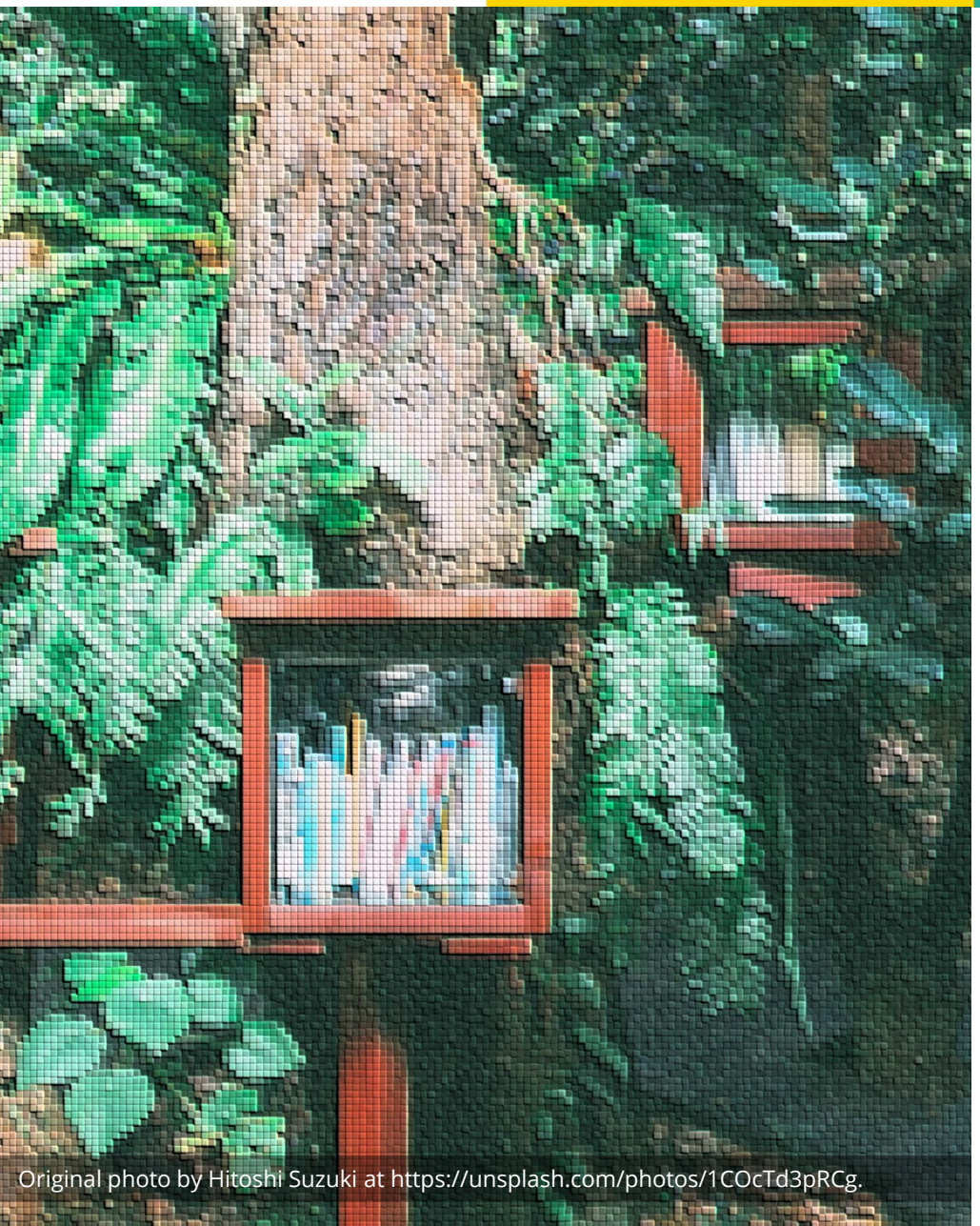
Utrecht Center for Game Research



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Ecogames:

Playful Perspectives on the Climate Crisis

Section 1: Games for Change

Section Editor:

- Prof. dr. Joost Raessens, Utrecht University

Alenda Chang: Change for Games: On Sustainable Design Patterns for the (Digital) Future

This contribution looks at the UN's Playing for the Planet initiative and the International Game Developers Association's new climate special interest group. Notably, the climate SIG has been working to develop both "climate games" and "design patterns" databases that will theoretically provide models "from finished games to individual mechanics" for developers to emulate. These efforts manifest a key underlying question: what is a sustainable game, and is it the same thing as a sustainably developed game? Are we talking about games with overt environmental messaging? Or games, as Benjamin Abraham has argued, whose production carbon footprint has been offset before the point-of-purchase, obviating player agency? Are they games designed with efficient energy consumption in mind? Or, are they games we refuse to play?

Hans-Joachim Backe: Between the Lines: Using Differential Game Analysis to Develop Environmental Thinking

When discussing Games for Change, there is a tendency to focus on the didactic potential of playing one specific game with its well-researched representation of ecological issues and carefully encoded values. While such arguments are doubtlessly needed, they may underestimate the importance of the context in which play makes meaning. This contribution highlights two important contexts within which players understand their actions in a particular game: their experiences in similar games, and their personal play compared to that of and with others. It presents deep readings of four survivalist games, played both solo and cooperatively, and shows how much ecocritical reflection is produced not by engagement with the individual example, but the comparative perception of games and players.

Thomas Bjørner and Henrik Schønau-Fog: A Dynamic Engagement Model to Provide Ecological Awareness of the Climate Crisis through Video Games

The chapter presents an overview of important elements that contribute to making successful video games that promote engagement with the climate crisis and raise awareness of it. Major challenges exist in how to design engaging, serious games that target the climate crisis, including, for example, motivation, flow, learning outcomes, or even behavioral changes. Building on past research and different ecological game examples, we suggest a Dynamic Engagement Model (DEM) that outlines four stages of engagement for video games, including before, during, and after gameplay and dis- or reengagement. We argue that more work should be spent on studying a holistic perspective of engagement, including the importance of engagement in the four stages, in order to improve our understanding of motivational factors for playing ecological games.

Péter Makai: Do You Want to Set the World on Fire? Transmediating Climate Science into Playful Agency in Earth System Games

The chapter will investigate how climate change games incorporate climate science and policymaking into commercial digital games where game mechanics allow players to meaningfully affect the climate of the gameworld. My approach focuses on the medial affordances of digital narratives and the way they shape our reception of scientific knowledge about the biosphere as a complex system. The case studies will focus on *The Fate of the World* (Red Redemption 2011), *Democracy 3* (and *4*, depending on its release) and *The Sims 4: Eco Lifestyle* and *Tiny Living* game packs to showcase how player decisions on the global, national and individual levels are affected by climate science and reveal the designer's practices of transmediation in implementing its results.

Sebastian Möring and Birgit Schneider: Climate—Game—Worlds: A Media-Aesthetic Look at the Depiction and Function of Climate in Computer Games

In view of the work being done in the rapidly emerging field of 'green game studies,' this chapter seeks to establish a coherent and critical framework that can aid in future analyses of the depiction of climate and weather in computer games. In its attempt to generate an analytical schema, the paper expands on existing media-aesthetic, media-ecological and existential-ludological perspectives, thereby mixing methodological approaches with concepts drawn from climatology. This mixed-methods approach allows the authors to put forth a number of key insights, most importantly that the examination of climate as an in-game actor—that is, as a component that has an impact on gameplay—can lead to new levels of analysis in the field of games studies. The authors conclude by testing their critical schema on the survival-crafting game Eco (Strange Loop Games 2018).

Souvik Mukherjee: No Cyclones in Age of Empires: Empire, Ecology and Videogames

This chapter analyses games themed around exploration, which have an express colonial premise, and empire-building games that depict the exploitation of flora and fauna, particularly in settings of colonialism and empire. The discussion also addresses other games where hunting is directly connected to the colonized landscape. In doing so, the chapter addresses larger questions raised by postcolonial ecocriticism in the context of videogame cultures. Such a discussion aims to supplement the ongoing discourse on ecocritical issues in videogame studies as well as to broaden the ambit of postcolonial thinking around ecology, especially by extending the framework to newer digital narrative media such as videogames.

Soraya Murray: Postcoloniality, Ecocriticism and Lessons from the Playable Landscape

What methodological lessons for ecocriticism may be learned from previous critical game studies interventions? Specifically, I consider the political work undertaken by postcolonial critiques of video games, and their pertinent address of human-centered understandings of the land, within the context of larger issues of inclusion, representation, diversity, and the challenging of hegemonic power structures. What can ecocritical games' crucial visual culture function be, in operating against the grain of profit and innovation-driven ends—or even the very real problems of raw resources needed for their existence? Can the context of games and play provide any lived-world intervention into the urgent ecological challenges that are becoming an existential threat? This chapter is an extension of a larger discussion about the functions of postcolonial and other critical cultural scholarly interventions. This chapter asserts that ecocriticism and postcolonial critique exert a doubled pressure on rote forms of play design, and present meaningful possibilities for video games as a maturing cultural form.

Section 2: Future Worlds

Section Editor:

- Prof. dr. Gerald Farca, Macromedia University Leipzig

Colin Milburn: Mutate or Die. Neo-Lamarckian Ecogames and Responsible Evolution

Several neo-Lamarckian video games, including *Maneater*, *Biomutant*, and *Evolve*, feature nonhuman protagonists in environments that have been damaged by extractive industrialization and who must mutate to survive. While seeming to endorse a dystopian politics of accommodationism, acquiescing to the inevitability of climate change and ecosystem collapse, these games also thematize anticipatory practices of governance and stewardship. Tasking players to take responsibility for living in a critically destabilized world, these games allegorize—and actuate—the imperative to change tactics, to renovate our ways of life in advance. By turning directed mutagenesis into a gameplay mechanism, they emphasize preadaptation in concert with environmental modulation: not mutating merely in reaction to environmental crisis but mutating in proactive ways that make the whole world more survivable as time goes by.

Victor Navarro-Remesal and Mateo Terrasa-Torres: Healing the Self, Humanity, and the Earth: Slowness and Ecosophy in *Death Stranding*

Futures, in which society has collapsed and nature has healed, are a common setting in contemporary videogames, especially after the Great Recession. The "post-apocalyptic trope of regeneration through violence" (Pérez-Latorre et al., 2017) and "collapse" (Chang, 2019) are central in games like *Enslaved: Odyssey to the West* or *Nier Automata*.

Though action-oriented, these games feature moments of calm, such as the encounter with a herd of giraffes in *The Last of Us*. We study the combination of hypoludicity (Conway, 2012) and narrative catalysis (Barthes, 1968) to produce respites defined by an aesthetic of slowness in otherwise oppressive game worlds. Through this device, these games favor ecosophical (Panikkar, 2021) and transcendentalist readings that connect with progressive and conservative views of the anthropocene.

Gerald Farca: Ecology in the Post-Apocalypse: Regenerative Play in the Metro Series and the Critical Dystopia

The chapter examines the utopian trajectory of *Metro 2033* and *Exodus* and the re-generative aspect this entails for the players. Whereas *Metro 2033* envisions a world where humankind lives underground in the Russian Metro, trapped in a never-ending loop of conflict and mistrust of the Other, Exodus embarks on a different, more hopeful route. The third installment of the series sends players on a journey towards Utopia, away from the enclosure of linear ideologies and towards a considerable ecological direction where a restart seems imaginable. The chapter will thereby lay focus on the re-generative aspects this journey entails for the players and the power of fiction to sensualize us to ecological issues but as well to the splendor of the natural world. The aspects of the re-generative that will be under scrutiny include: the affective, reflective, aesthetic, ethical, communal and cyclical elements of the *Metro* games.

Lauren Woolbright: There is No Planet B: A Milieu-Specific Analysis of Outer Wilds' Unstable Spaces

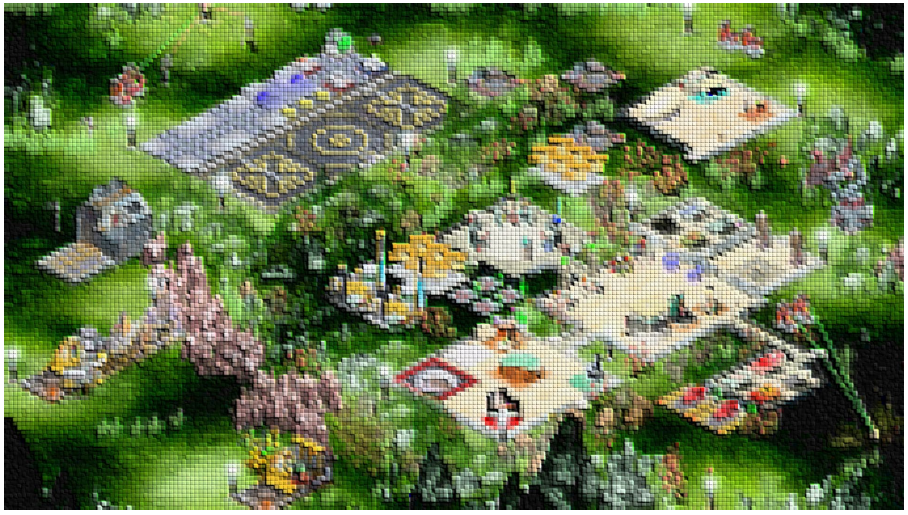
In "Why Discard Studies," Max Liboiron introduces the concept of dark ludology, which this chapter will examine using the game Outer Wilds. Facing the catastrophic collapse of civilization in a small solar system and the mystery and whiplash of being stuck a time loop, players in Outer Wilds must navigate tornados that can throw islands into space among other environmental perils as they seek information about what happened to cause the apocalypse they are endlessly reliving. I am interested in the tension between collective and individual action in games and in how we conceptualize issues like environmental collapse through both lenses in a broader, cultural sense in the Global North.

Pawel Frelik: Green New Worlds? Ecology and Energy in Planetary Colonization Games

The questions of both ecological balance and climate crisis intersect in a number of ways and many of them have been explored in speculative video games of varying genres. One of them remains conspicuously absent in many games, though: the issue of energy and its sources. In fact, to talk about late capitalism and the condition to which it has led the planet is to talk about petromodernity driven by the energy unconscious. In my chapter, I want to look at a selection of titles belonging to the genre of planetary colonization games, a significant body of texts with the broader category of simulators, and analyze their interplay of ecology and energy. In that, I want to explore whether titles such as Farlight Explorers (2015), Earth Space Colonies (2016), or Aven Colony (2017) envision new models of ecological sustainability or whether they perpetuate speculative visions of unlimited growth based on the availability of cheap energy.

Gabrielle Trépanier-Jobin, Maeva Charre-Tchang, and Sylvie Largeaud-Ortega: The Potential and Limitations of Diving Ecogames: A Content Analysis and Reception Study of Abzû

The questions of both ecological balance and climate crisis intersect in a number of ways and many of them have been explored in speculative video games of varying genres. One of them remains conspicuously absent in many games, though: the issue of energy and its sources. In fact, to talk about late capitalism and the condition to which it has led the planet is to talk about petromodernity driven by the energy unconscious. In my chapter, I want to look at a selection of titles belonging to the genre of planetary colonization games, a significant body of texts with the broader category of simulators and analyze their interplay of ecology and energy. In that, I want to explore whether titles such as *Farlight Explorers* (2015), *Earth Space Colonies* (2016), or *Aven Colony* (2017) envision new models of ecological sustainability or whether they perpetuate speculative visions of unlimited growth based on the availability of cheap energy.



Laura op de Beke: Dark Play and the Flow Time of Petroculture in Oil-themed Games

In response to the mostly human, even individual-centred histories of petroleum Tim Kaposy argues we need another approach, one that is more attentive to the nonhuman temporalities of oil, for instance the slow violence of pollution, or the nonhuman temporalities that are involved in the increased automation of oil extraction and manufacturing (2017). In this chapter, not only do I want to attend to how these nonhuman temporalities are engaged with in videogames. I also want to touch on the inhuman, or anti-human elements of their representation. By 'inhuman' – not only do I mean cruel, or brutal, but also, following Andrew Pilsch, "actors that exist at temporal or physical scales beyond our limited perception" (2017, 344).

Drawing on Richard Grusin's book *The Nonhuman Turn* (2015), I understand affect theory and new materialism to be important branches in its genealogy. Grusin argues that although "it is not always readily apparent how human affect can be nonhuman," in foregrounding the wilfulness of the body, affect theory decentres humanist notions of bounded individual autonomy. On the contrary our bodies are pervaded by petro-chemical waste products like microplastics and the derivatives of chemical fertilizers and pesticides. The opposite is true as well, our bodies are leaky and wasteful, and there is constant interchange between us and the environment. My first move in this chapter will be to explain, drawing on Cara Daggett's work, how such free-flowing exchange is threatening to petro-masculinities. I then close read *The Oil Blue* (2010) to theorize how the affect of flow can be understood as part of a more general resource aesthetics of petrocapitalism, and how flow, as the gamified sublime, sits within a more general framework of the petro-chemical sublime (Burnham 2017). Afterwards, I'll shift the focus to the base-builder *Oxygen Not Included* (2017), to discuss how its simulation of flowing, comingling materialities – oil among them – in a closed ecology, and where the human sits within this system.

Section 3: The Nonhuman

Section Editor:

- Dr. Laura op de Beke, University of Oslo

Joost Raessens: Symbiosis, or How to Make Kin in the Chthulucene

The virtual reality installation Symbiosis (Polymorf 2020) is a performative, multi-sensory, multi-user, multi-species, and interpassive storytelling experience inspired by Donna Haraway's book Staying with the Trouble (2016). It offers a speculative world set somewhere 200 years in the future, after a human-caused climate disaster has changed the Earth beyond recognition. The world's population consists of so-called 'children of compost' or 'symbionts,' organisms composed of different combinations of biological and non-biological life forms. The installation allows six participants to simultaneously embody one of six symbiotic life forms for fifteen minutes. Each experience comes with a uniquely designed soft robotic wearable enabling participants not only to see, hear, and feel but also to smell and taste their symbiotic experiences. In this way, Symbiosis becomes a passionate imagining of how to make kin in the Chthulucene.

Jordan Youngblood: "Have you ever heard a worm sing?": The Spectral Ecology of Kentucky Route Zero, Act V

This chapter places the episodic adventure game Kentucky Route Zero in conversation with ecological theorist Timothy Morton's ideas of "spectral ecology," with a particular focus on how the game habitually ruptures the boundaries between human and non-human.

Through analyzing the play mechanics and narrative structure of the game's fifth act, I argue Kentucky Route Zero presents its players with an environment marked by a mingled co-existence of ghosts, animals, humans, and trash; it is what Morton deems a perforated world, one where the definition of humankind comes into question and new de-anthropocentric modes of living emerge. In its presentation of a flooded, largely abandoned company town explored by a player-controlled cat, the game invites players to both acknowledge the environmental ruins left by corporate exploitation and also consider new forms of solidarity between all kinds of beings. Kentucky Route Zero is not a puzzle to be solved but a space to be witnessed, and in its refusal of a narrative of mastery, it offers instead a final lingering image of a home with open walls: a space of unbounded play with what it means to be human.

Merlin Seller: 'Hiding (in) the Tall Grass': Rethinking Background Assets in Videogame Plantscapes

This chapter will explore the significance of 'grass' assets, bringing Critical Plant Studies (Marder, 2013; Pollan, 2002) and the Anglo-American lawn's cultural historiography (Steinberg, 2006; Marusek, 2012) to textual analysis of ludic backdrops. While Chang critiques "functionally inert" plants in "predominantly visual" videogame environments (2019: 23), this risks repeating what Marder (2013) identifies as Western marginalisation of flora's rooted, acephalic alterity - underestimating invisible plant monocultures subtending society (Pollan, 2002; Steinberg, 2006) and reifying anthropocentric values of agency and centrality.
Indeed, passivity is key to videogames (Fizek, 2018; Keogh, 2019), and Game Studies regrettably marginalises visuality (Keogh 2018). I propose that 'visual' and 'inert' background assets (exemplified by grass) offer rich and underexamined terrain for analysis wherein the 'plantscapes' dwarfing humanity (Hall, 2011:3) might challenge disciplinary understanding of agency/interactivity.

Sonia Fizek: Material Infrastructures of Play. How the Games Industry Reimagines Itself in the Face of Climate Crisis

This contribution is an exploration of the materiality of digital play. I want to discuss how it relates to environmental sustainability and how the video game industry addresses the issue. The chapter will provide a hermeneutic analysis of selected parts of the Green Games Guide in a wider eco-critical media context. One of the most crucial questions this chapter wants to address is how the industry responds to the climate crisis and how to read this response vis-à-vis the neoliberal culture of exponential growth, optimization and planned hardware obsolescence. In other words, are green game-making commitments and self-regulatory initiatives rhetorical PR stunts or could they be read as catalysts of a deeper cultural and political shift within the games industry?

Paolo Ruffino: No Man's Game: The Infinite Boredom of Procedurally Generated Environments

The chapter investigate players' responses to the failures of techniques of automated videogame development such as Procedural Content Generation (PCG). In particular, it explores how players have articulated their affective responses to the release of *No Man's Sky* (Hello Games, 2016) on YouTube and other social media. While PCG appears to delegate game development to a nonhuman agent, the case of No Man's Sky reveals a complex structure of feeling that triggers novel anxieties among game consumers. Anxieties concern the inhuman(e) boredom of a simulation that exceeds the control of any individual human player. At the same time, players have been attributing responsibility for the game's failures to an all-too-human agent, the indie auteur Sean Murray. The case of *No Man's Sky* and its reception opens new questions regarding the political and affective implications of automated game development.

micha cárdenas: Trans Ecologies in Digital Games and Contemporary Art

The chapter argues that for the survival of all our ecologies, we must refuse human centricity and understand our lives as mutually dependent on the lives of other species and forms of life, through examples from digital games and contemporary art. Tiffany Lethabo King's concept of the shoal as a space between Blackness and Indigeneity, as a shifting, moving body that is neither land nor sea, becomes a figure for thinking ecotonal spaces. I think through this transitional space between environments and between bodies in the examples of Sin Sol, a multidisciplinary artwork that I created with the Critical Realities Studio, Ursula Biemann's installation and film Acoustic Ocean, Porpentine's Twine game With Those We Love Alive and Danielle Braithewaite Shirley's game I CANT REMEMBER A TIME I DIDNT NEED YOU. Throughout these examples, one sees trans, Indigenous and Black bodies and identities extended beyond the bounds of the skin, through augmented reality, hormones and ontologies and ethical systems of multispecies interdependence.

Kara Stone: The Earth's Prognosis: Doom and Transformation in Game Design

This paper discusses three videogames made by the author: *UnearthU* (2021), *the earth is a better person than me* (2018) and *Humaning* (2017) in relation to their positioning of non-human and more-than-human actors and the ways in which this focus can open up alternate imaginings of environmental futures.. These games grouped together ask: what can role-playing or identifying with narratives about non-human species do for environmental justice? How can they enable us to understand the earth better, as well as human's role on it? Through analyzing these games as well as the process of creating them, this paper argues that games can not only communicate the importance of thinking more-than-humanly but that designers can move towards creating in a way that lessens their negative environmental impact.

Section 4: Metagaming Practices

Section Editor:

- Dr. Stefan Werning, Utrecht University

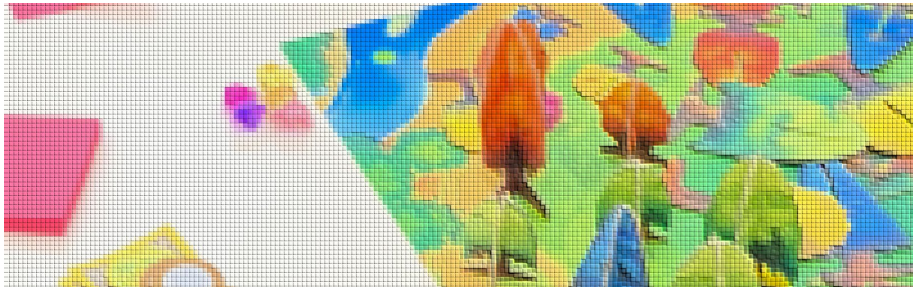
Jordan Clapper: What Do We (NDNs) Do with Games?

This chapter examines how Indigenous video game development presents opportunities for meta-gaming engagement for both gaming practices and digital environments. Indigenous games are able to critique the very systems they are built upon, from ludic to environmental, as they offer alternatives to western imaginaries, medial histories, and naturecultures. These digital landscapes and gaming spaces draw from the various media that have contributed to their construction. Additionally, Indigenous game development must draw from self-reflective and identificatory processes while incorporating cultural elements and critiques individual to that developer's land-based connection. The design and execution of these games resists dominant cultural imaginaries in both form and theme as they call the player to critique what makes a game a game and what makes an environment an environment.

Chloé Germaine Buckley and Paul Wake: Play and the Environment - Games Imagining the Future

This chapter explains the methodology and research design of a current participatory project that investigates how board games can support young people's understanding of, and action on, the climate crisis. The project contends that the climate crisis is a social problem and an imaginative challenge, especially for young people whose futures are most affected by it.

This project thus moves beyond the consideration of board games as a tool for climate education, and self-consciously investigates them as a means for young people (aged 16-19) to explore and communicate their ideas about climate change, social transformation and the future. The project methodology is a synthesis of YPAR methods (Camarotta and Fine, 2008) and a game 'hacking' process developed through the artistic practice of our project partner, Matteo Menapace. YPAR is a praxis that provides young people with opportunities to study social problems affecting their lives and then determine actions to rectify these problems. We propose that board games, due to the hands-on and collaborative play that they engender, are a good fit for YPAR methods since games are themselves a site of critical enquiry, engaging players in questions of the rules, structures and norms that frame play. It is precisely such rules, structures and norms at the level of society and institutions that YPAR methods seeks to challenge and transform, empowering young people as they do so. Finally, with our co-researchers, we aim to develop principles for future game design in a time of climate crisis. Though our research questions pertain specifically to the relationship between young people and climate change, we present our methodology in this chapter as having broader applications for the study of board games and social issues.



Joost M. Vervoort, Carien Moossdorff and Kyle A. Thompson: Games for Better Futures: The Art and Joy of Making and Unmaking Societies

This chapter proposes that games engaging with the global ecological crisis would benefit from engaging with the processes of building and dismantling institutions. We first describe how institutions are at the core of human society, culture and organization. We then discuss the link between games and institutions. Our research indicates that commercial games already benefit from a focus on institutions: these games are considered interesting, deep and engaging in games media. Subsequently we discuss game media ecosystems and introduce the value of looking at game design and gameplay as utopian processes, in addition to pointing out the benefit of public reflections on games as a way to connect games and societal change. Next, we discuss the need to not only focus on building new institutions but also on dismantling existing, destructive institutions. We focus on the link between games and activism. Finally, we discuss the structural changes needed for the game sector to realize its transformative potential by using the concept of imagination infrastructuring. We focus on changes to funding and publishing, the education of game developers, platforms, and other aspects

Rainforest Scully-Blaker: Re-Framing the Backlog: Radical Slowness and Patient Gaming

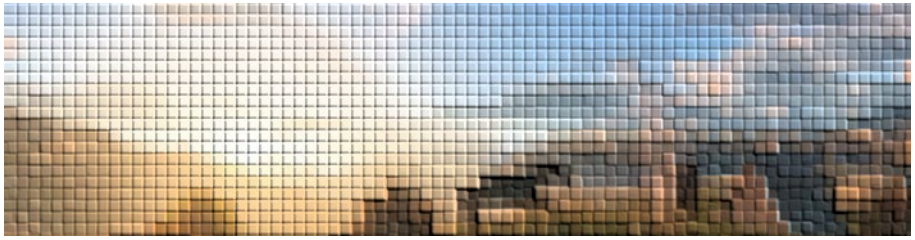
This paper uses the findings of an investigation into the /r/patientgamers subreddit to account for the ways that our leisure time and our play have been assimilated by the logics of neoliberal, late capitalism. The figure of the patientgamer was selected not just because of their explicitly protracted approach to video game consumption, but because the community has grown out of a frustration with the financial and temporal costs to accessing leisure. In particular, users' anxieties around possessing a video game backlog (a term which once referred to something held in reserve and has since come to mean quite the opposite – an accumulation of tasks unperformed) is argued to be emblematic of the way that video game play has been rendered productive according to capitalist logics. Even so, I argue that the patientgamer ethos suggests ways that play may yet be reframed to undercut logics of efficiency and productivity through the practice of what I call "radical slowness," a deliberate failure to keep up with the pace of capitalist consumption as a political, ecocritical act. This paper concludes by arguing that the case of the patientgamer may serve as the grounds for theorizing an emancipatory form of interdependence that spurs collective action and cultivates communal care in the face of impending economic and ecological collapse.

Nicolle Lamerichs: Sustainable Fandom: Responsible Consumption and Play in Game Communities

Sustainability is a global problem that is deeply connected to corporate social responsibility, resource scarcity, and responsible consumption. These different issues are not just a matter for companies to take into consideration, but they also affect consumers and their lifestyles. Sustainability is increasingly discussed in the context of games, fandom and play. Fans critically question what they consume and create awareness around sustainability in their own practices. In this chapter, I conceptualize these practices and discourses as sustainable fandom. Sustainable fandom involves discourses of responsible consumption as well as the sustainable design of one's own fan activity. Sustainability in fandom has not been widely studied, but it is increasingly discussed by audiences themselves. In this chapter, I provide several examples of sustainable fan practices and interactions, such as ecomodding, "'ecocosplay'" (sustainable cosplay) and green boardgames. These different examples show that players do not only create awareness around sustainability in general, but also aim to integrate sustainability as one of the core values informing their own green media production and fan works

Melissa Bianchi: A Field Guide to Monsters: Practices of Wildlife Watching in Video Games

Mainstream games, though often rife with (un)intentional misrepresentations of nature, can nuance what we know about how games encourage thoughtful considerations for the nonhuman. This essay continues conversations about the value of popular video games to ecocriticism by applying Krzysztof Jański's (2016) game animal categories and Hans-Joachim Backe's (2017) descriptive ecocritical matrix for games to mainstream releases, including *New Pokémon Snap* (2021) and *Monster Hunter Rise* (2021). Connecting analyses of these games to writings about watching and photographing actual animals illustrates how mainstream games can extend and subvert discursive practices of wildlife observation. Moreover, these games demonstrate how design and play might reify troubling aspects of the human-animal divide while supporting critical perspectives on nonhuman agency and ethics in ecotourism.



Stefan Werning: Remediating Green Practices: Landscape Photography and Nature Documentary Filmmaking in Videogames

The chapter examines how contemporary forms of digital metagaming, specifically in-game photography and in-game wildlife documentaries, re-enact and re-interpret constitutive practices of earlier environmental movements (see e.g. Cronin 2011 on the connection between photography and early national parks). It defines these practices (e.g. nature photography) as epistemic eco-practices, drawing on related concepts like "green practices" (Lewis 2012), "ecostrategies" (Sandell 2016) and Lavery's (2018) work on "weak theatre" as "an alternative kind of eco-practice".

The analysis explores how in-game photography (Gerling 2018; Möring and de Mutiis 2019) in games like Red Dead Redemption 2 (2018) and Beyond Blue (2020) as well as fictional nature documentaries using footage from games like GTA Online (2013-) and Destiny 2 (2017-) remediate earlier epistemic eco-practices, and how the focus gradually shifts from photographs and documentaries as (digital) 'objects' to replicable and inclusive practices. To conclude, the chapter demonstrates how this approach can be adapted to the remediation of other epistemic eco-practices, e.g. how players of Stardew Valley (2016) and Animal Crossing: New Horizons (2020) have transferred "community gardening", an activity directly linked e.g. to "eco-identity" (Hoffman and Doody 2015) and green citizenship (Lewis 2012), into digital spaces during the Covid-19 pandemic.

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