‘Anecdotal Evidence’: A Holistic Approach to the Ecological Analysis of Videogames

David Harold ten Cate
Digital Media Research Centre
Queensland University of Technology
davidharold.tencate@hdr.qut.edu.au

ABSTRACT

Videogames, the games industry, and game studies all find themselves at a crossroads of ecological crisis. Considering the entanglement of games with ecological crisis in terms of their environmental impact, their ecological textuality, and the sustainability of game development, this paper explores the methodology of *anecdotal evidence* to study games’ ecological relations. Doing so requires that the analysis of games comes to appreciate their innate politics to cultivate ecopolitical negotiation. By reviewing the lineage of ecomedia theory in game studies, this paper retrospectively identifies anecdotal method as capable of bridging between situated knowledge and planetary realities. Prospectively, this paper suggests future directions for anecdotal analysis.

Keywords

Ecological crisis, anecdotal evidence, ecomedia studies, ecogames, textual analysis

INTRODUCTION: GAME STUDIES AT A CROSSROADS

Videogames, the games industry, and game studies all find themselves at a crossroads of ecological crisis. This is to say that games are no longer simply an exciting new medium capable of representing, approaching, or interacting with ecological issues in informative, persuasive or emancipating ways, but instead find themselves in the middle of an ecological crisis that is now palpable and pervasive.

The study of the interconnection of ecology and games is vital and urgent, and spans a variety of directions, with some finding themselves at times directly juxtaposed. Generally, there are three ways of considering the ecological relations of games:

1. *Games as material artifacts*, which rely on circuits of hardware to conduct energy, altogether comprising about 0.04% of global total carbon emissions and related environmental degradation (Abraham 2022)
2. *Games as texts*, which have been read as containing ecological themes (Chang 2011; Op de Beke et al. 2024a), or in a more ambient sense, inviting ecological forms of engagement with them
3. *Games as an industry*, where ‘sustainable’ development means survivability in an increasingly precarious work- and marketplace (Keogh 2023)

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Hitherto, the tendency has been to separate and isolate these concerns, each relying on different theoretical frameworks, methods, and conclusions. According to Benjamin Abraham (2022), for example, the question of ecological games should not consider their textuality at all, but focus primarily and urgently on achieving net-zero emissions. While polemically loaded, Abraham's argument likewise problematizes the performative self-importance of many game analyses, which claim that games have the potential (or even: purpose) to change the world for better (McGonigal 2011). When converted to the study of the ecology of games, such analyses may claim that games train gameplayers to become better ecological citizens (Raessens 2019), be instrumental in fostering climate change engagement (Galeote et al. 2021), or accurately provide models for environmental policy simulation (Bell-Gawne et al. 2013). These studies appear directly at odds with Abraham's materialist analysis.

Yet, to persist in absolute oppositions is to reverberate the woes of game studies' enduring essentialist temptations, and would entail a focus on what games 'are' rather than what they do – they mediate culture politically. In this sense, the infantilization of games in culture wars discourse (Egenfeldt-Nielsen et al. 2024, 168) is reflected in games' infantilization of culture, particularly by mainstream game developers who maintain that their games are void of political signification (Ruch 2021). In fact, games and gaming culture have had a seriously regressive political outlook that perpetuates attitudes of colonialism (Harrer 2018; Mukherjee 2017), sexism (Kirkpatrick 2013; Shaw 2014), and capitalism (Dyer-Witheford and De Peuter 2009; Kline et al. 2003), among other woes. A dedicated political intervention steers game studies toward a direct confrontation with games as cultural artifacts in times of ecological crisis.

Globally, recent political trajectories appear to favor denialism, opposition or reluctance to climate change mitigation over enhanced ecological mobilization (Calma 2024; McDermott and Daly 2024), spurring the need to constantly evaluate ecological negotiation, especially as the climate crisis has arrived at a generally palpable level (IPCC 2021). The development of ecological game (ecogame) studies in the last decade or so is an encouraging measure of ecological negotiation. Now, however, with the climate crisis disrupting everyday experience beyond the niche analyses of scientists and academics, the question of ecogames must likewise transcend the strictly medium- and method-specific mode of inquiry and extend itself to the perceptual availability of everyone. In other words, rather than the more rigorous analysis of ecology in games according to analysis-specific frameworks, at stake here is the development of ecological inquiry to more easily acquire everyday verisimilitude, especially in order to question the ecological politics of the everyday. Doing so likewise takes up the challenge posed by Paolo Ruffino (2024a) to refrain from a sense of universal applicability suggested by games' virtual worlds and to instead consider situated contexts of play as capable of expanding ecopolitical knowledge.

This paper develops the theoretical methodology of *anecdotal evidence* (Cubitt 2020) to account for the methodological engagement of games and ecology. The objective of this paper is to embrace the multidisciplinary and diverse background of game studies approaches and provide a conceptually overlapping framework for direct engagement with questions pertaining to ecopolitics. As such, this paper provides a holistic and straightforwardly applicable methodology for game studies analyses of ecological relationality. It does so by tracing the lineage of ecomedia studies, and its small but dedicated force in game studies, before conceptually and methodologically reflecting on the phenomenon of the anecdote to pursue ecological analysis. Finally,

the paper presents emblematic applications of anecdotal game analysis to specify how anecdotal method has already surfaced and may materialize in the future.

AN ECOMEDIA STUDIES APPROACH TO GAME STUDIES

Ecomedia studies comprises the study of media from an ecological perspective. Sean Cubitt's seminal work *EcoMedia* (2005), which preluded this field of study, argued that ecological criticism (or ecocriticism) should extend beyond explicitly ecological communication to popular media, and how they reflect ecological thinking, even if only tacitly. Later works in ecomedia studies have concerned themselves with the material requirements and environmental impact of media as well (Cubitt 2017; Maxwell and Miller 2012; Parikka 2015), and modern formulations of ecomedia studies have accordingly expressed the need for ecological approaches to account for both of these – and more – aspects of ecology in media (López et al. 2024; Rust et al. 2016a).

Hence, it is paramount for ecological scholarship to address the ecology of media as a multidimensional phenomenon, especially to avoid falling into contradictory readings. James Cameron's *Avatar* (2009) presents such a paradox of ecological meaning: the film's main theme was interpreted to be humanity's abuse of the environment, but its financial success partly relied on an intense Internet marketing campaign, fueled by server farms that at that time surpassed the airline industry in terms of carbon dioxide emissions (Rust et al. 2016b, 3). As such, *Avatar* is steeped in paradox, like many popular mediations featuring environmental themes (Parham 2016). Curiously, *Avatar*'s recent game adaptation, *Avatar: Frontiers of Pandora* (2023) is thematically faithful to the original film, but exclusive to the most advanced, hardware-intensive console generation, thus internalizing the logic of 'Bigger and Better' which is likewise the attribute of the increasingly emissive mainstream games industry (Keogh 2023; Nieborg 2011), mirroring *Avatar's* paradox in its game adaptation.

The question of ecology is necessarily a question of interrelations – "to join the dots and see that everything is interconnected" (Morton 2010, 1). If textuality is connected to materiality, and they contradict each other as in the '*Avatar* Paradox,' this reframes the practice of ecocriticism as a study of interrelations, to avoid the false attribution of absolute ecological meaning to complicit culture, as in *greenwashing* (Miller 2018). Game studies, which has long negated games' political embeddedness while celebrating the use of games for bettering society, must pay special attention to these paradoxes in order to indicate its own ecological relationalities. The history of game studies' adaptations of ecomedia studies provides fertile soil for such undertakings.

While game studies has long neglected a thorough engagement with ecomedia studies, Alenda Chang and John Parham (2017) formulated the ecological study of videogames through the multidimensional lens of ecomedia studies. Accordingly, accompanying Chang and Parham's conceptual work in *Ecozon@*'s dedicated journal issue were articles focusing both on material (Nguyen 2017) and textual (Lehner 2017; Rivera-Dundas 2017) questions concerning the ecology of games. The recent anthology on ecogames (Op de Beke et al. 2024b) shows an even greater variety of ecomedia engagements, including, next to textual (Navarro-Remesal and Torres 2024; Woolbright 2024) and material (Fizek 2024) studies, also research on a variety of practices, including game making (Stone 2024; Vervoort et al. 2024), game hacking (Germaine and Wake 2024), and fan practice (Lamerichs 2024; Scully-Blaker 2024). Chang's (2024a) opening chapter in this anthology preludes this variety by stressing

the necessity of considering the tandem of ecocritical readings of game texts, sustainable game design and industry engagement. This third branch of ecology in games, of the industrial perspective, appears especially poignant considering the recent and increasing layoffs in the games industry (Carpenter 2024), and the promise of exacerbation that automated game design seems to spell (Pitts 2024).

The present paper's answer to the ecological questioning of games is by making ecological analysis a holistic and political affair of questioning relationalities. The ecomedia veins of this thought are best represented by the work of Cubitt, who, while not writing extensively on games, defined the ecogame as follows:

> An *ecological game* is then one in which the act of externalising and objectifying the environment as other is broken down by insisting on the mutuality of production, the interaction of multiple users to produce an evolving rule-set. (Cubitt 2009)

Generally speaking, Cubitt's definition establishes that ecogames shape systems of interrelated agents which are not fully manipulable by (just) the player. Indeed, this definition was cited and further developed by Benjamin Abraham and Darshana Jayemanne (2017) when they questioned the typical objectification of environments in mainstream games, and suggested the need for games to ascribe agency to 'backgrounds' in games. However, Cubitt's quote could similarly speak to the mutuality of production between game designers, players, and the material conditions, all equally required to realize a game, in which case the categorization of ecogames opens up to significantly more samples. To productively and politically study these interrelated components of games in their ecological relations, further theorization could be undertaken, starting from Cubitt's more conventional ecomedia work, particularly his call to "re-politicize ecological discourse" (Cubitt 2014, 166).

For Cubitt, ecomedia studies is necessarily an engagement with the aesthetic mediation of politics, or what he later (2017) defined as an *aesthetic politics* that needs to be ecologically ordered. In Cubitt's assessment of politics as constituted by aesthetics, it is possible to discern Jacques Rancière's (2009) theorization of aesthetics as the distribution of the sensible, meaning the regulation of what can be perceived – and in a political sense, who is granted the ability to perceive, to speak, to feel and to sense. How fitting, then, that Alenda Chang's (2019) major consideration of games as *mesocosms* – mini-ecosystems modeling environmental processes and thus allowing players to experiment with(in) them – may evaluate this train of thought for an ecocritique of games. It conveys that every game consists of a particular distribution of sensibility (or experimental space that is distributed by a game's ruleset), and therefore every game can be studied as a realization of aesthetic politics which necessarily (re)shapes ecological relations in some manner.

The ecocritical examination of games goes further than just establishing the fact that games constitute environmental realities and allow the player structured space to experiment with(in) these realities. For Cubitt (2019), in the tradition of ecocriticism (Garrard 2012), the quest of ecocriticism necessarily means the study of media without explicit ecological messaging. Ecology permeates all media aesthetics (Morton 2007), just as media, in a material sense, permeate ecological realities (Gabrys 2013; Parikka 2015), and thus all media – and all games – should be opened up to ecological questioning. Just as ecocriticism looks beyond the obvious communication of ecological values and instead reveals environmental dimensions in

less explicitly ecologically coded texts, an analysis of ecological interrelations in games must start from the premise that all games are worthy of ecological analysis.

This paper conceptualizes *anecdotal evidence* (Cubitt 2020) as a methodological intervention to account for a holistic and ecological endeavor in the study of games that is necessarily politically oriented. Anecdotal evidence is considered as a logical methodological culmination of ecogame scholarship that makes the political analysis of ecological relations in games accessible and easily implementable for a wide audience, especially students and scholars endeavoring to undertake ecological game analysis without formal and discipline-specific game studies methods.

NOT JUST ANOTHER (TEXTUAL) GAME ANALYSIS METHOD

Because it is now broadly accepted that game studies is a multidisciplinary field, even though it strategically draws strength from the medium-specificity of games (Mäyrä 2009; Raessens 2016), the methods of game analysis have taken increasingly diverse forms, including qualitative game analysis (Consalvo and Dutton 2006), discourse analysis (Gee 2015), systematic content analysis (Lu and Kharrazi 2018), and formalist analysis (Mitchell and Van Vught 2024). These – and more – methods each have their own attributes, particularly in correspondence to their associated disciplines and fields, and make game analysis an approachable methodology for a great variety of academic inquiry. However, these specific methods necessarily sacrifice conceptual continuity between disciplines, and thus comprise the methodological issue identified by Mieke Bal (2002). Whereas Bal specifies the travel of concepts within humanities disciplines, the question of ecology as formulated in ecomedia theory imagines conceptual travel as occurring beyond media studies and humanities to greater questions vital to ecology, such as politics, economics and natural science (Cubitt 2019). Indeed, beyond any fantasy of methodologically unifying multidisciplinary game studies approaches, it empowers the anecdote to universally communicate knowledges that may otherwise only be understood in particular contexts (of discipline, location, or method).

In other words, if the general use of methodology is to specify the means of analysis, thus generating a particular set of results, the ecocritical interpretation of methodology is to analyze a particularity, and see its interconnectedness to totality – ecosystems, environments, and energy equilibria. The opposite of universal and factual communication is purely situational, related solely to the idiosyncratic, and sacrifices any relevance to conceptual development. Therefore, rather than ecology in the tree-hugging, isolated sense of 'thinking like a mountain' (cf. Cubitt 2014), a political orientation of the idiom "to make a mountain out of a molehill" comes to both its figurative and literal realization in anecdotal method, at once expanding the scope of otherwise highly limited analysis to the planetary, and questioning how highly singular nature-cultural phenomena (cf. Haraway 1989; Plumwood 2006) relate to geophysical realities no longer taken for granted in times of ecological crisis.

The call for a conceptual ecological methodology does not indicate the shortcoming of established analysis methods. Rather than taking issue with methods, it is paramount to take issue with the issue permeating game texts – that is, ecological crisis. Within the tradition of ideology critique, games can be read as politically loaded artifacts, implicitly or explicitly (Bogost 2006; Hayse 2023). Generally, this means that the question of ecological politics can be applied to every game, allowing analysts to find ecological meaning in less obvious ways. Similarly, however, games, as

increasingly complex spatiotemporal configurations of interactive play, have taken up the task of ecological mediation regardless of the analyst. This is to say that, rather than simply applying the fact that all games can be read ecologically, all games *are* necessarily ecological, especially in times where ecological crisis has reached the public consciousness. The pertinent question is rather: how?

'ANECDOTAL EVIDENCE' AS A THEORETICAL FRAMEWORK

The purpose of developing anecdotal method for game analysis is twofold:

1. It simplifies game analysis by not strictly applying any specific formal method, instead favoring an approach that is easily adaptable to the ever-changing circumstances of ecological crisis
2. The simplified form of anecdotal analysis is conceptually ecological, thus making the questioning of ecological interrelations arise naturally

To support these two claims, this section discusses the theoretical framework concerning anecdotal evidence. Firstly, the idea of the anecdote in scientific inquiry will be further discussed, to pre-empt potential dismissals of the method as unfitting for academia. Secondly, and substantiating the first purpose, the method will be situated in more formalized textual game analysis methods, to consider how anecdotal method is faithful to their procedures and dynamics while different in its objectives. The second purpose of anecdotal method will be contextualized and substantiated throughout this section by reference to ecomedia theory.

Conventionally, anecdotal evidence is a saying as much as a concept, referring to an individual experience of truth, or at its worst hearsay, which is not (yet) verified by rigorous analysis. Scientific studies tend to oppose anecdotal evidence to statistical, empirical or other rigid forms of evidence which are deemed more reliable and trustworthy, and resultingly, more persuasive (Hoeken 2001; Hornikx 2005). These issues with anecdotes appear to cause additional headaches in times of climate change, especially when fervent activists such as Greta Thunberg (2021) claim that scientific fact communication is the most important vector for climate change awareness, and academics claim that conditions of anti-scientific 'post-truth' disproportionately hurt climate change support (McIntyre 2018). Anecdotally, it is possible to corroborate this claim with experiences (or rather, lack thereof) stating that climate change is not yet 'felt' and should therefore not yet be emphasized in political debate and action (Brosch 2021; Stoknes 2014). Especially in this sense, anecdotes cannot stand in for empirically tried and statistically tested models that present the threat and possible negotiations of climate crisis.

However, here the anecdote is situated at its worst excesses rather than in its poetic strengths. The weaponization of anecdotal evidence by climate denialists demonstrates that anecdotes can be successful in emancipating people to take an avid (albeit anti-scientific) political stance, demanding answers from scientists they cannot accordingly give in the same anecdotal form. It is, therefore, rather than a phantomic antagonist, a necessary surrogate of scientific practice to clarify science in anecdotal terms (Moore and Stilgoe 2009). Rather than indulging in factual warfare and claiming pedagogical superiority, which may actually be counterproductive for persuasion (Lucas 2021), like Rancière's (1991) authoritarian figure of an 'ignorant schoolmaster,' the task is to bridge this anecdotal deficit by making ecological crisis a felt reality.

Anecdotes have a special place in the negotiation of ecological issues, as these are particularly susceptible to localized and personal experiences of (indigenous) stewardship (Schang et al. 2020), but also of death, decay, degradation, and disaster (Irwin et al. 1999; Reser and Bradley 2020). Art history already considers anecdotes a valuable resource to connect the artist to the work (Ledbury 2013). In ecomedia studies, the question of anecdotes has specifically been picked up by Cubitt. In an early negotiation of anecdotal method, he considers:

> The extremely high resolution of the anecdotal method provides depth and colour to the generalist findings of methods that deal with multiple instances and large-scale tendencies. Anecdotes test such large hypotheses against the unique qualities of artworks and experiences. The anecdotal method does not abandon the project of making statements about larger, more abstract formations like 'society' or 'cinema' – it grounds them in the specific instance. (Cubitt 2013, 6)

For Cubitt, then, the idiosyncratic is part of, rather than opposite to, the scientific process. Anecdotal evidence, in this sense, is a thoroughly ecological mode of inquiry, as it deemphasizes total human control over research findings, but rather embraces the contingency of material and physical environments, and how they uniquely shape experiences that elude statistic capture (Cubitt 2013, 16-17). A more-than-human heterogeneity of approaches has become vital to ecological thinking (Haraway 2016; Morton 2018), and it is therefore only fitting that anecdotal evidence allows such knowledges to be emphasized.

As elaborated in his more recent work, Cubitt is concerned with a more fundamental consideration of truth finding through aesthetic politics. In particular, Cubitt problematizes the contemporary computability of knowledge:

> If everything is computable […], then mathematical description no longer needs any reality beyond the mathematical self-inscription of systems. […] The quality of experience, of perception and affect, is of no account to the new accountancy of information capital other than as data, potential data, or unpaid processing power. Universal computation has no need of any reality other than its own. (Cubitt 2023, 76)

Echoing his (2017) earlier call for an aestheticization of politics, Cubitt sees a serious role for ecocritical analysis in the singular examination of universal truths. Thus, Cubitt goes beyond the tradition of ecocriticism, which generates new, ecological meanings of art, especially when they are not evident, while also stressing the need not to rely on absolute and explicit communication of universal truths, such as facts about the climate crisis. Rather, the objective materialized in anecdotal method is the evaluation of truths as they come to the fore in the aesthetics of media. In other words, Cubitt's approach applied to the study of games would emphasize the situational as an evaluative measure of the universal. Now the question arises how to position such an approach within game studies' rich history of methodological tinkering.

Games have unique potential to foster thinking anecdotally, especially because they essentially consist of systemic models of experimentation (or 'possibility') space (Bogost 2007) that incorporate individual player feedback on scales far beyond the local (Chang 2019). Politically speaking, this is the realization that games are political artifacts, but that their negotiation in play is, next to a methodological, also a political

endeavor (Sicart 2014, 73). Exemplifying this is Ian Bogost's reflection on his falsely presumed linearity of game communication, when he shares an anecdotal example of his students rejecting a game's dominant meaning while playing an otherwise "terrific example" of persuasive political game design (Bogost 2021, 33), thus deconstructing the notion that this communication necessarily persuades as intended.

In other words, the situational of the anecdote in play directly negotiates the universal qualities of games. Retrospectively, the rich tradition of methodological formation in game studies could all be explained as variations on this essential idea – the question of how interactive experience is entangled with the formal properties of a game text. In particular, Diane Carr's (2019) conceptualization of textual game analysis, which emphasizes the player's subjectivity and embodiment, serves as a precedent to the ecological analysis advocated here. Carr stresses the importance of the player-as-analyst, and especially their "context, subjectivity, and lived experience" (Carr 2019, 711). Textual analysis, for Carr, is not to be employed with a categorical, predetermined focus, but rather in consideration of the context, which demands a more situational focus on elements relevant to this context. Anecdotal method does not differ from this idea, but instead locks in ecopolitical concerns as the relevant meaning to be read by the player-as-analyst.

Likewise informing anecdotal method is the spectrum of games-as-object and games-as-process (Van Vught and Glas 2018). This spectrum is designed with first-time analysts and students in mind, and maps different attitudes toward the game ranging from close to the texts' linear instructions to engaging in free play at odds with these instructions. For anecdotal method, this spectrum collapses, as the situated and processual is folded directly on the objective and formal. The player's experience is necessarily interpreted as implicated in the designed systems, their biases and effects. Indeed, such a spectrum is helpful in determining why certain attitudes are well-warranted, and others are more rebellious, according to the game system's ecosystem. Anecdotal method builds on this method for the realization that player-game relations necessarily constitute an ecological relationality, but extends this consideration beyond the game text to material and industrial relations as well.

ANECDOTAL METHOD AS AN ECOLOGICAL ANALYSIS METHOD

Having established the theoretical lineage and framework of anecdotal evidence, it is now possible to formulate and demonstrate how anecdotal method works for game analysis. In essence, as argued by Cubitt (2020, 32), anecdotal method is the interrogation of texts in a similar vein to traditional textual analysis and close reading methods, but with the significant distinction that it does not favor either isolating the text in its historical context, nor isolating it from its historical context. Rather, any anecdotal method is at the same time a historical interrogation of the text's crisis as a mediation of past, present and future (Cubitt 2020, 35). Indeed, in the spirit of Dipesh Chakrabarty's (2009) ecological intervention in the discipline of history, Cubitt's anecdotal method becomes a historically positioned ecopolitical questioning of media texts, where all historical contexts (the developer's, the materials', and the reader's) are mediating each other, thus making them ripe for interconnected questioning.

Such an ecocritical practice quite straightforwardly translates to game studies, both as a method and as an ecological lens. The variety of games, as complex cultural artifacts consisting of both real rules and fictional worlds (Juul 2005) – or, as Alenda

Chang (2019, 20) remarked, perhaps of real worlds and fictional rules – blends these various historical contexts at once in its presentation to the player. Analyses of games have considered their potential for visual artistry (Sharp 2015); narrative depth (Mukherjee 2015); aural variety (Kamp 2024); interactive poetry (Mitchell et al. 2020); and tactile affectivity (Anable 2018), among other characteristics (cf. Tavinor 2009). Textual game analysis methods have enabled the analysis of such formal elements in specific (Fernández-Vara 2024, 18-20), whereas other studies have instead focused on the practice of play as a material or 'meta' layer beyond the formal qualities tied to the artifact's text itself (Apperley and Jayemanne 2012; Boluk and LeMieux 2017). In anecdotal method, these approaches make up the same analytical gesture centered around ecopolitical relationality. The way the player situates themselves within and toward the game (by making, breaking, competing or cheating) not only generates unique anecdotal knowledge on the player's ecological existence within the game world, but also necessarily reports on the boundaries of this game world, and thereby on the physical reality this game world represents.

This perception of anecdotal method can be taken literally, as the primary transcription of a player's play session of any game. This literal adaptation is a prerequisite for anecdotal analysis, bolstering the strength of the anecdote as evidence of ecological encounter. In addition to this proviso, the analyst must be ecologically minded, through a dedicated questioning of ecopolitical interrelations – presumably of predetermination (via a concept or phenomenon), but possibly of serendipitous emergence, an observation in-crisis or appearing during reading.

Despite its rejection of specific procedure, anecdotal method can generally be identified in game analysis when it meets the following requirements:

1. The analysis concerns at least one game and at least one player-as-analyst's interaction with this game (textually and/or contextually)
2. The analysis studies (an instance of) ecological relationality and positions this relationality in ecopolitical discourse
3. The analysis can (partly) be presented in anecdotal form, as the story of a play session or other situated narration of engagement within and beyond play

If anecdotal method can be applied regardless of the game's commitment to ecological communication, the analysis should likewise work on abstract game design. For example, consider booting up the classic game of *Tetris* (1985) and analyzing it. Historically, the game has been read as representing overburdened working-class lives (Murray 1997). At the same time, however, this is a representational reading tied to its 20th-century release, which begs the question of what the significance of *Tetris* is today. In contemporary discourse on *Tetris*, questions of progression and completion speed are increasingly being asked (Dallant and Iacono 2024), opening up the question whether this may represent an adaptation to digital capitalism's increasing acceleration of life (Wajcman 2014). Beyond the textual level, access to the classic, original *Tetris* on its original platform, the IBM PC DOS, is not as straightforward as one of the many re-releases in variants or mediations of *Tetris*, featuring differing levels of graphical detail, and of energy and material requirements. Finally (but not exhaustively), motivations for playing, alone or in a social context, may differ significantly from time to time and place to place, from game mod to competitive event.

These varying conditions of game, play and players create a plethora of anecdotes, reframing questions of what *Tetris* is, what it represents (or not), what playing *Tetris* means to different players and communities, in disparate sociohistorical contexts. These questions have been studied and can be answered with traditional game analysis methods, but their theoretical nexus is only stressed in an ecological sense through anecdotal method, when relationality and mediation themselves become the object of analysis. Critical inquiries of *Tetris* are then engaged to produce ecological meaning, such as how playing the latest version of *Tetris* on a high-end pc may stress different representational features, while demanding more in terms of power requirements.

More directly inspired ecological analyses have already been conducted without specification of any strict methodological framework, and they reveal ways players and communities relate to game texts, and how games mediate lived realities. Cory Arcangel's famous artwork *Super Mario Clouds* (2002), where a cartridge of *Super Mario Bros*. is hacked to contain only the animated white clouds on the game's sky-blue background, is described as "a refusal to participate in contemporary culture's lightning-fast cycle of technological turnover" (Whitney Museum of American Art n.d.). Here, an anecdote tied to a classic game becomes an artistic statement against mainstream gaming's perpetual upgrade culture, a phenomenon that is ecologically destructive in multiple ways. As far as anecdotal evidence is concerned, *Super Mario Clouds* demonstrates to its ultimate extent how especially singular interpretations can carry weight for phenomena of great scale and consequence.

The most sophisticated ecocritiques of games can retrospectively be considered as variants of the ecopolitical analysis envisioned by anecdotal method. This is true for some analyses in the recent ecogames anthology. For example, the form of anecdotal method is preluded in Hans-Joachim Backe's (2024) 'differential analysis.' Focusing on the differences between players' textual experiences as they manifest themselves in their gameplay and how they allow for comparative reflection on environmental representation, Backe even goes as far as typifying such a methodology as somewhat anecdotal, providing reference to Cubitt (2020). Indeed, anecdotal method could be seen as an extended form of this kind of analysis, possibly featuring next to textual player-game relations also considerations of material and industrial aspects.

Other examples in the recent ecogames anthology powerfully study those ecological relations. Laura op de Beke's (2024) analysis of 'petrocultures' in oil-themed games is one such example, coupling her approach with the thematical lens of petroculture at large. Oil permeates culture, and communicates its associated characteristics through games, just as "coal has communicated with humans for centuries" because it "has sent messages about the consequences of burning it" (Cubitt 2017, 169). For Op de Beke, oil-themed games surround cultural feelings associated with oil extraction. These games, in turn, invoke petrocultural power fantasies while obscuring oil extraction's destructive implications. By owing this observation to the fact that "video games give us license to play with desires that in most other contexts would be deemed improper, or at least politically polarizing" (Op de Beke 2024, 306), Op de Beke achieves a politically oriented ecological analysis of a more-than-game phenomenon that typically assumes innocent pleasure, just as so many games and discourses of gaming culture have before.

In the same collection, Paolo Ruffino's (2024b) analysis of *No Man's Sky* (2016) shows the ecocritical potential of relating textual elements to the working conditions in game

development. His (2020) original analysis of *No Man's Sky* considered this procedurally generated title to be profoundly ecological in its sense of deconstructing human agency in favor of the nonhuman. Even environmentally exhaustive developments of AI generation were then prophesied as ecological companions. His (2024b) more recent take on *No Man's Sky* and procedural generation follows Aleena Chia's (2022) critique of procedural content generation as exacerbating the hegemonical organization of the game development process. By productively examining the paradox of text and development context, Ruffino develops a more balanced and ecologically interconnected study that appropriates the analysis of games for ecopolitical inquiry, transforming an idiosyncratic argument on *No Man's Sky*'s textuality into an ecopolitically embedded evaluation.

Ruffino's latest analysis of *No Man's Sky* is more conscious of the paradoxes games with otherwise fecund ecological textuality may entail, in similar vein to the *Avatar* Paradox. Anecdotal analysis can take up the task of identifying paradoxes in general, especially since they surface on relational levels, thus avoiding the analytical greenwashing of any single game. For example, Lawrence May and Ben Hall (2023) identify a paradox between representation and encouraged player mindset in *Cities Skylines*' (2018) paratextual content, which perpetuates destructive myths of human mastery over environment. As another example, Erik van Ooijen (2018) discusses how *The Sims 3: Pets* (2011) and *Stardew Valley* (2016) establish relations between people and pets, and farmers and livestock, as friendly and harmonious (not allowing their slaughter), yet both consider fish as killable and edible, thus creating a hierarchical relationality between species.

A retrospectively identifiable example of anecdotal analysis that tackles multiple relationalities is Edward McGowan's (2024) mapping of the evolution of Death Mountain, the volcano of the fictional country of Hyrule, home to the *Zelda* (1986-) series of games. Through an analysis of games featuring the volcano (or not), and a comprehensive timeline of the franchise's universe, the author tracks the evolution of the volcano through these games, and determines whether this evolution could be considered as realistic according to geological laws. Answering this question mostly in the affirmative, McGowan concludes that the franchise's volcanology makes observable on the textual level a geological phenomenon that, in its physical equivalent, would require an analysis beyond realistic temporal restraints.

McGowan's analysis achieves several ecological findings: 1) the *Zelda* franchise is explained as a series that successfully integrates geological processes, thus responding to Jussi Parikka's (2015) call for geophysical aesthetics in media; 2) by making general processes of the Earth palpable in the particular experience of playing games, McGowan more than adequately fulfills the potential of anecdotal evidence to singularly and situationally prove and testify to universal truths of ecology; and 3) in constructing the analysis from the call to make geology more interesting to potential new students, McGowan addresses a direct sociopolitical impetus for ecological engagement.

McGowan's analysis is more strictly ecological in the sense that is considers the life of an environmental object beyond human control and out-scaling human – or in the case of *Zelda*, Hylian – existence, coming rather close to what Timothy Morton (2013) referred to as a *hyperobject*. The necessary intervention in games' continuing obsession with power fantasy, and the player-character as the manipulator of nature, while not necessarily overturned by the game itself as it is in more experimental

games (Rivera-Dundas 2017), is rather anecdotally overturned by the author, who demonstrates the outlasting qualities of the land compared to the short lives of its inhabitants. Both the concern that ecological crisis measures itself in slow time (Nixon 2011) and that games are particularly capable of portraying changes on large spatiotemporal scale within the individual play experience (Chang 2019) are now captured in an anecdotal account concerning a thoroughly inter-ecological theme. As such, McGowan's analysis is a prototypical example of how anecdotal analysis naturally lends itself to the ecological study of games and their virtual/real worlds.

THE DIRECTIONS OF ANECDOTAL METHOD

The preceding examples, however, remain anecdotes of what ecological mediations can be achieved through anecdotal method when applied retrospectively. The purpose of framing such analyses as anecdotal method is that they can prospectively be purposefully claimed for a more robust ecocritique of games, thereby providing recourse for students and commencing analysts, and establishing a more productive discourse. Concretely, this means that any academic analysis employing anecdotal method is familiar with the interconnected question of ecopolitics, and analyzes an encounter with ecological mediation without any rigid method that separates one ecological register from another, as much as rigid methodology may have to offer ecological analysis itself.

The specific direction of ecological questioning is loosened from its pre-ordainment of explicitly ecological subject-matter. In fact, the more explicit the ecological artifact, the less interesting an anecdotal encounter becomes. The purpose of ecocriticism remains the understanding that all culture and art is inherently ecological, rather than stressing that some artifacts are superior in ecological communication. Hence, the most valid and necessary ecological – and thus anecdotal – analyses pertain to popular mediations that can be of significance to public consciousness (Cubitt 2005).

A historically successful title and accompanying anecdote is *Untitled Goose Game* (2019). The game, centering a goose's perception of a human environment, rather than the intuitive opposite, has been textually examined and situated in ecocritical dialogues (Caracciolo 2021). Furthermore, the game became a global phenomenon, with many anecdotally referring to the goose's particularly combative stance toward humans (Keogh and Tulloch 2023; KnowYourMeme n.d.a), and has since inspired others to develop ecological games according to its engaging model (Bonetti et al. 2024). In other words, the power of *Untitled Goose Game* is preserved in its anecdotal quality, as reference to situations occurring in the game help imagine constellations of ecological relationality (in this case, between human and nonhuman) and are invoked upon every iconic mention.

From *Untitled Goose Game*, the anecdote has spread naturally, without any need of academic discourse, even though the game is not one-dimensional, let alone preachy, in its ecological communication. Anecdotal method opens up such dynamics to more games, to share ecological anecdotes on and beyond a peer-to-peer basis. Popular discourse on games already features the anecdote as a comprehensive form of communication, from "You Died" memes on the *Dark Souls* series (KnowYourMeme n.d.b) to the reimagination of Mahatma Gandhi as a nuclear warmonger in the *Civilization* series (KnowYourMeme n.d.c). The objective of anecdotal analysis is to cultivate anecdotes that reflect on ecopolitical relationalities. As such, anecdotal method could particularly pursue the following relations constituted by games:

- The much-documented relationality between player and game system, where the system constructs a particular ideological constellation (Bogost 2008), but where the player is to some extent free to determine their allegiance or opposition toward this constellation, thus making gameplay a fundamentally moral activity (Sicart 2009). However, this subjectivity must be measured according to its ecological relations, questioning both how the game represents the environment (Abraham and Jayemanne 2017) and how the player necessarily posits – and can powerfully posit – an ecological stance through gameplay, at times transgressing intuitive gameplay subjectivities (cf. Westerlaken 2017).
- Representations of 'real worlds' (Chang 2019) in games, or allusions to real locations and phenomena in games – and their limits due to modal representation (Chang 2024b). Likewise, virtual worlds that live as real worlds according to their communities, and their environmental history that lives on in anecdote (Bainbridge 2010), such as how players of MMORPGs reflect on the loss or disintegration of their inhabited game world or server.
- Aesthetic elements categorical to games, such as 'fun' (Sharp and Thomas 2019) and 'immersion' (Calleja 2011), and specifically how questions of such categories are transformed when ecopolitically examined (e.g., Nicoll 2024).
- Audiovisual elements of games that may become iconic points of reference in anecdotal form, for example in dialogue, cutscenes, moral choices or other representational elements of game aesthetics. These are already powerful in the construction of gender (Murray 2018) and (post)colonial (Mukherjee 2024) relations, and can likewise be important in the construction of similar and other ecological relationalities.
- The player's awareness of the material conditions of play, emphasized through crisis, for example in terms of battery or energy failure, lag, bugs, glitches or crashes, inaccessible content, poor rendering, performance or graphical display, and similar technical shortcomings (cf. Höltgen 2021).
- Experiences of the modification of games, and how they (facilitate) change (of) ecological meaning (or 'ecomodding' experiences (Werning 2021)).
- Anecdotes pertaining to the development of games' workplace conditions, especially when they are relevant to game design choices (Banks and Keogh 2021; O'Donnell 2019).
- Any (re)combination or (re)mediation of these aspects, when folded onto each other.

In any case, successful anecdotal analysis distinguishes itself not through methodological rigor, but through thematical alignment on questions of ecological relationality and mediation. Students and other analysts should therefore not concern themselves with disciplined application as much as with ecopolitical evaluation. Furthermore, anecdotal analysis should not be considered as a replacement for more specific analysis methods that are concerned with empirical data, or other measurements beyond the boundaries of textual analysis methods. If anything, anecdotal analysis serves to situate more rigid analysis methods in aesthetic form and experience.

CONCLUSION: THE ECOLOGICAL ANALYSIS OF THE FUTURE

As established at the outset of this paper, game studies finds itself at a crossroads, amidst an ecological crisis relevant to games on material, textual, and industrial levels. Anecdotal method is an ecopolitical intervention in textual game analysis methods that emphasizes the different ecological entanglements of videogames and their interrelations. By simplifying and broadening, rather than complicating and specifying, the methodology to create ecological readings, anecdotal method has been conceptualized as a relatively accessible, unstructured and ecopolitically oriented methodology to conduct game analysis. Capable of transcending idiosyncratic textual analysis, by specifying truths of greater scale and significance, anecdotal method allows for the cultivation of anecdotes as powerful and recognizable instances of ecological interrelations, thus allowing for communication beyond disciplinary boundaries. Furthermore, anecdotal method aligns otherwise distinctly situated ecological analyses by providing a common vantage point, without denying the specificity of each inquiry's objective. Therefore, anecdotal method presents an open-ended variety of directions for analysts, and makes ecological game analysis widely accessible.

The objective of developing anecdotal evidence as a method is the cultivation of an ecocriticism of games. In times of ecological crisis, both academia and society at large require ecopolitically oriented forms of questioning that extend beyond obvious or purposefully designed ecological communication, without merely resorting to niche ecocriticism of obscure titles. Anecdotal method allows academics of all backgrounds and levels to more easily dedicate their analysis to ecopolitical purposes, and resultingly, to communicate results more clearly to audiences within and beyond academia. In rapidly changing times of ecological crisis, such mobile and ecopolitically positioned methods are of utmost importance to bridge anecdotal deficits and make ecological realities perceivable.

However, anecdotes and anecdotal method are not adequate replacements for ecological science, and should not be considered as substitutes for other modes of scientific inquiry. In fact, anecdotal evidence works best when corroborating, testifying to, or otherwise making textually perceivable what otherwise exists in a vacuum of academic engagement. However, any exploration of the retroactive use of anecdotes for the cultivation of scientific practice itself is highly encouraged, just as is any application of anecdotal method to more specific game analysis methods, or purposes beyond ecology.

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