

Within the Mainstream: An Ecocritical Framework for Digital Game History

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Abstract

Ecocriticism of digital games has so far engaged with a rather small corpus of examples, often prescriptively and with a quite limited methodological toolkit. This essay systematizes and historicizes some of these commonly found limitations of past research and proposes methods for a more historically and generically diverse exploration of ecological thinking vis-à-vis digital games. The majority of discussions of games from an ecocritical perspective has applied concepts and frameworks borrowed from literature and film studies, thus privileging surface semiotics over game mechanics. More methodically aware studies have oriented themselves toward the popular framework of procedural rhetoric (Bogost 2007), resulting both in a selection bias towards serious games and an author-centric, intentionalist slant inherent in the approach. In general, the discussion revolves around a small number of games with apparent ecocritical potential, such as *Myst* (Cyan 1993) or *Farmville* (Zynga 2009), resulting in a selective, a-historic and therefore distorted discussion of ecology in the diverse medium of digital games. This essay discusses strategies for dealing with a larger corpus of digital games through a descriptive matrix for identifying and analyzing the ecological dimension of digital games. It proposes an extension of the ecocritical toolkit by including a more user-centered, ethics-based theoretical framework based on Sicart's *Ethics of Computer Games* (2009). The gain of engaging with representation and simulation of the natural environment in mainstream computer game history will be demonstrated in an analysis of two paradigmatic games. In both *Red Dead Redemption* (Rockstar San Diego 2010) and *Dishonored* (Arkane Studios 2013), we encounter game design geared toward producing ludo-narrative dissonances which are highly inductive of critical engagement with the ecosphere.

Keywords: Historiography, popular culture, entertainment, anthropomorphism, methodology, ethics, *Red Dead Redemption*, *Dishonored*.

Abstract

La ecocrítica de los juegos digitales se ha centrado en un corpus de ejemplos muy pequeño. Asimismo, la ecocrítica se ha basado en un número muy limitado de métodos. La mayor parte de los debates sobre juegos han utilizado conceptos y teorías tomados de la teoría literaria y el análisis cinematográfico, haciendo prevalecer por tanto análisis semióticos superficiales sobre el estudio de las mecánicas de juego. Los estudios que aplican métodos de *game studies* suelen estar basados en la teoría de retórica de procesos (Bogost, 2007), lo que acarrea una selección de ejemplos sesgada hacia los *serious games* y los juegos de autor. En general, estos debates se centran en un número pequeño de juegos con potencial ecocrítico, como *Myst* (Cyan 1993) o *Farmville* (Zynga 2009), lo que deriva en una discusión selectiva y ahistórica de la ecología en un medio tan diverso como los juegos digitales. Este artículo presenta estrategias para analizar un corpus de juegos mayor y propone una matriz descriptiva para identificar y analizar la dimensión ecológica de los juegos digitales. Metodológicamente, este artículo opera con una extensión de la teoría ecocrítica que incluye un marco teórico centrado en el usuario y

basado en *The Ethics of Computer Games* (Sicart, 2009). Los beneficios de centrarse en la representación y simulación del medio natural en el canon de los juegos digitales serán demostrados a través del análisis de dos juegos paradigmáticos. Tanto *Red Dead Redemption* (Rockstar San Diego 2010) como *Dishonored* (Arkane Studios 2013) producen disonancias ludo-narrativas que promueven una relación crítica con la ecoesfera.

Palabras clave: Historiografía, cultura popular, entretenimiento, antropomorfismo, metodología, ética, *Red Dead Redemption*, *Dishonored*.

Introduction: Game Ecologies, Broad and Narrow

Ecocritical studies of games are, as the other contributions to this issue document, both necessary and challenging. Ecocriticism has always been conceived of as an open movement, characterized by a “commitment to environmentality from whatever critical vantage point” (Buell, *The Environmental Imagination* 11). At the same time, “[e]co-criticism takes as its subject the interconnections between nature and culture, specifically the cultural artifacts of language and literature” (Glotfelty xix). Only in recent years has this traditional focus on the literary been identified as little more than a “home-discipline affinity [...] of literature-trained environmental critics”, whose endeavor has been a necessarily interdisciplinary one from its very beginnings (Buell, “Ecocriticism” 103).

Ecology is a term one encounters with surprising frequency in game studies—however mostly in a metaphorical sense, following the lasting influence of Gregory Bateson. It is used to denote human embeddedness in digital environments (Salen), or, in more technological contexts, the algorithmic interdependencies of gameworlds (Grimshaw and Schott). Consequently, while established game scholars sidestep ecocritical questions even in analyses of games with a pronounced ecological dimension (Begy and Consalvo), experienced ecocritics have often struggled with addressing the peculiarities of games. Early ecocritical studies of games (Ulman, Clary) tended to disregard medium specific aspects and dedicated game studies methodologies, while at the same time privileging a handful of atypical games such as *Myst* (1993).¹ Newer studies, most notably Alenda Chang’s excellent work, have mostly overcome these issues, yet as in any developing field, the variety of examples discussed and the range of methods applied is still somewhat limited.

A survey of existing writing on the topic reveals a completely understandable, possibly even unavoidable privileging of advocacy and activism over detached analysis. There is a tendency towards selecting a specific type of example in a fashion comparable to ecocritical film studies’ focus on the “genre of ecocinema” (Willoquet-Maricondi 45).

¹ Amy Clary, for example, interprets the success of *Myst* as a part of “the ongoing desire for *representation* of the natural world in popular culture” (105, my italics) and analyses exclusively the visuals of the game, ignoring the immersive and interactive qualities that set games apart from other media. It needs to be pointed out, though, that such underdeveloped approaches are widespread in—even typical of—early contributions to all branches of game studies.

Amy Clary, for example, limits her study to “games that teach natural resources stewardship” (107), while Chang focuses primarily on overtly ecocritical games to “embrace and encourage game design in forms that recall our favorite modes of natural play” (“Games as Environmental Texts” 58) and which “measure games as instruments of public knowledge” (“Games as Environmental Texts” 59).² Equal attention is devoted to negative extremes in the depiction of the natural environment, e.g. in farm games, which “inevitably caricature complicated biological and economic processes” (Chang, “Back to the Virtual Farm” 250). The analyzed examples thus cluster towards the ends of a categorical spectrum, with intentionally ecocritical games on one end and environmentally irresponsible games on the other, explicitly excluding ‘modern’ and ‘popular’ “console blockbusters” (Chang, “Games as Environmental Texts” 58) in favor of atypical, albeit very successful, games.

The central hypothesis presented here is that ecocritical studies of computer games would benefit from taking the long and rich history of mainstream computer games into consideration more frequently and systematically. The classifications of ‘atypical’ versus ‘mainstream’ is, of course, tentative, a shorthand meant to highlight that many common genres and conventions are underrepresented in the existing literature. Examples like *Myst* or *Farmville* are important milestones in the history of computer games that have reached millions of players, yet they are not indicative of the medium’s capacity for simulating the natural environment in intricate detail, nor of the expansive and intricate ludo-narrative hybrids distributed by major publishers as single-player computer games.

Ambitious nature simulators can be traced back at least to *Eco* (1988), *SimEarth* (1990) and *SimLife* (1992), and came to significant popularity in *Creatures* (1996) and its numerous sequels. These games are complex and ambitious even by today’s standards and deserve study. *SimEarth* allows the player to manipulate twenty macro-level parameters such as erosion and cloud formation as well as giving her the opportunity to manually trigger events such as volcanic eruptions and to influence the flora and fauna of specific areas. While this sounds like a power fantasy, the effect of the simulation is rather the opposite, namely a game that suggests omnipotence yet not only withholds it, but makes it seem completely unachievable. The combination of the excess of parameters and the graphical limitations of the user interface, above all the maximum resolution of 640x480 pixels, impress upon the player the quite literally super-human scope of the simulated system. The interrelations between the geology, atmosphere, hydrosphere, plant and animal life cannot be processed either visually or mentally. While in their later landmark, *The Sims* (2000), Maxis stress that the mundane is manageable, their earlier games revel in the almost unmanageable complexity of interrelated systems. While it is possible to play *SimEarth* successfully, one can never fully master the game, because the remaining contingencies are not only greater than in

² These approaches put games and ecology into the frame of science education, where the accuracy of scientific facts is the primary focus of attention. This leads Chang to correctly identify *Spore* (2008) as a problematic environmental game because it over-simplifies and distorts natural processes (Chang, *Playing the Environment* 1–2).

other games, but of a more fundamental kind. *SimEarth* leaves the player with two lasting impressions: one knows very little about the history of the planet and its evolution, and even if one does, it is frequently impossible to attribute the game's outcome to player actions or the autopoietic quality of the ecological simulation.

Excluding the mainstream from an ecocritical approach to games is problematic, it seems. It is for these reasons that, inspired by the broadening of scope in ecocritical film studies (Murray and Heumann, Rust et al.), this article proposes to extend serious ecocritical thinking to popular digital games at large, and sketches an ethics based approach to the history of ecology discourses in computer games. It proposes a descriptive matrix for gauging the ecological dimension of digital games based on existing models of game ontology and play ethics. These tools are used in analyses of paradigmatic cases in which procedural design and player behavior create friction. The overall aim of proposing such a method for an environmentally aware interpretation of games is to stipulate a more widespread discussion of ecocritical thinking to game studies by offering up an easy-to-use, systematic tool for the identification of ecocritically interesting examples.

Exploring the Field

Considering mainstream games for a systematic discussion of ecology in computer games is contingent on two questions: Are there enough viable examples, and, if so, how can they be properly systematized in order to prevent positivist and unspecific analyses?

In fact, a brief historical overview of computer games shows a wide variety of ecological phenomena. One recurring, even ubiquitous topic is the relationship of human and non-human agents, which leads many mainstream games to deal with themes identified as central to ecocriticism by Buell, such as “human obligations toward the nonhuman world, the porousness or solidity of the human-nonhuman border, interspecies communication” (“Ecocriticism” 106).

Even the least sophisticated implementations of playable animal characters give rise to reflections on anthropocentrism and anthropomorphism. The popularity and influence of these games has traditionally been enormous, from early arcade games like *Frogger* (1981) and *Donkey Kong Jr.* (1982) to console games of the 1990s—from *Sonic the Hedgehog* (Sega, 1991) to *Ecco the Dolphin* (1992), *Earthworm Jim* (1994), *Gex* (1994), *Jazz Jackrabbit* (1994), *Crash Bandicoot* (1996) and *Spyro the Dragon* (1998)—not to mention all the worms, lemmings, and birds that have made group appearances in digital games.³ With equal frequency, animals are subjected to the agency of human avatars. Fishing, hunting, and farming games—like *King Salmon: The Big Catch* (1993),

³ In his application of Thomas Nagel's reflections on the ontological differences between human and non-human sensory perception, Stefano Gualeni points out that even imperfect renditions of an animal perspective in computer games possess enormous potential: “The crucial point in this understanding of the metaphysical relevance of interactive digital media content is that it prompts humans to apply their cognitive and perceptual equipment as well as their subjectivity to a context that could not be encountered in their ordinary life” (“What is it Like to Be a (Digital) Bat?” 5).

Deer Hunter: Interactive Hunting Experience (1997) and *Animal Crossing* (2001)—therefore raise very different questions of anthropocentricity. Somewhere between the extremes of anthropomorphism and commodification, we find virtual pets of different complexity, from the original *Tamagotchi* (1996) to ‘nurturing games’ like *Petz: Horsez* (2006). Of a similar anthropomorphic status, yet on a different level of anthropocentricity, are the animal companions of adventure, role-playing or action games, from the second-order avatars in *Black & White* (2001) to the NPCs in *Fallout* (1997) or *Dragon Age: Origins* (2009), and the same issues can be raised with other non-human game characters, be they elves or extraterrestrials. All these categories are often dissolved or called into question by anthropomorphic machines and objects—artificial intelligences like SHODAN in *System Shock* (1994) or GLaDOS in *Portal* (2007), sentient weapons like *SoulCalibur’s* (1998) Soul Edge, robots like the Protectrons and Sentry Bots in *Fallout 3*—which may appear alongside anthropomorphized animals (the core concept of *Ratchet & Clank* (2002)), or even form hybrids, like Max, the four-armed, cigar-smoking cyborg dog in *MDK* (1997) or Rex, the ‘cyberdog’, in *Fallout: New Vegas* (2010). And there are, of course, many tropes apart from encounters with the non-human that make mainstream games interesting from an ecocritical perspective. Most notable are examples that deal with the threat of biotechnology—like the *Resident Evil* series (1996–2017) and *Far Cry* (2004)—, natural disasters—*Spec Ops: The Line* (2012)—or visions of a postapocalyptic biosphere—the *Fallout* (1997–2015) and *STALKER* series (2007–2009).

It should have become apparent that even within such a small selection of examples and phenomena, there are many instances that would warrant analysis and categorization. This answers the first question, pertinence, and prepares the second, method. The key reason for the wealth of examples is, more generally formulated, the systemic coincidence of two of the main foci of environmentalist criticism: the setting as more than a neutral backdrop (Buell, *The Environmental Imagination* 4), and the privileging of human perspective and resulting anthropomorphism. According to environmental philosopher David Keller, humans cannot but think of themselves as the center of every discourse. This stance, he stresses, is one of “the defining features of Modernity” (Keller 709). One of the key components of this anthropocentric world view is a mechanistic perception of nature that “entails the conclusion that nature has no intrinsic value” (Keller 710). Formalized games of strongly ludic character (Caillois 27–28) (i.e. goal-driven board games and digital games) tend towards a mechanistic treatment of all their subject matter. Sometimes reduced to the management of resources (Salen and Zimmerman 78), games are characterized by the construction of complex, yet calculable systems with many discreet, unequivocally defined elements. These systems share important traits with the ecosphere as conceptualized by Barry Commoner in the early 1970s; they tend to be an interdependent, closed sphere “in which nothing can be gained or lost and which is not subject to over-all improvement, anything extracted from it by human effort must be replaced” (Commoner 23).

Regardless of the fact that there are absolutely no natural environments in computer games—because virtual worlds are completely ‘built’, and as such, suffused

with technical and strategic significance (Aarseth, “Virtual Worlds”)—the environments coded as natural within game worlds can be critiqued.⁴ Chang defines these as “not only topography but also the flora and fauna that should be coextensive with such topography, and their manifestations via images, sound design, and potential for interaction” (“Games as Environmental Texts” 79, EN 4). It is especially the last aspect that Chang identifies as crucial: the ability to interact with the game environment. Two of the three gravest mistakes she diagnoses in the handling of natural environments in games are connected to this: “relegating environment to background scenery, relying on stereotyped landscapes, and predicating player success on extraction and use of natural resources” (Chang, “Games as Environmental Texts” 58). As games allow players to be an active part of an environment (as opposed to an observer in other media), the actions they can (or cannot) perform towards this environment are imminently meaningful (Vella 6–7). Yet how does one account for these actions within analyses of game objects?

Proceduralism and Ethics

Just as the virtual worlds themselves are completely fabricated, so are their behaviors and the players’ abilities to influence them or be influenced by them. As such, the processes the players participate in carry meaning. The most widely used theory of this kind of meaning-making is Ian Bogost’s concept of procedural rhetoric. He stresses that “abstract processes [...] can be recounted through representation. However, procedural representation takes a different form than written or spoken representation. Procedural representation explains processes *with other processes*. Procedural representation is a form of symbolic expression that uses process rather than language” (9; emphasis in original).

Bogost’s strong claim that procedural representation foregoes and replaces language, while paradoxically amounting to a language of its own, poses many challenges. Newer publications thus explain more modestly that the “proceduralist position strives to understand a game’s meaning in the context of the processes that it affords [...], sharing similarities with the New Criticism movement which strove to understand how language can be *charged with meaning*, without relying on authorial intention, individual experiences, or historical context” (Treanor and Mateas 2; emphasis in original).

While proceduralism seeks to enable analysis independent from implied authorial intention, its language-analogy leaves open the question of whether processes

⁴ The virtual worlds of games matter, because they are cognitively as well as conceptually actualized in the process of incorporation: “the absorption of a virtual environment into consciousness, yielding a sense of habitation, which is supported by the systemically upheld embodiment of the player in a single location, as represented by the avatar” (Calleja 169; emphasis in original). A similar argument has been made by H. Lewis Ulman from an ecocritical vantage point, who argued that the distinction between “real” and “virtual” landscapes is meaningless. Not only are (mirroring Calleja’s argument) similar phenomenological stances taken towards both. The degree to which nature has been shaped and transformed by humans, especially when aiming to produce an “even more natural nature” as in the case of natural parks, blurs the distinction: “Yet even our attempts to preserve and protect material, nonhuman nature from the worst effects of human encroachment necessarily entail the virtual” (Ulman 353).

denote or connote meaning. Bogost suggests a denotative quality when he discusses the persuasive power of procedural rhetoric; in the words of his critic Miguel Sicart: “players will be ethically or politically affected, or *persuaded*” (Sicart, “Against Procedurality” n.p., emphasis in original). This idea, the assumption that games are encoded with values and directly reproduce them in their players, has been taken literally in some games ecocriticism, and, ironically, even been attributed to authorial intentions: “I wish further to emphasize that *Norrath*, as an interactive and redundant medium, does not just reflect the value system of its designers, but works to reproduce these values in the user” (Stumpo 30).

The revised proceduralist approach of Treanor and Mateas identifies this stance as that of a “naive proceduralist” (3). They oppose the idea of a directly encoded message in games and stress the importance of context and interpretation. Yet even they remain convinced that the communicative power of games relies on processes with unequivocal meaning that will be understood by players (4).

As indicated, one of the most vocal critics of procedural rhetoric is Miguel Sicart. While he (as probably do most game scholars) agrees with the basic observation that games produce a significant part of their meaning through rule-based processes, he has spoken out against the deterministic dimension of proceduralism. Sicart posits that to actually effect a change in players, games have to be “ethically relevant”, which he defines as “a game in which the rules force the player to face ethical dilemmas, or in which the rules themselves raise ethical issues” (*Ethics* 49). These games create “a space of ludic possibility that is determined by a set of ethical values” (*Ethics* 50) through their ontology as “both objects and experiences; they are objects designed to be experienced, and they only exist fully in that process” (*Ethics* 30).

As objects, games are made up from a rule system and a representational or semiotic layer, or, in Sicart’s terms, “systems and worlds. These two elements have to be coherent, creating entertaining gameplay while crafting a game world. The ethics of games as designed objects can be found in the relations between these two elements” (*Ethics* 21–22).⁵ In their procedural and experiential dimension, however, games can only be understood by accounting for the active role of the player. “Players are creative, engaged, value-driven agents who engage in play with their own values as part of what helps them configure their experience” (Sicart, “Against Procedurality” n.p.). These values derive from the fact that we “think, and play, as ethical agents beyond being players, but also as cultural beings” (Sicart, *Ethics* 105). Properly constructed games will not try to determine and condition every action of their players—the extreme form of procedural rhetoric mentioned before—but will offer enough freedom and depth to allow players to not only overcome the game’s challenges, but to enjoy a wide range of actions which produce a reflective distance.

⁵ In his description of the game object, Sicart uses Järvinen’s (2003) tripartite model of system, representation and interface. Not the least because an ecocritical approach is dependent on the semiotic layer, it might be advisable for future studies to replace this model with Zagal et al.’s (2005), because it offers a finer granularity, distinguishing interface, world-rules, gameplay-rules, agent goals, game goals, as well as entities and entity manipulation.

The availability of a wide range of actions is contingent on simulating a system in which players can interact with a considerable amount of freedom—a freedom not afforded in more linearly scripted games. This freedom does neither have to be total, nor does the simulation have to be complete.⁶ To engage the player in a process of reflection, Sicart adds, “a computer game need not simulate the complexity of the world: it is enough to create a simulated world where play is interesting” (*Ethics* 32).

In such games, ethical conflicts emerge because the player is “a living, breathing, culturally embodied, ethically and politically engaged being that plays not only for an ulterior purpose, but for *play’s sake*” (Sicart, “Against Procedurality”, n.p.; emphasis in original). Therefore, games become ethically—as well as, in our case, ecologically—relevant if they provoke conflict in players by implementing game goals that may clash with a player’s extra-ludic values and beliefs. In the closed systems of single player campaigns, this can happen in two different modalities: “subtracting ethics patterns leave players the task of understanding the values they are playing by, and reflecting on them; mirror ethical patterns are more direct experiences of predetermined ethical situations, a much harsher kind of experience that can also yield intense reflection when we are not players” (*Ethics* 217).

It is therefore not necessarily the overt, explicit treatment of moral themes that have the greatest impact. Sicart holds that without provoking ethical conflict in the player, there is no need for reflection (*Ethics* 159–160). He argues that a game like *The Sims* (2000) inhibits critical reflections on ethical issues by enforcing an ethical stance through its rules, therefore connoting its work-life-balance ethics as not only ‘good’ but as the only meaningful possibility. The controversial *Manhunt* (2003), however, inevitably provokes ethical considerations by putting the player in a morally impossible situation (*Ethics* 52–53).

An Eco-Ethical Analysis Framework

Applying this line of reasoning to ecocritical game studies is helpful in dealing with game mechanics and semiotics. Sicart’s reflections suggest that the factual and representational accuracy of simulations of the natural environment are less important than their ability to model key aspects and to get players to engage with them practically and emotionally—an assessment in tune with even the foundational texts of ecocriticism such as Buell’s *Environmental Imagination*, which only calls for an implicit awareness of ecology in paradigmatic texts (Buell, *The Environmental Imagination* 7–8).

If we furthermore accept the idea that dissonances between gameplay and semiotics as well as tension between game goals and player morals provoke critical engagement with the game and its topics, it is possible to formulate a number of research questions to operationalize the inquiry into an ecological history of computer

⁶ Sicart points to Mary Flanagan’s reflections on simulation: “Games are frameworks that designers can use to model the complexity of the problems that face the world and make them easier for the players to comprehend. By creating a simulated environment, the player is able to step away and think critically about those problems. [...] In some cases, a game may provide the safest outlet available for exploring devastating problems and conflicts” (Flanagan 249).

games. With the exception of the first one, the questions set out below are no checklist of binary possibilities, but an interpretive scaffold that points towards essential, yet easily overlooked dimensions of ecology in games. The absence of any one of these elements in an example can also be productive.

One: Is the natural environment engaged with semiotically—that is, audio-visually and discursively—as well as ludically? As a first step, it is obviously important to identify the elements of a computer game that deal with the natural environment. As discussed in the previous section, the communicative dimension of game mechanics cannot be stressed enough. Still, a game that does not refer to the natural environment through audio-visual or verbal cues will not prompt players to perceive gameplay elements in this dimension. The opposite is true, as well. To paraphrase Buell's initially quoted realization: as soon as a computer game represents or discusses the natural environment, players will make the connection. Some types of games—most notably farming, hunting or fishing games—will, by virtue of their genre conventions alone, engage with the natural environment through audio-visual signs, discourse, and mechanics. It seems also important to distinguish between audio-visual and verbal semiotics, as already demonstrated in existing ecocritical writing on games, e.g. in Chang's pointing out discrepancies between pastoral visuals and mercantile verbal rhetorics ("Back to the Virtual Farm"). If there is no engagement with the natural environment to be found in any dimension, an ecocritical study of a game object would be pointless.

Two: Do the three modes of engagement with ecological questions cohere or create friction? This second research question tries to identify ludo-narrative dissonances, as per Sicart's theory, as sources of deeper critical engagement with the game under consideration. This is, however, more of a meta-question: for the verbal, visual and ludic dimensions can be interrogated through the following four questions, and the results then compared as to coherence or friction.

Three: Is the treatment of ecological topics explicit and central or rather implicit and peripheral? If a longish game such as *Batman: Arkham Asylum* (2009) refers to one of its numerous opponents once as an ecoterrorist, but otherwise does not engage and fails to connect its mechanics to ecology, the peripheral treatment of ecology might indicate that the game holds less promise for an ecocritical analysis (which might, of course, turn out to be wrong if those peripheral, isolated elements emerge through analysis as having a strong impact on the game as a whole). *Spec Ops: The Line* for the greater part treats cataclysmic change in the natural environment—sand-dunes big enough to swallow all but the tallest high-rises of Dubai—as a mere backdrop, yet makes use of the sand as an environmental hazard and potential weapon, thus drawing attention to it (and ecological questions) on a gameplay level. A further, extreme example is *Whiplash* (2003), a platforming game which refers to environmentalist issues explicitly and drastically on the semiotic layer, yet offers a contradictory gameplay. *Whiplash* puts the player in control of Spanx, a weasel, who tries to escape an animal testing facility together with Redmond the rabbit. While the basic game goals—escape the facility, free other animals and destroy lab equipment—seem reasonable enough, the

game mechanics reduce Redmond the rabbit to an unfeeling, facile tool, often for comic effect. When Spanx swings his fellow animal on a chain and smashes him into objects, it creates a jarring disconnect between semiotics and gameplay.

Four: Is the treatment of “nature” specific and informed? As already discussed, a certain degree of accuracy in depicting and simulating the natural environment is essential for games to seriously reflect ecological issues. Chang (“Back to the Virtual Farm”) discusses at length the problems of farm games that omit elementary components of the simulated processes such as watering and fertilizing, and other ecologies, such as that of *EverQuest*, are similarly “utterly broken, with frankly dangerous theoretical underpinnings” (Stumpo 30). It is not only the omission of important factors (such as the dynamic nature of creatures and ecosystems) from a simulation that leads to problematic distortions. Wildly inaccurate models of genetics in games such as *Evolva* (2000) and *Spore* raise the question of whether one is dealing with nature simulations at all, or whether the games are merely using natural processes as metaphors for arbitrary gameplay mechanics. And an example like *Jaws Unleashed* (2006), which lets players control the bloodthirsty, man-eating shark from the *Jaws* movies, shows how intentionally and programmatically inaccurate a portrayal of the ecosystem can be—a fascinating topic in its own right.

Five: Are game mechanics or semantics anthropocentric, or do they offer alternative perspectives? Some simulated activities such as hunting, farming, and zoo-keeping necessarily affirm an anthropocentric perspective and can, at best, incorporate notions of responsibility, sustainability and stewardship. Putting the player in control of a more or less realistically simulated animal forces her to reflect upon her relationship to her environment, especially if this environment is not natural but tailored toward the needs and abilities of humans. Even games that resist the anthropocentric in such ways usually remain anthropocentric on the interface level, because otherwise interaction would be impaired or impossible. However, *Flower’s* (2009) extensive use of the Sixaxis controller’s gravitational sensor, for example, shows that the implementation of unusual controls can productively defamiliarize the player from accustomed modes of control. Furthermore, *Flower* largely disembodies the point of agency, rather than anthropomorphizing animal behavior to such a degree—as does *Tokyo Jungle* (2012)—that feeding, mating and protecting territory appear as “basically Grand Theft Auto with lions” (Gibson n.p.).

Six: Is the treatment of ecological topics affirmative, critical, or ironical? The general tone of a game has to be taken into account, as well, yet this qualitative dimension can only be dealt with as part of the interpretive process. The humorous, even farcical tone of games like *Worms* (1995) or *Angry Birds* (2009) has to be taken into account so as to not misinterpret irony or exaggeration as serious depictions. While in humorous games, a certain distance to the subject matter is obvious and inevitable, the question of a *critical* distance in more serious games is often difficult to resolve. A comparison of the dedicated hunting simulation *Deer Hunter Tournament* (2008) with the hunting mini-game in *Resident Evil 4* (2005) will reveal that the former is more explicitly didactic in its portrayal of hunting: for while the latter game awards the avatar

money for killing birds and snakes without the least amount of contextualization, the former implements the possibility of shooting endangered species, but punishes the player massively for doing so. Whether the utter lack of problematization in *Resident Evil* or the enforcing of a specific ethical position in *Deer Hunter* would qualify as “unethical game design” (Sicart, *Ethics* 37)—i.e. if the examples fail to create a critical distance to their subject matter—can only be productively discussed in correlation with the overall tone and stance of any respective example.

Following these six questions, a quick assessment of latent ecological properties in specific computer games is possible, rendering the transhistorical dimension of the medium’s ecocritical aspect more tangible. There are obvious limitations and biases inherent in this approach. The analytic framework intentionally privileges the object-analysis of representational games over analyses of abstract ones, while also excluding player-studies.⁷ Interpretations of abstract games are notoriously fraught with subjectivity. Janet Murray’s interpretation of *Tetris* as a metaphor for the stress of American office workers is probably the best-known example of an interpretation of a computer game that lacks any referential trigger and thus might be considered as an associative over-interpretation (see Möring, *Games and Metaphor* 228–234). Yet even mostly abstract games can be productively processed within the framework presented: The title of the mobile game *Splice* evokes the natural environment, creating a first reference to ecology. Its gameplay is wholly abstract: pill-shaped objects have to be combined in the most efficient way to create patterns in the utter isolation of a featureless, fluid or gaseous void. The simulation of natural processes is explicit and central to the game, but the game places no emphasis on an accurate depiction of genetic splicing—rather, natural processes serve as a template for puzzle design. The game’s abstraction and de-contextualization make it impossible to inquire into its tone, anthropocentrism, or ludo-discursive dissonance, because even on the discursive level, the game is too abstract, dealing not with life as we experience it, but with life’s building blocks. Whether this still presents an engagement with ecology is more of a philosophical question, but comes more clearly into focus through application of the analytic framework outlined above to two mainstream games.

Red Dead Redemption

Red Dead Redemption (2010) deals with the natural environment verbally, visually and ludically. Set in the last days of the Wild West, hunting, herding cattle and breaking in horses are discussed and implemented as gameplay elements, and the gameworld is highly detailed and densely populated with plants and animal life. The game’s narrative foregrounds questions of coexistence with nature through its criminal-turned-farmer protagonist John Marston, who initially aims for nothing more than sustaining his family with just as much land and livestock as absolutely necessary.

⁷ Players will unpredictably engage with games or interpret them in ways that are influenced by ecological awareness. It lies in the nature of play that it appropriates and changes its objects. Player-studies have developed their own instruments and methods, though addressing these is beyond the scope of this article.

Marston not only discusses his outlook on life and nature with the game's non-player characters, his first missions require him to apply the necessary skills. While nature always features prominently in the game, its specificity is especially apparent in longish side-quests aimed at survivalist skills, which require Marston to identify the habitat of some flora or fauna and collect specimens. The game's depiction of nature is guided by verisimilitude rather than an attempt at true simulation: weather changes are random, animals spawn instead of reproduce, and wildlife will never become extinct—with one notable exception.

While *Red Dead Redemption* is unabashedly anthropocentric on all levels, it verbalizes the necessity for a conscientious treatment of nature, especially near the end of the single player campaign, when Marston teaches his son the strategies and ethics of hunting. The interesting friction in *Red Dead Redemption's* treatment of the natural environment results from a clash of its discussion of morals with its gameplay. Although Marston ends up killing hundreds of people in the course of the game, it is surprisingly moralistic when compared to other Rockstar games (Pallant 134). This means, as Sicart has stressed, that some player actions are made impossible. No matter what temptation he faces, Marston remains faithful to his wife, and the player cannot change this. However, the game does allow the player to explore the boundaries of Marston's morality in several respects, acknowledging the player's actions through optional achievements.⁸ The crowning achievement of amoral play toward NPCs is called "Dastardly" and is awarded for tying up a woman, placing her on railroad tracks and watching her be killed by a train. As a sort of companion piece, there is an achievement called, cynically, "Manifest Destiny", which contextualizes the game's treatment of hunting. In a move identified by Stumpo as "forced commercialization" (Stumpo 34), one of the most lucrative activities in *Red Dead Redemption's* open game world is hunting, both in intradiegetic and ludic terms. The avatar can sell furs, organs and trophies for money, while the player needs to hunt to fulfill a number of quests. Hunting is not trivialized, though. Unlike *EverQuest*, which "sanitizes" the reality of skinning (Stumpo 36), *Red Dead Redemption* shows skinning and gutting as the messy activities they are. Although the dead animal is hidden from view, the screen fills with blood spatter while Marston's knife audibly scrapes bone and severs cartilage. Frequently, Marston will complain about the stench of the animal carcass, which, after this treatment, is left lying on the ground, skinned and bloody. Still, the game makes hunting attractive through rewards, and the player will be motivated to explore the possibilities of this activity. While wild animals are, as already mentioned, generally plentiful, the endangered status of the buffalo is problematized by in-game dialogue several times. Fittingly, it is the only species in the game that can be hunted to extinction by the player, for which she will be awarded the "Manifest Destiny" achievement. The tension between the verbal treatment of the buffalo, its portrayal as a peaceful, beautiful creature, and the temptation of the achievement for completionist players provokes reflection about not only hunting buffaloes, but animals per se, as well as (through the intricate connection the game

⁸ Achievement systems are "[s]ystems where players collect virtual rewards that in some sense are separated from the rest of the game" (Jakobsson 2011).

constructs between all of Marston's civilian activities) the greater context of farming, and general coexistence with the environment.⁹

Dishonored

The natural environment is a far less explicit feature in *Dishonored's* urban setting, the steampunk city of Dunwall. As an assassin, the game's protagonist Corvo has little connection to the natural environment, and initially, nature appears mostly as a threat. The citizens of Dunwall suffer from a plague transmitted by rats, which, when they appear in large enough groups, will attack and devour dead and even living bodies. The rivers that run through Dunwall are populated with predatory fish, and the only other species of animal the avatar comes into contact with are bloodhounds. Yet neither the graphics nor the elements of the simulated world aim for realism. Everything in *Dishonored* is carefully stylized, from hand-painted textures and angular, sketchy character models to retro-science-fiction machinery. Accordingly, the game offers visuals that are imminently appropriate to the not-quite-realistic stealth mechanics that make up the bulk of its gameplay.

While the majority of the game's elements thus create a unified impression, ecology is used as a subtext to create a certain degree of disenchantment or even alienation from the gameworld. Its steampunk technology uses whale oil for a power source, and as such, whaling is an integral part of the gameworld's culture. Whaling is never practiced by the avatar, but he does not actively oppose the practice, either. On the contrary, it is impossible to play the game without benefiting from or actively using whale oil powered devices. As such, the treatment of whaling might be considered uncritical if it was not for the prominent placement of whaling ships and accounts of the trade. The game opens with the avatar disembarking from a whaling ship and being driven through Dunwall's harbor and with the whaling fleet having numerous half-dead whale bodies still onboard. Throughout the single player campaign, the avatar finds many written accounts of whaling practices as well as scathing attacks against animal rights activists. The rich and powerful decorate their apartments with paintings of whaling ships and display harpoons next to taxidermy trophies, while the poor spend their money on dogfights. Cruelty against animals and general disrespect of the natural environment are used to mark Dunwall's society as primitive, regardless of its admirably advanced technology. However, *Dishonored's* critique of society does not stop there. The game's missions are designed so that it is possible to play them violently or without shedding a single drop of blood, thus leaving it to the player to interpret the main character Corvo through her actions as vengeful, pragmatic, or idealist. The chosen play style affects the gameworld, which becomes more chaotic and frantic the more violently the avatar behaves. In the end, the avatar's actions will have either been responsible and

⁹ The impact this achievement has on players can be observed in public discussions about it. One forum of such discussion are the comments to YouTube achievement guides. In the most popular one (with ca. 600.000 views and 1.400 comments at the time of writing), a great number of players express remorse for their actions and discuss the ethical dimension of the achievement (Rooster Teeth 2010).

mindful, leading to restoration, or irresponsible and destructive, ending one crisis by instigating another. Given the prominence of ecological topics in the game, these alternatives might be taken as signifiers of ecological behavior leading to either conservation or entropy. But *Dishonored* precludes such an easy reading. Corvo and his world are always violent, and even the least harmful courses of action lead to dire consequences for someone. The game is, therefore, deeply ambivalent, almost cynical towards humanity, with every potential romanticizing gesture thoroughly deconstructed. Yet, regardless of its advanced technology, there is still magic in Dunwall, preserved in runes from a Golden Age when humans and whales coexisted peacefully. The runes and charms made out of whalebone fully identify the sea mammals as essential for the physical as well as spiritual well-being of *Dishonored's* society, and one spell they grant Corvo lets him abandon his anthropocentric perspective by taking possession of an animal. For a short time, Corvo can see the world through the eyes of a fish or rat—only to kill the animal once the spell wears off.

Conclusion

These two brief analyses should have demonstrated the potential for ecocritical analysis present in mainstream games as well as the applicability of the research questions outlined above. Without in any way diminishing the excellent work already done in ecocritical game studies, this essay should have also pointed out the need for a more diverse and intensive discussion of ecological thinking and games. It is meant, above all, as a proof of concept, a demonstration of just how fruitful the medium can be when discussed from the vantage point of environmental awareness. I have streamlined complex concepts from both ecocriticism and game studies but have done so intentionally in the hope of somewhat bridging the gap between them. The reflections presented here should offer a robust basis for future developments in ecocritical game studies such as gendered or animal studies approaches, globalizing perspectives of spatiality, or the discussion of individual ecosystems (e.g. oceans). Above all, this essay should have proven one point: that the discourse of the natural environment stops at no border and has no privileged locus.

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