

On Striated Wilderness and Prospect Pacing: Rural Open World Games as Liminal Spaces of the Man-Nature Dichotomy

Marc Bonner

Institute for Media Culture and Theatre
University of Cologne
Meister-Ekkerhart-Straße 11
50937 Cologne (Germany)
Tel.: +49 221-470-3791
mbonner@uni-koeln.de

ABSTRACT

From colonization to (post)industrial era, recreation guised as preservation of wilderness is a concept and ongoing topic in arts and media. This paper defines the distinct staging of untamed and pristine environment in open world games as *striated wilderness* which is constituted by aesthetics and gazing regimes of Western culture as well as by modularity and variability of computer games as data bases. Merging the wilderness discourse with concepts of *tourist gaze* and *prospect-refuge theory*, rural open world games can be analyzed as rhythmized liminal spaces of the man-nature dichotomy. Thus, they stand in the tradition of landscape gardens and nature parks where former survival instincts and urges for exploration are experienced for recreation and entertainment. *Striated wilderness* has to be differentiated between place (wilderness) and practice (wildness). How do open world games regulate our understanding of landscape and longing for nature?

Keywords

Open world, game space, landscape, wilderness, horizon, prospect pacing, tourist gaze, Appleton, Deleuze/Guattari, Manovich, Lefebvre, Horizon Zero Dawn

INTRODUCTION

This paper broaches the issue of wilderness as a concept and Western idea of a pre-modern nature. The staging of an untamed and pristine environment in rural open world computer games will be argued as a tradition's continuation found in nature parks and landscape gardens as liminal spaces of recreation as well as compensation of the man-nature dichotomy. The distinct game intrinsic wilderness will be defined as *striated wilderness* which is constituted by aesthetics and gazing regimes of Western culture as well as by the modularity and variability of computer games as data bases. The three core theses are: (1) as a distillation of actuality, open world games regulate and mediate the experience of world within the tradition of fenced wilderness and as media-specific intermingling of place and practice; (2) the characteristics of digital media are crucial for *striated wilderness*, its *prospect pacing* and the involvement of players; (3) the meaning of *striated wilderness* can transport serious topics of actuality and heighten the players' senses to perceive and act within the physical-real environment.

Accordingly, this study contextualizes the colonization of the Americas and Australia with the 1964 issued *Wilderness Act* by offering an overview on the wilderness

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discourse (Callicott; Nelson 1998) and stresses the indispensable differentiation between wilderness and wildness (Bunting 2012). Furthermore, aspects from Media and Game Studies will be merged with the *prospect-refuge theory* of Human Geography (Appleton 1975) and the *tourist gaze* of Sociology (Urry; Larsen 2011) in order to reveal media specific characteristics. This will be corroborated by adapting principles of philosophy (Deleuze; Guattari 2006) and rhythmanalysis (Lefebvre 2014) in order to analyze *Horizon Zero Dawn's* multi-layered world as the main case study.

LET THERE BE WILDERNESS

The very idea of wilderness as pristine and untamed nature derives from the man-nature dichotomy and thus mankind's progression away from nature towards an artificial environment. Robert Ginsberg states that “[w]e save nature out of the flattering illusion that we live in harmony between the human-made and the natural. But we have fenced in or out the natural. [...] Nature is always the ingenuous invention of human sentiment” (2004, 219).

J. Baird Callicott and Michael P. Nelson argue alike but highlight the critical role of Christian worldview: “[W]ilderness is first and foremost an artifact of the sharp dichotomy, in Puritan thinking, between humanity, on the one hand – exclusively created in the image of God, but also fallen and depraved – and nature, on the other” (1998, 4f.). In context of colonizing Australia, the term *terra nullius* (ownerless land) was deduced from said dichotomy in order to categorize the New World legally and legitimate the extinction and displacement of the Aborigines (ibid., 7f.). Both authors plead to “deanthropocentize the classic wilderness idea” because usage and entertainment are still foregrounded. The preservation of critical or endangered flora and fauna in order to secure the functioning of *biomes* is only in second (ibid., 13):¹ “[W]ilderness areas [...] were selected because they [...] had little foreseeable commercial value, and contained monumental scenery or opportunities for [...] recreation” (ibid., 14).

Ever since the discovery of the the New World, restless Europeans have longed for its pristine expanse. In contrast to the cultivated and densely populated countryside of the Old World it seems to have a liberating effect. Christopher Columbus and the following conquistadores and missionaries report a paradise that is fairly populated and has networks of trade routes and farming inscribed in its uncharted landscape (Denevan 1998, 414, 433). By the time the first pathfinders, trappers and hunters roamed throughout the west of North America, the indigenous tribes were depleted by 90% of their former population due to diseases introduced from the first contact with the Old World. Thus, in the second half of the 18th century America was less inhabited than in 1492 (ibid., 415f., 433). According to William M. Denevan, this finding is critical for the modern-day image of the wilderness that has “since become part of the American heritage, associated ‘with a heroic pioneer past in need of preservation’.” This is most evident in Theodore Roosevelt’s 1897 founding myth degrading the indigenous as a passive bunch of wilds and heroizes the likes of Daniel Boone: “[They] roamed far and wide through the lonely, danger-haunted forests which filled the no-man’s-land lying between the Tennessee and the Ohio” (1998, 66).

The concept of wilderness was romanticized by the colonization of North America. In 1862 Henry David Thoreau writes: “The West of which I speak is but another name for the Wild; and what I have been preparing to say is, that in Wildness is the preservation of the World” (Thoreau 1998, 37). According to Jonathan Bordo the wild is the essence and condition inherent of the term wilderness: “It halos a very human enunciation by declaring human erasure. The wilderness posits itself as a sign to threaten the extinction of the very human sign” (2002, 292). He concludes that landscape paintings depicting the New World were also used as a medium to witness a ‘deserted’ wilderness in order

to conquer and colonize (ibid., 308f.). The landscape painting here becomes the pictorial equivalent to the term *terra nullius*.

All of the above aspects peak in the 1964 issued *Wilderness Act* which was decreed by president Lyndon B. Johnson and written by Howard Zahniser. By forces of the law, places were suddenly fenced and as such denoted as wilderness that, as resource, serves the usage and entertainment of U.S. citizens (Zahniser 1998, 120). But what is the juridical meaning of wilderness? In *Section 2 (c)* one can find the core definition: “A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain” (ibid., 121).

Taking a look at the overcrowded US national parks like Yellowstone or Yosemite, one can see that this only applies conditionally. Although a national park such as Yosemite isn't synonymous with the dedicated *Wilderness Area* off the *Wilderness Act*. In fact, *Wilderness Areas* are smaller territories within national parks, which underlie more severe restrictions. In those areas no man-made structures like farms, pipelines or mines shall be evident or dominant in the landscape.² Thus they shall enable seclusion and pristine recreation for its visitors. Only in last place it is written, that those areas shall feature ecologic and geologic characteristics of historic, scientific or aesthetic value (ibid., 121).

THE WILDERNESS EXPERIENCE

As Roosevelt heroized the pioneers roaming between Tennessee and Ohio, topographical edges and obstacles like broad rivers, mountain ridges, high plains and arid deserts rhythmized the colonization of the West in four waves (Lehan 2014, 4f.). Prospects into the vastness framed by horizons were critical modes of experience that also helped finding trails and springs and settlement sites in those days. The untamed nature is repressed into more remote places. Daniel Richard Lehan defines the ever-retreating wilderness from Christian civilization as “wilderness frontier” (ibid.): “As the country moved west, there was a natural tendency to see life as a struggle between human will and the environment. The task at hand was to dominate the wilderness, within which evil (forms of the devil) was at work. The Puritan obsession with evil – before Emerson could dispel it – gave the movement a missionary as well as secular calling” (ibid. 8).

The frontier is the dynamic edge of conquered territory. Settlements, out- and trading posts string together along the trails. It marks the dualism between the untamed and pristine environment and the pre-stage of orderly and civilized infrastructure. The frontier in open world games seems to shift with the players' agency by exploring, conquering and freeing designated places from hazards as well as scaling mountain tops, gazing over staggered horizons and looting hidden treasures for rare items.

With open world games, the experience of a vast landscape becomes an end in itself. Whether as archipelagos bathed by the ocean, valleys limited by steep slopes or woods as far as the horizon that enclose ruin sites and caves, open world computer games simulate a coherent and unmanageable vastness and evoke an exploratory spirit. This is accomplished by dense and complex networks of quests, settlements, NPCs, landmarks, wild animals and emergent events. This marks a change of focus in worldbuilding distal to traditional narrative concepts. Rolf F. Nohr defines this focus on continuous game space as spatial fetishism (2006, 7f., 18). Furthermore, Espen Aarseth describes space in general as a critical agent of computer games. According to him, game intrinsic landscapes are allegories of topographies of actuality (2001, 309, 317). Just as in-game world experience is conditioned by physical-real behaviour

patterns, it also regulates – like film and photography before – the comprehension and appropriation of actuality. Adapted and streamlined for playability and entertainment, such gameworlds are designed asymmetrically towards the players' agency (ibid., 315).

Only few open world games are brave enough to confront the players with wilderness as an empty vastness free of quests, hostile NPCs and other affordances. Especially rural focused games like *Red Dead Redemption* (Rockstar San Diego 2010), *Metal Gear Solid 5: The Phantom Pain* (Kojima Productions 2015), *The Legend of Zelda: Breath of the Wild* (Nintendo 2017), *No Man's Sky* (Hello Games 2016) and *Assassin's Creed Origins* (Ubisoft Montreal 2017) partially stage the idea of remote ridges, billowy tundras and grasslands and especially arid deserts. Instead players experience, much like Columbus, an unknown world full of equal distributions of established ludic contents, populated with NPCs and lanced with networks of routes. Wilderness and frontier seem to fold into each other – a narrow confrontation and media specific distillation.

A recent example for the experience of the *Desert Biome* (Woodward 2009, 17ff.) and its different geological forms is *Assassin's Creed Origins'* world of ancient Egypt during the end of the Ptolemaic dynasty. Certain regions of the world like *White Desert*, *Great Sand Sea*, *Quattara Depression*, *Iment Nome* and *Desheret Desert* sport nothing but sand and rocks, cliffs and cascading mountains as well as emergent sandstorms that reduce visibility. Traversing such a region, that is not much bigger than New York's Central Park or Yosemite, players experience intense lighting, billowy dunes are cut off at the horizon because of mirages and after a while avatar Bayek sees hallucinations of a speaking bush or his late son. Especially in the south of the world map, several *Desert Biome* regions are chained together and only few feature predator lairs or bandit camps as places of ludic open world conventions. Feeling the heat audiovisually, reflecting the son's death and the solitude of Bayek's path of vengeance as he and his wife drift more apart with every fulfilled main quest, the *Desert Biome* is a perfect metaphor that evokes slower pacing and thus contemplation. They are ever inviting places of recreation between the repetitive quests. By employing varying geological formations and haunting *biomes*, the redundancy of well worn quest types and gameplay elements is concealed. As soon as the players head back to settlement sites or the Northern regions, the hyperreal atmosphere of the untamed desert wilderness is gone – heat, aridness and thus inner conflicts of the avatar seem to be pushed into the background.

Besides such stagings, the topic of wilderness is also thematised in the broader narrative context of game worlds. Be it as party tourist Jason Brody in *Far Cry 3* (Ubisoft Montreal/Red Storm 2012) who liberates the natives of fictitious Pacific islands from pirates; as Aloy in *Horizon Zero Dawn's* post-apocalyptic distillation of U.S. federal states Wyoming, Colorado and Utah, who saves pre-modern tribes from their distinction; or as an unknown astronaut in *No Man's Sky*, who can explore millions of hostile planetary surfaces within a procedurally generated galaxy.

Through the *Wilderness Act* wilderness becomes an adventure space similar to theme parks and landscape gardens. According to Hubert Damisch, Yosemite park was only possible in 1872 because the prospect of large construction projects and willingly paying passengers made the Northern Pacific Railroad Company to advocate for its realisation. The company became a major shareholder of the park and realized the needed infrastructure from the cities in the alpine seclusion (1997, 175f.). Ginsberg states: "So great is our desire to enjoy nature, away from civilization, that we create it and supply it with all the conveniences of civilization. [...] The natural is packaged within a human frame" (2004, 219).

Families drive to fenced wildernesses for the weekend in order to tie in with the exploits of pioneers and trappers (Damisch 1997, 183). Consequently, nature parks and *Wilderness Areas* generate a temporal relationship with the U.S.-American expanse beyond historical facts (ibid., 180). The experience of wilderness then is an actualization of an indefinable time where man lived in harmony with nature (Bunting 2012, 31). It is a compensatory need because of man's perpetual effort to overcome nature. According to Jay Appleton, parks and wildernesses as well as landscape gardens and ruins become liminal spaces of conciliating the man-nature dichotomy (1975, 173).

ON HORIZONS AND PROSPECT PACING

Proceeding in such strokes the *scenic value* is a critical agent for staging man's recreation and edification. But panoramas and prospects and their lines of horizons not only evoke a contemplating gaze. In 1836, writer Ralph Waldo Emerson emphasizes the importance of the "distant line of the horizon" which initiates the urge for exploration (1998, 30). In 1712 Joseph Addison explicates that "a spacious Horizon is an Image of Liberty, where the Eye has Room to range abroad, to expatiate at large on the Immensity of its Views, and to lose it self amidst the Variety of objects that offer themselves to its observation [sic]" (1891). This fits perfectly with its involving gamers into open world games. Besides the diegetic architectonics it is an ideological aspect in game design. Hence prospects not only are an aesthetic point of view but also a political and social one, such as in context of the Western empires in 18th century, with the intellectuals in the 19th century and in the slope between experienced gamers and unexperienced ones.

The horizon also is an essential element of Appleton's *prospect-refuge theory*. Within his aesthetic experience of landscape, he defines the horizon as a *secondary vantage-point*, which encourages speculations and curiosity concerning the landscape beyond (1975, 90). For example, in *Horizon Zero Dawn* one of the countless horizons enables to gaze at ruined wind power stations that tower behind it. Once the horizon generating hillside is scaled, the former horizontal line becomes a broad valley enclosed by three steep cliffs and ridges, which become horizons themselves, offering non-linear navigation. The said horizon and its valley also function as main passage (besides secluded mountain passes) from the first to the second half of the world which is also staged by a fluent transition from the *Alpine* and *Boreal Forest Biome* to the *Desert* and *Tropical Rainforest Biome* (see Woodard 2009).

The continuous navigation from horizon to horizon, from hill to mountain top to valley sides, from ledges to watchtowers is not only essential for the experience of landscape (gardens) and wilderness, but also for rhythmizing coherent open world games, which can be defined as *prospect pacing* (see Bonner 2017; see Figure 1). While the level structures of games like *Far Cry 3*, *Uncharted 4: A Thief's End* (Naughty Dog 2016) or *Horizon: Zero Dawn* are *prospect dominant* landscapes in the sense of Appleton (1975, 125), they all feature different characteristics: From a network of equally scattered radio towers, hilltops and hostile camps (*Far Cry 3*) to the more linear altitude alternating Parkour full of postcard impressions (*Uncharted 4: A thief's End*) to organic open world architectonics that adapt iconic geological characteristics and use contrasting *biomes* in order to fill the undulant sea of mountain ridges and valleys (*Horizon Zero Dawn*). The latter enables to scale almost all snow peaks, places which no NPC routine can reach.³



Figure 1: *Prospect pacing* induced by staggered horizons in *Horizon Zero Dawn*.

Appleton divides the landscape experience in three categories that are combinable with each other which he understands as biological legacy tracing back to our hunter-gatherer era and beyond: The places or spaces of *prospect*, *refuge* and *hazard* then are subdivided in different types of vistas and panoramas or, for example, herbal, animal, topographical or man-made hazards (1975, 97-100). He explicates that man's relationship towards landscape has changed fundamentally from the necessity of survival to an aesthetic desire (ibid., 169). In context of the latter, Gernot Böhme speaks of an urge in 18th century for frequenting nature as sight and recreation from the urban civilization. With modern-day industrialized mass tourism, nature became a decor (1992, 145ff.). Nature is fading into a pattern which is also stated indirectly by Appleton when he defines landscape as "sign-stimuli" that evokes explorative patterns (1975, 53, 64, 69, 81). Böhme goes even further when he explicates that today, the aesthetical and historical established gaze of the observer is already anticipated by the specific organisation of the experience itself (1992, 149f.; see also Turner 1998, 620).

Also, these habits are present in fictional worlds of mass media. Especially in digital game worlds the organization of experience is more formulaic than in nature parks, landscape gardens or *Wilderness Areas* of actuality (see Bonner 2015, 2017). For example, the events of *Horizon Zero Dawn* take place in an open world distillation of Wyoming, Colorado and Utah. Hence the landmarks and iconic geological monuments of the several physical-real parks like Yellowstone, Bryce Canyon, Lake Powell, Castle Rock, Red Rocks or the direct surroundings of Colorado Springs are adapted in detail (see Figure 2). Furthermore, by the logic of the post-apocalyptic diegesis the southwestern part of the world, known for Utahs *Desert Biome* is transformed into a *Tropical Rainforest Biome*.



Figure 2: Prospect along the adaption of Castle Rock in *Horizon Zero Dawn*.

Gazing is the the crucial agent for experiencing, decoding and appropriating game intrinsic space and *prospect pacing* is its media spetic norm in open world games. It is a cultural as well as media-based constructed gazing, which is due to the constitution of computer games and distinct sensitivity for game mechanics and thus the avatar’s agency. In context of scenery and the asymmetrical design towards the players, the accordances with the practice of the *tourist gaze* are evident. John Urry and Jonas Larsen thematize the “‘ludic’ behaviour” of the *tourist gaze* which is decoupled from the everyday life: “Gazing is a performance that orders, shapes and classifies rather than reflects the world. [...] Gazing at particular sights is conditioned by personal experiences and memories and framed by rules and styles, as well as by circulating images and texts of this and other places. Such ‘frames’ are critical resources, techniques, cultural lenses” (2011, 2).

Places of tourism as well as game worlds are *evocative spaces* (see Jenkins 2004) that produce certain expectations, mostly are embodied by surface phenomena and might be spectacular yet predictable (Urry; Larsen 2011, 4, 18f., 125). Both authors define the urge for exploration and discovery of deserted beaches, secluded mountaintops or untamed forests as “romantic gaze” (Ibid., 19), which finds its equivalent in a landscape iconically decoded as pristine wilderness (see Figure 3).



Figure 3: Secluded mountain tops distal to hostile NPCs and quests in *Horizon Zero Dawn*.

Concerning the artificial state of the wilderness concept as an enclosed place, Ben Bunting Jr. pleads for focusing on the practice of wildness as a mode to be in a place and interact with it – from camping in a nature park to practices of the urban exploration scene like exploring abandoned buildings and rooftopping skyscrapers to experience the expanse of an open world game (2012, 7). He argues to separate the historical unity of place (wilderness) and practice (wildness) in order to analyze “wild experience” apart from nature parks and hiking trails (ibid., 35).

According to Bunting the entertainment of getting lost is intrinsic to a wild appropriation of space. That said, the very idea of getting lost or being confronted with hazards must be controllable and obey a system of rules in order to evoke a foreseeable end of the wildness (ibid., 66-69). In context of computer games he clarifies aspects of a ludic wildness that, in parts, also are thematised by Nohr (2006) and Daniel Vella, who writes: “[E]xploring the gameworld becomes a worthy end in itself, encouraging the player to appreciate the aesthetic appeal of the landscape, to feel a sense of achievement in having climbed high mountains and discovered deep caverns, and to relate to the details of ‘their’ virtual land in much the same way that a backpacker might relate to the details of an oft-returned-to trail. [...] This spatial practice then enables the experience of wildness by merging with the game's survival mechanic” (2013, 143, 146).

STRIATED WILDERNESS

In consideration of all the aspects conducted above, game intrinsic wilderness can be divided into two intermingled layers. First, it is an asymmetrical designed place of polygon meshes and historical as well as cultural coined sign systems. Second, it is a practice of wildness within the level structures via an avatar. In such a way the game intrinsic wilderness has to be defined as *striated wilderness*, referring to the spatial theory of *smooth* and *striated space* by Gilles Deleuze und Félix Guattari (see 2006). Both describe two dichotomous practices of appropriating and traversing space. Key to the distinction is the way of perceiving space.

Striated space is defined by lines and paths between two waypoints. As such it is structured through an optical perception (ibid., 436f.). In context of computer games this means following navigational points, overall goals of a quest or the NPCs’ path routines. *Horizon Zero Dawn*’s non-diegetic interface is designed as an augmented reality that marks campfire savepoints, collectable plants and the current destination including an ever refreshing counter of the remaining distance (see Figure 4). Avatar Aloy also uses a second, diegetic augmented reality device which projects the path routines of hostile NPCs into the game world and marks their weak points. Most quests are chained up via several waypoints and players also are able to set waypoints or destinations themselves by marking a place on the world map. This enables a goal-oriented, ludic, crossing of the vast landscape.



Figure 4: *Horizon Zero Dawn's* non-diegetic interface and the experience of *striated space*.

Correspondingly the *smooth space* focuses on the stretch of way, the distance itself. The journey is the reward which, as a momentum, fits perfectly with the involvement of players through the experience of open world landscapes as an end in itself. Deleuze and Guattari define *smooth space* as the space of affect, structured through a multi-sensory perception (ibid., 436f.). Regarding the computer game as audiovisual medium, the multi-sensory way of perceiving is impossible. Sensory impressions like humidity, heat or odor are compensated by hyperreal audiovisual stagings of them, including colors, luminosity, sound and other visual design like physical-based rendering. Furthermore, players turning a blind eye to maps, icons and markers of interfaces traverse the game intrinsic space as *smooth space*. This is the established practice of *free roaming* and henceforth the practice of wildness in open world games (see Figure 5).



Figure 5: The experience of *smooth space* in *Horizon Zero Dawn*.

While an ideal example for *smooth space* is how nomads experience and navigate landscapes, the ideal example for *striated space* is how urbanites inscribe movement patterns into infrastructures. Deleuze and Guattari emphasize that the dichotomy functions like a reversible figure. As constant as *smooth space* is transferred into

striated space, *striated space* is reverted back into *smooth space* (ibid., 434). Accordingly, *smooth space* is the basis of *striated space* (Ibid., 441). This applies vice versa for digital gameworlds as they are constituted by the Cartesian grid. The process from *smooth* to *striated* is essentially the transformation of wilderness into territory. The concept of wilderness as a lawful pegged place is also a type of *striated space*, although it paradoxically is intended to stage the characteristics and atmospheres of a pristine nature and therefore *smooth space*. The examples of unofficial settlements or districts in urban spaces like *Kowloon Walled City* or the favelas of Rio de Janeiro embody the reciprocal process as people recapturing *smooth space*.

That said, both dichotomous spaces become modes of play that are phases and regulated by the players' preferences. This fits perfectly with the concept of *smooth* and *striated space* as reversible figure: whether the players follow an inscribed network of streets, paths and trails towards their next quest or destination (*striated*) or are guided by hyperreal impressions of aesthetics, luminosity, sound and topography (*smooth*). The latter might lead to detours but also to emergent events, rewarding prospects or rare items because *free roaming (smooth space)* is also intended and inscribed by game designers. The open world then not only is organized in patterns and networks of a *striated* appropriation but also stages the illusion of free *smooth* roaming.

Deleuze and Guattari reason that traveling is not distinguishable by the quality of places visited or the quantity of movement but through the way of spatialization, the way of being in space or of being space itself (Ibid., 443). Although the quality of places (*genius loci*) as well as the quantity and types of movement is crucial for the effect of an open world game as entertainment product, it is true that the mode of traversing or appropriating the game space, the players' interaction with the given level structures and ambiguous possibilities is the most important aspect. This is due to the fact that the game experience is dependent on how space can be traversed, appropriated and conquered.

Lev Manovich states "automation" as one of the core characteristics of digital media (2001, 32ff.). In context of the *smooth* or *striated* mode of appropriating a game world, said automation of processes by algorithms leads to the illusion of free control over the avatar and its agency, especially when it comes to enabling complex climbing and navigation possibilities. As Paul van Grinsven reveals for *Horizon Zero Dawn*, algorithms were written in order to perform a continuous prediction of movements according to metadata of the players' induced animation sequences. With this, the game can afford a player's crossing of versatile landscapes in the most fluent and simple ways (2017). The sequence of animations decides at what time Aloy's feet and hands have contact with the level structure and the algorithm decides at which places this is done. This is realized with the "control plane" which can be understood as a kind of mechanical 'racing line' that cuts the topography's polygon meshes in order to directly compute the relationship between avatar and the seemingly pathless terrain with the help of pre-designed "taggings" within the polygon meshes and "animation warping" (ibid., 27, 29, 64f.).

As this dependency of gamers as the "implied player" (Aarseth 2007, 132), as a 'gear wheel' to algorithms seems dystopic, Appleton notes a very similar repetitive interaction with the landscape of actuality which leads to some kind of automation with seasoned mountaineers, wanderers and the like: "[I]n landscape we find recurring the same basic situations in which the details are peculiar to the particular occasion while conforming to a regular general pattern" (1975, 136). In addition, the thought-out programming is indispensable for involving players with the game world by the point of action and its production of meaning (Nitsche 2008, 187, 226).

RHYTHM AND PATTERNS OF STRIATED WILDERNESS

In context of a cultural history and science James Gleick states: “We are pattern-recognition machines, and the project of science is to formalize our intuitions, do the math, in hopes not just of understanding – a passive, academic pleasure – but of bending nature [...] to our will” (2016, 259). This also applies for bending wilderness to a human frame, especially when it comes to fictional worlds.

The *striated wilderness* as alleged pristine nature of rural open world games is evidently a modular rhythmized topography full of repetitions. Manovich describes computer games as databases that are controlled by successions of algorithms (2007, 42). The assets of every single in-game object (e.g. polygon meshes, textures, mappings, renderings, soundfiles and animations) are saved separately in the database. Linked by an algorithm, several combinations can form on screen (ibid., 40, 49). According to Manovich, “modularity” and “variability” are closely linked with each other. As core aspects of digital media, variability describes the very state of objects existing in code that can be copied and recombined in virtually infinite versions (2001, 30f., 36ff.).

Every game intrinsic landscape, every topographic constellation embodies variations by a limited number of geologic erosion forms and interactions. Certain *biomes* of actuality then are used as areas in game worlds for their specific aesthetics regarding Appleton’s core elements prospect, refuge and hazard. Christopher Totten defines the design process of environment artists as “thoughtful execution of *gameplay* into *gamespace* for players to dwell in” (original emphasis, 2014, 41, 46). Independent of the remarks on the “control plane” above, Totten also underlines that repeating spatial patterns are effective in order to communicate with the players (ibid.). This is also pointed out by Henry Jenkins and Kurt Squire in (2002, 65). With the use of Henry Lefebvre’s universally applicable *Rythmanalysis* (2014) a *striated wilderness* can be analysed properly.

Lefebvre notes that only repetition evokes differences in rhythm. “No rhythm without repetition in time and space” (ibid., 16f.). At its core, *Rythmanalysis* consists of *cyclical* and *linear repetitions*. Both are teathed and convoluted with one another: “Time and space, the cyclical and the linear, exert a reciprocal action: they measure themselves against one another; [...] everything is cyclical repetition through linear repetitions” (ibid., 18). While *cyclical repetitions* are a recurring sequence like the day-night cycle, *linear repetitions* are its constituent parts. The circular motion of hands on a clock-face is a *cyclical repetition* which is constituted by the *linear* monotony of the clock work whose individual parts can in turn be *cyclical repetitions* themselves.

Within *Horizon Zero Dawn*, several types of places create a distinct amalgamation of quest and level structure and thus embody *cyclical repetition*. For example, *Tallnecks*, giant robots that circle a certain area, have to be scaled and their disc-like radar dome heads have to be hacked in order to chart the region for the world map and reveal points of interest.⁴ Another example are *Cauldrons*, four subterranean automated factories, producing hostile ‘infected’ robots. They function as *cyclical* iterative dungeons made of the same triangle dominated level structures. Variability is carried out by *linear repetitions* like spatial successions of atriums and arenas, different types of hostile NPCs and individual boss fights.

The same applies to the *Bandit Camps*, *Corruption Zones* and *Hunting Grounds*. The former two stage the elimination of the ‘wild’ bandits and the conquest of their forts or the ‘infected’ robots and the conquest of their lair (see Figure 6). The latter stage the hunting of animal-like robots and thus enable upgrading the avatar’s skills and introduce types of possible enemies and how to fight them. Both are hazard spaces that feature modular variations of more or less complex multi-level structures full of

prospect and refuge spaces, climbing paths, stealth inducing high grass (a space of prospect and refuge) and different combinations of hostile NPCs. Such variability of *cyclical repetitions* and their digital modularity indicate the potential of a *smooth* appropriation of the *striated wilderness*. They are “possibility spaces” in the sense of Jenkins and Squire (2002, 70) that allow an ambiguous play pattern.⁵ Consequently, a rhythm’s quality depends on the variability of its repetitions.



Figure 6: Walter Netsch’s iconic UASAF Cadet Chapel (Colorado Springs) as landmark of a bygone Colorado and as *Corruption Zone* in *Horizon Zero Dawn*.

The liberation of *Horizon Zero Dawn*’s post-apocalyptic wilderness and its pre-modern tribes is carried out at hazard spaces like *Cauldrons*, *Bandit Camps*, ruins, mountain lakes, snowy mountain passes, dense forests or forking canyons. Settlements of allied NPCs function as *cyclical* refuge spaces where quests can be accepted, the game state can be saved and trade can be done. The evil is situated beyond those isles of pre-modern civilizations. Both are intertwined by neutral hazards like grazing robots and adventurous *smooth* experiences like *free roaming* towards mountain tops and between cliffs.

Here, wilderness as decor features quite a few animals like boars, foxes or racoons, which are not hazardous for the players, contrary to the fauna in the *Far Cry* series or *Assassin’s Creed Origins*. Similar to the usage for trappers and hunters of the frontier, the animals function as *linear* resources of a *cyclical* crafting system. The numerous types of flowers and branches are shared all over the game world and have to be harvested in order to craft medicine, antidotes or ammunitions. These aspects of hunting and crafting also lead to a wildness gameplay. In context of wilderness as resource, said *Bandit Camps* are of special interest. They are surrounded by cutover areas of muddy earth and stumps and thus thematise man’s overexploitation of nature in general. The ‘wild’ bandits get an additional layer of malignity that is linked to the pre-apocalyptic past: ecological destruction (see Figure 7).



Figure 7: *Bandit Camps* and man's overexploitation of nature in *Horizon Zero Dawn*.

Open world gameplay in particular consists of several different rhythms in variable sets. Quests dominate for a while but can mostly be paused for *free roaming*. Depending on the quality of world design, the placement of quests (*striated* mode of play) and the possibilities of *smooth* appropriation of space, open world gameplay can be a harmonious accumulation of rhythms – a polyrhythm (Lefebvre 2014, 25).

STRIATED WILDERNESS AS CRITICAL MODE

Most open world games apply to Bordo's third category of wilderness "as a transgressive way of acting that fabulates the 'savage' way of life" (2002, 294). In its adaption of geological landmarks found in Wyoming, Colorado and Utah, *Horizon Zero Dawn* additionally applies to the first category, "the wilderness as a tropic or symbolic orientation, tending northerly and westerly wherever it lands geographically" (ibid.). Furthermore, its post-apocalyptic setting and the topics of pre-modern cultures, religions and the confrontation with a fanatic cult and an errant A.I. causes an inversion of Bordo's fourth category of wilderness "as a temporality and an alleged past coincident with the emergence of the modern European idea of antiquity" (ibid.). The *ecopunk* wilderness of *Horizon Zero Dawn* only functions with the aid of grazing and roaming animal-like robots that maintain the operations of the *biomes*. Art director Jan-Bart van Beek comments the game's concept as follows: "[T]he idea was to explore the world that would come after humankind" (van Beek cited from van der Haak; VPRO 2017, TC 00:09:13). An independent A.I. of the nuclear age long gone is the main villain yet machines keep nature running. *Horizon Zero Dawn* projects a future that sadly seems not too distant regarding the ongoing worldwide extinction of bees by pesticides and mankind's research on artificial pollinators (see Eaton 2017; Lallensack 2017).

To highlight this, a romantic gaze is used. Van Beek also explicates the succession of *biomes* which also anachronistically feature different seasons: "The player begins here with green forests and yellow trees, a real autumn feeling. Then we move north where the winter is settling in and you have high mountain peaks. Then we travel to the desert and finally end up in jungle-like areas with large lakes. It's all based on real landscapes and mountains. In many cases we have views that reflect the real world as it is. So you give the players a virtual holiday, a romantic version of the real world" (ibid., TC 00:16:05). Within the context of scaling the game world's topography he adds: "Game worlds are always Disney-like versions of the real world. Everything is smaller. If a

mountain is 3000 m high, we make it 300 m. So it works and you can go through it rapidly, but it feels big” (ibid., TC 00:32:55-00:33:32).

Screening several hours of BBC nature documentaries such as both *Planet Earth* seasons (Fothergill 2006, 2011), their distinct visual aesthetics and cinematic qualities became a style-defining agent in the design process of landscape experience: “‘It’s a quality that isn’t actually completely photorealistic,’ Beek said. ‘It’s a form of hyper-realism that we started calling ‘BBC-realism.’ It’s all shot in perfect condition, at the perfect time of day, with exactly the right dramatic light angle, cloudscapes and weather. There is a lot of cinematic grading to add contrast, atmosphere and saturation to the screen. It’s a film process that takes weeks to find those conditions and film a 10 second snippet” (van Beek cited from Hernandez 2017).

CONCLUSION

There still are wildernesses in the world, like the Lengguru mountain massif in Papua New Guinea. But they are ever decreasing, making room for mass or ecotourism, for boutique hotels and thus transforming a suggested pristine or untamed wilderness into resorts for wildness recreation. Industrialized agriculture and the imminent extinction of bees and coral reefs outline a dark future.

The distinct experience of wilderness in open world games, the direct coexistence of settlement sites and wilderness, is a vividly one. Especially rural open world games have to be seen in a wider context of a post-modern wilderness discourse. They produce media specific systems of meaning. As a topic and non-linear navigational space, *striated wilderness* has at least two intermingled layers: the place in terms of aesthetics of wild landscapes and (in)animate hazards – the wilderness as decor – and the practice in terms of specific given quests and the overall agency of the players and its possibilities for *smooth* play (exploring, climbing, hunting, gathering, crafting etc.) – the wildness as entertainment.

Striated wilderness, *prospect pacing* and the ambiguous, non-linear possibilities of the *smooth* wildness gameplay are critical strategies of involvement, defining rural open world games as liminal spaces of the man-nature dichotomy. Thus, games like *Horizon Zero Dawn* stand in the tradition of landscape paintings, landscape gardens or nature parks. They can stage a playable witnessing of and reflection upon (a pristine) nature and man’s impact on it. This recalls Thoreau’s dictum that „[w]ildness is the preservation of the World“ (1998, 37). It fits perfectly with the concept of rural open world games not only as an interactive adaption and distillation of actuality’s landscapes but also as a disclosure of the desires of post-industrial man.

In the end, it rather depends on the individual player’s willingness and the overall world design if more in-depth (e.g. post-colonial or ecological) discourses are to flourish and trigger alternative approaches towards game intrinsic space and physical-real nature. Eventually *striated wilderness* stages modes of play, which do not only regulate the players’ world view but also have the potential to heighten the players’ sensitivity for the environment and thus maybe change their relationship towards nature. What Appleton concludes for the wanderer, mountaineer, camper or golf player also applies to the players of vast interactive game worlds which are as artificial as a nature park: “‘Though few of us would give up the emancipation we have already won, all of us long to get back, when the opportunity arises, to that proper environment to which our inborn behaviour mechanisms are still tuned, and in it to live and move and have our being” (Appleton 1975, 177).

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BIBLIOGRAPHY

- Addison, J. 1891. “The Spectator, No. 412, Monday, June 21, 1712.” In *The Spectator, in three volumes*. Volume 2. A New Edition edited by H. Morley. London: Routledge. <https://www.gutenberg.org/files/12030/12030-h/SV2/Spectator2.html#section412>
- Aarseth, E. 2007. “I Fought the Law: Transgressive Play and The Implied Player.” In *Situated Play, Proceedings of the DIGRA 2007 Conference*, Tokyo, Japan, 24-28 Septmeber, 130-133. <http://www.digra.org/digital-library/publications/i-fought-the-law-transgressive-play-and-the-implied-player/>
- Aarseth, E. 2001. “Allegorien des Raums: Räumlichkeit in Computerspielen.” In *Zeitschrift für Semiotik*, 23 (3-4), 301-318.
- Appleton, J. 1975. *The Experience of Landscape*. Chichester/New York: Wiley & Sons.
- Bonner, M. 2017. “Erkundung als virtuell-fiktionale Immersionsstrategie – Das prospect pacing der Open-World-Computerspiele als Spiegel nicht linearer Spieler-Einbindung.” In *Jahrbuch Immersiver Medien 2016. Interfaces – Netze – Virtuelle Welten* edited by Institut für Immersive Medien Kiel, 38-57. Marburg: Schüren Verlag.
- Bonner, M. 2015. “Ambiguous Play Pattern: A Philosophical Approach to the Refuge-Prospect Theory in Urban Open World Games by Merging Deleuze/Guattari and de Certeau.” Paper present at the *9th International Conference on the Philosophy of Computer Games, Meaning and Computer Games*. BTK Berlin, Germany, 14-17 October, 1-16. https://www.academia.edu/24458160/Ambiguous_Play_Pattern_A_Philosophical_Approach_to_the_Prospect-Refuge_Theory_in_Urban_Open_World_Games_by_Merging_Deleuze_Guattari_and_de_Certea
- Böhme, G. 1992. *Natürlich Natur. Über Natur im Zeitalter ihrer technischen Reproduzierbarkeit*. Frankfurt am Main: Suhrkamp Verlag.
- Bordo, J. 2002. “Picture and Witness at the Site of the Wilderness.” In *Landscape and Power* (2nd Ed.) edited by W.J.T. Mitchell, 291-315. Chicago/London: University of Chicago Press.
- Bunting Jr., B. S. 2012. *Alternative Wildernesses. Finding Wildness In 21st Century America*. Dissertation submitted at Washington State University. https://research.libraries.wsu.edu/xmlui/bitstream/handle/2376/4095/Bunting_wsu_0251E_10409.pdf?sequence=1
- Callicott, J. B., Nelson, M. P. 1998. “Introduction.” In *The Great New Wilderness Debate* edited B. J. Callicott, and M. P. Nelson, 1-20. Athens/London: The University of Georgia Press.
- CD Projekt RED. 2015. *The Witcher III: Wild Hunt*. PC, XBOX One, PS4. Namco Bandai and Warner Bros. Interactive.
- Damisch, H. 1997. *Skyline. Architektur als Denkform*. Wien: Passagenverlag.

- Deleuze, G., Guattari, F. 2006. "1440 – Das Glatte und das Gekerbte." In *Raumtheorie. Grundlagentexte aus Philosophie und Kulturwissenschaft* edited by J. Dünne and S. Günzel, 434-445. Frankfurt am Main: Suhrkamp Verlag.
- Denevan, W. M. 1998. "The Pristine Myth. The Landscape of the Americas in 1492 (1992)." In *The Great New Wilderness Debate* edited by B. J. Callicott and M. P. Nelson, 414-442. Athens/London: The University of Georgia Press.
- Eaton, E. 2017. "Fleets of flying robots could pollinate crops." In *Science News. Magazine of the Society for Science & the Public*, Vol. 191 (5), 18 March, 4. <https://www.sciencenews.org/article/fleets-drones-could-pollinate-future-crops>
- Emerson, R. W. 1998. "Selections from Nature (1836)." In *The Great New Wilderness Debate* edited by B. J. Callicott and M. P. Nelson, 28-30. Athens/London: The University of Georgia Press.
- Fothergill, A. 2011. *Planet Earth II* (6 episodes) BBC One 2016.
- Fothergill, A. 2006. *Planet Earth* (11 episodes) BBC One 2006.
- Ginsberg, R. 2004. *The Aesthetics Of Ruins*. Amsterdam/New York: Rodopi.
- Gleick, J. 2016. *Time Travel*. New York: Pantheon Books.
- Guerilla Games. 2017. *Horizon Zero Dawn*. PS4. Sony Interactive Entertainment.
- van Grinsven, Paul. 2017. "Player Traversal Mechanics in the Vast World of Horizon Zero Dawn." Paper present at the *Game Developer Conference 2017*, San Francisco, USA, 19-23 March. <https://www.guerrilla-games.com/read/player-traversal-mechanics-in-the-vast-world-of-horizon-zero-dawn>
- van der Haak, B., VPRO Blacklight. 2017. *Horizon Zero Dawn – The making of the game (2017)*. In *youtube.com*, 16 April. <https://www.youtube.com/watch?v=A0eaGRcdwpo>
- Hello Games. 2016. *No Man's Sky*. PC, PS4. Sony Interactive Entertainment and iam8bit 2016.
- Hernandez, P. 2017. "Horizon Zero Dawn Looks Unnaturally Good Because of 'Hyper-Realism'." In *kotaku.com*, 23 March. <http://kotaku.com/horizon-zero-dawn-looks-unnaturally-good-because-of-hyp-1793570455>
- Jenkins, H. 2004. "Game Design as narrative architecture." In *First Person: New Media as Story, Performance, Game* edited by P. Harrington and N. Frup-Waldrop. Cambridge: MIT Press. <http://web.mit.edu/21fms/People/henry3/games&narrative.html>
- Jenkins, H., Squire, K. 2002. "The Art of contested Spaces." In *Game-On*, 40, 64-75.
- Kojima Productions. 2015. *Metal Gear Solid 5: The Phantom Pain*. PS4. Konami.
- Lallensack, R. 2017. "Could this pollinating drone replace butterflies and bees?" In *sciencemag.org*, 9 February. <http://www.sciencemag.org/news/2017/02/could-pollinating-drone-replace-butterflies-and-bees>
- Lefebvre, H. 2014. *Rhythmanalysis. Space, Time And Everyday Life*. London/New Dehli/New York/Sydney: Bloomsbury.
- Manovich, L. 2007. "Database As Symbolic Form." In *Database Aesthetics. Art In The Age Of Information Overflow* edited by V. Vesna, 39-60. Minneapolis/London: University of Minnesota Press.
- Manovich, L. 2001. *The Language of New Media*. Cambridge: MIT Press.
- Naughty Dog. 2016. *Uncharted 4: A Thief's End*. PS4. Sony Interactive Entertainment.

- Nintendo. 2017. *The Legend of Zelda: Breath of the Wild*. Wii U, Switch. Nintendo.
- Nitsche, M. 2008. *Video Game Spaces*. Cambridge: MIT Press.
- Nohr, R. F. 2006. "Raumfetischismus. Topografien des Spiels." In *Computer/Spiel/Räume. Materialien zur Einführung in die Computer Game Studies* edited by K. Bartels and J.-N. Thon, Jan-Noël. In *Hamburger Hefte zur Medienkultur, Vol. 6* edited by Institut für Medien und Kommunikation, Hamburg, 61-81. <http://repositorium.medienkulturforschung.de/nohr-2013-raumfetischismus/>
- Rockstar San Diego. 2010. *Red Dead Redemption*. Xbox 360 et al. Rockstar Games.
- Thoreau, H. D.: "Selections from Henry David Thoreau." In *The Great New Wilderness Debate* edited by B. J. Callicott and M. P. Nelson, 31-47. Athens/London: The University of Georgia Press.
- Totten, C. W. 2014. *An Architectural Approach To Level Design*. Boca Raton/London/New York: CRC Press.
- Ubisoft Montreal. 2017: *Assassin's Creed Origins*. PS4 et al. Ubisoft.
- Ubisoft Montreal. 2011: *Assassin's Creed Unity*. PS4 et al. Ubisoft.
- Ubisoft Montreal. 2007: *Assassin's Creed*. Xbox 360 et al. Ubisoft.
- Ubisoft Montreal and Red Storm. 2014. *Far Cry 4*. PC et al. Ubisoft.
- Ubisoft Montreal and Red Storm. 2012. *Far Cry 3*. Xbox 360 et al. Ubisoft.
- Urry, J., Larsen, J. 2011. *The Tourist Gaze 3.0*. London: Sage Publications.
- Vella, D. 2013. "The Wanderer in the Wilderness: Being in the virtual landscape in *Minecraft* and *Proteus*." Paper present at the *7th International Conference Of The Philosophy of Computer Games 2013*, Bergen, Norway, 2-4 October. http://gamephilosophy.org/download/philosophy_of_computer_games_conference_2013/Vella%202013%20the-wanderer-in-the-wilderness.pdf
- Woodward, S. L. 2009. *Introduction to Biomes*, Westport/London: Greenwood Press.
- Zahniser, H. 1998. "The Wilderness Act of 1964." In *The Great New Wilderness Debate* edited by B. J. Callicott and M. P. Nelson, 120-130. Athens/London: The University of Georgia Press.

ENDNOTES

1 *Biome* means the biocenosis – the interdependency and interplay of all flora, fauna, fungi and microorganisms – of an area or specific environment on earth's surface, like *Alpine Biome*, *Tropical Savannah* or *Boreal Forest Biome* (Woodward 2009, 1-36). In context of open world games and the staging of *biomes* as decor of level structure and involvement for the players, game intrinsic *biomes* are mostly surface phenomena.

2 In *Section 4* permanent infrastructures and commercial enterprises that exceed the function of recreation, are prohibited. But mines that possess ongoing mining rights, are allowed to continue their work using the woods as resource. Also, livestock is allowed to graze in the *Wilderness Area* if the pasture existed before the commencement of the *Wilderness Act* (Zahniser 1998, 126ff.).

3 This also applies to *The Witcher III: Wild Hunt* although the alpine topography surrounding *Kaer Mohen* and the mountains of the *Boreal Forest Biome* of the *Skellige*

archipelago may hold emergent events or ludic points of interest beyond the ideas of *prospect pacing* and contemplation and thus pure landscape experience.

4 The idea of scaling vertical structures in order to enable prospect spaces (rewarding vistas) and thus the possibility of contemplation as well as observation of nearby hostile NPCs but also in order to reveal the direct environment with its points of interest on the world map, possible quests and *secondary vantage-points* in form of horizons and reduplications (e.g. tower on a hill) became an elementary gameplay mechanic in open world games since *Assassin's Creed* (Ubisoft Montreal 2007). Ubisoft games in particular use vertical structures like bell towers or radio towers in *Assassin's Creed Unity* (Ubisoft Montreal 2014) or *Far Cry 4* in context of side quests. In *The Witcher III: Wild Hunt* such towers are mostly placed for enabling a prospect, functioning as part of the *prospect pacing*. Only very few are the stage of a side quest but not a side quest themselves.

5 Like the concept of scaling a vertical structure in order to map and observe the game world, the appropriation and conquest of constant allotted hostile forts, camps or outposts, respectively, is a typical *cyclical repetition* in open world games and thus an established quest topos to guide players through the vast world.