Generative Atmospheres

Ambient Modes of Experience in Digital Games

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INTRODUCTION

Playing computer games is an active pastime: players are presented with a dynamic scenario that requires various inputs in order to engage with its core game loop. To do so, the player must constantly pay attention to the game while performing actions to propel gameplay. However, some games can be experienced over multiple levels of engagement. Such games may not require the constant provision of input to offer a meaningful experience. In these games, atmosphere often reveals itself as the underlying structure, intricate enough to be experienced in its own right.

Ambient music, a term coined by musician Brian Eno, is a genre that is meant to allow for different levels of engagement. This may reach from ambient music being a background accompaniment in a given setting, to being the center of listener attention. This article will identify a type of game that offers ambient modes of experience that unfold across varying levels of engagement and intensities of interactions.

The term *ambient game* is relevant in this context, since it references the homonymous music genre. This article will present existing definitions of ambient games to identify parallels between the creation and perception of ambient music and various modes of experiencing digital games. Based on these findings, this article will propose three ambient modes of experience that represent the varying intensities of player interaction within the diegetic boundaries of games.

AMBIENT MUSIC

On a rainy afternoon in early 1975, Brian Eno, hospitalized and recovering from an accident, was listening to a record of 17th-century harp music. A friend had put it on for him, albeit at a low volume. Bed-ridden, Eno was not able to reach the record player to turn up the volume. This resulted in the music being just loud enough to be heard above the rain, converging with the sounds of the falling drops of water and ambience in the room.[1] The experience contributed to Eno's realization that immersion was the reason to engage in music: "[people] were making music to swim in, to float in, to get lost inside."[2] In the decades following this realization, Eno would produce numerous records that helped define and establish the genre of ambient music in public recognition.

Around 50 years prior, composer Erik Satie had written music to be background accompaniment for a social setting. His 1917 work MUSIQUE D'AMEUBLEMENT (furniture music) was created as intermission music for a play, where the audience was urged "[…] to take no notice of it and to behave during the intervals as if it did not exist."[3, 4] It was meant to "[…] make a contribution to life in the same way as a private conversation, a painting in a gallery, or the chair in which [one] may or may not be seated."[5]

In the 1930s, MUZAK emerged. This type of music featured low-key instrumental versions of popular songs, and was intended to promote spending in stores and increase productivity in office spaces.[6] The term is derived from the name of the first company to specialize in offering functional, light background music. With ambient music, however, Eno intended to provide an auditory texture for varying levels of listener engagement and transcend the merely functional qualities of MUZAK.

1 Eno, Brian: *A Year With Swollen Appendices*, London: Faber and Faber 1996, here pp. 294-295.

2 Ibid., p. 294.

3 Templier, Pierre-Daniel: Erik Satie, Cambridge, MA: MIT Press 1969, here p. 45.

4 MUSIQUE D'AMEUBLEMENT (Satie, Eric. Éditions Durand-Salabert-Eschig, 1917-1923. Musical score).

5 Ibid.

6 Baumgarten, Luke: "Elevator Going Down: The Story Of Muzak", in *Red Bull Music Academy Daily*, September 27, 2012, https://daily.redbullmusicacademy.com/2012/09/history-of-muzak.

Eno mentioned the term ambient music for the first time in the liner notes of his album AMBIENT 1: MUSIC FOR AIRPORTS.[7] Here, Eno identifies a certain type of music as ambience. He defines ambience "as an atmosphere, or a surrounding influence: a tint."[8] This statement implies that atmosphere is something that does not emanate from a particular object, but emerges from the totality of a given setting, coloring everything that takes place within it. This shows parallels to the concept of atmosphere according to philosopher Gernot Böhme, who states that "[…] atmospheres imbue everything, they tinge the whole of the world or a view, they bathe everything in a certain light, unify a diversity of impressions in a single emotive state."[9] Therefore, in the following I will use atmosphere and ambience as different terms referring to the same phenomenon.

MUSIC FOR AIRPORTS was designed to be played at airports in order to defuse the often tense and anxious atmosphere of the terminal, and to provide a soothing counterpoint to busy activity. In this vein, ambient music according to Eno is meant to enhance environments, while retaining a sense of uncertainty: "Ambient Music [sic] is intended to induce calm and a space to think."

Furthermore, Eno stated that "[ambient music] must be able to accommodate many levels of listening attention without enforcing one in particular; it must be as ignorable as it is interesting."[10] This definition focuses on the level of attention the listener might pay to the music. Beyond music, however, there have already been attempts to apply Eno's philosophy to digital games. These approaches focus on possible modes of perception as well as the emotive qualities of ambient music and will be described in the following section.

AMBIENT GAMES

The term ambient games first appeared in a paper by creative technology researchers Mark Eyles and Roger Eglin titled "AMBIENT ROLE PLAYING GAMES: TOWARDS A GRAMMAR OF ENDLESSNESS" (2007). The authors describe the term using Eno's definition of ambient music as a reference point: they define ambient games as

7 AMBIENT 1: MUSIC FOR AIRPORTS (Eno, Brian. Polydor, 1978. Vinyl LP).

8 Eno, Brian: Liner notes for Ambient 1: Music for Airports, Polydor 1978, 1 LP.

9 Böhme, Gernot: *The Aesthetics of Atmospheres*, New York, NY: Routledge 2017, here p. 29.

10 Ibid.

games "[…] that the players can dip in and out of […]; that the game is running in the background while they are engaged in other activities."[11]

They further distinguish ambient games from traditional games through the context of pervasive games. Pervasive games are "games that are controlled by everyday actions […] in everyday, real-world environments that have gameplay consequences in a virtual game world."[12] Such games use digital technologies as a technical support structure integrated into a real-world environment. Eyles and Eglin refer to such an augmented environment as an "[…] ambient intelligent environment […]."[13] Furthermore, pervasive games may omit the use of traditional input methods, such as the gamepad, mouse, or keyboard.

For example, a pervasive game may incorporate the use of a device, such as a pedometer, to track the amount of player movement. The player may actively engage with the game, adjusting their movement consciously in order to influence its outcome. On the other hand, the player can become unaware of the device they are carrying and the game that is running, while their movement still affects the outcome of the game. This is the case in AMBIENT QUEST, Eyles' own implementation of an ambient game.[14] In this role-playing game, players transmit their step count via e-mail to the game administrator. Their movement is mapped onto a virtual 2d representation of the game environment, formed by a grid of various tiles. These tiles may hold enemies that are fought or items that are picked up automatically.[15] While transmitting the player's step count and movements requires an active effort in this example, today's smartphones are equipped to fully automate this process: always connected to the internet and equipped with various sensors, they allow for a fully automated engagement by evaluating sensor input and transferring data.

Eyles and Eglin take from ambient music the variability of its reception. A game's embeddedness in the player's environment allows for multiple levels of player engagement: a game can hold the full attention of the player, as they engage with it according to its ruleset, or it may linger within their surroundings, devoid of their attention, while ready for interaction. Eyles and Eglin further state that

11 Eyles, Mark, Eglin, Roger: "Ambient Role Playing Games: Towards a Grammar of Endlessness", in *Women in Games Conference* (2007), here p. 25.

12 Ibid.

13 Ibid., p. 18.

14 Eyles, Mark: "AMBIENT QUEST version 1.0", In: Mark Eyles Ambient Quest Website, https://www.eyles.co.uk/ambientquest/AQv1.html

15 Eyles, Mark/Eglin, Roger: *Ambient Role Playing Games: Towards a Grammar of Endlessness*, p. 27.

"[…] the key component of an ambient game is that the player may choose their level of interaction with the game."[16] Here, they indicate a shift of focus from attention as in Eno's definition of ambient music, towards interaction. This shift appears reasonable in the context of digital games, as video game studies researcher Espen Aarseth identifies most games as simulations, i.e., "[…] complex systems based on logical rules."[17] Therefore, games cannot "[…] be read as texts or listened to as music, they must be played."[18]

Journalist Lewis Gordon approaches ambient games from a different perspective, one that focuses on traditional computer games and the emotive qualities of ambient music. In an article titled "THE RISE OF THE AMBIENT VIDEO GAME" (2018), Gordon draws parallels between Japanese ambient music and the THE LEGEND OF ZELDA franchise.[19] The debut of the first THE LEGEND OF ZELDA game coincided with the release of several Japanese ambient music records, such as GREENand SURROUND by Hiroshi Yoshimura, as well as MERCURIC DANCE by Haruomi Hosono.[20, 21, 22] He asserts that both the game franchise and the ambient records channel the natural elements water, earth, and air, and identifies them as "[…] phenomena of increasing rarity in the modern Japanese city."[23]

However, this may not be restricted to Japanese society. Cultural and literary scholar Hartmut Böhme makes a similar observation from a Western perspective, stating that the average urban citizen is shielded from the direct experience of the elements, as they inhabit largely artificial environments.[24] In fact, the elements are also present in Eno's AMBIENT series (1978-1982): natural elements appear across all album covers in the form of maps: schematic illustrations of mountains (earth) and rivers (water) from an aerial (air) perspective.

16 Ibid., p. 4.

17 Aarseth, Espen: "Computer Game Studies, Year One", in *Game Studies*, Volume 1, Issue 1 (2001).

18 Ibid.

19 THE LEGEND OF ZELDA (Nintendo R&D4, 1986: Nintendo).

20 GREEN (Yoshimura, Hiroshi. AIR Records Inc., 1986. Vinyl LP).

21 MERCURIC DANCE (Hosono, Haruomi. Monad Records, 1985. Vinyl LP).

22 SOUNDSCAPE 1: SURROUND (Yoshimura, Hiroshi. Misawa Home, 1986. Vinyl LP).

23 Gordon, Lewis: "The Rise of the Ambient Video Game", in *The Outline*, April 17, 2018, https://theoutline.com/post/4181/ambient-video-game-legend-of-zelda.

24 Böhme, Hartmut: "Die vier Elemente: Feuer Wasser Erde Luft", In: Christoph Wulf (ed.), *Vom Menschen. Handbuch der Historischen Anthropologie*, Weinheim: Beltz 1997, pp.17-46, here p. 19.

According to Gordon, life in the city tends to produce distressing or overwhelming sensory situations that create the need for mood-regulating devices. In Japan of the 1980s and 1990s, such devices came in the form of consumer electronics such as the Sony Walkman and the Nintendo Game Boy. They were often used because "[…] the rhythm of music or the video game was frequently preferable to that of the train or bus."[25] This parallel examination implies that some games and ambient music offer ways of escaping one's immediate reality in favor of what Gordon identifies as a "[…] reflective mood and atmosphere."[26] This mirrors Eno's assertion that ambient music "[…] induces calm and space to think."[27]

Gordon views games such as THE LEGEND OF ZELDA: BREATH OF THE WILD or SHADOW OF THE COLOSSUS as "[…] the video game equivalent of putting an ambient record on."[28, 29, 30] He identifies repetition as a common structure in these and other ambient games. As games become predictable, he argues, they leave mental space for other subconscious activities. Gordon establishes a connection between this repetitive structure and Eno's *generative* process for Music for Airports.[31] The generative process will be discussed in the context of the generative atmospheric ambient mode of experience below.

The descriptions by Gordon as well as Eyles and Eglin demonstrate that there can be different interpretations of the term ambient game. Both interpretations use Eno's conception of ambient music to shed light on how ambient games can be experienced. However, each approach treats the ambient aspect differently: according to Eyles and Eglin, ambient games can fade completely into the background and disappear from the player's perception. In contrast, Gordon does not consider the option of leaving the game unattended; rather, he sees the ambient aspect as emphasizing atmosphere and informing about possible modes of play, i.e., "coded atmospheres [that] offer a space for reflection."[32]

It should be noted that, by adapting Eno's definition of ambient music to games, both Eyles and Eglin as well as Gordon apply a theory that is meant for a linear, non-interactive medium (music) to a non-linear, interactive medium (digital games). Unlike recorded music, games are usually intended to receive input

25 Gordon, Lewis: *The Rise of the Ambient Video Game*.

26 Ibid.

27 Eno, Brian: Ambient 1: Music for Airports.

28 THE LEGEND OF ZELDA: BREATH OF THE WILD (Nintendo EPD, 2017: Nintendo).

29 SHADOW OF THE COLOSSUS (Team Ico, 2005: Sony Computer Entertainment).

30 Gordon, Lewis: *The Rise of the Ambient Video Game*.

31 Ibid.

32 Ibid.

from the player. Paying attention is not enough. Games demand interactions of varying intensity.

Media scholar Alexander R. Galloway identifies video games as an action-based medium "[…] whose foundation is not in looking and reading but in the instigation of material change through action."[33] Such actions are not exclusive to the player: the machine can also take actions either as a "[…] response to player actions … [or] independently of them."[34] Here, Galloway distinguishes between operator actions, i.e., "acts performed by players,"[35] and machine actions, i.e., "acts performed by the software and hardware of the game computer."[36] Operator and machine actions are not mutually exclusive, but their ratios may change resulting in player interactions of varying intensity.

Galloway further proposes a classification system of action in video games that, in addition to the above distinction, regards diegesis as a factor: certain actions may be diegetic, i.e., embedded in the ludonarrative environment of the game, or non-diegetic, i.e., outside the ludonarrative environment of the game.[37] The shifting ratio between machine and operator actions informs the *ambient modes of experience* proposed in the next section. While my analysis only regards modes of play within the ludonarrative context of a game, Galloway's classifications are still applicable and will be referenced throughout.

AMBIENT MODES OF EXPERIENCE

Various intensities of interaction may inform different modes of the game experience. In the following, I propose three modes of experience that accommodate different intensities of interaction.

The ludic experience

The *ludic experience* features the highest intensity of interaction in a game. In this mode of play, the player engages with the core gameplay loop.

33 Galloway, Alexander R.: *Gaming. Essays on Algorithmic Culture*, Minneapolis, MN: University of Minnesota Press 2006, p. 4.

34 Ibid.

35 Ibid., p. 5.

36 Ibid.

37 Ibid., p. 7.

The core gameplay loop depends on the genre. For instance, it could consist of aiming and shooting in an action game or solving puzzles in a puzzle game. This mode of play also allows the player to achieve progress in the game, e.g., advance in the story, or unlock a new area by performing the required actions. The ludic experience may also feature loss conditions, such as when the player character dies in a firefight or when a timer runs out.

Some games may not offer significant means of interaction beyond the core gameplay loop. In this case, to leave the ludic mode of interaction would imminently lead to a loss condition, i.e., 'game over,' and thus the interruption of the game flow and diegetic experience. Mark Eyles and game developer Dan Pinchbeck describe such games as having "low degrees of ambience."[38]

This is especially prevalent in early video games and arcade games. For example, in most variants of TETRIS, the core gameplay loop consists of the player having to align perpetually spawning bricks of various shapes to create gapless rows.[39] A gapless row will disappear immediately. When the player stops actively providing input to make rows disappear, the bricks will eventually pile up beyond the upper border of the play field, triggering a loss condition and stopping the game flow.

In RED DEAD REDEMPTION 2, the ludic mode of experience is represented by the many missions throughout the game. During a mission, the player must follow clear instructions to ensure a continuation of the game flow. Such instructions may entail moving to a specified position or surviving a firefight by shooting and killing enemies. Otherwise, the mission will fail, and the game will be interrupted.

The explorative experience

In the *explorative experience*, the focus lies on spatial exploration of the game environment. This is achieved by changing the position of the player character or camera angle. Galloway refers to this type of player interaction as *move acts*.[40]

Some games focus entirely on this mode of play, and do not go beyond the interaction intensity of movement and exploration. In some cases, they may incorporate an environmental narrative. Since the release of games such as DEAR

38 Eyles, Mark/Pinchbeck, Dan: "Playful Ambience" in *DiGRA '11 – Proceedings of the 2011 DiGRA International Conference: Think Design Play*, Volume 6, Utrecht 2011, here p. 13.

39 TETRIS (Alexey Pajitnov, 1984: Alexey Pajitnov).

40 Galloway, Alexander R.: *Gaming. Essays on Algorithmic Culture*, p. 22.

ESTHER and GONE HOME, the term *walking simulator* has been established to describe several games that predominantly reside in the explorative experience.[41, 42, 43] Cultural studies scholars Zimmermann and Huberts describe a similar concept using the term *explorative game*.[44]

In RED DEAD REDEMPTION 2, when not playing a mission, the player can freely explore the game environment on foot or horseback. They may pass through the game's diverse environments, and possibly discover areas that they would not have otherwise encountered during missions. Following Eyles and Pinchbeck, RED DEAD REDEMPTION 2 could therefore be described as a game with "high levels of ambience" because it "allow[s] different levels of engagement, including the ability to have a very low level of engagement."[45] In other words: the game allows players to *not* follow the core gameplay loop if they so desire.

The generative atmospheric experience

In the *generative atmospheric experience*, the intensity of player interaction is reduced to a minimum: the player has stopped actively providing input. However, they are still present to witness what Galloway refers to as the *ambience act*: "the user is on hold, but the machine keeps on working. […] While the machine pauses in a pause act […], it is the operator who is paused in an ambience act, leaving the machine to hover in a state of pure process."[46] In the ambience act, the "world of the game exists as a purely aesthetic object."[47]

Here, the machine offers a dynamic aesthetic experience that may include a spontaneously emerging narrative without player participation. As Zimmermann and Huberts note in the description of their *awareness game*, "[t]he game world is

41 DEAR ESTHER (The Chinese Room, 2012: The Chinese Room).

42 GONE HOME (The Fullbright Company, 2013: The Fullbright Company).

43 Kill Screen Staff: "Is It Time to Stop Using the Term Walking Simulator?", in *Kill Screen*, September 30, 2016, https://killscreen.com/previously/articles/time-stop-using-term-walking-simulator/.

44 Zimmermann, Felix, Huberts/Christian: "From Walking Simulator to Ambience Action Game. A Philosophical Approach to a Misunderstood Genre", in *Press Start*, Volume 5, Issue 2, pp. 29-50, here p. 39.

45 Eyles, Mark, Pinchbeck, Dan: *Playful Ambience*, p.11.

46 Galloway, Alexander R.: *Gaming. Essays on Algorithmic Culture*, p. 10.

47 Ibid., p. 11.

absolutely independent of the player and does not rely on their input."[48] When interaction is absent, paying attention, i.e., awareness, becomes the player's sole action, fully directed at the ever-present atmosphere of a game.

David O'Reilly's MOUNTAIN almost exclusively resides in this mode of play.[49] At the start of the game, the player is asked to draw objects on the screen. This is the only interaction required of the player. Beyond this brief task, there are no means of interacting with the game apart from moving the camera or changing settings in the pause menu, leaving the mountain to be watched as it slowly undergoes changes over time.

In RED DEAD REDEMPTION 2, various game processes persist even without player input: NPCs still follow their daily routine and interact with each other and weather changes dynamically, transforming the look and sound of the environment.[50] When player input has been absent for some time, the game camera shifts away from the player character, showing visual impressions of the surrounding environment.[51]

Galloway distinguishes this dynamic rest state from the pause function through *micromovements*. Such "micromovements often come in the form of pseudorandom repetitions of rote gamic action, or ordered collections of repetitions that cycle with different periodicities to add complexity to the ambience act."[52]

I label this concept *generative atmosphere*, as it exhibits similarities with another concept closely connected to ambient music. *Generative music*, another term coined by Eno, describes both a process, *generative*, and its result, *music*. In the generative process, multiple musical layers of different lengths are overlayed and played back simultaneously. Because each layer is looped in their respective cycle, musical elements across all layers eventually overlap at different times, creating an ever-changing musical output. Eno describes this process for his album DISCREET MUSIC, "[…] in which two simple melodic cycles of different durations

48 Zimmermann, Felix/Huberts, Christian: *From Walking Simulator to Ambience Action Game*, p. 39.

49 MOUNTAIN (David OReilly, 2014: Double Fine Productions).

50 RED DEAD REDEMPTION 2 (Rockstar Studios, 2018: Rockstar Games).

51 This again stresses the point that RED DEAD REDEMPTION 2 allows for different levels of engagement. A ludic experience, an explorative experience, and a generative atmospheric experience are all possible.

52 Ibid., p. 10.

separately repeat and are allowed to overlay each other arbitrarily."[53, 54] He utilized increasingly complex variations of this process on several of his ambient records, including MUSIC FOR AIRPORTS. Eno later switched from combining pre-recorded material to using software that would generate an ever-changing musical output in a similar manner.[55] The shift from using pre-recorded material to employing algorithmic processes illustrates a convergence of ambient music into the context of the generative atmospheric experience in computer games.

To demonstrate the similarities between generative music and the generative atmospheric experience, consider the following: the different musical tracks of a generative ambient piece correspond to processes of the game environment, i.e., events that take place regardless of player intervention. Galloway refers to such events as *diegetic machine acts*.[56] These include day/night cycles, the individual daily routines of humanoid non-player characters, or the behavior of animal NPCs. These processes may not necessarily repeat at the same interval but nevertheless overlap with each other and contribute to the game environment. Their actual expression, like the behavior of an individual NPC, can be seen as the equivalent of a musical expression, such as a melody or a rhythm. Just like various musical expressions overlap at seemingly random intervals, machine acts serve as a generative system, creating the impression of a complex, emergent atmospheric setting.

When the game enters an ambient state, the atmosphere of the game becomes the element at the center of the player's attention. However, Zimmermann and Huberts note that "[t]he ambience act is ever-present."[57] This implies that the ambience act remains active throughout all modes of experience, even if it may fade in the background, as operator actions become more frequent and intense.

Böhme notes that, "[t]oday there is no area of life, no product, no installation or collection that is not the explicit object of design."[58] Digital games offer an unprecedented degree of control over the individual elements that may produce atmospheres: shapes, spaces, the texture of surfaces, lighting, physical properties, sound, and the algorithms that define the behavior of animate and inanimate

53 DISCREET MUSIC (Eno, Brian. Obscure, 1975. Vinyl LP).

54 Eno, Brian: *A Year With Swollen Appendices*, London: Faber and Faber 1996, here p. 330.

55 Ibid., pp. 330-332.

56 Galloway, Alexander R.: *Gaming. Essays on Algorithmic Culture*, p. 11.

57 Zimmermann, Felix/Huberts, Christian: *From Walking Simulator to Ambience Action Game*., p. 35.

58 Böhme, Gernot: *The Aesthetics of Atmospheres*, p. 27.

entities. Therefore, games and their atmospheres require the attention from scholars across various disciplines, to engage with these elements both individually, as well as in their entirety.

CONCLUSION

Eno's concept of ambient music has been influential in the development of the idea that the perception of and interaction with some games can vary considerably. The notion of ambient games has been interpreted differently by Gordon as well as Eyles and Eglin. While the former focuses on ambient games' emotive qualities and variability of interactions within their diegetic context, the latter focus on the different intensities of interactions and the level of attention paid to the game. However, both approaches contain the theme of variability that can be traced back to Eno's idea that ambient music "must be as ignorable as it is interesting."[59]

The variability of player interaction is characterized by a shifting of the ratio between machine and operator acts. This shifting informs the ambient modes of experience proposed in this article: The *ludic mode* focuses on an intense engagement of the player with the core gameplay loop; the *explorative mode* focuses on the spatial exploration of a virtual environment; and the *generative atmospheric mode* focuses on the player's experience of the game's ever-changing atmosphere. The atmosphere of a game is inherently generative, as it usually emerges from the overlapping of various elements with their individual rhythms. The atmosphere may be intricate (and compelling) enough to be experienced in its own right, but beyond that it is always present, tinting the experience across the other modes.

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