Sky's the Limit: Skyboxes and Backgrounds as Narrative and Imaginative Elements (Extended Abstract)

EXTENDED ABSTRACT (CAMERA-READY VERSION, MAY 2023)
Skyboxes and backgrounds are amongst the types of "limit" and "margin" of a videogame world that more easily come to a player's mind — even as the current game design ethos shifts more and more towards the idea of an open world where the explorable space is extended and dilated in a breathtaking manner, the sky(box) is still the limit.

In a recent paper, German art scholar Marc Bonner defined the skybox as "a cubical or spherical volume in computer world games, through which the 3D space that is explorable and can be experienced by the player is delimited" (Bonner, 2022 – my translation from the German). Backgrounds in 2D games (like bidimensional platformers) might not constitute an element of the game world (they do not enclose space like skyboxes do in a 3D game), and the player immediately perceives them as "non-explorable"; yet even the background serves at least an aesthetic purpose — it is a tool of narration and worldbuilding, and it completes with a strategic smattering of visual information (a cluster of islands, a thunderous sky, a row of gray tower blocks…) an otherwise bare and purely functional universe of ledges, platforms and abysses.

Such elements respond to the need to create spaces in games that *look* and *feel* true. Even games that do not actively try to replicate our reality are still subject to what Brian Upton defined as a tendency to "mimic real-world spaces" and the way they work, if anything to allow players to orient themselves and navigate the game-world by instinctively perceiving what they can or cannot do in terms of movement and explorability. Upton does not name skyboxes directly, but he does make a fundamental point: "The line-of-sight checks performed by AI characters are designed so that our real-world knowledge of how eyesight works will be a useful constraint." (Upton 2018). Eyesight and the visible as points of contacts with the world and at the same time inherent limits can also be applied to the avatar controlled by the player and its own line of sight imposed by the game – a line of sight that *stops* with the sky, the quickest way to exclude a portion of the visible from the realm of interaction and possibility. In game design terms, skyboxes skilfully use this "romantic" trick to hide the constructedness of videogame spaces. Reflecting on "nested spaces" and the irregularities of scale between indoor and outdoor in games, Jesse Schell argues that – even though these scales are hardly "geographically realistic" – they still match "our mental models of how we think about spaces – when we are indoor we think about space inside the building we are in, with little thought to how it exactly relates to the space outside" (Schell 2020). The game world itself, though, is a nested space protected and enclosed by the skybox; hypnotised by this immersive boundary, the player is keen to equally pay "little thought" to hierarchies and architectures of levels and "rooms" as they occur under the hood and are manifested by the game code. The sky the player sees on their journey still encapsulates – in their mind – the world of the inn, of the dungeon, of the HQ, even if those sub-levels are stored in another "box". The skybox contributes to sustain the idea of geographic continuity of a game world, even if no such continuity is present in the actual technical organisation and manifestation of the game-world; it is a boundary that has the power to have players *forget* about boundaries.

In this paper, I will present an overview of skyboxes as game design tools, especially in terms of their narrative potential. How do skyboxes serve to represent the outer limits of the level in the player's perception? How do they fare as elements of the game-world themselves, being simultaneously a part of it but also outside of the player's immediate grasp? What are the verbs associated to these liminal elements of the levels and landscapes? And as the limits of a level, how are skyboxes used to complicate and sometimes question the fiction of the game, hinting at an "outside" that is not directly addressed and thus leads players to conjecture and speculate about the game world itself (such as the mysterious figures

one can spot in the horizon of a level in *Super Mario Galaxy 2*)? For brevity's sake, I will focus primarily on skyboxes in 3D games, but a briefer reflection on if and how these conclusions can apply to backgrounds in 2D games will be undertaken too.

In tackling these questions, I will mainly take examples from the genre of 3D platform games – such as *Super Mario Galaxy 2* (Nintendo EAD Tokyo 2010) and *Croc: Legend of the Gobbos* (Argonaut Software 1997). I will concentrate on platform titles because they are one of the genres in which the game world and the environment around the player are most intensely interacted with, meaning that the outer limits of a level have to be clearly defined and marked as such; the level structure typical of these games also means that skyboxes need to make up for an "unconnected" world whose continuity is only granted by the story or via a map with an overhead perspective, whereas open-world games present a space and a game world that is clearly contiguous and can be discovered at leisure.

One fundamental goal of this paper is to sketch out a framework of analysis for skyboxes / backgrounds that is useful for game critics and narratologically-oriented game scholars, since most of the literature currently existing on the subject (Bonner, 2022; Günzel, 2008) has been produced by art scholars and theorists who tackled this subject from more strictly aesthetic and technical points of view. That such a framework is beneficial, can be garnered by looking at how landscapes and backgrounds as boundaries are actively studied and understood as part of the artistic artifact in other provinces of the humanities – see for instance their presence in the analysis of set design in theatre studies (Sosnovskaya 2013). Whereas – in the theatre – set design and backgrounds help carving the space of the stage from the real world and allowing for a dramaturgical fiction to happen in that arena (delimiting it, and reinforcing its design by simulating a town, a cave, a given historical period etc.), video games present the added challenge of taking place in a *virtual* world that needs to be constructed and maintained as fiction over a much longer scale and expanse of time; all the more reason to suggest tentative ways we might tackle these peculiar margins and boundaries of game worlds, as this paper aims to show with the example of 3D platformers.

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