Environmental designs: A typology towards an expanded field

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INTRODUCTION

In this paper we offer a provisional typology of the primary categories of environmental or ecological relationships depicted, represented or simulated in games. We explore four main approaches to environments in games: environment as backdrop, as resource, as antagonist, and as text. These four provisional types are not clearly delineated, or equally common amongst all games and game genres, nor are they mutually exclusive within particular games. We argue that consideration of ecological notions in gaming reveals their frequent subordination to higher level game design decisions, and that analysis through this typology can reveal the shifting relationships between technologies of simulation and videogame strategies of representation – as well as orient game design towards the possibility for more expansive thinking about environmental relations (and hence, the most significant political issues of our time) as seen in the work of scholars such as Timothy Morton.

How have videogames imagined the environment?

Received wisdom would suggest that mainstream game design has had an uncomplicated engagement with the natural world, with much big-budget industrial game production and game rhetoric emphasizing the simulation of natural phenomena like waves, water, particle effects and explosions to a high degree of visual fidelity (Barton, 2008). But beneath this surface drive towards naturalism and verisimilitude lies the possibility of deeper analysis of ecological relationships within game design, and a consideration of the varieties of possible environmental and ecological models present in games. From Cory Arcangel's startling transformation of *Super Mario Bros* into a meteorological meditation to From Software's cryptogeographies, the category problem that the environment represents has appeared in many different ways across the history of gaming. It has appeared as a threatening sea whose effects on fragile islands must be managed through

ritual (*From Dust*), as a space for expansion and control (*Civilisation*), and a procedurally-generated technological sublime (*No Man's Sky*) – to name only a few.

However, we argue that environmental concerns arise in games even when they are not explicitly thematised through design, mechanic or art elements. Conscious design focuses on ratios and the best use of finite resources, but glitches, errors, feature creep, exploits and other emergent videogame properties exhibit new and unforeseen varieties of finitude. If, as Cubitt (2009) has argued, "an ecological game is... one in which the act of externalising and objectifying the environment as other is broken down by insisting on the mutuality of production, the interaction of multiple users to produce an evolving rule-set", we argue that glitches and errors show the need to include objects and processes beyond the human in this mutuality (Golding 2012; Linderoth 2015). Much as in our own world, in such cases the environment of the game's virtual world asserts itself as too complex to be fully apprehended – kicking back against its own contexts of production and consumption (Dyer-Witheford & de Peuter, 2009). To this we can add the perspective of the game hardware as 'environment' doubling and complexifying the relations between foreground and background, object and environment, actor and object. This perspective destabilizes any clear analytical distinctions between player and game, hardware and software, and so on, of much analysis produced in game studies.

The 'environment', then, is both a legitimating source of verisimilitude, a threat to the bounded aspects of game design, as a constant source of possible absurdities where phenomenological experience and simulation abruptly part ways, and a destabilizing frame within the study of games.

Thinking About Environments

This paper's typology of four main approaches to environments in games aims to facilitate discussion of these relations. We argue that the environment functions as backdrop, as resource, as antagonist, or as text. These four provisional types are not, however, clearly delineated, stable, or equally common amongst all games and game genres. Using these types as a guide for analysis of both games and genres and their development over the longer trajectories of game design, we suggest, may reveal shifting relationships between technologies of simulation and videogame strategies of representation – for instance, the shift in 3D games from pre-rendered backgrounds that served a mainly spectacular function to the more exploitable and manipulatable real-time environments in more contemporary titles has necessitated a concomitant emphasis on the resource, antagonist and text-oriented approaches to game design.

Most significantly, we will argue that this typology shows how attenuated environmental and ecological notions are in game design, and how subordinated they almost invariably become to higher design decisions and doxa. Following Chang's (2011, 60) analysis that finds many current 'games naively reproduce a whole range of instrumental relations' towards the natural environment, we suggest that while our proposed typology is useful as a first pass at the topic, ultimately more research and environmental thinking are needed (Bell-Gwane, 2013; Bohunicky, 2014). As Timothy Morton (2007, 1) has put it: 'when you mention the environment, you bring it to the foreground. In other words, it stops being the environment.' In closing, we will flag future work and adumbrate what this ecological thinking might look like with a critique of the term 'affordance' and its provenance in Gibson's (1986) original formulation in explicitly ecological terms which was itself informed by the work of Gregory Bateson (1972) and other scholars at the Macy conferences on cybernetics.

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