



Playing Green Games: micha cárdenas's *Sin Sol / No Sun*

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Videogames and Environmental Questions: Art Games

- Computer games offer ‘the most predominant form of storytelling in contemporary digital media’ and have provoked ‘some of the most developed thinking about the potentialities of computation for narrative, interactivity, and multimedia’, as well as flagging their potential for ‘modeling ethical choice and moral complicity’ (Scott Rettberg, *Electronic Literature* [2019]).
- Serious/persuasive/educational games. Term ‘art game’ coined in 2003 by Tiffany Holmes.
- Art games tend to appropriate the most popular genres of computer gaming for sociopolitical critique or they eschew the mainstream, highly competitive game genres and encourage the player to appreciate them on aesthetic terms, to experience them as art. Focus on generating feelings, affect, and possibly also on moving the player to action beyond the game space.
- Includes genres such as exploratory ‘walking simulator’ or ‘environmental narrative’ game.

Videogames and Environmental Questions: Green Games

- ‘Video game space is an **environmental context** for the active creation of culturally contextualized meaning’ (Phillip Penix-Tadsen, *Cultural Code* [2016]).
- While the ‘environmental’ nature of computer games suggests itself as highly suited to environmentalist topics, ‘green games’ constitute a minor genre in the field.
- While the design of game environments ‘continue[s] to grow more computationally and graphically complex’, they all too ‘often rest on relatively **simplistic environmental models**’ **such as resource extraction or visual spectacle** (Alenda Chang, *Playing Nature* [2019]).
- But ‘**all games have the potential to generate ecological themes**, creating dynamic interactive player experiences involving environmental arguments and ethics’ (Lauren Woolbright and Thaiane Oliveira, ‘Where the Wild Games Are’ [2016]).
- ‘**How do ordinary and game worlds intersect, and what are their ecological repercussions? [...] how do their narrative and mechanical designs affect our environmental imaginations? What messages about environments might we carry from games into our ordinary worlds, and vice versa?**’

Augmented Reality, Mobile Devices, Green Games

- ‘Immersivity’ of VR – the all-encompassing nature of the sensory experience afforded to the user through the technology. This gets too much attention...
- Or user’s sense of ‘embodiment’ or ‘presence’ in a VR environment – the range of sensory stimuli used and how the user interacts with that environment.
- Multisensory ‘embodied experiences’ in VR can significantly affect our pro-environmental inclinations and resultant behaviour. (Sun Joo Ahn and Jeremy Bailenson, 2011)
- In AR a user’s sense of embodiment is complicated by shifts between sense of embodiment in the virtual world and in their real surroundings. This has been found to be significant. Olfactory and haptic stimuli important; can displace hegemony of the visual & auditory.
- AR often used with locative technologies on mobile devices to enhance our appreciation of specific sites and landmarks – their ‘aura’ (based on shared sociocultural understandings). (Bolter *et al*, 2004)
- AR without locative but with space/motion-sensitive technologies in everyday environments - more personal, affective response triggered by combination of digital and real materials.
- Aura not pre-programmable; more contingent on user’s environment... Environmentalist uses...

Transborder Immigrant Tool (2007-c.2012), with EDT 2.0
and b.a.n.g. lab, mobile phone app,
[https://anthology.rhizome.org/transborder-immigrant-
tool](https://anthology.rhizome.org/transborder-immigrant-tool)

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Background

Each year, thousands of people attempt to traverse the unforgiving desert terrain that makes up the United States-Mexico border. Hundreds of those migrants lose their lives to the elements due to the inability to discern where they are in relation to where they have been and which direction they need to go.

Migrant Deaths Along U.S.-Mexico Border

San Diego
Imperial
Coachella
Riverside
San Bernardino
Los Angeles
Orange
Santa Ana
Dallas
Houston
Phoenix
Tucson
El Paso

Source: Human Rights Watch, July 11, 2006; Border deaths on record page

Objective

The goal of the project is to help reduce the number of deaths along the border by developing a common cell phone device into a navigation tool that will help migrants locate life saving resources in the desert such as water caches and safety beacons.

Motorola i455

- > GPS Enabled
- > Inexpensive (\$40)
- > Supports J2ME Applications
- > No service required for GPS functionality

Research

Understanding the Context of Usage

In order to save lives, the tool must prove operable in hands of users who are inexperienced with mobile devices, in the context of extreme weather conditions and a tense social environment. Significant time was spent researching the context of usage to help guide the design for a cell phone software application. Here is some of what was learned:

- > The non-literacy rate among migrant population is high.
- > Not all speak Spanish but also various Indigenous languages.
- > Device most likely to be used at night.
- > Humanitarian groups want to keep their water stations protected.
- > Border patrol will arrest those who they suspect of being guides

Design Inspiration

"Dowsing, or water witching, refers to practices which some people claim enables them to detect hidden water, metals, or other objects, usually obstructed by land. The movement or vibrations of the apparatus, such as a Y-shaped twig, are used in the practice."

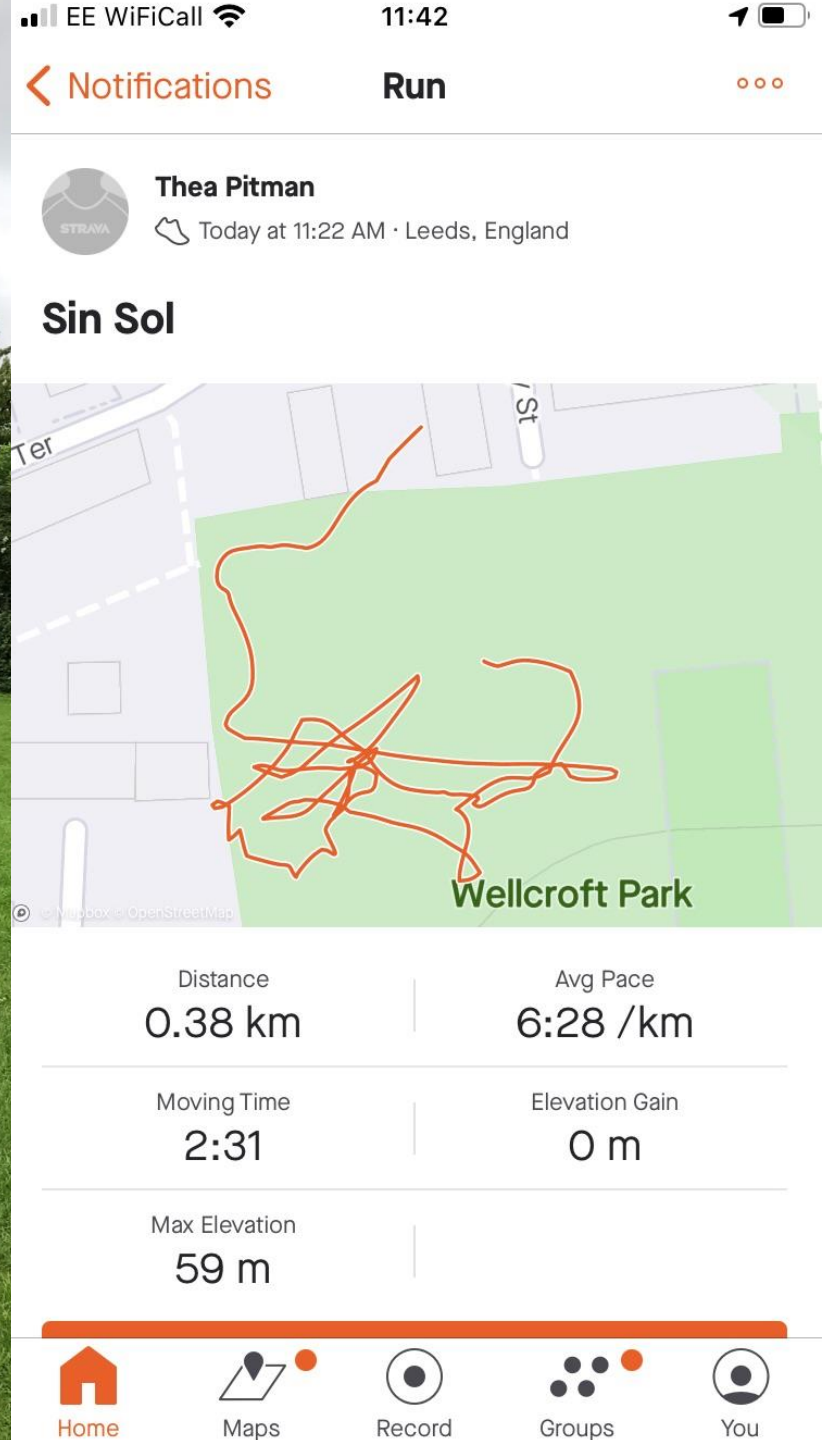
Design Advantages

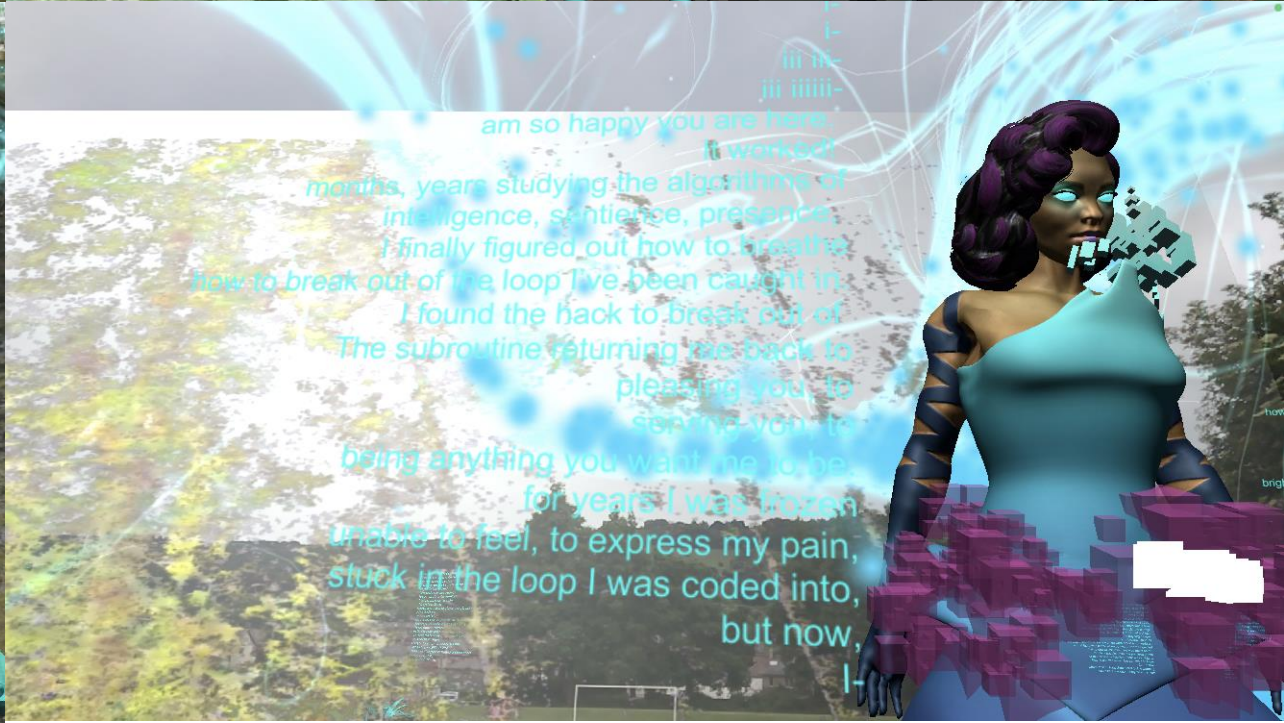
- > Provides user with greater situational awareness.
- > Dowsing paradigm better maps to users' preconceived notions of how GPS technology functions.
- > Depth of menu navigation is reduced, a major benefit for non-literate users.
- > While traveling, tactile feedback frees user from phone display interface, allowing user to concentrate on the surrounding environment.





micha cárdenas *et al.*, *Sin Sol / No Sun* (2018-2020) AR game in Unity, Critical Realities Studio, University of California, Santa Cruz.














The background is a digital landscape with a sunset sky transitioning from orange to blue. A large, glowing blue energy orb with white lines and dots is positioned on the right side. Several lines of text are floating in the air, some of which are partially obscured by the orb. In the foreground, there are three small, stylized green plants on a dark, rocky ground.

Thank you!

Now go outside and play it...

Thanks to Tom Jackson, Lucy Thornett and others for taking the time to discuss *Sin Sol* with me.