

Divergent Design: Disrupting Systems Through Game Experiences

Stephanie O'Dell Daugherty

Virginia State University, Petersburg, Virginia, USA

Virginia Commonwealth University, Richmond, Virginia, USA

sodell@vsu.edu

Abstract: This interdisciplinary research project investigates how divergent design choices in video games could have the potential to influence player thinking and challenge oppressive societal systems. Through play, including play in video game simulations, we shape our cultural norms and societal structures (Huizinga, 1955). Baudrillard's (1994) theories of simulacra and the hyperreal demonstrate how designed media experiences reflect, distort, and ultimately influence societies. Grounded in systems thinking (Meadows, 2008) and Creative Game Studies (Ruffino, 2018; Chess, 2020), this research explores the connections between virtual and real-world systems through an intersectional feminist lens. Using gender representation in character design as an example of a divergent design choice in video game media, the study highlights opportunities for research in digital ethnography and digital sociology to analyze the impact of design decisions on societal structures. The project treats video games as both cultural simulations and pedagogical spaces for questioning patriarchal systems. Drawing from literature on cognitive effects in games—such as creativity, problem-solving, flow, and learning—it positions video games as immersive media uniquely suited for generating player investment and reflective engagement, beyond the passive consumption of traditional media. A pair of case studies includes game titles *Satisfactory* and *Outer Wilds*, representing divergent design choices that counter gender norms. These titles serve as sites of inquiry for understanding the connections between divergent video game design choices and experiences that invite player reflection on social systems. These game systems function as experiential learning environments, fostering player metacognition and ethical reasoning. The project explores how informal, incidental learning emerges when players engage with transgressive designs that disrupt social norms. This work bridges disciplines in critical game studies and learning sciences and encourages instilling ethical design principles in game designers of the future. It proposes prospective research pathways using methodologies from mass media studies to further examine the potential implications of game design choices.

Keywords: Game design, Player experience, Design thinking, Systems thinking, Sociology, Interdisciplinary

1. Introduction

Video games are more popular and far-reaching than ever, with immersive experiences that deeply shape psychological and emotional understandings of the world (Chess, 2020; Ruffino, 2018; Bogost, 2015; Flanagan & Nissenbaum, 2014; Green, Garo, & Kaufman, 2015; Hodent, 2021; Isbister, 2016; Klopfer et al., 2018). We have the power to create new systems—or to reinforce existing, problematic ones by replicating them in digital simulations. Video game design frequently mirrors dominant social norms, yet it holds the potential to subvert or question these norms. The role of play and simulation in shaping social structures is underexplored, particularly through the lenses of systems thinking and intersectionality.

Play, including digital play through video games, contributes to the construction of cultural norms and societal systems (Huizinga, 1955). Baudrillard's (1994) concept of simulacra and the hyperreal illustrates how designed media reflects, distorts, and ultimately shapes societal perception. This project is grounded in systems thinking (Meadows, 2008) and Creative Game Studies (Ruffino, 2018; Chess, 2020), and it approaches the relationship between virtual and real-world systems through an intersectional feminist framework.

Design is a powerful, systemic act—each design decision influences many users. If, as the scholarship suggests, design significantly impacts perception and behavior, then its power must be wielded with care. This project addresses the gap in research that considers the intersection of systemic design, identity, and social structure, with a focus on how video game design can challenge patriarchal systems.

This study asks—how do divergent design choices in video games provoke player responses, as reflected in the rhetoric and debates within online game communities? Two case studies examine recent games with non-normative design choices, alongside a review of player discourse in online communities. Early observations suggest digital ethnography and sociology may reveal deeper connections between design, player experience, and cultural patterns. The following sections will outline theoretical frameworks, present case studies, explore online player responses, and propose pathways for future research. This work aims to contribute to game studies, design ethics, and conversations about media's power to shape society, by building on current conceptual frameworks, sharing initial observations, and outlining planned research in these areas.

2. Theoretical and Methodological Framework

As humans, we replicate systems through simulations in media (Baudrillard, 1994). Video games represent the most immersive form of media yet, with simulations growing hyperreal through advancements like virtual and augmented reality. They offer a prime platform for experimenting with systems and observing player responses.

Donella Meadows (2008) describes systems through stocks, flows, and feedback loops, noting how unchecked systems perpetuate themselves—and how targeted interventions can shift outcomes. The video game industry has a history of profiting from games designed by, marketed to, and played by a largely male audience (Chess, 2020; Ruffino, 2018). Misogynistic and violent content becomes the “stock” that flows from designer to player. Young players grow up to be the next generation of game designers, and the system continues. Feedback loops of capitalist profit and gamer culture propel the system forward, solidifying social systems that privilege cisgender men as core structures of the game design industry. There is opportunity to diverge from this status quo, by inserting design choices that counter patriarchal norms.

The loosely defined rise of ‘indie’ game development shows promise for smaller developers to challenge these norms through designing new simulated systems. Indie developers are generally under fewer restrictions and can explore new ideas over popular themes. Additionally, it is more accessible than ever for players to become designers using free development platforms. Ruffino (2018) sees indie development as a revival of early game-making eras, when small teams built games as research experiments. The definition of game developer has widened, and games have the potential to represent a broader range of voices. There is opportunity in the game design industry to support this diversity and foster the creation of divergent systems.

Creative Game Studies (Ruffino, 2018; Chess, 2020) offers a framework for engaging with video games as surprising, engaging media experiences. It is in this space I ask about the potential for interactive experiences in video games to impact the real-world systems we live within. By approaching this inquiry in a critical and performative way (Ruffino, 2018), this work serves as exploratory research in which I aim to spark conversation about the responsibility of game designers in shaping the world through their creations. Additionally, this work aligns with Chess’s (2020) vision of a playful feminism, and through this lens examines design choices that subvert heteronormative structures in traditional games. Building on systems thinking, games futurism, and feminism, the following case studies support the critical examination of divergent design choices in current games.

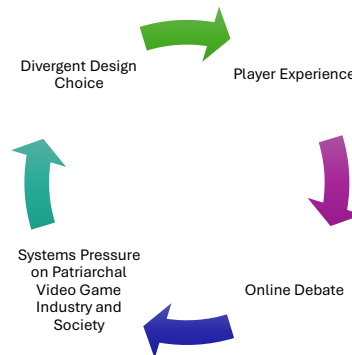
3. Case Studies

The planet of MASSAGE-2(A-B)b holds a wealth of resources, flora, and fauna for the lonely pioneer who inhabits it. In this open-world building game of production and efficiency, the pioneer faces hostile creatures, harsh landscapes, and the cold indifference of their employer, FICSIT. The open-world game *Satisfactory* provides a system in which players can exercise their creative thinking and problem-solving muscles, leading to increased brain plasticity (Ganter-Argast et al., 2024). This game induces a flow state for players—some report spending hundreds or thousands of hours playing (Reddit r/SatisfactoryGame).

The player character in *Satisfactory* is rendered as a space pioneer, with facial features obscured by a full-face oxygen mask but a body shape showing curved hips and chest in a full-length jumpsuit. There are no customization options aside from changing the colors and textures of the jumpsuit and accessories. The game is primarily viewed from a first-person perspective, with only gloved hands visible as players rotate through tools. This design—featuring a woman as the sole protagonist and engineer—challenges gender norms in STEM fields. The Society of Women Engineers reports that women represent only 16.7% of careers in architecture and engineering (Society of Women Engineers, 2024). An initial review of the vocal Reddit community, r/SatisfactoryGame, suggests that some players are significantly bothered by having to play as a female character—an ironic reaction given the history of male-dominated game design where women often have no choice but to play as male characters. While there are a wide range of player reactions and many potential factors for these reactions, some vocal and argumentative comments about the woman engineer protagonist clearly suggest that the representation resonates as a divergent, disruptive, norm-challenging choice for their worldview.

In contrast, traveling the *Outer Wilds* solar system as a Hearthian in a spaceship pieced together with wood, rope, and natural materials, the player presents as genderless and is referred to with they/them pronouns, while the long-lost Nomai characters use gendered pronouns. These deliberate design choices spark discussion by

drawing attention to specific societal systems. Like *Satisfactory*, *Outer Wilds* features non-normative gender presentation that provokes discussion. The key difference is that the player is not a woman, but genderless. An initial review of online conversations reveals less misogynistic rhetoric and more introspection—some players question why they notice gender at all or default to binary roles.



As these cases demonstrate, divergent design choices shape the player's experience with the game system and provoke reflection, which are visible in online conversations where players process and discuss these disruptions.

4. Future Research Direction

The current methodology presented here involves critical ludological analysis, but future directions include social listening and content analysis of Reddit discourse to assess ethnographic and sociological implications of divergent design choices. Reddit is identified as a key site for metacognitive insight, where user-generated content—comments, upvotes, downvotes, and moderator deletions—offers a rich source of rhetorical and behavioral data. Additional sites of inquiry could include Steam game forums. The research plan currently includes implementing an API script to pull data in the form of post comments, upvotes, and downvotes to facilitate a thematic analysis. A thematic analysis will serve as a foundation for understanding various player reactions, and comparing expressed sentiments with the number of upvotes and downvotes will demonstrate relationships between sentiments and popularity of those sentiments. Indicators such as misogynistic language and body shaming point to negative sentiments, while positive descriptions of the design choice or player character point to positive, neutral, or accepting sentiments. While not intended to be generalizable to all players or all game experiences, these conversations reveal how some players process disruptive design and reflect on their experiences in virtual systems, then use online game communities to discuss and debate their views on social systems. This player discourse provides a window into the metacognitive experience of gameplay and the negotiation of social norms.

Ultimately, this research bridges critical game studies and game-based learning, highlighting how divergent design choices can support divergent thinking, ethical reflection, and creative learning outcomes with broader social implications. This work contributes to scholarship that treats video games not only as entertainment but as cultural texts with pedagogical potential. Future research will apply digital ethnographic methods and thematic analysis to explore how online player communities engage with non-normative design. Additional research is needed across games with various presentations of player representation, or other divergent design choices in mechanics or gameplay. These methods will support a deeper understanding of how players interpret or internalize messages embedded in games.

By interrogating the intersection of design, identity, and player experience, this project underscores the transformative potential of intentional game design to question—and reimagine—the systems we live within.

Ethics declaration: This research did not involve human subjects or personal data collection and therefore did not require formal ethical clearance. All analysis is based on publicly available content and theoretical frameworks.

AI declaration: AI tools (ChatGPT, Grammarly) assisted with the process of organization and editing of the original thoughts and inquiries presented here. All ideas are the author's own based on a multitude of influences. The pre-writing, draft, and final paper are original works.

References

- Baudrillard, J. (1994) *Simulacra and Simulation*. Translated by Sheila Faria Glaser. Ann Arbor, University of Michigan Press, 1994.
- Bogost, Ian. (2015) *How to Talk about Videogames*. University of Minnesota Press, Minneapolis.
- Chess, S. (2020) *Play Like a Feminist*. Cambridge, Massachusetts, The MIT Press.
- Coffee Stain Studios. (2024) *Satisfactory*, v1.0. Coffee Stain Publishing, Skövde, Sweden.
- Flanagan, M., and Nissenbaum, H.F. (2014) *Values at Play in Digital Games*. The MIT Press, Cambridge, Massachusetts.
- Ganter-Argast, C. et al. (2024) "The Light Side of Gaming: Creativity and Brain Plasticity." *Frontiers in Human Neuroscience*, Vol. 17. Frontiers Research Foundation, Switzerland.
- Green, Garo, and Kaufman, eds. *Video Games and Creativity*. Amsterdam: Elsevier, Academic Press, 2015.
- HelloGames. (2016) *No Man's Sky*. HelloGames, Guildford, England.
- Hodent, C. (2021) *The Psychology of Video Games*. Routledge, Taylor & Francis Group, London.
- Isbister, K. (2016) *How Games Move Us*. The MIT Press, Cambridge, Massachusetts.
- Huizinga, J. (1955). *Homo ludens: a study of the play-element in culture*. Beacon Press, Boston.
- Klopfer, E. et al. (2018) *Resonant Games: design principles for learning games that connect hearts, minds, and the everyday*. The MIT Press, Cambridge, Massachusetts.
- Meadows, D. H. (2008). *Thinking in systems: a primer* (D. Wright, Ed.). Chelsea Green Publishing, Vermont.
- Ruffino, P. (2018) *Future Gaming: creative interventions in video game culture*. Goldsmiths Press, London.
- Society of Women Engineers. "Employment of Women in Engineering," updated February 19, 2024.
<https://swe.org/research/2024/employment/>.