Producing positive ecological value through digital fashion systems in videogames

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ABSTRACT

Videogames stand as established and widely enjoyed platforms for digital fashion consumption. Employing a variety of design strategies and mechanics, digital fashion systems in videogames constitute significant economies, generating great value for game developers and producers through growth-focused models and aggressive monetisation. However, the environmental impacts of these systems are largely overlooked, including the infrastructural and computational costs of producing digital fashion objects and the virtual gameworlds in which they are enjoyed. In this developmental paper the design of an early-stage research project is detailed which seeks to reorient the economic value generating priorities of digital fashion systems in video games to instead generate a greater plurality of ecological values. In doing so, the project seeks to develop new ways to design and interact with digital fashion systems in videogames which acknowledge their environmental costs. With digital fashion continuing to grow, these critical sensibilities are essential to ensure that this growth is sustainable and accountable.

Keywords: digital fashion, videogames, gaming, sustainability, environment, metaverse, design

INTRODUCTION

This developmental paper details the early planning stages of a research project focused on producing ecologically-attuned digital fashion systems in videogames. Recent attention has been directed towards digital cosmetic objects in videogames (often known as ‘skins’) as constituents of economically significant fashion systems. The proven popularity of these skins has profoundly changed the business models of digital games. Pay-for-product models have been surpassed by more complex systems based around free-to-play or “freemium” strategies, where players can install and play the game without charge but are encouraged to purchase optional in-game content including skins. Key examples include *Fortnite, League of Legends*, and *Roblox*, each reflecting broader efforts between the videogame and fashion industries to align through collaboration and partnership (Norris et al., 2023). Long-standing gaming contexts of virtual clothing and skins are now seeing inclusion within recent

constructs of digital fashion histories, construed as significant and influential forms of digital fashion alongside so-called *Fashion 4.0* and *metaverses* (Boughlala and Smelik, 2024).

LITERATURE REVIEW

Digital fashion in a broad sense has seen praise for offering alternative methods of fashion production and consumption. For example, digital design practices and virtual garments without material counterparts are argued to circumvent or reduce known environmental impacts of traditional fashion manufacturing and retailing (Periyasamy and Periyasami, 2023). Less is known however of the alternative trajectories for negative environmental impact that the computational nature of digital fashion production and consumption presents. Although unfamiliar in this context, these impacts are not unknown. Perspectives from infrastructure and platform studies emphasise material ontologies in researching digital media and cultures (Plantin and Punathambekar, 2018); in doing so they highlight not only the significant environmental costs of digital infrastructure like data centres, but also how such infrastructure reproduces "uneven systems of capitalism" by exploiting historic colonial imbalances between the global north and south (Brodie, 2023). In short, environmental impacts of digital fashion infrastructure are largely overlooked, including the computation associated with modelling, hosting, and rendering digital fashion objects and virtual gameworlds in which they can be enjoyed. Existing metrics measuring the substantial infrastructural and energy costs of videogames development and the sustaining of virtual worlds (Richard and Toby, 2012) provide initial critical insights into the environmental impacts of digital fashion where dedicated analysis is currently lacking.

These direct environmental concerns are compounded by the lucrative growth-focused monetisation strategies surrounding digital fashion systems in videogames, which receive criticism for their often aggressive and predatory monetisation strategies. Such strategies involve the creation of artificial demand through contrived scarcity, timed exclusivity, gambling elements, and rapid schedules of new skin releases (Petrovskaya and Zendle, 2012). "Avatar economies" constructed within freemium games through game mechanics and ties to controlled digital distribution platforms foster a sense of "affective investment" between players and their in-game representations, working to keep players playing while continuously generating value from them (van Ryn, Apperley and Clemens, 2018). This value generation is achieved through means of direct monetary extraction or "playbor," where players add value to a game through their actions both in and outside of it (Kücklick, 2005). These approaches to digital fashion systems in videogames can be viewed as problematic, reinforcing consumption behaviours long understood as unsustainable in conventional fashion contexts.

METHODOLOGY

The overall aim of this project is to explore how digital fashion in videogames can be more ecologically responsible; it therefore explores how the ludic qualities of videogames could instead create digital fashion systems which generate a plurality of ecologically-attuned cultural, social, and civic values. To do so, it will first identify the value-generating mechanics within the digital fashion systems of contemporary videogames. It will then work to reorient these mechanics to construct digital fashion systems for videogames which generate a greater plurality of ecologically-attuned values. Finally, it will evaluate the effectiveness of these reoriented mechanics and disseminate design implications for practical applications.

To achieve these aims and objectives, the project's methodology focuses on the world-building qualities of videogames. Videogames construct worlds to tell stories through interactive ludic experiences, allowing players to unfold them through diegetic exploration of the spaces, rules and boundaries of these worlds. As cultural products, videogame worlds and their ludic workings often reflect cultural systems and values of the individuals which produce them. In a paradoxical manner, videogames often offer escapism from neoliberal systems by recreating them, leveraging what Bódi (2024) calls the "ontological security" afforded to players in the ability to succeed in a simulated world where comparable success is harder to attain in one's ordinary life. This ontological security may factor into the value generating mechanics of contemporary videogames, feeding on players' abilities to attain success and social capital among fellow players through fashion-centric meritocratic systems (Stein, 2009; Paul, 2013).

The concept of 'brainprinting' is also central to the research design. As Kääpd and Vaughan (2022) describe, brainprinting refers to the impact of "representational tendencies and both implicitly and explicitly articulated values" in screen media on the social and cultural outlooks of media consumers. Brainprinting can be seen as a complementary factor to footprint reduction, encouraging positive action through behavioural change. Leveraging the affective qualities of videogames, fictional gameworlds can therefore portray novel fashion systems which prioritise the generation of plural values. This can offer players new ways to interact and relate with digital fashion objects alongside the opportunity to explore the possibilities of such speculative realities in manners beyond the exploitation of players' ontological security.

The project will lead with an ethnographic multiple case study of digital fashion systems in contemporary videogames. This will be conducted to understand the mechanisms of their value generation, focusing on game community interactions and responses to these systems. Using these findings, a series of rapid speculative design workshops will follow to produce a design toolkit and set of best practices for designing ecologically-attuned digital fashion systems. These two outcomes will then

be applied and tested in practice by hosting a Game Jam; an event where participants will be invited to rapidly prototype over the course of two days proof-of-concept videogames which integrate ecologically-attuned digital fashion systems into their gameplay (Cook et al., 2015). The Game Jam will bring together both research insights generated from earlier stages of the study with practical design skills from participating practitioners, facilitating an interdisciplinary approach and knowledge exchange. The third stage will involve evaluating player interactions with the prototype games. Players have “intrinsic worth” to videogames (Neely, 2017), in that developers must ethically consider the experience of players and their essential role in a gameworld through their interactions with it. In order to therefore understand applied nature of the digital fashion systems constructed in the prototype games, we must understand how players respond to them as parts of these systems. This will be achieved by exhibiting the prototype games publicly to collect recorded gameplay footage and player interviews to understand to what extent these digital fashion systems promote ecologically-attuned interactions and outcomes with players, and how players’ environmental sentiments are affected by playing the prototypes.

CONCLUSION

In summary, this project initiates a critical discourse concerning environmental factors surrounding digital fashion, using digital fashion systems in videogames as a lens. While these concerns do not appear to occupy the current priorities of practitioners and researchers alike, the rapid, ongoing growth of digital creative industries, videogaming and virtual worlds will inevitably hasten demand for digital fashion as a manner for individuals to represent themselves in digital domains. As previous studies regarding the environmental impact of the videogame ecosystem have illustrated, this growth will demand great and costly infrastructural support. This project and others of similar motivations are key to ensure that the growth within digital fashion contexts is accounted for, and its capacity to contribute to fashion’s already reprehensible environmental and human costs is proactively managed.

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