When AI Promises to "Cure" You: Individual Experiences, Systemic Biases, and Community Action for Marginalized Players in Video Games

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ABSTRACT

This study critiques the dominant "AI promise" in gaming that frames artificial intelligence as an inevitable, benevolent force for democratizing play. Moving beyond utopian discourse, we analyze AI's multifaceted impact on historically marginalized players — including those with disabilities, from racial/ethnic minorities, LGBTQ+ communities, and low-income backgrounds — through a three-level framework: micro (individual empowerment), meso/macro (systemic bias), and grassroots (community re-appropriation). A multi-method design combines a mixed-methods study with 16 visually impaired players using assistive AI in Justice Online, a computational bias audit of AI Dungeon generating 547 narrative variations, a controlled social experiment with 112 participants in Sea of Thieves, and a three-month digital ethnography of 200+ modders creating custom AI-voice packs. Findings reveal a contradictory landscape: AI reduces task completion time by 42.7% and errors by 61.3% while demonstrating contingent empowerment, yet it amplifies systemic bias (e.g., 71.8% higher passivity tropes for female-coded protagonists) and erodes communal bonding (23.1% lower social connection scores). However, grassroots modding communities demonstrate sophisticated agency, transforming AI from opaque top-down solution into malleable toolkit for self-determined accessibility. We conclude that true accessibility cannot be algorithmically

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generated but must be collectively built through mandatory bias auditing, community data sovereignty, and formalized co-design partnerships.

Keywords

artificial intelligence, game accessibility, marginalized players, systemic bias, algorithmic auditing, grassroots innovation, co-design, intersectionality

INTRODUCTION

This study critiques the dominant "AI promise" in gaming, which frames AI as an inevitable, benevolent force for democratizing play. Moving beyond this utopian discourse, the research analyzes AI's multifaceted impact on historically marginalized players, including those with disabilities, from racial/ethnic minorities, LGBTQ+ communities, and low-income backgrounds. Grounded in the view that technology is a non-neutral cultural artifact, it frames in-game AI as a contested terrain where ethical outcomes are shaped by socio-technical contexts, training data economies, and user agency.

GOALS

The primary goal is to deconstruct the "AI promise" through a three-level analysis: examining AI's assistive potential for individual empowerment (micro), uncovering how it perpetuates societal biases (meso/macro), and documenting grassroots community re-appropriation. The central argument is that AI's net impact arises from the tension between top-down, often-biased implementations and bottom-up, user-driven adaptation and resistance.

METHODOLOGY

To address these goals, a multi-method, tripartite research design was implemented, allowing for a holistic investigation.

1.Micro-Level: Mixed-Methods Study on Assistive AI. A cohort of 16 visually impaired players, representing diverse ages, impairment types (e.g., retinitis pigmentosa, congenital blindness), and gaming proficiencies, was recruited. Participants engaged in longitudinal gameplay sessions in Justice Online, a popular MMORPG. They completed standardized navigation and object-interaction tasks both with and without the game's proprietary "AI Eyes" feature — a context-aware audio description system. Quantitative performance data (completion time, error rate) were collected via telemetry software. Complementary phenomenological data were gathered through post-session, semi-structured interviews, which were transcribed and subjected to thematic analysis to capture subjective experiences of agency and immersion.

2.Meso/Macro-Level: Computational Bias Audit and Social Impact Experiment. To expose embedded biases, a computational audit was conducted using AI Dungeon, a narrative game powered by a large language model. Researchers generated 547 unique story continuations across systematically varied protagonist identities (gender, race via naming conventions, disability, socioeconomic status). Advanced computational text

analysis techniques, including sentiment analysis and topic modeling, were used to identify patterns of stereotyping. Concurrently, a controlled lab experiment with 28 four-person teams (n=112) in Sea of Thieves investigated the social impact of an autonomous AI crewmate. Teams were randomly assigned conditions with or without the AI, and post-session surveys combined with sociolinguistic analysis of voice chat logs measured impacts on team cohesion and social communication.

3.Grassroots-Level: Digital Ethnography of Modder Communities. A sustained digital ethnography was conducted over three months within an international Discord community of over 200 modders. These practitioners collaboratively create and share custom AI-voice packs for classic text-heavy RPGs. Researchers conducted approximately 450 hours of observational fieldwork, systematically analyzing 2,317 community posts, development threads, and tutorial exchanges. Critical discourse analysis was applied to understand motivations, power dynamics, and knowledge-sharing practices within this space of grassroots innovation.

RESULTS

The findings reveal a contradictory and complex landscape:

1.Contingent Empowerment: At the individual level, the "AI Eyes" assistive feature demonstrated significant quantitative benefits, reducing average task completion time by 42.7% and interaction errors by 61.3%. Qualitatively, 87.5% of participants described a transformative restoration of agency and narrative immersion, redirecting cognitive effort from overcoming barriers to experiencing pleasure. This validates AI's potential as a tool for sensory translation and adaptive design.

2.Systemic Amplification of Bias: The bias audit revealed that AI systems function as powerful amplifiers of societal prejudice. Narratives with female-coded protagonists were 71.8% more likely to involve tropes of passivity or rescue. Characters with names associated with specific ethnic minorities were strongly correlated with descriptors of exoticism or aggression, while being systemically underrepresented in roles of authority or expertise. This demonstrates a foundational architectural problem masked as algorithmic neutrality.

3.Social Thinning and Communal Erosion: The social experiment revealed a critical paradox: the AI assistant's operational efficiency came at the cost of communal bonding. Teams using the AI reported significantly lower scores (23.1% lower on average) on metrics of social connection and shared accomplishment. Sociolinguistic analysis confirmed a 34.8% reduction in non-instrumental, social-affective communication (e.g., joking, emotional support), effectively eroding the "magic circle" of play vital for marginalized communities seeking connection.

4. Grassroots Re-appropriation and Innovation: Confronting these limitations, the modding community exhibited sophisticated agency. Motivated primarily by "filling accessibility voids" and "resisting algorithmic paternalism," these users engaged in complex technical co-design — fine-tuning open-source speech synthesis models, creating custom pronunciation libraries, and

building shared repositories of knowledge. This practice inverts the traditional AI value chain, transforming AI from an opaque, top-down solution into a malleable, bottom-up toolkit for self-determined accessibility.

CONCLUSION

This study concludes that the "AI promise" in gaming is a dynamic site of political negotiation, not an inevitable technological endpoint. It delineates an interconnected trajectory: tangible but contingent individual empowerment is inherently limited by invisible yet pervasive architectures of systemic bias, which are, in turn, actively challenged and reconfigured through resilient, agentive practices at the grassroots level. For AI to ethically fulfill its purported liberatory potential, the industry must undergo a paradigmatic shift from techno-solutionism to infrastructural justice. This requires three integrated pillars:

1.Mandatory Bias Auditing: Rigorous, ongoing audits for stereotyping and exclusion must be integrated throughout the development lifecycle.

2.Community Data Sovereignty: Formal frameworks must be established to return control over personal data and algorithmic outputs to the marginalized communities they impact.

3.Formalized Co-Design: Community-led design practices must be integrated as compensated and essential components of development, not as optional afterthoughts.

Ultimately, true accessibility cannot be algorithmically generated; it must be collectively built through sustained partnerships that share power, resources, and technological control. Only then can AI in games transcend its role as a mirror of societal prejudice and become a collaboratively shaped instrument for genuine intersectional liberation and the co-creation of dignified digital worlds.

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