3D Interaction Game's Influence on Player's Anthropomorphism Perception: Taking Romantic Game Love and Deepspace as an Example

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INTRODUCTION
Female-oriented romantic video games (RVGs, also known as otome games) in Asia have been increasingly popular (Wu et al., 2023). Existing research has explored the cognitive and emotional influence of these games on players. Song and Fox (2016) suggested that the amount of time spent playing RVGs indirectly predicted romantic beliefs through identification with avatars and parasocial relationships with video game characters. Chen (2020) further stressed that these games provide a utopian vision for women.

The first 3D otome game *Love and Deepspace* (Papergames 2024)triggers fierce competition in China around female-oriented romantic video games. Compared with 2D images, 3D technology makes characters more anthropomorphic and embodied. Anthropomorphism is an inductive inference that can facilitate social human-nonhuman interactions and is believed to satisfy the need for social connection and understanding of the environment (Epley et al., 2008). However, there is still a lack of discussion on RVGs with more advanced technology.

Research Question
This study explores individual perceived anthropomorphism and underlying influencing mechanisms in the context of Love and Deepspace.

RQ1: How do individuals perceive 3D characteristics and their influence in this game(i.e., anthropomorphism perception)?

RQ2: What is the influencing mechanism of 3D characteristics, including anthropomorphism perception and other consequences?

The study uses an exploratory sequential mixed-methods design. Study 1 is a pilot study with semi-structured interviews among four experienced players to compare perceptions between 3D interaction games and traditional romantic video games. Study 2 develops a structural equation model based on interview results and uses purposive sampling and survey data analysed with AMOS.

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PRELIMINARY FINDING

Based on primary interview results. The following themes around 3D technology's influence were extracted.

(1) 3D technology empowers the avatar with more embodied movements, leading to more interesting interactions.

3D technology in tome games "creates" the body for game male characters, making them act as humans. It improves the player's anthropomorphism perception. To be more specific, male characters have detailed expressions that show their personalities. Additionally, the physical bodies of male characters provided more real human responses for players.

(2) 3D technology enables more kinds of physical interactions between players and avatars, which enhance the sense of presence and companionship.

3D technology introduced new interaction styles in the game at the same time, which increases the player's emotional attachment. In the game, players can have some unique interactions with male characters, including changing their clothes, listening to their heartbeats, and touching their bodies. These intimate interactions decrease the psychological distance between female players and male characters, increasing a sense of presence and companionship of the characters.

(3) The immersive world created by 3D technology also faces some challenges.

There are some challenges mentioned in the interviews about 3D technology in RVGs. The first one is modelling problems. Sometimes the 3D model avatar could cause the uncanny valley effect, which affects the human-avatar interactions (Ciechanowski et al., 2019). Additionally, there is a mismatch between the limitations of a fixed script and the immersive feeling created by 3D technology. These design drawbacks break the immersive experience. Maybe in the future, more advanced Large Language Models should be introduced to keep the game experience consistent.

EXPECTED RESULT AND SIGNIFICANCE

The expected result includes two parts. One part is the player's unique perception of the 3D characteristics of the romantic game. The other part is the influencing mechanism of 3D romantic games. Analysing how people's anthropomorphism perception changes and what influences of 3D technology in games are the most important facets of this study. The study would expand the literature on the impacts of romantic games on women. It also complements the understanding of the 3D technology's role in developing virtual intimate relationships from players'perspectives. In addition, future research can consider non-human actors' roles in developing relationships. Practically, this study can contribute to improving the design of female-oriented romantic video games.

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BIO

Xueyan Cao, a PhD student in Communication at the Chinese University of Hong Kong. Her research focused on the persuasive effect of games as an emerging technology on individual health.

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