The Potential for Facial Biometrics in Role-Playing Games

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INTRODUCTION

Role-playing games (RPGs) have experienced a resurgence since their early popularity, particularly since the release of *Dungeons and Dragons: Fifth Edition* (D&D) in 2014. First released in 1974, D&D remains the most popular and globally successful RPG franchise. Although developed as a tabletop game where players sit at a table, rolling dice and sketching maps on paper, the game is is no longer a necessarily non-digital experience. Rather, "the modern play and consumption of D&D [is] more hybrid than initially accounted for" (Sidhu and Carter 2020, 11). Echoing other forms of hybrid tabletop play (Rogerson et al. 2021), D&D players increasingly use digital tools to deliver in-game effects, character management tools, and communication opportunities.

Key to the experience of an RPG is the customized character that each player creates as their interface to the game world. Character creation, however, is a complex process that presents barriers for new players (Rients 2014, 11-13, Gibson 2020, 69). D&D characters are traditionally generated manually by players, who roll dice to determine values for attributes such as Intelligence, Strength and Wisdom. These attributes influence and constrain the player's experiences within the game. With multiple steps in the character creation process and dependencies between aspects of the created character, this necessary precursor to play can seem more chore than play.

Just as each character is unique and special, so too is the face of each player. The *Biometric D&D* project explores how players' facial biometrics can be used to generate playable characters for RPGs through a focus on D&D. We will use these generated characters to explore how the relationship between the generated character and the player's own persona impacts the gameplay experience. Our goal for this research is to explore the experience of being assessed and constrained by facial biometric tools as a key component of an RPG.

This work builds on the *Biometric Mirror* (Wouters et al. 2019) project, which presented participants with a limited number of facial psychometric readouts and speculative future scenarios. *Biometric D&D* uses feedback from *Biometric Mirror* to create fully realised, ready-to-use and personalized characters that can immediately be implemented in a playful setting. *Biometric Mirror* is a cloud-based machine learning model that distinguishes a range of psychometric traits from facial images. It has been developed specifically to enable public discourse about the ethics of emerging technologies such as artificial intelligence and automated decision-making.

We will study how D&D players experience the outputs of the *Biometric D&D* application and how the generated characters influences their gameplay. Moreover, this research will provide a safe and playful setting in which to explore ethical issues and concerns around the assumptions that facial biometrics tools make about people.

The primary research outcomes of this project will be new models and theories of how facial biometrics can be used in playful settings, providing opportunities for enhanced storytelling as well as for integrations with other role-playing games.

In this presentation, we will present work on the project to date, as well as a functional demonstration of a simple prototype of the Biometric D&D tool. We explicitly invite discussion from the DiGRAA community around the feasibility of the tool and the ethical issues which it may foreground.

ENDNOTES AND BIBLIOGRAPHY

BIO

Niels Wouters is Head of Research for Science Gallery Melbourne, and Research Fellow in the School of Computing and Information Systems at the University of Melbourne. His research practice in Human-Computer Interaction revolves around the democratization of technology in order to achieve tangible benefits for society. Niels' work is regularly featured in national and international media, highlighting the impact of new technology on urban life.

Melissa Rogerson is a lecturer in the School of Computing and Information Systems at The University of Melbourne. Her research examines the experience of playing boardgames in both physical and digital forms, as well as the characteristics and motivations of hobbyist boardgame players, designers, and developers, applying techniques from human–computer interaction to the study of games and play. She is currently researching the functions of digital tools in hybrid digital boardgames.

Yian Hu is a student undertaking a Master of Information Technology at the University of Melbourne. He is currently focusing on improving the user experience of Biometric D&D application.

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