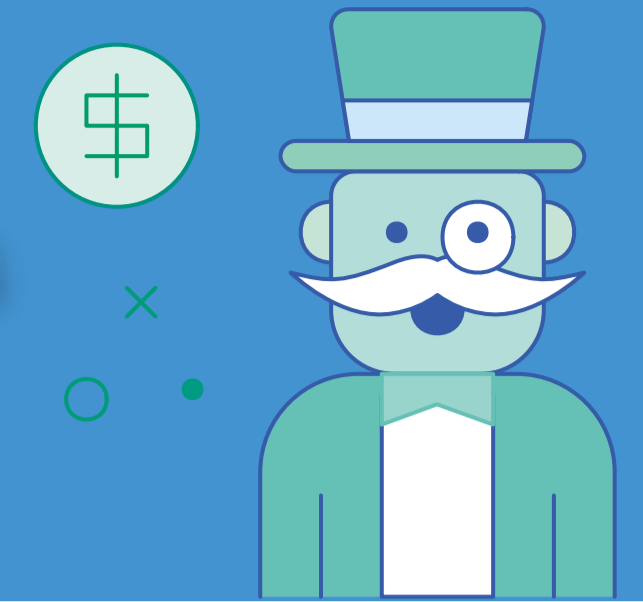# Exploring User Social Interaction and Experience in Multiplayer Board Games: A Comprehensive Study of Monopoly of different formats

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Abstract

This Project **aims to explore how different forms of multiplayer board game Monopoly affect users' social interactions and gaming experience during and after the game**. Based on the types and characteristics of multiplayer board games, three forms of Monopoly games - physical, iPad, and computer - were ultimately chosen as the material for this experiment. 51 participants aged between 18 and 25 were subjected to three separate rounds of Study testing.

Introduction&Background

This project conducted three studies to investigate the theme. **Study1** is to use Eye-tracking equipment to investigate the differences in users' visual attention in three different forms of the Monopoly game; **Study 2** is a computerized group of three forms based on and then adding two communication tools. Users were scaled after completing the Monopoly game in five control groups, as board games are now not limited to tabletop games but also to many forms of video games, all of which have unique and indispensable characteristics.; **Study3** adopts the Interview method to investigate the users' feelings during the game and the interpersonal interaction after the match. Users' social interactions were examined throughout this project, not only because social interactions largely explain the enjoyment of games *(Cole, H., & Griffiths, M. D, 2007)* but also because social interactions and support benefits people's mental health and well-being.

Research Question:

R1: Are there differences in players' visual attention and interaction patterns in different forms of Monopoly games? And how do they differ?
R2: What factors influence the social interaction and gaming experience of users of different forms of Monopoly games? And how do they influence?
R3: How does understanding how players feel during a Monopoly game and does it affect subsequent interpersonal interactions?

This study fills the research gap for different forms of social interaction and gameplay experience of a multiplayer board game, providing valuable insights for designers and researchers of video and physical games or hybrid games to their better understanding and optimization of players' social and gameplay experience in the game.

Study Methodology&Testing

Considering that social interaction and gaming experience are multidimensional concepts and that a single research method may be limited, this study adopts a mixed research method. This method not only helps to provide a more comprehensive research perspective but also ensures that the investigation has both quantitative support and in-depth qualitative explanations.
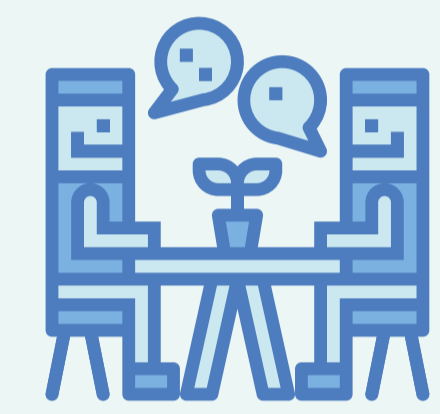
Study 1 Eye tracking
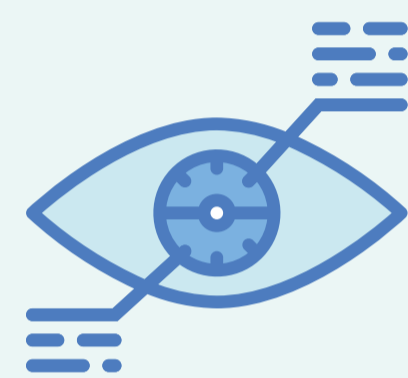
This part aims to **capture objective physiological data about players' visual attention**.Gaze tracking during gameplay was performed using Tobii Glasses3 and Tobii Spark on 19 users for each player in the physical Monopoly game, the electronic iPad Monopoly game, and the electronic PC Monopoly game, respectively.

Study 2 Questionnaire

This part is expected to obtain comparative indicators of players' performance in different board games.At this stage I used three questionnaires, Game Experience - Core and Social Presence Modules, and Interpersonal Communication Satisfaction, amis to **the factors influencing and the extent of social interaction and game experience** for each of the 32 users in the five groups Physical, Ipad, Pc pure (without communication), Pc with Voice, and Pc with Video.
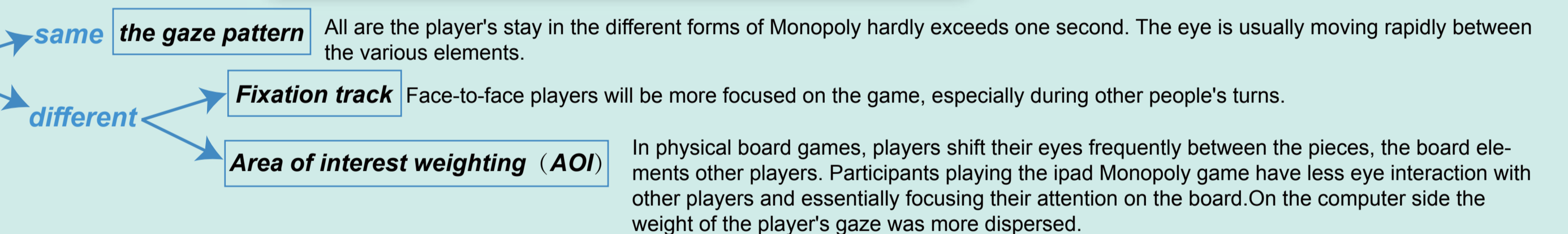
Study 3 In-depth interview

This part will explore **players' inner feelings and actual interactions after the game**.A total of five participants from study2 were selected for in-depth interviews
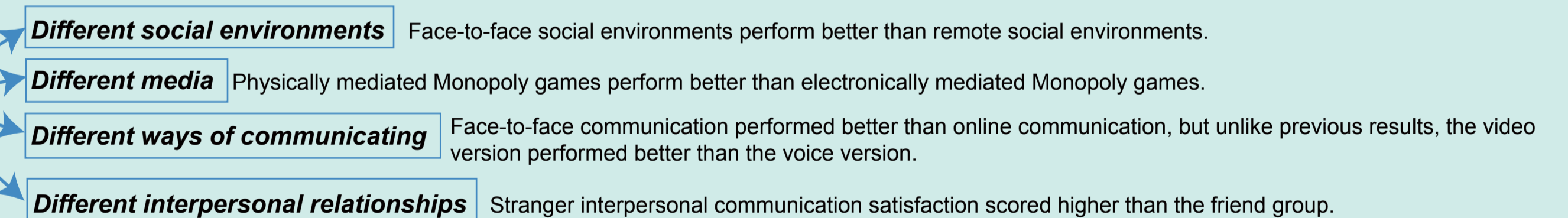
Research Results

Study 1 Eye tracking
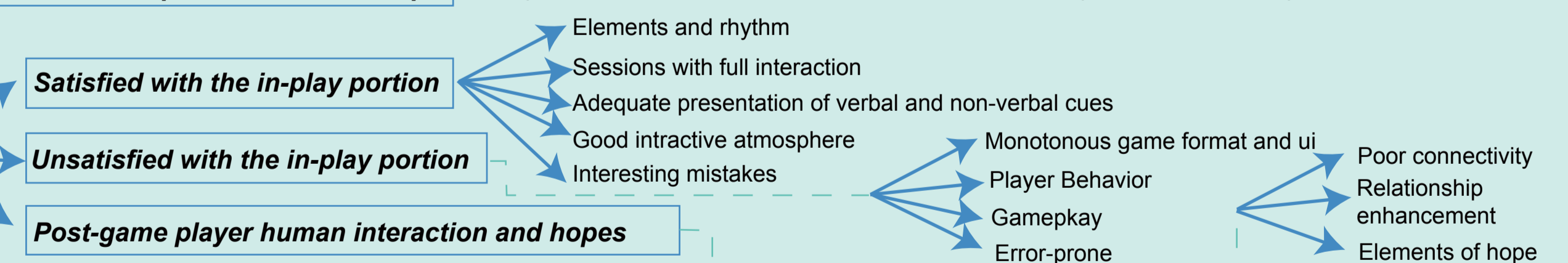Similarities and Differences in Eyesight

same → the gaze pattern → All are the player's stay in the different forms of Monopoly hardly exceeds one second. The eye is usually moving rapidly between the various elements.

different → Fixation track → Face-to-face players will be more focused on the game, especially during other people's turns.

→ Area of interest weighting（AOI） → In physical board games, players shift their eyes frequently between the pieces, the board elements other players. Participants playing the ipad Monopoly game have less eye interaction with other players and essentially focusing their attention on the board.On the computer side the weight of the player's gaze was more dispersed.

Study 2 Questionnaire
Factors affecting users' social interaction and gaming experience

→ Different social environments → Face-to-face social environments perform better than remote social environments.

→ Different media → Physically mediated Monopoly games perform better than electronically mediated Monopoly games.

→ Different ways of communicating → Face-to-face communication performed better than online communication, but unlike previous results, the video version performed better than the voice version.

→ Different interpersonal relationships → Stranger interpersonal communication satisfaction scored higher than the friend group.

Study 3 In-depth interview
Feelings during the game and post-game interpersonal interactions

→ Satisfied with the in-play portion → Elements and rhythm / Sessions with full interaction / Adequate presentation of verbal and non-verbal cues / Good intractive atmosphere / Interesting mistakes

→ Unsatisfied with the in-play portion → Monotonous game format and ui → Poor connectivity / Player Behavior / Gamepkay → Relationship enhancement / Error-prone / Elements of hope

→ Post-game player human interaction and hopes

Conclusion&Future Work

This study adopted a **mixed research method** to examine the social interaction and game experience of players of the case Monopoly game in many aspects, which is of some value. However, this study also has some limitations, especially because the sample is more limited and the sample size is small. In future research on multiplayer board games, a multi-sample data study will be of more excellent value to the entire research direction, and at the same time, increase the study of experimental materials, and the comparison of the materials of multiple multiplayer board games will improve the data and produce value for this research direction from more perspectives.

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