

# The Implied Participants: Reflections on Prototype Design for Experimental Player Studies

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## ABSTRACT

Scholars have long advocated for the building and testing of experimental games and game prototypes as viable methodological tools for game research (e.g. Mateas and Stern 2005; Eladhari and Ollila 2012). This research format, often connected to the broader tradition of research-through-design (RtD) (Frayling 1993), has frequently been the subject of analyses and investigations in the field of game design research (see e.g. Coulton and Hook 2017 for a recent overview). However, within existing design research literature, there has been relatively little discussion regarding the specificities and challenges of designing games for use in experimental player studies. In these scenarios, game prototypes primarily act as facilitators for hypothesis testing and data collection on various player groups, rather than as artefacts developed for the purpose of furthering knowledge about game design, as is the case in experimental game design research (Waern and Back 2017). Drawing on reflections from the development processes of two sets of game prototypes utilized in social-scientific qualitative player studies, this presentation will investigate the intersection of game design and study design in experimental player studies with custom game prototypes. It will focus on the role of the study participants in the game development process, and discuss two possible ways in which they may be conceptualized during said process.

Game prototypes have been used in experimental studies in a variety of fields, from game design (e.g. Juul and Begy 2017, Hicks et al. 2019) to domains such as pedagogy (e.g. Dobrescu et al. 2015) and psychology (e.g. Sailer et al. 2017). Due to the differences in terms of study design, methodology, scope, and aim, it is difficult to offer general design guidelines for prototype development. Further complicating matters is the fact that the prototypes usually need to be highly particular in terms of design, as is the case in A/B testing (Hanington and Martin 2012), where a single game design element is manipulated between two versions of the prototype. In the specific case of experimental player studies, however, the principal point of interest are not game

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design particulars; rather, it is the players who will perceive and navigate these particulars in a playtesting situation. Taking as reference Espen Aarseth's concept of *the implied player*<sup>1</sup>, I argue that the process of developing game prototypes for use in experimental player studies entails designing for *implied participants*. I define these as ideal player constructs whose relationship to the developed prototype is conceived primarily in terms of the hypotheses or problem areas under exploration. Implied participants can feature in the game design process as pre-formed, relatively defined figures, emerging from established hypotheses and thus guiding game development. Conversely, they may be constructed during the design and development process, as part of an ongoing cycle of reflection and iteration which culminates in hypotheses or research questions and the experimental study setup.

To illustrate the concept of implied participants, the presentation will be rooted in reflections from two development projects aimed at creating game prototypes for social-scientific experimental studies on different groups of players. The first project consisted of two 2D side-scrolling platformer games, created in the Unity3D game engine, developed for use in an experimental study focusing on perception of differences in design and their effects on game categorization and classification processes. The second project consisted of a 2D walking simulator, inspired by concrete poetry and created in Twine, developed for the purposes of an experimental study examining aesthetic appreciation and thematic interpretation.

These two examples demonstrate two contrasting ways in which implied participants may feature in the prototype design and development process. The Unity3D project took place after the formulation of research questions and hypotheses pertaining to the problem area, and had the goal of creating artefacts for traditional hypothesis testing (Christensen et al. 2014). In this project, implied participants were stable mental constructs, reflecting the theoretical assumptions behind the study and taking the form of two players with varying degrees of gaming experience. Consequently, the developed prototypes featured design solutions aimed at testing said assumptions, and the participant recruitment process followed the principle of purposive sampling (Teddlie and Yu 2007) to ensure two specific groups of players with differing experience levels. Conversely, the Twine project adhered more closely to the RtD philosophy of iterative development and conceptual reframing (Zimmerman et al. 2007). During this project, implied participants were mutable constructs, constantly in need of attention, revision, and reconceptualization in order for the project to be kept on track and within the confines of the problem area under exploration. Their lack of strict definition at times brought into question the scientific and research qualities of the prototype itself, but also facilitated greater experimentation with various design solutions and the continual generation of possible research questions pertaining to the problem area.

The concept of implied participants, as outlined in this presentation, is intended to serve as an anchor between game and study design in experimental player studies with custom game prototypes, offering designer-researchers a theoretical tool for navigating the intricacies and particularities of both design processes, as well as the crucial interplay between them. In doing so, this presentation also hopes to encourage more interdisciplinary player research of this kind, which holds great, underexplored potential for deepening our understanding of players and gaming.

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## **ENDNOTES**

<sup>1</sup> The implied player is defined by Aarseth as “a role made for the player by the game, a set of expectations that the player must fulfill for the game to ‘exercise its effect’” (2007, 132).