

VU Research Portal

Experiencing Interactive Storytelling

Roth, P.C.H.

2016

document version

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

citation for published version (APA)

Roth, P. C. H. (2016). *Experiencing Interactive Storytelling*. [PhD-Thesis – Research external, graduation internal, Vrije Universiteit Amsterdam].

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

E-mail address:

vuresearchportal.ub@vu.nl

SUMMARY

Interactive Storytelling is a promising new technology at the intersection of different media, research fields, and emerging technologies (e.g., artificial intelligence, virtual reality, generative content), offering plenty of application possibilities. This work explores the appeal of Interactive Storytelling applications to get a better understanding of what makes the concept unique and potentially enjoyable. Given the recency of the field under study, we developed a formal definition of Interactive Storytelling and identified fourteen dimensions of user experiences possibly related to the enjoyment of Interactive Storytelling applications. Finally, we conducted a number of experimental studies to investigate the role of interaction, replaying, different user roles, and perceived user agency on the user experience of Interactive Storytelling.

Interactive Storytelling pursues the vision of making the experience of narratives truly interactive, by letting users make meaningful decisions, e.g. influence the fate of characters, and thus co-create the story. The users' impact on the narrative should be intentional and users should be aware of this influence to experience agency. While the experience of Interactive Storytelling overlaps in part with experiences known from playing narrative-laden video games or watching movies, researchers and designers envision it to become an entirely new type of media. Envisioned applications of Interactive Storytelling often lie in the field of modern literature, education, and therapeutic treatment.

The aim of this work was to provide a comprehensive analysis of Interactive Storytelling's properties using a theoretical framework based on entertainment theory, resulting in fourteen user experience dimensions. We categorized these into experiences related to the appreciation of interactivity, the appreciation of narrative, and affective outcomes (e.g. overall enjoyment and affect). Existing scales to measure these concepts were selected from the literature and where not available, we developed new measurement instruments. The resulting measurement battery was used in all empirical studies presented throughout the dissertation.

From our perspective, Interactive Storytelling needs to provide users with a sufficient level of entertainment to succeed as a new medium. For this reason, our secondary goal was to investigate how user experiences unique to Interactive Storytelling relate to enjoyment. This is crucial for the design and user experience evaluation of present and future applications, entertainment products and serious applications alike.

This dissertation covers five experimental studies that examine the user experience of different storytelling applications. We studied the effects of interaction on the experience of narratives in two experiments using the applications *Fahrenheit* ($N = 80$) and *Façade* ($N = 68$), featuring participants either interacting with a computer mediated story or

passively watching a recorded sequence thereof. Both studies showed that interactivity significantly fuels the sense of effectance. However, most other experience dimensions were not significantly affected, hence we concluded that providing interactivity does not necessarily lead to intensified entertainment experiences.

The third experiment ($N = 50$) explored the role of interaction further, this time in relation to perceived effectance or agency, to explain the enjoyment of Interactive Storytelling. We let participants play the application *Façade* twice to see how their increasing experience with an Interactive Storytelling platform alters user actions and experiences. We conclude that replay is one way to make agency more visible; at the same time the perception of agency is highly influenced by the meaningfulness of system responses.

Based on the results of the previous experiments, we developed the hypothesis that the perception of global agency is a key determinant of enjoyment in Interactive Storytelling environments. Global agency is the users' awareness that they do not only impact local events (handling physical objects, engaging in social interactions) but also global events (the story plot, its development, and its outcome). Two final experiments tested the effects of manipulating perceived global agency on user experiences. The first experiment examined two different user roles (local: "actor" vs. global: "ghost") in the Interactive Storytelling system *Emo Emma* ($N = 34$). To test the effects of agency, participants played both roles, and reported user experiences after each session. In the second study, we manipulated the perception of local and global agency by adding sonic feedback to the commercially available interactive narrative *Dinner Date* ($N = 46$). The perception of agency was manipulated through two differing introductions participants were randomly assigned to, claiming that the feedback sounds signal local agency or global agency respectively. Results showed the application was more reciprocal (autonomy), interesting (curiosity), and immersive (flow) for participants in the global agency group. We conclude that more freedom and autonomy, as found in the ghost mode, and more meaningful effectance, as a result of perceived global agency, could be unique drivers for the enjoyment of Interactive Storytelling applications.

Overall, we found that current Interactive Storytelling applications are still limited in providing either autonomy or global agency. We argue that for genuine Interactive Storytelling experiences, users need to perceive interactions with a system as meaningful and we offer some ideas to make interactions more tangible. This dissertation advanced insights into the enjoyment of Interactive Storytelling both theoretically and empirically, and provides the means to evaluate future applications.