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Narrative Engagement in Games

– A Continuation Desire Perspective

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ABSTRACT

User/player experiences may be evaluated in many ways, however, most concepts describing engagement with interactive artifacts tend to be complex and limited. This paper focuses on an aspect of engagement, which we believe, may be used to quantify any Interactive Storytelling (IS) experience. The willingness to continue an experience or Continuation Desire is a driver for meaningful and engaging experience, which is often overlooked. We believe that Continuation Desire is a useful tool for assessing narrative quality when combined with factors related to narrative engagement. We discuss possible aspects related to evaluating narrative engagement and Continuation Desire. The resulting framework represents a basis for evaluating IS artifacts (e.g. games and IS applications) in future studies.

Categories and Subject Descriptors

K.8.0 [Computing Milieux]: Personal Computing - Games

H.5.1 [Multimedia Information Systems]: Evaluation - Methodology

General Terms

Measurement, Experimentation, Human Factors.

Keywords

Continuation Desire, Evaluation, Interactive Storytelling.

1. INTRODUCTION

Interactive Storytelling (IS) and Digital Games offer a wide spectrum of interactive experiences covering most, if not all aspects of player and user engagement. However, assessing user and player engagement is complex and a number of studies have investigated in great detail the related concepts of flow, immersion or presence – see e.g. [1, 2]. While useful, these concepts focus on player motivations and their consequent behaviors and rely heavily on the artifact, requiring the researcher to assess or take into account the specific nature of the artifact.

This represents a major issue when evaluating games with narrative elements and pioneering core technologies emerging from the IS research community where ideally one would like to

assess the quality of a user/audience experience as independently as possible of the medium or artifact. When attempting to compare different narrative artifacts it is therefore necessary to devise an all-inclusive concept, which assesses the fundamental aspects of player/user engagement.

We argue, that it is essential to devise a far-reaching concept covering all types of interactive narrative experiences through which specific patterns could be identified and the relative efficiency of specific techniques towards user engagement established. We propose to step away from the complexities of engagement-based theories and instead to approach interactive experiences from the combined perspective of narrative assessment techniques and the simpler concept of Continuation Desire (CD) [1]. We furthermore believe that detecting signs of disengagement (as opposed to engagement) along with a multi-layered narrative consideration opens the door to an evaluation framework adapted to IS, games and other narrative-based media. In this article, we aim to identify and combine the evaluation components for both Continuation Desire and Narrative Engagement as a first step towards defining a generic evaluation framework for IS and Digital Games. We propose to investigate this prospect by conducting a multi-disciplinary perspective-taking reflection on Continuation Desire with regards to narrative engagement (Section 2) in order to revise our Continuation Desire concept (Section 3) in the prospect of an experiment-based framework.

2. PERSPECTIVES ON CONTINUATION DESIRE

Engagement in interactive media is a multidimensional concept, which describe various qualities of an interactive experience and has been related to other concepts such as motivation, immersion, flow, fun and pleasure – see e.g. [1, 2]. However, we argue that these concepts may all *lead to* and support the desire to continue, while they at the same time might be the outcome and *the result of* the desire to continue. A user may for example experience fun while playing and this experience may lead to the desire to continue which is then manifested through prolonged play. On the other hand, a user who has the aspiration to continue may experience the concept of Flow as the result of the desire to continue. The element of Continuation Desire may thus be argued to be an essential aspect of any engaging player/user experience.

Based on empirical studies in [1] using a grounded theory approach, Continuation Desire may be explained as the willingness to continue due to the triggers related to four dimensions of CD, namely the objectives, activities, accomplishments and affect experienced during the interaction with the artifact. These four dimensions can furthermore be

explained in detail through 18 different causes of CD which makes players/users want to continue due to:

- **Extrinsic** (application-defined) and **intrinsic** (user-defined) objectives.

- The performance of activities: **solving** problems, **interfacing** with the body, **sensing** the game's audiovisual elements, **exploring** the game world, **experimenting** with the application's possibilities, **creating** something with the application, **destroying** something, experiencing the **characters** and the **story**, and **socializing** with others while playing.

- The accomplishment of the **completion** of e.g. a level or a story path, the **progression** through the experience and/or the **achievement** of something.

- The affect experienced while playing or interacting with the application (**positive** or **negative** affect or the experience of **absorbing** concepts such as presence, flow, immersion, incorporation etc)

The concept of Continuation Desire describes thus not only the tenacity and aspiration to continue playing digital games but the concept might also be used to explore the willingness and persistence to continue experiencing any interactive media artifact. We will in the following section focus in detail on the narrative engagement in order to arrive at a more detailed understanding of the narrative aspects of continuation desire in interactive storytelling and games with narrative content.

2.1 Narrative and User Engagement

Audience engagement in conventional linear narratives has been essentially conceptualized around the concepts of perceived realism [3], presence [4], identification with characters [5], and transportation [6]. Together, with the notion of fictionality (e.g. comprehension, coherence of the story), these concepts provide a good indication of audience engagement [7].

The **perception of realism** has been studied by its relation to: a) the sensorial aspects of the representation itself, basically the visual, sounds, settings and pacing which tend to emulate the sensorial experience attributed to real life, and b) abstracts and hypothetical conceptualizations linked to the probability that the shown events could happen in real life or to the user, even though they're fantastic. It is known that users made judgments about the typicality or the familiarity of the portrayed actions, settings, characters (their behavior, the events in which they participate), expectancy of the specific emotions, and feelings of immersion or flow with the story. **Presence** is often described as a psychological state in which the subjective experiences of receivers are produced by means of technological artifacts without consciousness of its intervention. Lee defined presence [4] in terms of physical experience, social presence and auto-presence. **Character identification** is generally defined as the affinity for audiences towards the media persona and empathic understanding of the characters' feelings, the situation they live, their motivations or their goals. Character identification allows audiences to experience character situations and momentarily forget the reality of the media. Cohen [5] proposed a four dimension approach to character identification: a) Empathy or the capacity to share the feelings of the characters; b) A cognitive aspect or the capacity of sharing character perspectives and understanding their motivations or goals; c) A motivational aspect or the capacity of sharing the motivations and goals of the character, and d) Absorption or the degree in which the receiver loses the sensation of self during consumption. These dimensions formed the basis for Cohen's scale of attitudes (10 items) towards

measuring identification. Igartua and Páez's [8] also worked on identification measurement and proposed four dimensions focusing on: a) Cognitive empathy, defined by the capacity of understanding characters or taking their perspective; b) Emotional empathy or the possibility of sharing character feelings; c) The ability of imagining and anticipating what is going to happen to the characters, and d) Becoming the character or feeling as if the receiver is part of the story.

Finally, **Transportation** into the narrative world is one of the most observed concepts in fiction's perception studies and is defined as a specific mental process characterized by a loss of oneself, attention, feelings and images so as to travel within the text. Transportation is also explained as the experience of feeling lost inside the text. This is characterized by a shift in attention where all the mental systems, and capacities, are centered on the events happening in the narrative [9]. Green and Brock [9] identify three conditions to transportation that help to identify its dimensions a) the physical and psychological components of the story become accessible by the audience; b) transported audiences are able to experience strong emotions and motivations although they are aware that the portrayed events are fictional, and c) audiences leave the experience having the feeling that they have been changed by it. In terms of its measurement, Green and Brock proposed a scale of attitudes formed by 10 items. It aimed at describing the overall experience as well as characterisation.

While the concepts described in this section essentially describe the experience of perceiving a conventional linear narrative it is important to note that with regard to meaningful factors in narrative's perception, Busselle and Bilandzic [7] propose a specific scale for the measurement of narrative engagement. The scale is based on the perspective of mental models based on a list of constructs and measures related to different aspects of narrative engagement. They proposed a methodology to analyse them in the form of an attitude scale, formed by 12 items, and organized into four dimensions: a) **Comprehension of the narrative**; b) **Attention focus**; c) **Narrative presence**, and d) **Emotional engagement**.

This narrative engagement scale is relevant as it focuses on narrative perception and the understanding of meaningful factors within a story rather than the cognitive abilities of an audience. It represents a broader form of measurement which may cause the desire to continue due to the experience of the story, the characters and the affect encountered.

Furthermore, narrative engagement in Digital Games, has often been studied with regards to perceived realism (the virtual world), presence and character identification (the player character) due to their high-performance graphical nature. While perceived realism and presence relate to sensory attributes and are more sensitive to individual fluctuations, character identification is more directly related to the notion of role-play and is more reflective on the quality of story and character writing. For this reason, we believe that **character identification** could be a suitable complement to both the narrative scale identified by Busselle and Bilandzic [7] and the Continuation Desire concept [1], as experiencing the characters is an essential trigger of the desire to continue an interactive narrative experience. Finally, another factor which may support the desire to continue an interactive narrative experience is the **experimentation** with outcomes of the story, through "what would happen if...?" scenarios. This experimentation is also identified in [1] and is a unique aspect of interactive storytelling, which also has to be taken into

consideration when evaluating narrative engagement in interactive experiences.

2.2 Disengagement

Busselle and Bilandzic’s model of narrative comprehension and engagement [7] focuses mainly on considering narrative engagement from the perspectives of the situation (events, character actions and spatial / chronological cues), characters (identities, traits, goals) and the story world (spatial / temporal settings and story world logic). Figure 1 (below) present a simplified version of this model onto which we added an extra “Game world” dimension in order to reflect on the interactive nature of IS based on discussions in previous sections.

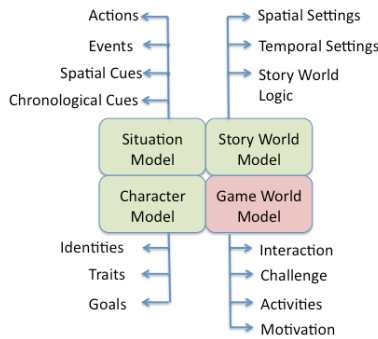


Figure 1. Model of Interactive narrative comprehension and engagement

The four models described in Figure 1 can all be investigated in regards to their potential for disengagement. The **narrative situation** (situation model) could be a source of disengagement when actions and events are repetitive, predictable or fail to bring novelty to a narrative. Similarly, slow progression and lack of resolution/closure could be regarded as potential causes for frustration or confusion. The **story world** represents the level and relevance of information contained within a narrative experience and contributes towards a player’s ability to suspend disbelief. This dimension is directly linked to a user’s interpretation of a player **character** in the sense that too much, too little or conflicting information have the potential to confuse a player as to the true motivations of his/her character. Thus leading to mistaken goals, intentions and objectives, which, in turn may affect a player’s perception of the narrative situation. It is well documented (i.e. HCI and Digital games communities) that interaction issues related to the **game world** can generate strong feelings and result in frustrating an interactive audience. This is particularly true of game-related aspects such as control mapping, challenge difficulty, task repetition, lack of achievement or repetitive failures (without feedback).

While each of these narrative comprehension/engagement dimensions could be investigated independently, we argue that meaningful sources for user disengagement should be primarily sought the interpretation a player makes of the relationships between these dimensions. It would be reasonable, for instance, to argue that a lack of motivation in pursuing a narrative experience could be the result of a mismatch between a player’s internal expectations (character / storyworld models) and the actual experience delivered through the artifact (narrative situation / game world models). Similarly, the relationship between the game world model and the narrative situation model carries the responsibility to causally link a player’s actions/decisions to their impact on the narrative. Thus providing meaning to decision making and determining if an experience can reach out to a

player. The disengagement problems when this relationship fail are: 1) mapping of causes and consequences (too easy to foresee action consequences), 2) perception of false promises (under-described consequences render the decisions made meaningless) and 3) mismatch between expectation and execution (effect of a decision outcome outreach expected consequences such as unforeseen consequences, loss of control or over-the-top reactions).

3. INCORPORATING NARRATIVE ENGAGEMENT IN THE CD MODEL

In order to refine the Continuation Desire concept with regards to narrative engagement, it is possible to incorporate the identified triggers of continuation desire in relation to narrative engagement in the CD model [1]. The **Comprehension of the narrative** relates to assessing the CD activity of experiencing the story, as well as to the progression and completion of the story in relation to accomplishment while interacting with the story. One may argue that the understanding of a story is an essential pre-requisite of the desire to continue; if a narrative is too incomprehensible a user might loose interest due to frustration, confusion or meaninglessness. However, if a narrative is barely comprehensible it might also trigger the willingness to continue, since a user may hope for further explanation later in the experience. **Attention focus** relates to the intrinsic objectives that a user may set up during the experience of the narrative. Trying to accomplish objectives like finding out who the killer is in a murder mystery or how it is all going to end, may be identified through the attention focus on interacting with the artifact, but also how a user might **experiment** with the possibilities of the application. **Narrative presence** relates to the absorption factor of the affect dimension in the CD model, and excludes other forms of presence, since it focuses on “being in the *story*”. This means that it is possible to focus on assessing how strong the narrative is in itself thus making it feasible to compare classic text-based interactive adventures with contemporary 3D audiovisual narrative interactive experiences. **Emotional engagement** obviously also relates to the affect dimension of CD and is intended to assess the level of feelings (negative and positive) while experiencing the interactive narrative. **Character identification** also supports the emotional engagement and relates to the activity of experiencing the characters which may create a stronger bond to the characters and thus support the desire to continue. Finally, **experimentation** with the possibilities of an interactive story may also be the cause for CD.

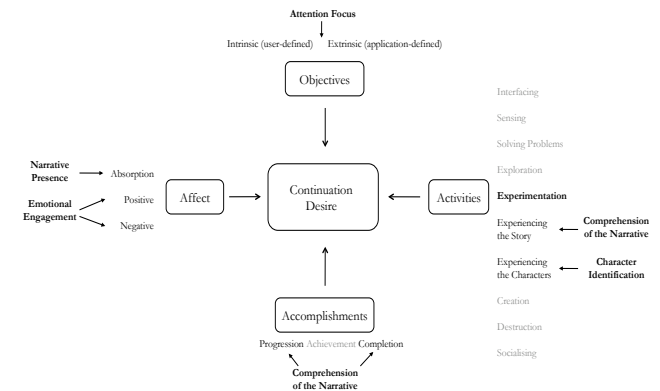


Figure 2. Narrative Engagement and Continuation Desire framework

Figure 2 illustrates an update to the Continuation Desire model [1], which focuses on addressing narrative engagement. The identified factors of narrative engagement have been added to the original model, while the factors not relevant to the assessment of narrative engagement has been grayed out.

Summing up, the narrative engagement scale and items from Busselle and Bilandzic [7] which consist of the dimensions of attention focus, narrative presence, comprehension of the narrative and emotional engagement which also includes character identification may be combined with the degree to which a user experiments with the artifact as well as the influence of the disengagement causes (see Table 1).

Table 1. Dimensions of Narrative Engagement

| Dimension | Items |
|---|--|
| Attention Focus | <ul style="list-style-type: none"> • Wandering mind • Thinking about other things • Keeping mind on story |
| Narrative Presence | <ul style="list-style-type: none"> • The mind is inside the storyworld • Storyworld cease to exist at the end of the experience • Storyworld closer than the real world |
| Comprehension of Narrative | <ul style="list-style-type: none"> • Making sense of the story • Understanding Characters • Recognizing story thread |
| Emotional Engagement and Character Identification | <ul style="list-style-type: none"> • Emotionally affected by the story • Feeling happy when a main character is succeeding and sad when it is failing • Feeling sorry for some characters |
| Experimentation | <ul style="list-style-type: none"> • Changing the outcome of the story • Playing different roles • Trying different possibilities |
| Disengagement causes | <ul style="list-style-type: none"> • Narrative Situation • Character • Story world • Game world |

These dimensions of narrative engagement may be used to quantify the level of continuation desire of an interactive narrative. Since the different dimensions in Table 2 either supports or negatively affects continuation desire an overall measure of the narrative engagement can be identified. Through use of in-game and post-game self-report questionnaires the influence of the various dimensions on the desire to continue may be assessed during run time and after the experience. The plan is to support the measurement of some of the dimensions by the use of in-game metrics (e.g. experimentation and interaction with the artifact) and psycho-physiological measures (e.g. emotional engagement and attention focus) where applicable.

4. DISCUSSION AND CONCLUSION

The assessment of narrative engagement in interactive storytelling and games with a narrative content by focusing on Continuation Desire, opens up for comparison of different types of interactive narrative artifacts. This makes it possible to compare for example text-based adventures with experimental IS applications such as

Façade and commercial interactive fiction games like Heavy Rain and LA Noir. With the current approach it is possible to use self-report questionnaires for evaluation after the experience and during run time, however, the next steps will be how to quantify the above introduced dimensions of narrative engagement not only by questionnaires but also supported by non-intrusive methods. The resulting knowledge from such future investigations are intended to be used to evaluate and compare a range of different interactive narrative artifacts, and also to apply that feedback to develop adaptive engaging narrative experiences. The non-intrusive assessment of in-game continuation desire could then be used to orchestrate events in order to keep player engaged in the narrative.

5. ACKNOWLEDGMENTS

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