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## **‘Narrative’ in Serious or Learning Game Design Research**

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### ***Abstract***

Numerous research articles consider the utilization of narrative in the field of learning and serious game design. Some of the arguments presented in these articles, for and against narrative utilization, seem to be strongly contradictory without reflecting to each others. Therefore, some kind of discontinuation seems to characterize the overall conversation. In fact, the articles may even deal with totally different objects while using the concept of narrative. In this article, a sample of research articles discussing narrative serious/learning game design is critically surveyed through their conceptions about narrative. Furthermore, the goal is to find out, for each separate concept of narrative, the essential conclusions and the main problems concerning the utilization of narrative in the context of serious games.

### ***Introduction***

In this paper, I am going to present preliminary results of the survey, which considers narrative conceptions or definitions in a sample of research articles that discusses narrative serious or learning game design. Furthermore, narrative-related discontinuation points of the discussion are sketched, and finally, the results are tentatively discussed from the narrative learning game perspective.

The main aim of this survey is to examine what is meant by the concept of narrative in the selected research publications. The publications must consider, from some perspective, the challenge of utilizing narrative in the context of learning or serious game design. Three keywords were used during the search of publications: Game (in the context of computer, video or digital games), Learning (in the context of leaning or serious games) and Narrative. Another condition that was used in the search process is that the content or outcome must be particularly related to game *design*.

The current sample of publications consists of 17 research articles. The majority of the articles have been published after 1999, but there are also two articles from 1980 and 1981 that are included due to many recent citations in the research papers. The target material includes both pedagogically and technically oriented as well as game study -based papers.

## ***The Current Findings***

As a result of this survey, which is actually the initial part of a more extensive study, five approaches to narrative are recognized. These are fantasy, story event -based approach, game scenario -based approach, structuralism-inflected approach, and cognitive psychology -based approaches.

### **Fantasy**

The concept of fantasy is based on the Malone's (1980, 1981) work with the entertainment games and the reasons that make these games highly motivating for players. Malone states that: "By a system with fantasy, I mean a system that evokes mental images of physical objects or social situations that are not actually present" (Malone 1981, 67). It seems that the Malone's fantasy represents a story or narration constituent and a very basic prerequisite, but it does not constitute a complete definition of narrative as such. The Malone's view includes influences from classical narrative theories, since the idea of expressing something that is absent is recognized in his definition of fantasy. Furthermore, it seems that his approach is influenced by cognitive theories, since Malone refers to the mechanism, where some stimuli are used to evoke particular mental consequences, which are, in this case, mental images of physical objects or social situations.

According to Malone, in computer games, the types of extrinsic and intrinsic fantasy can be distinguished from each others (Malone 1980, 1981). At the level of content, extrinsic fantasy does not have a relation to the activity that a player is conducting in the game. Extrinsic fantasy can be presented, for instance, as a reward after a successfully completed game task. In the case of intrinsic fantasy there is interdependency between the player activities and the objects or social situations referred to in the game representation.

Even though the Malone's concept of fantasy does not define complete narrative, it includes important preliminary identifications for game narrative. These identifications include the semiotic nature of representation, the cognitive aspects of representation and reception processes. Moreover, Malone implies that there are computer games which operate with bare symbols without any fantasy elements.

### **Story Event -Based Approach**

In the context of story event -based approach, the core argument of the narrative definition is that narrative is a series of events. The approach emphasizes characteristics, which are typical in the context of media forms preceding the appearance of digital media. Thus, the approach leans on traditional narrative theories, which focus especially on the story content. For example, in the spirit of Aristotle, it may be strongly highlighted that narrative requires the predefined beginning, the middle-part, and the end. In this context, the authors often suggest the utilization of various existing plot-models, for example, three-act-model (Kickmeier-Rust et al. 2010) or Freytag's pyramid (Lee et al. 2010), as an instrument for the story design process.

In several papers, the authors suggest that the Joseph Campbell's (1949) model of Hero's Journey could be utilized as a story design aid. Generally speaking, game designers (as well as novel writers and screenwriters) have adopted the Campbell's model to inspire and improve their story design work. It is noteworthy, that the authors using the story event -based approach and suggesting the utilization of Heros Journey -model absorb the model from the practice back to the research field without recognizing its scientific origins (i.e. Campbel's *The Hero with a Thousand Faces*, 1949). In Hoffmann and Riemenschneider (2004), the model was even called Vogler's Hero's Journey, likely due to the case that Christopher Vogler introduced it to the film industry in the eighties. Thus, in this case the original Campbell's source work and its goals are not recognized. Instead, it is clear that the model is adopted purely as the aid of the storyteller, and its utilization in the learning context is explained only by its easily recognizable form and intelligibility.

Furthermore, it can be seen that Berger and Müller (2009), Dickey (2005, 2006), and Friedlander (2010) apply the story event -based approach as part of their narrative conception, but due to the aspects referring more strongly to some other approaches to narrative, they are presented in other contexts.

In general, it can be said that within the story event -based approach, the game aspect is often ignored whereas the narrative aspect dominates the discussion. This means that the subjects like "gameness", a game as a system of rules, and playful tension are not taken into consideration.

### **Game Scenario -Based Approach**

It could be said that the game scenario -based approach is strongly game design inspired approach to narrative. The approach is applied, for example, in Raybourn (2007), Westera et al. (2008), Kickmeier-Rust and Albert (2009), and Berger and Müller (2009). The term game scenario means game situation or predesigned series of game events. In this case, narrative is constructed by a player from the scenarios that include the story event information (Westera et al. 2008). Besides, Raybourn (2007) highlights that narrative is constructed in co-operation of several players. The scenarios are designed by a game designer, who creates scenario constituents (e.g. the environment and objects) and also determines a range of various attributes related to these constituents (Westera et al. 2008). Thereby the designer defines *the story potentiality* of the game scenarios. It is a consequence of the essence of digital games that this potentiality and its manifestations in each moment are defined through predefined rules, which have to be formulated through Boolean expressions.

In contrast to the aforementioned story event based approach, the game scenario -based approach is partly based on traditional narrative theories, but above all on the new narrative theories. It seems to use especially media-specific perspective. This means that there is an effort to recognize the characteristics and the nature of game-like storytelling. Additionally, the approach emphasizes the game design perspective.

## Structuralism-Inflected Approach

If not truly in the game scenario -based approach, the focus of the discussion in the structuralism-inflected approach moves from the story content to the multimodal discourse of a computer game and to the player's role with or in a game narrative. Reeve states that "[i]f the term 'story' describes characters, events and plot, 'narrative' describes how the story is told" (Reeve 2009, 75). Later in his article, this division runs into conflict with the feature of interaction. In the general discussion about interactive storytelling there is an unanswered question, whether the interaction is a part of the means of digital game storytelling or not.

While using this approach, the authors may be pondering questions like: What kinds of means of expression a computer game can adopt from previous media forms (e.g., Marsh et al. 2008)? What kinds of new means of expression a computer game may use? In what sense the player can have freedom in a game narrative. What is unique in every single playing session? What is inevitably restricted by the designer?

From the following quotation we can see Reeve's answers to the questions about the player's freedom and uniqueness of a game (narrative): "*Although the design offers space for the player's activity, it is within tightly defined boundaries. [...] the player's exposure to the game elements is a unique experience*" (Reeve 2009, 77). Further, we also see his view on the player's role in game narrative: "*The player's own actions become part of the story itself and the player a central character: he or she becomes embedded within the narrative rather than a passive observer, thereby becoming a co-creator of the story*" (Reeve 2009, 77).

## Cognitive Psychology -Based Approaches

Within the cognitive psychology -based approach, there seems to be a common initial assumption: we have narrative experiences (e.g. Egenfeldt-Nielsen 2004, Mott et al. 1999, Lee et al. 2010, Dickey 2005). However, it seems necessary to make an additional question: Are all narrative experiences inevitably tied to the process of telling the story content through verbal language (aloud or mentally)? Among the authors cited in this survey, there is at least one, Egenfeldt-Nielsen, who seems to assume that narrative comprehension requires particularly verbal explaining. (Egenfeldt-Nielsen 2004). His view seems to be based on Jerome Bruner's *Acts of Meaning*, but this kind of reading has a strongly limiting impact on the Egenfeldt-Nielsen's conclusions of narrative utilization in the learning game context. I would like to suggest that this reading on what Bruner means by the relationship between narrative and language can be impugned.

In his book *Acts of Meaning*, Bruner explains how a child enters the meaning along with language learning, and thus the language may play a significant role also when one is adopting narrative mode of thinking. Anyway, even if we acquire fundamental tools of comprehension through (verbal) language, and these tools make it possible to construct narratives, it seems that Bruner does not say, at least in *Acts of meaning*, that *after* the first developmental steps (i.e. the entry to meaning, as Bruner phrases it) narrative thinking should *always* be conducted using the verbal form of thinking. What is the point

I wish to highlight? For example, when we are watching a film, I believe that we do not have to use an explanatory mental mode of thinking all the time. In order to understand and interpret the deeper meaning of a multimodal piece of narration, it may sometimes be worthwhile to explain some parts of it to ourselves (or to somebody else), but not, indeed, all the time. It could be even hypothesized that the dependence on verbal explanation may diminish if the other types of literacy (in this case, audiovisual literacy) improve. In *Acts of meaning* Bruner states that culture, rather than biology, shapes human thinking and life. “It does this by imposing the patterns inherent in the culture’s symbolic systems – its language and discourse modes, the forms of logical and narrative explication, and the patterns of mutually dependent communal life” (Bruner 1990, 34). In this context, the Bruner’s approach to the language and discourse mode seems to be extremely wide-ranging. Therefore, it can be expected that it encompasses and acknowledges various cultural products using sophisticated multimodal storytelling. These products may transform the act of *telling something* into new kinds of procedures that serve the same basic task (probably along with some new tasks) of conveying, and sometimes even producing, content.

In the narrative serious or learning game design -related research discussion, Bruner’s thoughts of narrative have inspired also Mott et al. (1999), and Dickey (2005 and 2006). In these cases narrative is seen as a mental tool, a cognitive frame, by which experiences can be constructed against meaningful subtext (e.g. Dickey 2006, see also Hokanson and Fraher 2008). The Bruner’s view of the centrality of culture in cognition is also considered as a bridge between a story and pedagogy (Mott et al. 1999).

In the context of cognitive psychology -based approach, narrative is seen as a mental tool. The workings of this mental tool can be shown through the division between stimuli and mental consequence. An artifact that provides stimuli causes the construction of a certain type of mental images, which then reflect the story content in the receiver’s mind.

In addition, in the context of cognitive psychology -based discussion, there seems to be a somewhat separate approach to narrative as a social, cultural, and cognitive artifact (Hokanson & Fraher 2008). One more time, story events are used as a starting point, but this time the event series is abstracted and the generalized pattern of events is recognized through metaphorical lenses. This is the operation by which Campbell (1949/1990) constructed the model of monomyth. According to Hokanson and Fraher (2008) “[i]f one views narrative as being tied solely to the generally linear aspects of storytelling, the application of the monomyth to instructional design may suffer” (Hokanson and Fraher 2008, 31). In their interesting article, Hokanson and Fraher (2008) compare the learner’s role in the learning process to the hero’s role in the process illustrated through the journey-metaphor. Thus, monomyth illustrates a particular type of systemic capacity of narrative, which is the capacity of a certain type of narrative to carry knowledge. This seems to be closer to the Campbell’s suggestion in *The Hero with a Thousand Faces* (1949/1990) than the aforementioned applications of the Cambell’s model.

## ***Discontinuation Points***

In the research discussion on the narrative serious and learning game design, there are some discontinuation points, in which the presented arguments, for and against the utilization of narrative, seem to be strongly contradictory without reflecting to each others. This discontinuation is traced to certain topics, which I present in the form of following questions:

- Is (the comprehension of) narrative always tied to verbal mode of language?
- Do narration and action (interactivity) necessarily stand against each others?
- Does the existence of narrative require predefined events? (designer's narrative versus player's narrative)

The first two questions are related both to the structuralism-inflected and cognitive psychology -based approaches. If the answer to these questions is affirmative, then the conclusion is likely that narrative predominantly interrupts both learning and game playing experiences. The third question is related both to the story event -based and game scenario -based approaches. This question considers in what sense *randomness* can exist in the game narrative – when the (game) content stops being narrative?

## ***How Learning Can Be Supported by Narrative according to Various Approaches to Narrative?***

What, then, are the mechanisms for narrative to support learning, which the authors propose for game design? The preliminary findings herein are presented only in the limited extend. According to Malone (1980), the intrinsic type of fantasy may support the player's motivation. In the context of the story event -based approach narrative is presented as a self-explanatory support for learning. Thus, in this context there is barely any reasoning for that support, only the argument that narrative is a well recognized and comprehensible pattern. The authors using game scenario -based approach state that as experience is considered as a system, in a game it is possible to design structured, predefined experiences unfolding in time. In the context of the structuralism-inflected approach, narrative contextualizes the player activities and enhances emotional engagement in playing. Furthermore, it is said that through role playing, the players can experience feelings, empathize other player's feelings and by that way update their understanding of the situation at hand.

Clearly, the cognitive psychology -based approach proves to be the most productive context for narrative, when the mechanisms of narrative to support learning in learning or serious game design are searched. To give a few examples, it is said that narrative offers a cognitive frame for reflecting experiences and activities, it offers a cognitive schema for aiding causal thinking, and helps in memorizing and remembering. Furthermore, it is said that with narrative one can illustrate and provide examples, offer an environment for problem solving and a tool for navigating in multimedia environment.

## Conclusions

As a result of the survey discussed in this paper, the cognitive psychology -based approaches to narrative proved to be especially useful from the learning and teaching support perspective. However, it became clear that through the structuralism-inflected approach important game and storytelling -related questions regarding the player's role in or with game narrative are foregrounded. These questions are important to consider also from the learning perspective while reasoning the use of narratives to support learning in computer games. Thus, the findings of the survey support the idea that a combination of the cognitive psychology-based and structuralism -based approaches could be useful for serious and learning game design. Furthermore, the medium specific approach to narrative, which manifests through the game scenario -based approach, should be noticed while considering the means of storytelling and computer game design.

The findings illustrate how multifaceted is, in fact, the research question of how learning can be supported through narratives in digital serious or learning games. At the same time, narrative has to be recognized as a particular type of content, an expressional frame, a cognitive tool, and a pattern of experience. To crystallize even some effective generalizations, in order to offer basic guidelines for serious game narrative designers, one big challenge is, how to consider the design methods on various dimensions of narrative and how to illustrate possible effect relations between the dimensions. In addition, before considering and illustrating this kind of problems, various narrative and learning related theory lines have to be driven together on the appropriate narrative dimensions.

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