

Affecting Choices in Interactive Storytelling*

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Abstract

This position paper brings forth the hypothesis that it is possible to use results from the social psychology's area of persuasion in order to influence the player of an interactive story in predictable ways. Several important concepts of persuasion such as how people make decisions, and how can we influence the process of decision are discussed. We end with a proposal on how to apply these results in an interactive storytelling setting.

Introduction

Interactive Storytelling is all about choice. If we are asked to enumerate what are the key differences between reading a book and playing in an interactive storytelling system one of them would certainly be that we have to do something meaningful in the story world in order for the story to progress. After all, that is why we call it *interactive* storytelling.

The degree of the importance and impact of those actions can arguably be said to be related to the feeling of *Agency*, *Immersion* and *Transformation* as coined by Janet Murray (Murray 1997). However, there is one important aspect regarding the way the player acts (by acting we mean performing an action in the story world) that is often disregarded. For example, it is expected that the player will experience the feeling of *Agency* if his/her actions have some impact on how the story unfolds. However, that feeling of agency depends not only of the opportunity to take meaningful actions in the story world, but also of the expectations that the user forms before acting, that if fulfilled lead to that feeling of meaningful action.

Imagine a system that could influence the user in a predictable way, known to the author at authoring time. That system would have to be able to provide specific stimuli to the user prior to each of its decisions that would have a specific impact on which cognitive content was generated by the user at that time. That specific cognitive content would

have to be the one responsible for the user's expectations that would lead him/her into acting in a particular way. Such a system would have the added benefit of providing the user with a feeling of *Agency* while having the user act in a predictable way. Furthermore, it could be enhanced with all the existing techniques used to handle unaccounted user intervention (Harris and Young 2010) (Mateas and Stern 2002) since all those methods are employed after the user acts.

As such, we can think of a perfect scenario where a system could dynamically provide the necessary motivations to the user in order for him/her to act in accordance with the story's goals in an interactive story, and in that way mold the user's experience accordingly to the criteria encoded in the system by the author.

Is this possible? In this position paper we present evidence, based on results from social psychology's area of persuasion, that support this idea.

Affecting choices

The area of Persuasion in social psychology focuses on understanding how a message can be made in order to produce attitude change in a particular direction. It can be roughly described as the presentation of a fabricated set of stimuli that will have a predictable effect on the receiver's attitudes (attitudes usually mean general evaluations that are capable of guiding behavioral, affective and cognitive processes).

There is a common technique used in the area of persuasion named thought-listing technique (Cacioppo and Petty 1981) (Greenwald 1968), that allows for the assessment of the effects of a persuasive message in terms of attitude change. This technique allows the production of messages that have a predictable effect on the user, and can be made in such a way that they are employed in important decision points in the story to increase the likelihood of the user complying with the author.

Additionally to message quality, attitude change can also be achieved via the use of cues. There is research in the area of persuasion that supports the idea that we employ different cognitive processes when making a decision (Petty and Cacioppo 1986). In situations where we are both motivated and have the ability to understand the message that requires us to make a decision regarding the information contained in it, we tend to perform that decision based on the true merits of the information contained within the message. In contrast,

*This work was partially supported by a scholarship (SFRH / BD / 31362 / 2006) granted by the Fundação para a Ciência e a Tecnologia (FCT). The authors are solely responsible for the content of this publication. It does not represent the opinion of FCT, which is not responsible for any use that might be made of data appearing therein.

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when we lack motivation or the ability to truly grasp the arguments contained in a persuasive message we are vulnerable to cues, such as the origin of the message (e.g. it is told by an expert (Petty, Cacioppo, and Goldman 1981) (Petty, Cacioppo, and Schumann 1983)) or the form of the message itself (e.g. number of arguments (Petty and Cacioppo 1984)).

Persuasion in Interactive Storytelling

An interactive story can be discretized as a set of situations where the user can take action that alters its the development. Even in those cases where the user can interact at any time, it can be argued that there are always a set of situations that are crucial to the development of the story, and those can be targeted in order to influence the likelihood of the user choosing a particular course of action.

In its simplest representational form imagine that we could represent a story as a acyclic graph whose nodes represent critical decision points. If for each of these points annotated content existed with information regarding which course of action it supports, then, at run-time, and taking into account previous user interaction, a system would be able to select which content to present to the user in order to increase the likelihood of a particular course of action to be chosen. The criteria for selecting a particular content, and corresponding path through the story, could be made to depend on characteristics of the user, and not necessarily fixed a priori. For example, previous preferences demonstrated by the user could be taken into account so that the system chooses a path that resonates with those previous decisions in an attempt to increase the enjoyment.

For example, imagine that a particular story could be represented with the graph in Figure 1, where each node is a decision point, and each arc represents a decision that if taken will lead to another node or to the end of the story. If the ideal story was the one with the path thorough the lighter-colored arcs, the system would choose the highlighted annotated content (in bold), where *strong/weak messages* refer to the quality of the messages in terms of which cognitive content (in favor or against) they are likely to produce if processed; personal involvement refers to manipulations likely to increase or decrease the likelihood of the message being processed (Petty and Cacioppo 1979) and the cues as manipulations likely to influence the behavior of the user if the likelihood of processing the message regarding the decision are low (Petty and Cacioppo 1986).

Conclusions and Future Work

In this paper we have focused on how user’s choices can be influenced in the context of interactive storytelling using results from the social psychology’s area of persuasion. We describe the cognitive aspects of choice and address the issues involved in influencing them. Our next step will be to develop a “choose your own adventure”-style web application where we plan to evaluate some of these manipulations in terms of their effectiveness in influencing the user’s choices in the story.

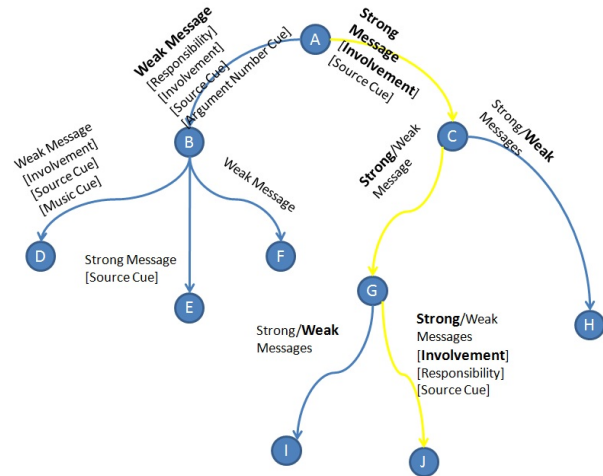


Figure 1: Story graph

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