An Interactive Environment for Historical Narrative

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ABSTRACT
In this paper, we describe our plans for an interactive three-dimensional environment for learning about and experimenting with Prospect Theory, a politico-historical theory of decision making. The environment is to be created with the Neverwinter Nights engine.

Keywords
Neverwinter Nights, New Media, Prospect Theory

BACKGROUND ON NEW MEDIA

Computers have provided artists with tools for conveying meaning through a variety of new media, such as hypertext, hypervideo, and video games. Inevitably, such new media, which currently exist in a more or less incunabular form, are inspired by more established forms. For example, video games borrow stylistically from motion pictures. Hypertextual fiction employs post-modern literary traditions.

It is useful to distinguish between narrative and non-narrative media, though such a distinction may not be absolute. The examples of new media cited above tend to employ narrative, whereas a telephone conversation tends not to be structured as narrative. One may certainly convey narrative over the phone lines, but the typical phone call is not intended for storytelling, but rather the conveyance of mere facts.

While narrative may describe fictional or factual events, all narrative indirectly conveys truth about the human condition. Joseph Campbell [Campbell] identifies the "monomyth" of the hero quest, which structure is duplicated in all ancient mythologies, and more loosely by narrative in general. Carl Jung [Jung] points out that the trials of the protagonist in the quest for enlightenment mirror the development of the human psyche including the differentiation of the ego from the self (individuation) and the ego's subsequent reconciliation with the unconscious aspect of the self. Ken Perlin in [Wardrip-Fruin] says of the protagonist that "His conflict becomes our conflict, his choices our choices, and his fictional changes of character seem, oddly, like a sort of personal journey for our own souls."

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The universality of narrative structure makes it an appealing tool for education as well as entertainment. In addition, the versatility of new media offer novel challenges and opportunities for the creation of narrative. As the fields of computer hardware and HCI advance, one can imagine a synthesis of media that approaches actual reality in its degree of immersion and agency – an ultimately hyperrealisitc medium, to use the vocabulary of Baudrillard [Baudrillard]. The medium that achieves this effect most closely at the time of this writing is the interactive three-dimensional environment. Current graphics and artificial intelligence allow for the production of simulated worlds that offer a taste of the immersion and agency of actual reality. Such simulated worlds may attempt to model or represent reality as closely as possible (for some limited domain), or may represent fictional fantasy.

Though simulated worlds offer greater versatility in narrative forms, this versatility conflicts with the revered linear narrative structure of what Perlin calls "The Novel." However, as Bryan Loyall in [Wardrip-Fruin] points out, interactive drama, whether portrayed for the participant by persons or artificial agents, can ensure some linearity in interactive narrative. The actors or agents should respond realistically to the participant's unpredictable behavior while providing subtle cues that lead the partipant to bring about lead a rising action, conflict, and resolution. Such methods lead us closer the a genre of "Cyberdrama," a term that Janet Murray reluctantly adopts in [Murray] and [Wardrip-Fruin].

Interactive three-dimensional environments may be implemented for traditional desktop HCI or virtual reality interfaces. Generally, development is simpler when the physical interfaces are more limited, i.e. mouse, keyboard, monitor, and speakers.

A HISTORICAL INTERACTIVE ENVIRONMENT

Our work is concerned with using the medium of the interactive three-dimensional environment in order to give students, scholars, or gamers an opportunity to learn about complex historical settings and political theories in an immersive, agency-laden setting. History can be a study of broad generalizations or fine details. Yet a complete historical understanding requires a synthesis of these

perspectives. The medium of the interactive three-dimensional environment is ideal for such a synthesis, because the agents that populate such a simulation can communicate to the participant/actor details about their simulated or fictionalized daily lives, but also the great important events of their time. Furthermore, the settings of such encounters may simulate the architectures and styles of the era under examination, furthering the sense of texture and immersion.

We plan to investigate the predictions and properties of Prospect Theory [Levy][Tversky][Mintz] in our simulated world. The player/participant could freely travel in a historical setting, perhaps playing the role of a great leader. The player could gather information from the agents populating the world, thus "framing" some historical decision making problem. The basic prediction of Prospect Theory is that when the problem is framed in a positive manner, in which the actor perceives a likelihood of gain or profit, the actor will be averse to risk. On the other hand, if the framing presents a domain of loss, the actor will be more willing to take on risk.

For development, we have chosen the Neverwinter Nights world creation engine because if it's simple world editing interface and rich control over branching dialog, which will give the appearance of intentionality to the agents in our simulation. We expect that this framework will offer the capabilities of the Decision Board (http://www.decisionboard.com/academic) software that Adam has used to investigate Prospect Theory in the past. In addition, immersion in a three-dimensional world and interaction with apparently intelligent agents should make our theoretical predictions more accurate, since the participant will be more inclined to identify with the scenario and the agents involved. Like the Decision Board, our interactive world would be appropriate for a variety of serious applications. Clearly, it could be used for research in testing political or human decision-making theories. In addition, it could teach political or historical ideas more effectively than merely textual interfaces. Eventually, the system could be used for training about decisions in crisis situations or in analyzing the risks of certain scenarios. For now, we keep the investigation historical since the detailed records available will facilitate development.

Adam [Mikeal] has previously investigated the decisions faced by Hannibal of Carthage in the Second Punic War. Such a scenario seems quite appropriate for an encoding in a Neverwinter Nights setting, as the already available textures and graphics would likely be suitable for setting up the world. However, we intend to investigate the possibility of integrating new textures for some different historical settings. Such scenarios may involve one or more moments of climactic choice, when the player must choose a course of events that may or may not coincide with actual history. One expects the player's choice to coincide with historical events at least in those cases that are accurately explained by the Prospect Theory.

CONCLUSION

Just as video games gave much inspiration for interactive three-dimensional simulations, such simulations inspire new narrative forms and genres. Our work employs a three-dimensional interactive environment for and educational and experimental purposes.

We intend the interface to communicate narratives about historical circumstances, yet to also allow freedom of interaction and pacing of action. Progress of plot will be achieved through minimal prompting from the agents populating the simulation and through pullulative moments of decision that the user controls. This immersive environment will permit the testing of decision-making theories, and permit users to learn about historical events from an "first person" perspective..

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