

Narrative Structure in Virtual Collaborative Environments

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Introduction

The ability to conceptualize the world in a narrative form is one of the central characteristics of human intelligence. We are unique, both in our ability to form narratives, and in the degree with which we rely upon narratives to organize our knowledge of the world. Artificial Intelligence has recognized the importance of narrative structure since its earliest days [1]. More recent work has demonstrated the role of narrative structure in the formation of scientific theories [2, 3], in shaping human-computer interaction [4], and in our conceptions of virtual environments [5].

One of the narrative's functions is in representing the shared assumptions of a culture, the stories that bind a community of human beings. Since human beings began carving stories of the hunt on cave walls, through the stories of Homer and the Bible, to the present day, shared narratives have played a central role in determining who belongs in a community, and in setting the patterns according to which those people behave and interact. More recently, we have evidence that narrative structure informs the interactions of people in virtual environments.

For example, in *Computers as Theatre*, Brenda Laurel demonstrates the similarities between human-computer interaction and the structure of improvisational theatre [4]. In both contexts, people determine their own actions, but do so within the confines of a basic, general narrative framework. In improvisational theatre, actors improvise within the basic framework of a genre, be it comedy, mystery, etc. Similarly, users of interactive software improvise their work within the structure of goals, actions and information afforded by the software interface.

In describing her work on co-operative role-playing in a multi-user virtual environment, [6] has remarked on the ease and enthusiasm with which users

assume roles in a larger story context, and spontaneously play to the larger, stated goals and assumptions of the simulated environment. Turkle [7] takes this insight even farther and argues that personality itself becomes plastic and context dependent in MOOs and other virtual environments.

Problems in applying narrative structure to CVEs

Collaborative virtual environments offer a number of promising dimensions for the development of human co-operation and community. These include the opportunity to create geographically distributed communities, an increased role for asynchronous communication, and access to large shared data stores. However, these properties also force us to re-evaluate the role of narrative in these communities: although both training and human nature dictate that narrative will play a role in virtual communities, the nature of virtual interactions places significant pressures on the way narrative functions in these communities.

Issues that software designers, users and sociologists of cyberspace must consider include:

1. The diverse backgrounds of citizens of CVEs. Because computer networks allow the formation of communities of people with widely distributed locations, it is likely that they will also have divergent cultural backgrounds. How can we communicate a common set of social narratives to such diverse groups.

2. Bandwidth and the communication of narrative structure. Much work in virtual environments strives for higher fidelity representation of sensory data. However, work in lo-fidelity environments such as the text-based MOOs and MUDs indicates highly effective communication and role playing [6, 7]. Although intuition tells us that higher bandwidth communication is important, we must admit that its effect on determining the narrative structure of a community is not well understood.

3. Formal representation and human narrative. Traditional shared narratives are communicated a variety of channels, with one of the most important being face-to-face story telling and other communications. Even modern media-intensive society rest on a framework of stories communicated

from parents to children in a face-to-face manner. What will be the effect of limiting storytelling to only those channels that can be formally represented?

4. Playing out shared narratives in an asynchronous setting. In *Computers as Theatre* [4], Brenda Laurel described computer interactions using an improvisational theatre metaphor. An important part of this metaphor, which carries over to single user software is the assumption of synchronous action. Multi-user virtual environments introduce the need for asynchronous interactions. What is the effect of asynchrony on the playing out of shared narratives in a community?

5. The plasticity of personality in virtual worlds. Turkle [7] has explored the ease with which habits of cyberspace can effectively role play (if not actually adopt) alternate personalities. Even something so basic as gender is often taken as arbitrary in virtual interactions. However, traditional narrative assumes a fairly constant personality structure among its characters. How will that plasticity of personality in virtual worlds affect the unfolding of shared narratives?

6. The rise and fall of the two minute empire. Because non-virtual communities require both physical co-location and infrastructure, their growth and development is necessarily slower than that of virtual communities. How will the shortened lifecycles of virtual communities affect the development of shared assumptions, the definition of roles, the definition of a space of actions and other pre-requisites for communally shared narratives?

7. Tradition and change in cyberspace. Tradition is an important constituent of most social narratives. Although cyberspace is almost compulsive about shunning the traditional, the old stories continue to exert their influence on it. Consider the recent film, *The Matrix*. Although it took place in an entirely virtual world, the plot was essentially the same hero story Joseph Campbell has traced back through history [8]. Exactly how will human narrative traditions both shape and be shaped by the development of virtual communities?

Conclusion

I believe that narrative will continue to play a central role in binding and organizing virtual communities. The unique nature of virtual community will not kill narrative, but it will change it. The challenge for designers and theorists of virtual community is in understanding the way virtuality will change our understanding of narrative structure, and these altered stories will, in turn, change our understanding of community, membership and what it means to be human.

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