Chapter V

Adaptive Narrative Virtual Environments

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ABSTRACT

Narratives are an important method of human-to-human communication. Combining the power of narrative with the flexibility of virtual environments (VEs) can create new and innovative opportunities in education, in entertainment, and in visualization. In this chapter, we explore the topic of narrative VEs. We describe the characteristics and benefits of narrative VEs, review related work in VEs and in computer-generated narrative, and outline components of an architecture for managing narrative VEs. We present the current status of our work developing such an architecture and conclude by discussing what the future of narrative VEs may hold.
INTRODUCTION

Storytelling is a significant method of human-to-human communication. We tell stories to share ideas, to convey emotions, and to educate. As new communication technologies have become available we have employed them in our storytelling, allowing us to reach wider audiences or to tell stories in new ways. Narratives were among the initial and most popular content types as books, radio, movies, and television were introduced to the public. VEs may provide the next technological advancement for presenting narratives. Consider the following examples.

Illustration 1

An inexperienced army specialist enters an immersive simulator in order to practice skills such as identifying and overcoming threats in an urban environment. The specialist encounters a hostile unit on Main Street, but chooses to retreat to a safe location. No longer sure of her ability to handle the hostile unit, the officer continues to explore the environment, but avoids Main Street. Aware that the specialist is no longer able to interact with the hostile unit on Main Street, the environment attempts to surprise the officer with a new hostile unit near her current location. This time she is better prepared. Rather than retreat, she engages and subdues the hostile unit.

Illustration 2

A child, nervous about an upcoming surgery, is given an opportunity to explore a virtual hospital. The child follows a patient about to undergo similar surgery, sees all the preparations that take place, and becomes familiar with the various people who are involved in the procedure. While he does not see the actual surgery take place, the environment makes sure the child notices that there are other children waiting for surgery and that they are all experiencing many of the same emotions that he is. He is reassured after his exploration — not just with his knowledge of the procedure, but that his fears and concerns are normal.

Illustration 3

A young adult begins interacting with a new mystery game set in a virtual environment. In the initial interactions, the player continually chooses to explore the environment and look for clues, rather than chase and subdue suspects. Noting the players interests, the game adjusts the plotline to emphasize puzzles rather than conflicts.
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