

# Tangible Viewpoints: A Physical Interface for Exploring Character-Driven Narratives

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## 1 Introduction

Over the centuries, stories have moved from the physical environment (around campfires and on the stage), to the printed page, then to movie, television, and computer screens. Today, using wireless and tag sensing technologies, story creators are able to bring digital stories back into our physical environment. The Tangible Viewpoints project explores how physical objects and augmented surfaces can be used as tangible embodiments of different character perspectives in a multiple point-of-view interactive narrative. These graspable surrogates provide a more direct mode of navigation to the story world, bringing us closer to bridging the gap between the separate realms of bits and atoms within the field of digital storytelling.

## 2 The Interface

The Tangible Viewpoints interface uses wireless graspable pawns to navigate through a multiple viewpoint story. Each pawn represents a particular character in the story, and when placed on the sensing surface, the story segments associated with its character's point-of-view are projected around it. A small lens-like object serves as a selection tool for viewing the story content. By gliding this selection tool over particular story segments, users can playback their associated story content on a nearby monitor. This causes the narrative to advance and new segments to become available. An aura is projected around each pawn to give a visual representation of the prominence of that character viewpoint in the current telling of the story. Changes in the story space (i.e. when the story moves forward or there is a shift in character perspective) are thus reflected by dynamic changes in the projected graphics.

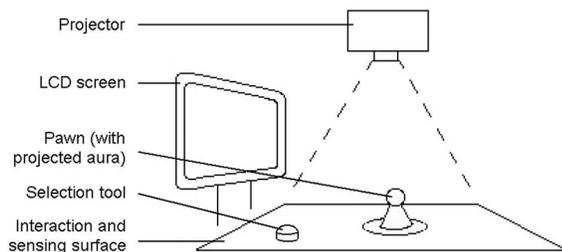


Figure 1. Diagram of the Tangible Viewpoints setup.

## 3 Story Content and Narrative Model

The Tangible Viewpoints narrative structure supports character-driven stories, in which different characters with distinct personalities and unique points-of-view are used as the primary basis for creating the narrative. The different segments of a multiple point-of-view story are organized according to the character viewpoint they represent, as well as their place in the



Figure 2. A user viewing a story in Tangible Viewpoints.

overall narrative. As the narrative unfolds, the system gathers information about which characters a user has been interacting with, and makes decisions about what segments to present based on this knowledge. If the user chooses to focus their interest on a particular character, the system narrows the story scope as it progresses, resulting in greater depth in that character's story. On the other hand, if the user spreads their focus between the three characters, the result is a much broader story.

When two pawns are touched together on the interaction surface, the system displays only the portions of story that are relevant to both characters. In this way, users can examine relationships between the characters and see how their individual stories or perspectives relate to one another.

The story segments in Tangible Viewpoints can consist of various types of media (video, audio, images, text), and as such can present character development, action and location with as much complexity as any scene of a film or chapter of a book.

## 4 Future Extensions

We have used Tangible Viewpoints for text and image-based stories (such as the example shown in Figure 2), and are now exploring the creation of an acoustic story space consisting of character dialogues, sound effects and ambient background sounds, coupled with the projection of a visual landscape onto the interaction surface. In this case, the visuals serve to give users an idea of the layout of the story's physical location. The story audio can then be mapped to different parts of the stereo field based on each pawn's position and movements on the interaction surface, creating a "soundscape" for the story that enhances the projected visual landscape.

## References

MAZALEK, A. 2001. *Tangible Interfaces for Interactive Point-of-View Narratives*. MS thesis, MIT Media Laboratory.