

(35) The Gestalt of Virtual Environments

Jacquelyn Ford Morie, Josh Williams

USC Institute for Creative Technologies, Marina Del Rey, CA, USA

morie@ict.usc.edu; williamsj@ict.usc.edu

Abstract

Our Sensory Environments Evaluation Project uses multimodal design techniques – specifically *Corroborative Detail*, *Coercive Narrative*, and an *Emotional Score* – to help steer the actions and behavior of a participant in a VR environment. Our design philosophy attempts to replicate the *human experience*, by way of its multiple senses and emotional responses, to provide an experience that “feels real”. We want such an experience to be meaningful, cohesive and memorable. We look to emotions as providing salience in both these respects and attempt to evoke them within our design methodology.

The *experience space* includes *sights*, *sounds*, and *smells* comprising the multiple sensory inputs of the *virtual environment*. The participant’s journey can be thought of as a large winding path through this space. Since a participant has free will within that space, our design techniques attempt to constrain his or her actions to those that will provide the best experience, with such constraints remaining essentially imperceptible. We make use of a transitional condition referred to as *priming*, during which the participant’s real world expectations and schemata are “allowed” into the *experience space*. Priming comes from the participant’s life experiences and is also elicited just prior to the virtual experience by the specific instructions given to the user about the VR world. Such priming serves to constrain irrelevant schemata, and becomes a “contextual filter” through which the environment is perceived.

Another technique we use is *Corroborative Detail*, minutiae such as marks of time and humanity (dust, weathering, rust, ambient sounds, smells, etc.) that substantiate believability and evoke the persistency and “feels real” quality of the world. Within our *Coercive Narrative* techniques we include *attractors* and *repulsers* to compel the path of the journey. These are psycho-physical responses as well as actions/reactions promoted both by the *priming* and the design of the world. Given the careful placement of these, the experience of the participant becomes possible to predict.

We augment the predicted emotional responses by what we term an *Emotional Score*. This includes carefully designed emotional cues - specific audio techniques that pervade the entire experience, much like a soundtrack in a film. Such cues include entrainment (synching the user’s heartbeat up to specific rhythms) and the modulations of low frequency sounds (to intensify or mediate the participant’s arousal state). Anecdotal evidence thus far suggests a high correlation of expectations with actual performance. We anticipate our findings will provide insights that will contribute to virtual worlds that more completely simulate the reality of the human experience.