# Aesthetics of Computer Games for Virtual Environments

Stefanie Toth

GMD, Sankt Augustin, Germany

Abstract. The project idea is on exploring the aesthetics in computer games for immersive virtual environments, such as CAVEs or cylindric projection systems). One aim is to investigate the impacts of technology development onto game, art, and culture and derive exploratory concepts for game and entertainment design. As a prototype, an interactive Manga installation within a CAVE or networked CAVEs is intended. Full sensory virtual experience (audio-visual, haptic and olfactory) will be implemented and evaluated during public presentations by various audience. As AVANGO - our Software framework for Virtual Environments - supports those 4-senses we would like to develop CAVE-experience together with a Japanese partner and to demonstrate this in a networked installation. We are interested in Manga, which originally emerged from the interaction of picture and comic styles of the western world and whose roots lie in the Japanese visual and perfoming arts receives continuously growing popularity among computer game users as a result of its abundance of pictures,
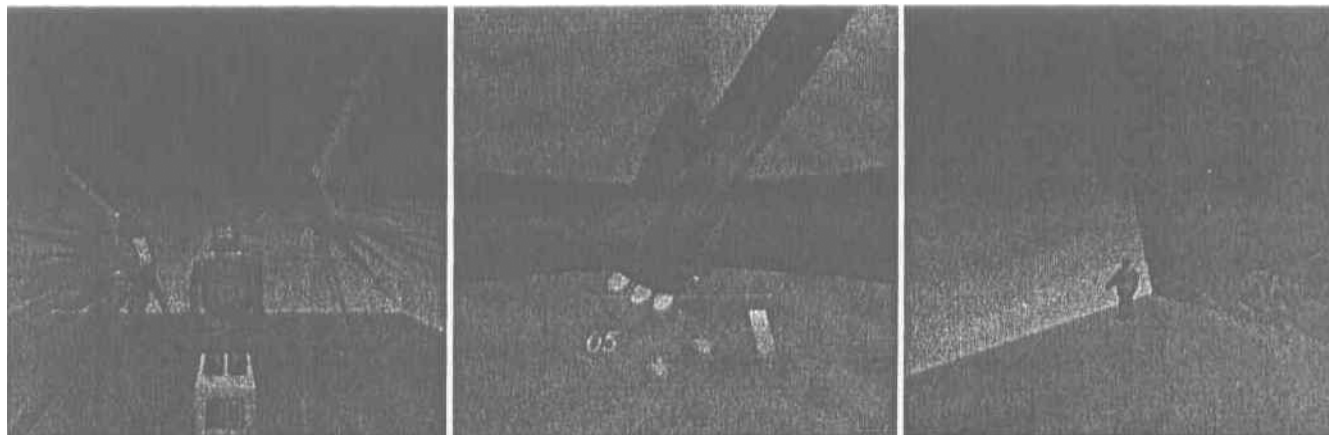
Work done so far

Interactive virtual computer game scenes were implemented for the CAVE with the software framework "Avango". The scenes deal with specific characteristics of computer game terminology in order to make them transparent for a possible further development in computer game technology as well as for the field of virtual reality. A Russian artist and a Russian programmer participated in the realization of the game scenes.

1. Robot Implosion Now

Computer games are distinguished by the special feature of their special effects. The special effects are assigned to objects whose relationship to each other determines the game. One firth of all heroes in Japanese computer games are robots which are represented a man's helper. In the interactive computer game the player has to bring the Japanese toy robot on the pedestal to life. The robot is equipped with a forward explosion and backward explosion effect. In how far the player is successful in triggering this effect and setting the robot in motion depends on navigating the interaction of the stars in the room, drawing the animals together and into themselves and representing the effect of the animals, the star in the form of waves and thereby deactivating them. If the player achieves his goal a reverse function takes place. The forward explosion splits the head of the dragon-robot open. Due to the backward explosion, implosion, the fragments compose a human head. As soon as the robot's head has turned into a human one, it leaves the pedestal in order to fold back the walls of the room and makes a crystal landscape visible.

Implementation: Burkhard Wick, Eduard Unger,
Modelling: Maria Spirko,
Sound: Markus Nikolai

2. Stell

One characteristic for the popularity of computer games is their comic-like graphic representation. In the CAVE the visitor stands opposite the comic figures with equal rights. The figures are a boy and a man with a toy submarine. The possibility of realtime morphing was realized for the scene, and was used for the comic figures facial expressions and gestures. The morphing allows a gentle interpolation motions in the key scenes. The interaction with a real toy submarine, modeled on the presentation of the comic, is integrated into the narrative sequence of the comic scene and determines the course of action. Hereby the visitor is included in the comic perfectly and his consciousness, determined by it for a short time. He is able to experience a comic-like future.

Implementation: Burkhard Wick, Eduard Unger,
Modelling: Oliver Griebl, Ivan Gonzalez-Diaz, Jeremy Eccles,
Sound: Steve Stitt - Gyration
Records, Voices: Harmony Eccles, Jeremy Eccles,
Model-making: Christian, Kohli

Shown at the opening of Media Theatre ANIMAX, Bonn-Bad Godesberg, July 1999

draft Work packages

1. Designs for interactive, virtual computer game scenes are based on the Manga-aesthetic together with the Japanese artist and Manga-drawer Shinya Tsuji

2. 3-D modeling and implementation of the designs for the virtual environment Cave with innovative interaction possibilities in order to set up a library, integrated in the software-framework "Avango" for the development of interactive virtual computer game scenes.

3. Sound design oriented to an area of "computer game music" that is expected to come into being together with the Japanese artist and musician Mikiko Yui.

4. Research for presentation possibilities of interactive virtual computer games in the public eye in order to make virtual reality accessible for a wider majority. The aim is the comparison and collaboration between computer game companies and classical exhibition forms such as museums or galleries.
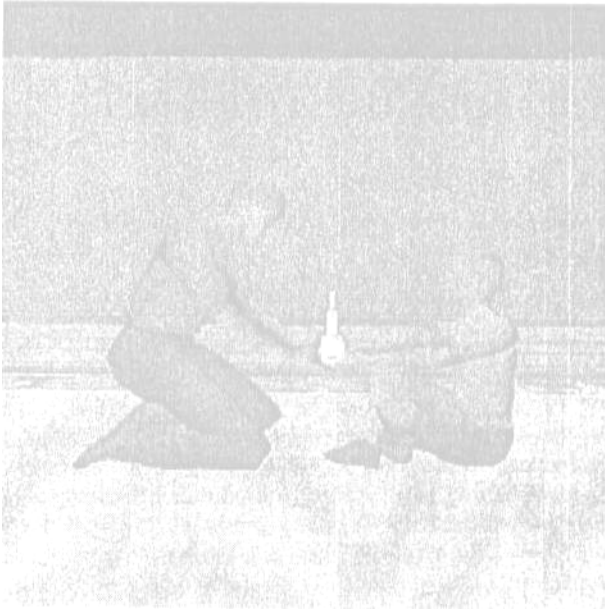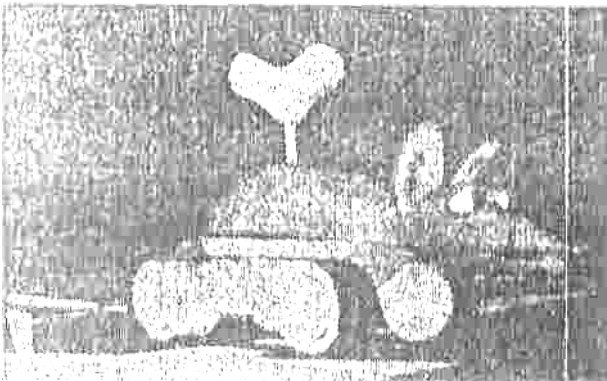
3. Insect:Mouse

In the computer game objects are assigned to character roles. In the interactive computer game scenes the characteristics of a windup robot mouse and a wooden table are represented in different relationships to each other and thereby determine the course of the game with constantly new scenes. In the computer game scene Mouse, the mouse runs across the table which explodes behind it only to reappear undamaged in front of it. After this has happened repeatedly there is a piece of cheese on the table. The mouse stops. The mouse eats the cheese of death and now explodes instead of the table.

Implementation: Burkhard Wick, Eduard Unger, *Modelling*: Oliver Griebl, Ivan Gonzalez Diaz, *Voice:* Burkhard Wick

Shown at the opening 6-side-CAVE, Science Park NOVI, University of Aalborg, Denmark, August 1999