MOVE

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1. Concept

MOVE is an interactive installation divided into six distinct modules, JUMP, AVOID, CHASE, THROW, HIDE and COLLECT. Each module offers a single-user interaction, based on a verb corresponding to the action the participant is invited to perform. Each verb corresponds to a common procedure acted out by avatars during videogame play. Each module offers an interaction with abstracted shapes (circles, rectangles) behaving according to simplified rules of physics (collision, friction). Each module is color-coded with consistency, where the color red is used for the graphical element that poses the core challenge Each module increases difficulty in a similar linear manner.

What makes MOVE unusual is that unlike most computer vision or sensor based games like Eye-toy or Dance Dance Revolution, the participant IS the avatar, he is not seeing a representation of herself or an indirect result of her actions on a separate screen but instead interacts directly with the projected graphical constituents of the game. Because those graphical elements are non-representational they do not allow for a projection in a fictional space. The combination of abstracted shapes and direct interaction reinforces in the player the focus on the action itself (JUMP, AVOID, CHASE, THROW, HIDE or COLLECT) instead of an ulterior goal.

Figure 1: JUMP

2. Setting

MOVE requires a darkened room in a gallery-type setting. When visitors approach the installation, they see a projection on the floor. The projection displays MOVE's 'menu', which consists of an animation that alternatively shows one of the geometrically distinct shape representing each of the modules. Each shape is 3x2 feet and fades in slowly until it reaches a middle-tone grey color, pauses for a second, and then fades out, replaced by the next module. The menu keeps animating until a visitor walks on top of the projected shape. As soon as the presence of the participant standing above the projection is detected, the shape extends to its full size (10x8 feet), turns to solid white, the other graphical elements required for the interaction appear and the interaction with the module can start. The interaction lasts as long as the participant is able to prevent collision with the opposing graphical element. If the participant loses, a distinct sound, common to all the modules, signals the end of the game, the graphical elements disappear, the shape turns from white to red, decreases back to its menu size, and the menu animation starts again, displaying the next module.

Interaction with one module does not affect in any way interaction with the other modules. There is no scoring system, and no progression from one module to the next. Since there is no way of winning, or beating the system, there is no reward except for the amount of time one is able to sustain interaction with a given module.

3. Technology

MOVE uses a camera vision detection system as an interface. A camera is rigged up on the ceiling of the gallery facing downward. The camera is connected to a computer, which is connected to a projector. The projector is installed on the ceiling horizontally and has a mirror in front of it at a 45-degree angle. The image is reflected from the projector on to the mirror and projected on the floor of the gallery at a 90-degree angle.

When a participant is standing above the projection, the camera vision script from the software application compares the video data it receives from the camera with a snapshot of video data taken when nobody was above the projection. The script compares the data and assumes that the color differences between the two frames correspond to the presence of a participant. That data is then processed through algorithms that locate the center of the shape corresponding to the body of the participant. These coordinates (x and y on a 2D plane) are then run through collision detection scripts and allow for interaction between the participant and the graphical animated shapes displayed on the projected image.