

"Menagerie": VR Boom Exhibit

Michael Girard and Susan Amkraut

Artistic Concept

When we began our design of "Menagerie", we wanted to create a playful virtual world that was dynamically alive and interactively confrontational. From the start, we abandoned the notion of creating a static database that the user must navigate through. Our world would be capable of dynamically reconfiguring itself around the participant as a sequence of encounters, rather than a fixed piece of architecture to be explored.

The central elements of the encounters in "Menagerie" are behavioral simulations of abstracted animal forms. Five different species of animals enter and exit the visible space through "portholes" and "doorways" that materialize nearby the user as she/he roams the infinite ground plane beneath. The animals appear to come from an invisible world behind the doors, beyond the virtual world explored by the user. Menagerie is structured as a series of events comprised of different combinations of animals that emerge and interact with the user according to varying behavioral scenarios.

In these scenarios, we try to capture the sense of mystery one has when confronted with a creature of a different species that one can not fully understand. The user must approach and examine the animals to determine their behavior. Through interaction, the character of the animals is revealed. For example, in one event, as the user moves toward a group of birds gathered on the ground, they take off and land at a slightly further location, baiting the user to advance again, eventually disappearing into a porthole that closes as the last bird flies in. In another event, "pigs" trot in an enclosed arena. If the user gets too close to a pig, he will bolt and run away, changing gaits into a gallop as he is being chased.

We were able to introduce a formal temporal structure over Menagerie by varying the rhythm and pacing of interactive events, punctuated by the appearance of doors and portholes. Ten basic types of scenarios were employed, each lasting between 10 seconds to 2 minutes (in part, depending on the interactive movements of the user). These ten were repeated three times, each with different animals in different roles, resulting in thirty unique interactive events. The events were ordered to build a heightened sense of drama and tension.

Although the user is always free to move in the virtual 3D space, we discovered that we could impose limits on what could be seen by gradually altering the viewer's speed during different parts of an event. For instance, when an event ends, we sometimes slow the user's pace. This forces the user to see animals disappearing through a door in the distance, creating a sense of completion of the event. Some events are meant to be experienced close up. The viewer is allowed to approach and be engulfed in a swarm of insects. Other events, such as a quick passage of two antelopes between two doors, should be viewed at a distance, forcing the viewer to sense the vastness of the surrounding space, and to see the grace of the animals bounding along the horizon. Thus, we were able to subtly impose a "film language" over Menagerie by placing some boundaries on the viewer's speed of movement.

In our computer simulations of legged and flying animals, the geometric representations are deliberately designed to be simple in order to emphasize the integrity and grace of the simulated motion of the animals, rather than the details of their appearance. For us, the essential expression is in the abstraction of the motion, and what it suggests to the imagination of the viewer.