BodySpin

The use of virtual reality scenarios and situations for research on the public individual has previously been inappropriate due to architectural problems. SPIN overcomes several such limitations. BodySpin *is an environment designed to investigate the actions and reactions of the public individual in a virtual space that has an abstract physics following their internal biomechanical state.*

Virtual Situationism—Situated Virtuality

The body as the focus of everything. Developing systems for creating experimental situations for the public individual has been about situating the body in an environment in which the individual can act and which acts upon the individual. The expression *Real Virtuality* has been used, the spaces created were so far removed from what one imagines as normal, the ways in which the space and the objects operated and interrelated were so far removed from everyday experience, that it was referred to as a virtuality—only it was real.

The creation of such spaces / environments is a tedious and difficult task and is, moreover, limited by the elementary facts of physics—gravity, vibration, wear and tear. We needed to reduce the surrounds to their elementary Platonic forms, perfect spheres hanging in space under the control of the physics of our choice. We wanted immersion, yet freedom of movement, whole body control and surround perception. A form of experience not possible in any of the available virtual reality contexts that we were aware of. So we built our own.

SPIN (Spherical Projection INterface)

SPIN, the Spherical Projection Interface, is a trackball three metres in diameter that one walks inside. As the trackball rotates beneath your feet, the motion is taken over to a virtual space and projections of it are cast upon the translucent walls of the ball. The effect is one of taking a stroll inside the virtual space. There is no forward, there are no goggles or other impediments, freedom of movement sets SPIN apart from other interfaces. The rolling motion is used to control navigation in a virtual space—the expression walk-through obtains real meaning at last.

Placing the body within the rotationally symmetric space of the SPIN, the public individual perforates the membrane and becomes singularly immersed. This degree of immersion allows us to investigate the behaviour of the public individual in ways that have been impossible to date.

Once inside SPIN the user is caught in the IRS.

The Inverted Reality System

The IRS allows us to deal with the virtual environments in a new way, one that is neither a mere copy or simulation of a current or planned (but too expensive to implement) real space, nor an artistically well painted maze of tunnels, rooms, etc.

In its essence the SPIN's Users find themselves inside a large wireframe sphere that has the center of gravity pointing outward, as if caused by centrifugal force. This sphere surface replaces the usual flat groundplane of VR worlds. Inside and on the surface of this sphere the worlds are created according to the users' preconditions.

The IRS also allows for an ideal implementation of a multi SPIN environment with more than one SPIN facing each other from different sectors of the sphere. Since the users can always see across the inner space of the sphere to the other side, as one

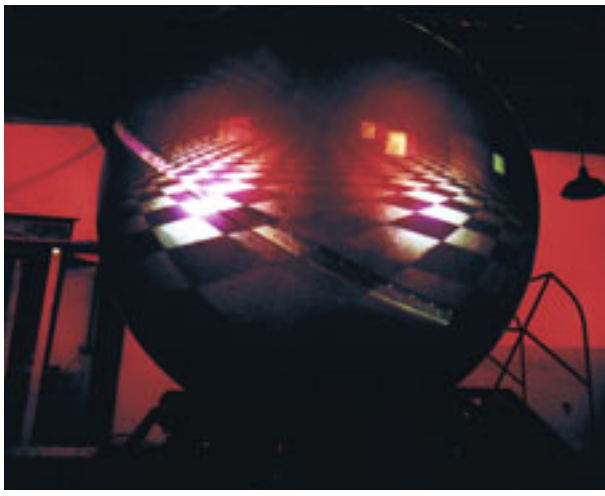

Foto: Otto Saxinger

would in a spinning recreational space station, the users can more likely see their colleague in another SPIN. Thus we increase the likelihood and depth of interrelation.

Biomechanics and Wireframe Physics

We are not replacing the world—the surround experience here is seamless yet the world is obviously unreal, wireframe objects with Tron physics. The unit ball, the individual in a ball that rolls inside another ball, the world ball yet inverted like some kind of (Ruckerian / Thulian / esoteric) Hollow Earth. The image of the sphere in which the individuals find themselves fades from memory quickly, the immersion takes over.

We break another smooth surface with this project. As we know, the biomechanical unit is bounded—it has a surface skin, or other defining limitations.[1] We break this barrier with noninvasive probes, light reflection and brainwave detection, to determine certain biophysical responses to the situation. And this reaction is turned back toward the individuals in the SPIN situation by immersing them in a world that is a reflection, a further representation, of their own internal state. Not only a biofeedback modulated audio frequency or flashing lights entrainment, but the inner state of the unit is translated to the properties and propensities of the surrounding world.

In Short

Body Spin aims at researching behavourial patterns in a simulated environment that incorporates the user's body rather than trying to overcome it. The research focus lies not only in the consequences of a VR-System on the user's body, but moreover in the influence of our physical presence on the parameters of such a system and its feedback upon the body (loop).

If, in the process of investigating this, we need to invent new hardware, then so be it.

Bibliography

1 "... we developed the idea of the biomechanical unit as an analogy and as an extension to H.R. Maturana and F.J.Varela's ideas of the autopoietic unit ... a special case. [The unit requires] the necessary existence of a border, an edge, a distinction between what is in what is not in the unit. Examples vary from single celled creatures or virii to the planet with the outer edge of its atmosphere as its border. ... it is often worthwhile to include other objects in a biomechanical unit of interest; the car-driver system or the television-viewer system taken as a whole." p.20 in "Closing the Loop 98 Laboratory Reports." Edition Time's Up, 1999.

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