

Experiences on the Boundaries: Screens In Between

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Screen as a boundary object

The ontological condition of the screen is “in-between” several boundaries: the boundary between space and time, virtual and real, immersion and rejection in the sense of similarity and difference. By re-categorizing, connecting and blurring these existential boundaries around the screen, the approaches described here form two kinds of screen experiences: three-dimensional screens in video installations, and ‘movable’ screens in real-time video and sound installations. In both, the viewer becomes a critical element in creating the ‘in-between’ screen, because viewers are not only a subject in screen experiences, but also can be a physical conduit combining the separate elements around the screen. In three-dimensional screens, as viewers move around in the physical space that is surrounded by the video imagery, viewers are enveloped in the video image and their existence itself bridges these two spaces. In movable screens, the viewer’s response to the work system and the system’s response to the viewer, structure the screen experience and function to connect and blur the boundaries. From three-dimensional screens to movable screens, as the viewer’s reaction to the work has changed, the function and condition of their response has also changed from meditative and serene in static screens to participatory in interactive screens.

Screens in-between

Three-dimensional screens

Three-dimensional video screens combine video images with a 3D sculpture or an architectural size environmental structure. The physical structure functions not only as a surface for video projection, but as a three-dimensional

shape and space inviting audiences to enter in. “Fire-recognition of fire” simulates fire simply by moving from a two-dimensional screen to a four-sided pyramid screen. Looping video images of a fire burning furiously down to ashes are projected on this pyramid from three different directions. In front of this work, some viewers held out their hands as if they felt heat from this virtual campfire. These audience reactions led me to question the relationship of the virtual and physical worlds, and the way in which viewers experience and identify with a work. Architectural screens expand the concept of sculptural screens from the object alone, to an environment that invites viewers to walk around inside the space of the screen. In “WaterFall I” and “WaterFall II,” hundreds of paper boxes and seven tons of newspapers are stacked to compose a valley. At the center, boxes are piled to form a stair-shaped screen and waterfall videos are projected onto it with sounds of falling water. When they stand in front of the waterfall, viewers feel like the water is flowing towards them due to the illusion created by the 3D screen. In “the Willow Tree,” the tree leaves are substituted with thousands of fabric ribbons suspended from the ceiling. The sunlight and greenery of wind-blown leaves are captured in video and projected onto the ribbons, and the breeze I felt on a hill as a child is replaced with light wind from fans hidden under the ceiling. The fans provide a wind-blown feeling that complements the visual scene of dancing ribbons. With the ambient sounds of locusts singing, the virtually reproduced willow tree in the gallery entices viewers to come walk around underneath and inside the physical/virtual space of the willow tree and appreciate it while recalling their own memories and experiences of nature.



"Fire – recognition of fire", 1998 (top/left), "WaterFall I", 1999 (top/middle & right),
 "the Willow tree", 2000 (bottom/left), "WaterFall II", 2000 (bottom/right)

In these works, the dual space and time of virtual and real co-exist simultaneously, and a viewer's existence inside the virtual imagery can be a metaphor for this connection. Later, I wondered what would happen if the virtual imagery can "re-act" to the viewer's reaction. If artworks allow "interactivity", how will the relationship of virtual and real be mixed? If the viewer's physical action can be included in the virtual imagery and trigger some events in the virtual space, will it promote the concept of 'in-between' screen even further?

Movable Screens

The idea of "movable screens" emerged while creating a single-channel video titled "Corresponding". In this work, several layers of corresponding relationships are created, and as a result, their spaces are intertwined through distorted images that occur through the physical movement of the screen. In interactive works, the "movable screen" provides a method for integrating interactivity between the work and its viewers, while emphasizing the connection of virtual and real through



"A BeadBall Table", 2003 (left), "Cross-Being-Todd: a tilting table", 2004 (middle), "Cross-Being-Dancers (Spinning Screen)", 2004-2008 (right)

the screen. Spatially the movable screen stands in the physical space where viewers are located. When viewers move the screen, virtual images follow, reacting to the physical movement of the screen. This encourages viewers to feel as if they control and interact with the virtual imagery.

In the interactive video and sound installation "A BeadBall Table," a tilt-able table with a flat video projection screen defines the physical screen. In this work, real world gravity is applied to the virtual world. Following the viewer's physical manipulation of the horizontal side of the tabletop, virtual video balls projected on the screen roll toward the lowest corner based on the degree and direction of tilt, also generating corresponding sounds. Adjusting the projection to parallel the movement of the tabletop was a technical challenge, so the imagery projected from a fixed point onto a tilting tabletop distorts the image seen on the tabletop screen. However, some viewers felt this distortion revealed the poetics of virtual and real worlds. In another tilting screen work, "Cross-Being: Todd," a human character in the video, Todd, moves around on the screen. Todd is designed to wait until the first audience member comes. If an audience member touches and tilts the tabletop in any direction, he slides toward the leaning corner of the screen. Since Todd's movements are very diverse, the real-time video requires more complicated

manipulation. To support this, several stacks of video sequences are stored in sixteen grid locations around the screen. Each time Todd moves to that location, the computer randomly chooses to display one of those sequences. "Cross-being" metaphorically represents the living subject in the virtual world. Thus, Todd's expression is elaborately embedded in order to make him human and lively. If nobody touches the table for a while, he gets bored waiting for users. If the user shakes the table for a long while, Todd becomes exhausted and angry. Mechanically, a spring is used for the tabletop joint to convey its resiliency and elasticity. Therefore, the tabletop automatically returns to the center after users stop tilting it. "Cross-being: Dancers (Spinning Screen)" was also created with a similar idea, but in this case the screen is 'spin-able' by the viewer's touch. Based on the spinning direction and speed of the screen, the displayed video dancer spins along: if the monitor turns, she turns as well and if the monitor stops, she also stops her motion. As such, the physical action of the screen can be transferred to the virtual imagery in real time. Also, slow turns allow the viewer to look at the detailed motion of the spinning dancer. Inspired by toy music boxes in which a ballet dancer on a plate turns as the spring unwinds, this work was created as an interactive optical toy in which a miniature character living inside the virtual world reacts to the users outside.