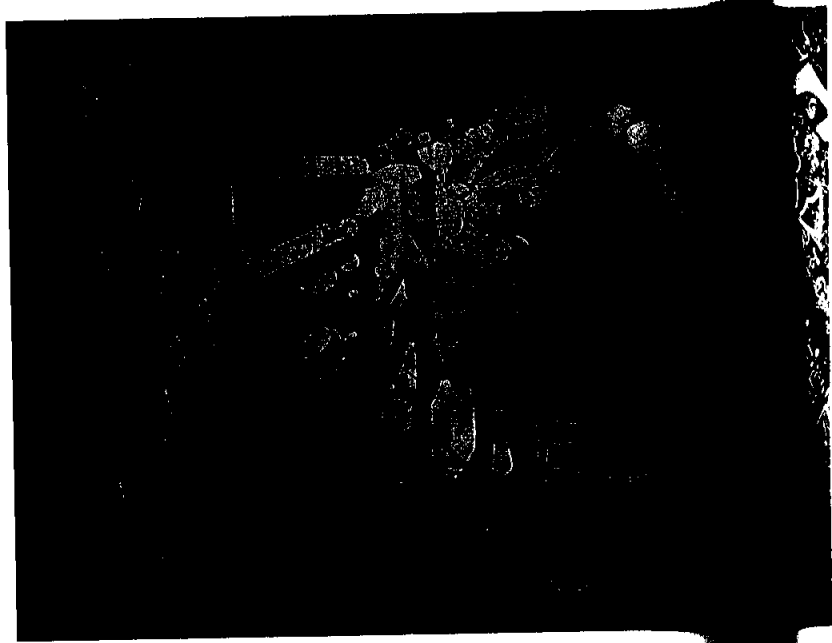


# Agnes Hegedüs, Bernd Lintermann, Jeffrey Shaw reconFiguring the CAVE

1997-2001

computer-based interactive video installation /  
music: Leslie Stuck / motion analysis for music:  
Jonathan Bachrach



## Considering *conFiguring the CAVE*

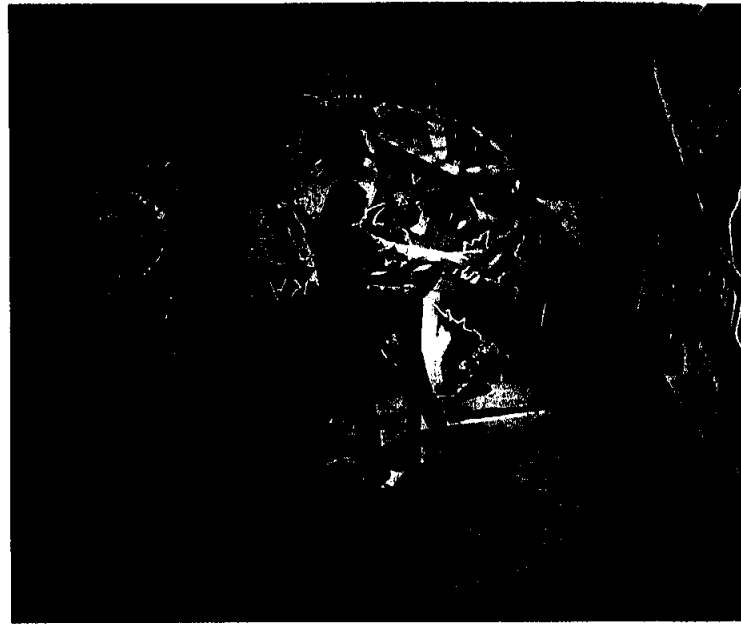
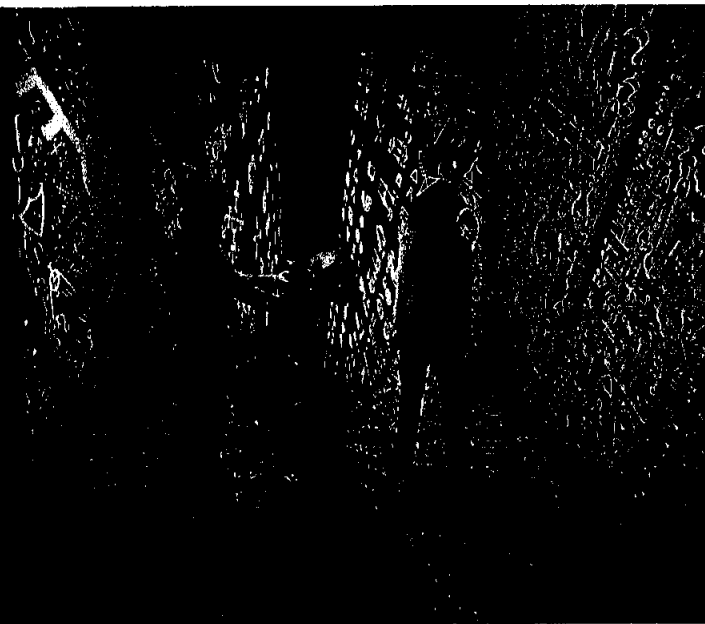
"See human beings as though they were in an underground cave-like dwelling with its entrance, a long one, open to the light across the whole width of the cave. They are in it from childhood with their legs and necks in bonds so that they are fixed, seeing only in front of them ... Their light is from a fire burning far above and behind them. Between the fire and the prisoners there is a road above, along which we see a wall, built like the partitions puppet-handlers set in front of the human beings and over which they show the puppets ... Then also see along this wall human beings carrying all sorts of artifacts, which project above the wall, and statues of men and other animals wrought from stone, wood, and every kind of material; as is to be expected ... Do you suppose such men would have seen anything of themselves and one another other than the shadows cast by the fire on the side of the cave facing them? ... Such men would hold that the truth is nothing other than the shadows of artificial things."<sup>1</sup>

A vision of future cinema, guided by a puppet, emerges at the interstice of teleological shadows, mimetic urgency, and historical materialism in *conFiguring the CAVE*.<sup>2</sup> One navigates a near life-size wooden puppet/mannequin situated in the center of the cave through visual and auditory sequences in an immersive computer-based interactive video installation. Fitted with electronic measurement devices embedded in its moveable joints, the puppet enables interaction with the transformations of the computer-generated images and sounds.<sup>3</sup> Participants enter

<sup>1</sup> Plato, *The Republic*, Book VII

<sup>2</sup> *conFiguring the CAVE* was retitled *reconFiguring the CAVE* for the exhibition "Future Cinema." Only two large projection surfaces were used, and the puppet was replaced with an LCD touchscreen as the primary interface. *reconFiguring the CAVE* was produced by Boctak Tokyo and David D'Heilly at the ZKM Karlsruhe Collection of the NTT InterCommunication Center, Tokyo, Japan.

<sup>3</sup> The Fraunhofer Institute in Stuttgart engineered the user interface.



the stage of production as puppet-handlers. These auteurs, apparently in control of the work, recall the automaton "puppet in Turkish attire and with a hookah in its mouth" described by Walter Benjamin in his "Theses on the Philosophy of History," the last text written before his suicide in 1940. There the puppet counters every move of an opponent in a chess game aided by a system of mirrors that camouflage the chess table under which hides "a little hunchback ... guid[ing] the puppet's hand by means of strings." The hunchbacks shaping the master narrative of *conFiguring the CAVE* and predetermining its imagery are Agnes Hegedüs, Bernd Lintermann and Jeffrey Shaw; Leslie Stuck composed the sound; and Bernd Lintermann developed the Xfrog software architecture that enables the dynamic of movement and image transformations modulated by the puppet user interface. The artists envision the work as "a mediated environment of functional relationships between bodily and spatial coordinates [that] refers to the long history in all cultures of conjecturing the body as the locus and measure of the universe, [and that is engaged] in a post-modern exigency which has dislocated the body in a vertiginous space of deconstructed coordinates and equivocal complexity."<sup>4</sup> As "a meta-discourse ... both separated from and connected to historical configurations," the discourse of *conFiguring the CAVE* is multivalent. Merging esoteric traditions with advanced technology, contemporary theory, and philosophy, it also recalls Benjamin's notion that the "philosophical counterpart" (to his story of puppet and hunchback) is "historical materialism," which "wins," especially by enlisting the services of a "wizened" theology in hiding.<sup>5</sup> Benjamin's meditation

on the messianic function in history asserts (through negation) the continued relevance of theological perspectives in historical materialism, a position with which *conFiguring the CAVE* seems to concur.

The system that organizes access to the work is configured in seven separate rich and intellectually dense domains that suture history and technology to theological content, especially in its affinities to Jewish mysticism and Kabbalah. Seven is a sacred number central to most esoteric traditions, a legacy preserved in the profane notion of the "lucky 7." Among hundreds of symbolic attributes of the number are the following. Seven appears in the divine organizational structures of ancient Egypt, Phœnicia, and Persia, in Judeo-Christian tradition and in Buddhism where, for example, the idea of seven stages of progressive development of the disembodied soul is allegorized in pagoda architecture.<sup>6</sup> Seven acts of creation structure the beginning of the world in the Old Testament. The original seven ancient planets served as the model for early divisions of states. Numerous units of seven divide configurations of stars (i.e., Septentrion). A contract with the devil was said to contain seven paragraphs, would conclude in seven years, and was signed by the contractor seven times. Legendary wars lasted seven years, seven months, and seven days. Seven in the Old Testament signifies wisdom (Proverbs 9:1). Seven days conclude Passover and seven branches define the menorah.

Each of the seven domains of *conFiguring the CAVE* is distinctive. In Domain One, a constellation of cubic and rectangular forms moves about in a complex organic symmetry. Interaction with the puppet causes them to enter the CAVE and fish-eye


*conFiguring the CAVE*  
1996  
computer-based interactive  
video installation  
installation views:  
ICC Tokyo, 1997  
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4. Space limitations have prevented me from discussing the relationships between imagery and sound in *conFiguring the CAVE*. But Stuck created seven sound compositions for the seven pictorial domains via an eight-channel spatialized-sound system that augments the three-dimensional qualities of the stereoscopic visual environment. The sound compositions, like the imagery, are interactively affected by the viewer's handling of the interface (the puppet's body and limbs) which contributes to the synchronous unity of visual and audio transformations, as well as to the overall syncretic but singularly of the work. Jonathan Bachrach developed the motion analysis for the music.

5. Agnes Hegedüs, Bernd Lintermann, Jeffrey Shaw, Leslie Stuck, handbook for *conFiguring the CAVE*, 1997.

6. Walter Benjamin, "Theses on the Philosophy of History," in *Illuminations*, "A Hunchback Books, New York, 1969, p. 253.

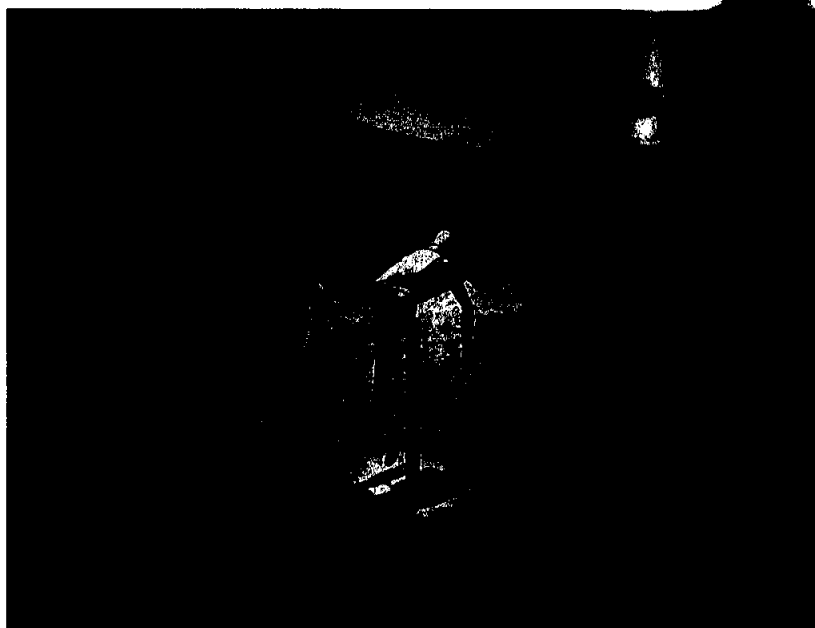
7. Among other sources, I drew on D.P. Blavatsky's article "The Number Seven" [*Theosophical Forum* 1900] for many of these references. <http://www.blavatsky.com/blavatsky/06/numberSeven.htm>



*Portrait of the Artist*  
1997 (2011)

Installation view of  
the exhibition at the  
Museum of Contemporary Art,  
Chicago, 2011. Photo by  
Jeffrey M. Katz





photographs on their surfaces must signify sight, as much as the long rectangular rods that saturate the space with colors suggest the origins of insight. In Domain Two, multi-layered walls of changing texts, alphabetic characters and hieroglyphics constitute the virtual architecture of a universal matrix of languages and information. On the floor of the CAVE, a circular representation of an ancient Chinese rubbing-stone carved with text appears in the spherical environment of an Hebraic astrological map. Movements of the puppet's body and limbs change the graphical contents and shift the positions of the text planes. Tilting the puppet completely upside-down causes a vortex of alphabetic signs. At other times one is immersed in a visually stunning space, effecting initiation into the origins of language or a tomb of shattered words, an exploded Tower of Babel.

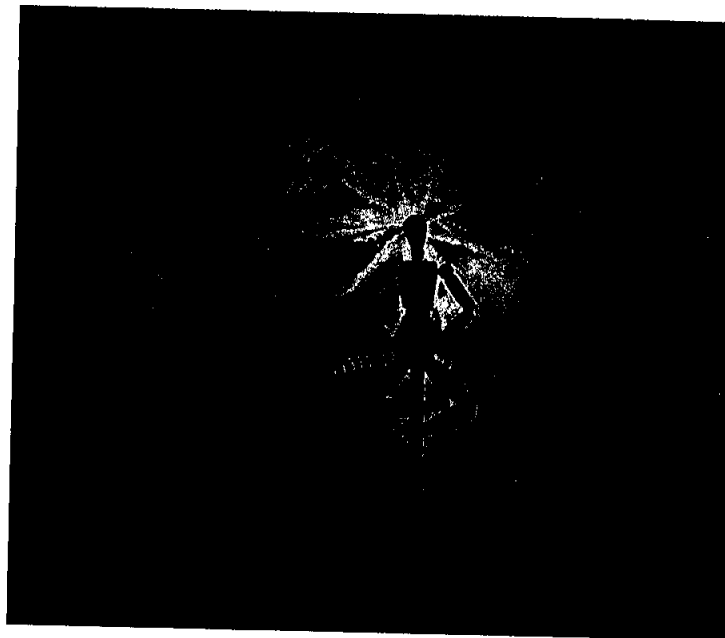
Positioning of the puppet's limbs in Domain Three determines the symmetry and movement of five Platonic geometric solids that continuously move through the cave against an environment constituted by three large, slowly rotating, concentric spheres. One depicts a satellite picture of Earth with the continents transformed into cloud formations. Another shows an astrological map of heavenly bodies. The innermost displays André Breton's Surrealist map of the world. Art historical references such as this abound in Domain Seven, where dabs of paint dart about recalling action painting, now programmed by a flocking algorithm. The blue refers directly to International Klein Blue, the color that the French painter created as part of his effort to depict the infinite. The Klein quotations summon his affiliation with Rose+Croix and Theosophy and reinforce the subtle esoteric aspects of Kabbalah, Gnosticism, and pan-

theistic occult practices throughout the work. Together with spiraling algorithmically generated monochromatic shapes (metaphors for forms in early abstract animated films), the lucid art historical references summarize paths to aesthetic knowledge. Even the contemporary art world surfaces in Domain Four, where media-art personalities appear in a panoramic photographic background. That domain also reinforces the aesthetic and art-historical motifs in circling clusters of line drawings representing hands that morph through a variety of gestures and a virtual hand-shadow play performed on the cave's rear wall.

The gender of the slender puppet, while ostensibly androgenous, may be read as female, situating *Figuring the CAVE* in an androcentric metaphysics. Indeed, the Jewish mysticism foundational to the work reveals itself to belong to what Gershom Scholem has described as "a masculine doctrine ... both historically and metaphysically." The fifth domain exacerbates this patriarchy by dividing the space into two overlapping image planes: a three-dimensional satellite photograph of the geographical area around Hiroshima and a Daguerreotype of two naked women. A figure of positive and negative connotation, the puppet-muse guides participants through the cave, while being metonymically connected to "the Other Side, the realm of impurity and evil" by the conflation of her body with the geography of mass destruction. Feminists have long deconstructed the relegation of the female body to nature (rather than culture) and have theorized about the appropriation of the muse and female procreativity for male creativity.

Moreover, tilting the body of the puppet between its vertical and horizontal axis causes the nudes to

<sup>11</sup> J.H. Lamm, *Jewish Mysticism: An Introduction*, Westminster, John Knox Press, Louisville, 2001, p. 139.



move up and down in erotic ways, becoming alternately the topography of the earth and the field of the firmament. The work is also tinged with the erotic clasping of a responsive and submissive body, however much it is only a wooden shadow of narcissism, the inability to engage the truth of bodies, and the deconstruction of the body. A vicariously sinister aspect of the pleasure and wonder experienced by steering the puppet occurs when someone else manipulates the figure. Viewing from a distance, craving metamorphoses into aversion, scopophilic appetite becomes foreboding. Capturing the gaze and dislodging viewers from their intimate interconnection renders the puppet a mere thing, an object all too reminiscent of Surrealist Hans Bellmer's tortured dolls. Indeed, the simultaneous act of participating in and viewing the actual corporeal scene activates codes of desire operating (but ordinarily sublimated) in conventional cinema. The administration of the puppet exposes the affect of appetite and repulsion fundamental to the fetishism of viewing. But in this future cinema, complicity circles back to self-incrimination.

Plato's cave is most directly invoked in Domain Six, where the environment becomes engulfed in flames and a virtual mirror image of the puppet emulates its movements and casts more shadows of shadows. Thus does the machinery of mirroring, characterizing conventional cinema, survive in future cinema in the shadow-filled simulacra of the high-resolution, real-time, computer-generated stereoscopic images of the CAVE.<sup>9</sup> Seven symbolic objects whirl through the flames: a menorah, a compass, a camera, a gyroscope, a child's wooden cart, a blue sponge, and a cube on whose sides appear six classical images of the "harmonious" human figure by Leonardo da Vinci. Folding

the puppet's limbs converges objects on the mirrored puppet's body, suggesting the corporeal origins of religion, science, visual technologies, planetary movement, narratives of learning, knowledge, play, geology, art, and mathematics. An intoxicating moment in the generative interaction occurs when *conFiguring the CAVE* is filled with fractal shapes washed in blue, reinforcing mystic Rabbi Moses Cordovero's invocation to, "Imitate your creator. Then you will enter the mystery of the supernal form, the divine image in which you were created."<sup>10</sup>

Locating sight in a simulacrum where technology exacerbates platonic phantoms, *conFiguring the CAVE* unleashes a multidimensional world of the body, its objects and ideas. The work insists on the unity of historical knowledge and visionary insight in its hybrid combination of theory and theology, themes found also in Benjamin's work. But rather than neutralize their significance (or the messianic elements in both Benjamin's work and *conFiguring the CAVE*), they energize each another. Benjamin understood this radicalism,<sup>11</sup> writing in his last letter to Gershom Scholem on 11 January 1940: "Every line we succeed in publishing today – no matter how uncertain the future to which we entrust it – is a victory wrenched from the powers of darkness."<sup>12</sup> In a militarized period in which world instability is comparable to that in 1940, a work like *conFiguring the CAVE* may be understood as a model of future cinema. In it art empowers a context for meditation on and interaction with vital and contested configurations of our time – history, divine and secular knowledge, and the body – even as the realms of their truths pass ever more into shadows.

Kristine Stiles

*conFiguring the CAVE*  
1997

computer-based interactive  
video installation  
installation views  
ICC Tokyo, 1997  
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<sup>9</sup> This unique form of virtual reality environment was developed by Dan Gaudin and his team of the Electronic Visualization Lab at the University of Illinois.

<sup>10</sup> Rabbi Moses Cordovero, *The Palm Tree of David*, quoted in Dan U. Feldman, *Fundamental Acts of Jewish Mysticism and Kabbalah*, Crossing Press, London, California, 1999, p. 19.

<sup>11</sup> For a discussion of the energizing and codifying elements in Benjamin's work, see Lloyd Spencer, "On the Concept of History: Some of the Background to Benjamin's 'Theses,'" <http://www.ucs.csi.cu.edu/~depart/media/sal/17/s/WBenjamin/100313.html>

<sup>12</sup> *The Correspondence of Walter Benjamin and Gershom Scholem 1932-1940*, Gershom Scholem (ed.), Schocken Books, New York, 1989, p. 262.