How, then, can I translate into words the limitless Aleph, which my floundering mind can scarcely encompass?

In that single gigantic instant I saw millions of acts both delightful and awful; not one of them occupied the same point in space, without overlapping and transparency. What my eyes beheld was simultaneous, but what I shall now write down will be successive, because language is successive.

Jorge Luis Borges, "The Aleph" (1945)

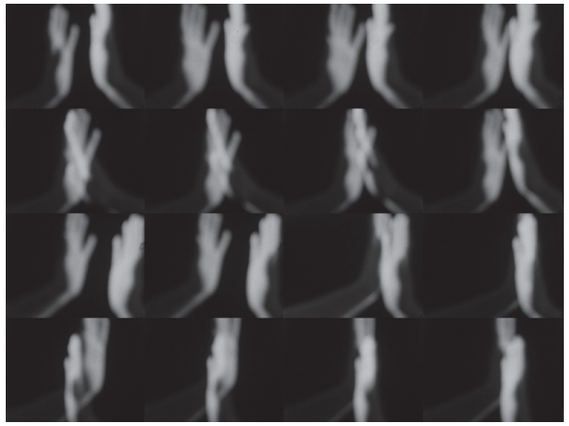
Borges' well-known short story "The Aleph" is narrated with the awareness that language, like images themselves, falls short of experiences that lie on the other side of conscious perception. Surrounded by utter darkness, the narrator gazes into the Aleph, a small sphere in space that allows him to see all things in the universe from all angles simultaneously.[1] He describes his experience of the Aleph in great detail, yet at the end of the story, he questions whether he actually experienced it, whether he truly *saw*.

At the crux of Danish artist Emil Salto's practice is the tension between a desire for direct experience and a yearning to perceive what is beyond its grasp. As such, stories like "The Aleph" that center on the myth of the portal are of great interest to him. In his personal archive, he collects found images and videos of mystical geometric forms, mirrors, and portals, as well as literature on nineteenth-century spiritism and philosophy, space-time theories, and occultism, which address the notion of "universes," parallel to our own physical world. His body of work from the last decade can be seen as an inquiry into "hidden matter," and the higher level of consciousness often perceived to give access to it.[2] But his investigation is first and foremost intuitive: anchored in and guided by the physicality of his own body, at work in the artistic process.

1 Jorge Luis Borges, "The Aleph" (1945). Available at: http://www.phinnweb.org/links/literature/borges/aleph.html. Accessed December 11, 2010.

2 See, for example, the artist book 8 *and Other* (Space Poetry, 2008), an exploration of mystical interpretations of the numbers one through eight.

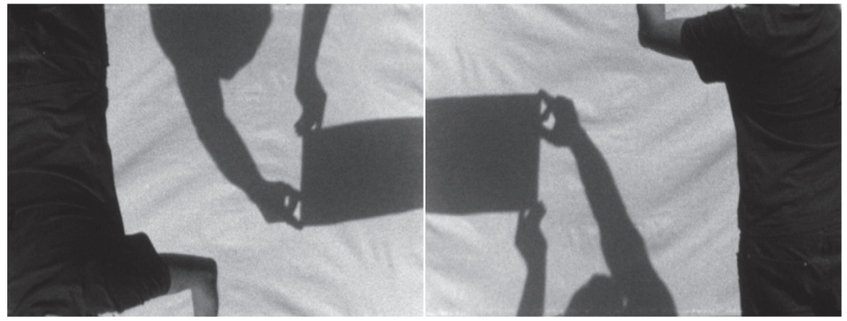
Stills from *Hands,* 2011, 8mm black & white film transferred to DVD, silent, dimensions variable, dur. 7 min. loop.



The myth of the portal is linked, for Salto, with notions of time and space that challenge our limited understanding of time and of ourselves as temporal beings.[3] He grounds his inquiry in the material and temporal properties of his media of choice, photography and film. In *Hands* (2011), a short, black-and-white 8mm film, two illuminated hands reach towards the center, as if blindly trying to locate each other. In the logic of the film, they occupy the same space, but as their overlapping transparent surfaces reveal, they were recorded at different moments. One hand searches for the afterimage of its counterpart, a trace of physical energy from its past presence. In *Doppel Acht* (2010), Salto explores the space between two recordings, in which the artist performs the same action at two different moments in time, shot on the same 16mm filmstrip, and fed though a 8mm camera twice. In the double projection—one normal, the other played backwards and upside down—two mirrored figures perform a

[3] Here I borrow Daniel Birnbaum's words. Daniel Birnbaum, *Chronology* (Berlin: Sternberg Press 2007), 179.

Still from *Doppel Acht,* 2010, double 8mm black & white film transferred to DVD, silent, double projection, dimensions variable, dur. 4 min. loop.

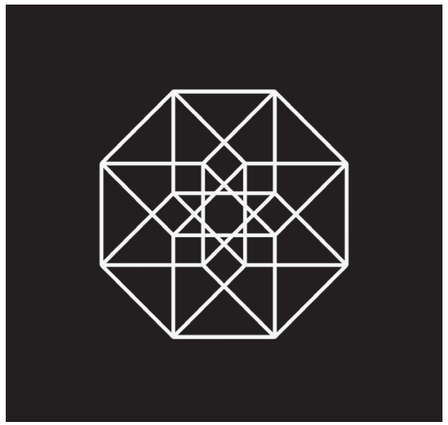


shadow-play against a white backdrop, attempting to line up the shadows of the square objects they hold. In the illusory space of film, we willingly accept that the two images, separated by a clear line, occupy the same time and space. The perceptual trick becomes a figure for the mental leap necessary to accept the possibility of parallel space-time dimensions that we cannot verify through sentient experience.

Salto is attracted to theories and scientific methods—some outdated and obscure—that grapple with the relationship between the material and the ethereal by insisting on direct experience and intuition. For this reason, he is fascinated with the writings of Charles Howard Hinton and his claim (later also made by Rudolf Steiner) that one could, by contemplation of a geometric form, enter a higher dimension: expand consciousness and gain access to a more complex space-time.

Charles Hinton (1853-1907), a British mathematician, spent his life trying to support his claim that our three-dimensional minds can be trained to visualize the fourth dimension—a concept embraced at the time by occultists and scientists alike.[4] The hypercube, or *tesseract,* an octagonal cube that can be unfolded into eight cubes, provided Hinton with a way to access the fourth dimension. Hinton constructed a set of twelve hypercubes and assigned a different color to each of their eighty-one parts to keep them distinct in his mind. The hypercube model-set was intended as an instructional tool to give people a mental image of the tesseract, by enabling them to contemplate its various cross-sections and rotation through the fourth dimension.[5]

Hinton's studies both anticipated and were refuted by the theory of relativity and later quantum physics. He was, however, one of the very few scientists whose work was rooted in the conviction that direct and intuitive knowledge of fourth-



4 The fourth dimension was popularly associated with the spirit world (an association supported by the active spiritist movement of the time).

5 In his excellent introduction to Hinton's writing, Rudy Rucker describes Hinton's project as follows: "By working with these [hypercube] cross-sections he was able to visualize the reality of the fact that if a tesseract is pushed through our space, turned over, and pushed back through, then the last cubical cross section seen will be the mirror image of the last seen the first time through." Rudy Rucker, "Introduction," in *Speculations on the Fourth Dimension: Selected Writings of Charles H. Hinton* (New York: Dover Publications, 2009), 7. The fascinating 3-D animations that a Google search on the tesseract yields may offer better comprehension.

Drawing of a tesseract from *Theosophy and the Fourth Dimension*, (1928) by Alexander Horne

dimensional space was possible.[6] While Hinton does not discuss the fourth dimension in spiritual terms, his method is very similar to present day spiritual exercises with "sacred geometry" (used in, for example, meditation), intended to give access to states of consciousness that transcend our physical reality.

Salto began working with the hypercube with Hinton's and Steiner's claims in mind. Curious to test their methods of accessing higher dimensions, he created a new variation of the geometrical shapes possible in the hypercube each day over the course of twenty days. Grounding his exercises in his work with the photogram, he used filters cut in the different shapes in the octagonal cube to make two-dimensional geometrical representations on photo paper. As the days passed, it seemed less and less likely that he would gain access to the fourth dimension, harder in practice than in theory, as Hinton too eventually concluded.[7] Salto instead found working with the tesseract unpleasantly

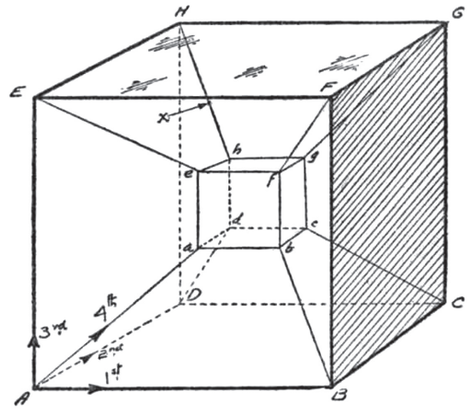


Fig. 19.—The Tesseract.

6 Ibid., 10.

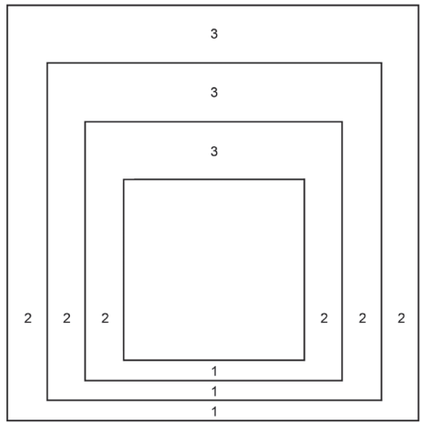
7 As Rucker writes, "Hinton had to eventually face that any experience of the fourth dimension was difficult to achieve in practice: in the end it seems that the best place to look for higher-dimensional space is, as Hinton so often said, in the mind. We still have no idea of how to axiomatize the logical space in which our mind moves about, but there is every reason to believe that this space is higher dimensional." Ibid., 7.

fatiguing, bringing to mind accounts by Hinton's followers of the autohypnotic effects of repeatedly attempting to reach higher-dimensional space.[8]

The nineteen black-and-white photograms that resulted from the experiment are each a variation on a two-dimensional rendering of the hypercube. In them, the artist explores different spatial possibilities in the simple form, rendered in tones of black, gray, and white. Contemplating any one of the prints, our eyes move on its surface, never finding rest for long, as three-dimensional shapes advance and recede. Through prolonged looking, each shape continuously reveals new geometrical spaces. Presented without contextualizing explanation of his inspiration or process, the works themselves leave us little option but to engage directly: as in his process, Salto insists on direct experience in his work's deciphering. The title *Hypercubes (the 4th dimension)* only hints at Hinton, and the gateway to a direct experience of higher dimensional space remains just an idea. We are, as the hybercubes remind us, limited to the three-dimensional world. But in the mind, images and experiences of parallel dimensions are limitlessly possible.

The hypercubes are characterized by the same contemplative silence as *Mute Science* (2009-10), and much of Salto's earlier work. *Mute Science* consists of black-and-white photograms, images produced without camera, solely by the imprint of light on photo paper. As such, they *are* their materials. While making the series, the artist turned, as he describes it, a "deaf ear to the exacting science of photography."[9] Taking the camera out of the equation, he relied on intuition and feel, rather than mechanical tools and automated timing. Enveloped in complete darkness—without the aid of red safe light—he repeatedly moved four individual cardboard pieces, together forming a square, inviting the possibility of "mistakes" as he exposed the photo paper to light. Deliberately cutting himself off from the faculty of sight, the artist was guided only by a mental image of space. The works are thus both straight records of their making—the most basic photographic process—and images of worlds beyond, conjured in the mind.

Josef Albers' geometric scheme for *Homage to the square* (1950-76)



The result is a series of forty prints, all variations on the same basic compositional scheme. Square and rectangular rims indifferent gradations, between the poles of black and white, repeat themselves concentrically to form narrowing vantage points. Each image is unique, the result of a delicate interplay between intention, evolving technique, and chance. Several photograms reveal flawed rims, resulting from the rough edges on the cardboard used to control light exposure. The crooked slants of multiple images bear witness to the manual process and, moreover, the imperfect communication between the provisional *partitur* (intention) and the movement of the artist's hands.

Like Joseph Albers' series of paintings *Homage to the Square* (1950-76), a clear historical precedent, *Mute Science* explores the formal and perceptual possibilities in variations of form and tonality. For Albers, the study of perception and color was linked to the spatial relations to which color combination gave rise. Colors, he argued, "are read as here and there … and therefore *in space*."[10] In the *Homages*, a series of differently sized and colored squares are set inside each other, arranged to allow colors to migrate across their borders and perceptually overlap. Albers also observed the ability of colors to optically advance and recede and alter spatial relationships in the scale between dark and light present in black-and-white photography. A trained eye, he argued, would be able to discern the "finer gradations between black and white," which "penetrate each other to varying degree."[11] Thus, in his methodical color study *Interaction of Color* (1963), he insists on the merit of repeatedly exploring the optical potential in the same basic formula.[12] For Albers, formal

8 Rucker writes, "it has been my personal experience that Hinton's claim that the mind can move in the 4-D space is true, although I cannot say that I find the experience of turning the world into its own mirror image is a pleasant one." Ibid., 18. Martin Gardner cites a letter from Hiram Barton, a British engineer, who claims to have worked with Hinton's cubes in the 1920s: "Please believe me when I say that they [hypercubes] are completely minddestroying … the process is one of auto-hypnosis and, after a while, the sequences begin to parade themselves through one's mind of their own accord. This is pleasurable in a way, but it was not till I went to see Sedlak in 1929 that I realized the dangers of setting up an autonomous process in one's own brain … " Martin Gardner, *Mathematical Carnival* [1965] (Washington, DC: Mathematical Association of America, 1989), 52.

9 Conversation with the artist (December 1, 2010).

10 Josef Albers, *Interaction of Color,* small ed. (New Haven and London: Yale University Press, 1971, rev. 1975), 31. Emphasis added.

11 Ibid., 12.

12 Variants, Albers suggests, "demonstrate...that there is no final solution in form," and form thus "demands unending performance and invites constant reconsideration—visually and verbally." Ibid., 74. Ibid., 74.

reductionism (the material flatness of paint) offered a way to expand perception, while negating any representational associations or pictorial illusion.[13] As Hal Foster writes, describing *Homage to the Square,* "they appear both materially flat, and optically expansive."[14]

Mute Science, too, oscillates between material fact and optical effect. Salto creates spaces through tonalities, but without the use of primary colors. As in his previous work, the artist draws on a visual vocabulary restricted to different shades of black, grey and white, exploring the possibilities of variations within this limited palate. Through the interplay between form and refined gradations, on the spectrum between light and dark, he creates a distinct sense of spatial depth. The earlier photograms in the series resemble, with their demarcated rims, the accordion-shaped bellow of an early analog camera. Ranging from small to large, these works explore the range of perceptual experiences of space, as the works increase in size and thus in corporeal presence.

Like Albers' *Homage to the Square,* the *Untitled* photograms in the *Mute Science* series require prolonged contemplation. They seem enveloped in silence, evoking a sense of timelessness, or perhaps the eternal. Stripped of narrative and representation, the works refer to nothing beyond themselves. Yet in the play between tones on the abstract surfaces, spaces appear: rooms and corridors recede into space, ending in narrow entrances, which again point to other spaces *beyond.* In the later works in the series, these spaces become more elusive, almost science fiction-esque, defined by refined tonalities and less contrast, achieved by the continuous movement of two filters during a single exposure.

Salto insists on the materiality of his process as a way to escape the indexical relationship of the photograph to the visible world. His adherence to a reductive language offers the possibility of images that give shape to the immaterial and intangible. The expansion of perception by refining vision, at the core of Albers' project, is in Salto's practice tied to the human quest to look beyond this world. The photograms do not slip into fiction: they rest at the border between physical fact and perceptual leap. Like Caspar David Friedrich's small figure gazing into the vast abstract sublime in *Monk by the Sea,* we remain on the cusp of the gateway to the other side. We look into the portal.

By Milena Hoegsberg

Caspar David Friedrich
The Monk by the Sea *(Der Mönch am Meer),* 1808–10.
Oil on canvas. 110 × 171.5 cm (Original in color).

[13] Achim Borchardt-Hume, "Two Bauhaus Histories," in *Albers and Moholy Nagy: From the Bauhaus to the New World* (London: Tate Publishing, 2006), 78.

[14] Hal Foster, "The Bauhaus Idea in America," in *Albers and Moholy Nagy: From the Bauhaus to the New World* (London: Tate Publishing, 2006), 94.