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Cosmography:
A Hypothesis on the Origin of
Alphabet

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Cosmography: A Hypothesis on the Origin of Alphabet

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## **Abstract**

As a result of many years of solo sojourns in the wilderness, I discovered that I was "reading the landscape" in various languages. I isolated and documented 5 patterns in nature that I subsequently found to be present in all alphabets, ancient to modern. I conjectured that these 5 forms were chosen universally because they mirror the shapes and structures of neurons and neural processes of perception and cognition. With this recognition I have shown that art and architecture that has survived time and culture, has also been based on these "hardwired" forms, and that these are the forms that are universally considered and experienced as healing images.

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I was a questioner from earliest childhood. At six I was already writing and publishing essays with titles like *Enigma* in the four languages of my childhood: Yiddish, Hebrew, English and French. These pieces dealt with questions such as 'we are at the height of civilization, yet we are still dealing with the problems of love, food and shelter'. I was mystified by the fact that we were so smart, yet so stupid. I was sent to a Jewish parochial elementary school in my birth city, Montreal, where the school day was divided into English and French, and Hebrew and Yiddish. I studied the Torah in Hebrew, but we were not permitted to speak about it in that sacred language. We discussed the Torah in Yiddish. When I was eight, I asked my male orthodox Torah teacher, 'Although the names and pronouns of God are written both as male and female, as well as singular and plural, why do we only talk about "he"?' My teacher walked down the aisle, grabbed my hair, threw me out, and I was never allowed back into the class.

The incongruity between what I was taught and my reality perplexed me. I found no correlation between text and context, and I was unable to make sense of the 'revelation' of the Torah with the abysmal realities of my life. My father, a brilliant scholar, was an invalid from the time that I was eight. Over a period of eight years he lost control of his body and speech due to complications of a car accident. My mother, who was a teacher, poet and author, was renowned and admired in her community, yet was physically and verbally abusive to both my father and me. Most of my relatives were very ill; there were always financial worries.

By the time I was ten years old, I had read about Albert Einstein being the greatest scientist in the world. I learned that he was Jewish and that he believed in the God of the Old Testament. Seeking an answer to my deep disturbance, I wrote Professor Einstein a letter asking how he could reconcile being the greatest scientist in the world and also believing in the God of the Old Testament, who not only allowed but created wrath and suffering, anger and war.

I received a reply within a week. On February 24, 1955, Albert Einstein typed:

'Dear Gilah, Thank you for your letter. Try to form your opinions always according to your own judgment. You have shown in your letter that you are able to do so. With kind regards, Sincerely, Albert Einstein.' and signed A. Einstein.' He died less than two months later. This letter became the guide of my life, and I learned to trust my intuition.

My childhood career plans consisted of becoming both a writer and psychologist. Rather than going to a graduate program for a PhD in Clinical Psychology, I accompanied my then-husband to the university of his choice, the University of California, Los Angeles where I received an MFA in Pictorial Arts. Thus, I accidentally became an artist. By the second year of graduate school I was already showing my paintings in the Los Angeles County Museum.

My interest in science continued, and I investigated the similarities and differences between the artist and scientist. Art emerges from a synthesis between the skill of the artist and the properties of the medium. The scientist works in a similar fashion. The artist knows all phenomena are interconnected in a matrix of light and space; so does the scientist, who also investigates additional qualities of valence, chaos, and quanta. The artist observes natural processes under controlled situations like plein air and the studio; the scientist works under stipulated conditions in nature or in a laboratory. The artist uses frequencies to create illusions of reality, as does the scientist. The artist finds patterns of behavior in natural phenomena, such as the occurrence of light and shadow. The scientist finds patterns of behavior in natural phenomena from electrons to galaxies, and studies the effect of valence from atoms to galaxies. Both rely on

imagination, visualization, and perfection of their execution. For the artist the criterion is beauty, and for the scientist, elegance.

The difference is that the artist brings abstraction into form, while the scientist brings form into abstraction. During the Middle Ages, anyone who knew anything, knew everything, and was called a Natural Philosopher. The Industrial Revolution forced specialization into ever narrowing fields. While we in the west may have become technologically more adept, we became generally ignorant and lost the ability to appreciate holistic knowledge. It was not until the 1960s, when eastern philosophy infiltrated the western world that attention was paid to older, far- reaching knowledge. The connection between quantum physics and mysticism was understood and east and west were newly, but tentatively, united.

While artists use media to layer veils of light and shadow to *produce* illusions of form that have dimension, reflection, refraction and the presence of substance, scientists *explain* the presence of substance by measuring illusions of dimension, reflection, refraction, evident in a matrix of frequency. We complement and need each other.

I began painting seriously in 1968, layering light, form, time and space. By the end of that year, I wanted to conjure concrete form. In painting something as traditional and simple as 'still life', I realized that there is nothing still in life. As soon as there is a relationship between any two objects, there is an *unstillness*, friction, and tension, which is necessary for life and creativity

In the early 1970s, I became one of the founders of the first feminist art group, the Los Angeles Council of Women Artists, that became the "mother" organization of all other women artist groups. As a painter, I used everyday foods of the woman's world as metaphors for women who were kept from their professional aspirations because of their biology. Working with scale and context, I rearranged every day food to create memories or associations to an event. I also began to figuratively refract the space to show distortion that might occur if a piece of glass were to be placed over a section of the image.

With a growing ability to create illusions, I was confronting the nature of reality. As I grew more facile as a painter, I could present and superimpose multiple images and qualities of realism. This led me to believe that since this is possible visually, then certainly it is possible to mentally hold various opinions simultaneously, all having validity and truth. If I could create them, I could also refute them, and I could create the illusion of images peeling right off the edges of the picture plane. I could invoke an image, discard it, and re-invoke it. It became clear that all that I had thought must now be reconsidered. I began to illusionistically curl the image inward, imagining that the canvas had become a metaphor for studying personality.

In 1970 I set off to the wilderness alone for the first time, beginning a new direction in my life. That first wilderness experience was marked by a near death experience. I had started from Los Angeles on a warm, sunny day in early December. By the time I reached the high Sierras, I was caught in an unrelenting blizzard. My van broke down in a remote location in the mountains. After the first night in the freezing van, I knew that I had to leave it or I would freeze to death in that steel icebox. With the blizzard still raging, I began to walk away from the van. I trudged through the snow-carpeted forest for most of the day. Eventually I walked along a stream, and then in the stream as the water still rushed, meaning that it was warmer than the ground snow.

My last memory was sinking into the snow with a great sense of exhaustion and resignation to my fate. The blizzard, still fully active, buried me where I sat, as deer

walked around me and looked askance at the strange presence slowly disappearing before them. The next thing I knew occurred two days later when I was found by an excited dog who smelled something live under the snow bank where he peed. The dog's incessant barking brought his master, whose van was also stranded in the blizzard. I was eventually discovered, more dead than alive, excavated from the snow mound, and revived.

After that adventure, I felt I had to examine my spirit and psyche to understand the trajectory of my life. I began a new series of round paintings catalyzed by a dream in which I pulled a yellow tapeworm from my left thumb palm. As I followed the image of the tapeworm through the ensuing paintings, it was visually transformed into a serpent, the only creature that can swim in water, live underground, on the ground, in the air, and fly. Mythically, it is both terrifying and revelatory, and is perennially searching for knowledge and truth. I understood these paintings to be metaphors for individuation.

It was at this time that I began to use Hebrew letters in my paintings. I re-evaluated 'Who am I, where am I,' and began the next series by representing myself as an orange egg in swaddling, inscribed with my name in Hebrew. I knew that I had to include my lineage in this way. In a later painting I worked with the Hebrew 'Mother letters' of *Cabala*: *Alef*, *Mem*, *Shin*. Each of these letters respectively begins the words for air, *Aleph*, water, *Mem*, and fire, *Shin*. I painted my right eye looking into my brain. I wrote my names in Hebrew in painted pomegranate seeds – *Chassia*, meaning refuge, and *Gilah*, meaning cosmic joy – the first of the five words for joy in the Hebrew wedding ceremony: *gilah* – cosmic joy, *rina* – joy of song, *ditza* – joy of giving, *hedva* – joy of community, *simcha* – joy of celebration. I proceeded to explore the center. Looking inward, I painted a metaphor for DNA, while exploring Cabalistic references with Hebrew inscriptions in the next works.

Deepening the exploration, I began to notice that any crossing of DNA created the Hebrew letter *aleph*. In Cabalistic lore, the first letter of the Hebrew alphabet, *alef*, is also seen as the origin of the universe.

In the congruency between the forms of *aleph* and DNA, I had found a wedding between mysticism and science. I then moved toward understanding form in sound and began to imagine what sounds look like. In painting the floral forms I was reminded of Hebrew letters. I painted as if I could see through tissue and through marrow, through to the moment of conception.

In 1981, I began to spend long solitary sojourns in wilderness. The first three years were spent at a large pond in southern California.

It was at this pond that I began to study the reeds as they grew, broke and fell. Certain geometric forms appeared in a regular way – angles, triangles, arcs and lines. I was utterly entranced with this natural unfolding as it occurred on a daily, seasonal, and annual basis. I was fascinated by the calligraphic 'messages' in the landscape.

Over the next three years I began to understand more of this scriptoral vision of the universe. Something about this articulated beauty was literally drawing me into it. I became hypnotized by the reflection in the pond, rather than that which was reflected. My vision deepened. The longer I spent in isolation with no mirroring of another human being, the more I felt like an untethered, isolated soul.

Again, I was concerned with the nature of illusion and reality. What was real? Was it that which was reflected? The reflection? That which sat on the surface of the pond? Was it the stick, or the leaves? I was floating in limbo. The pond had become my teacher and it enticed me further. The pond perfectly reflected both heaven and earth. The surface of the water was reified only by floating leaves, much like human

behavior reifies the dynamic of relationships. And soon, the pond, the point of focus for so long, was transformed into a portal into the mysteries of the land.

I felt that I had rounded a corner into light as I daily walked through the natural tunnel into the wilderness. The untrammeled paths and trails yielded confirming information. As I looked intensely at the land, I found the same geometric patterns which had so captivated me in the pond. In an 18-inch area of land, I was struck by the actual proximity of the triangles, arcs and circles, straight lines and crossed sticks forming an X. By this time the seed of a growing idea had germinated. Since paintings can be interpreted and photographs are indisputable, I decided to photograph my findings. As I wandered over the land, I was amazed to find the geometry of angles and triangles pervasive in the landscape. I found them in rocks, the branching of roots, sticks as they fell, reeds, trees, and the random crossing of sticks as they fell over each other on the ground. Sometimes I felt the straining of sticks to become angles as they lay angled but not touching. Or was it my need to make sense of it that way? I found groupings of similar shapes lying next to each other, such as roofshaped sticks next to roof-shaped rocks. I soon began to find wide-angled sticks with rocks or dots below them. Suddenly it was as if I could read a Chinese-like ideogram for house: roof over person. Acutely angled sticks with stones in their center reminded me of the English letter A. I was becoming profoundly affected by the forms that jumped at me from the complexity of the landscape.

It was not long before I was adding anthropomorphic expressions of human experience as I saw and documented them in natural occurrences in nature. I was perceiving particular structural patterns occurring in nature with increasing frequency. This led me to believe that there is no randomness in natural pattern, that a grand design exists, and within it are configurations which become familiar with repeated recognition; and that something within me prompted my recognition of particular events in nature.

## READING THE LANDSCAPE

I continued my documentation. By 1985, I was finding letters everywhere in nature.

English letters such as A, and then letter forms that I recognized in several languages, such as X in English, and *aleph* in Hebrew; Y in English, and *ayin* in Hebrew; R in English, and *taf* in Hebrew. I realized that I was reading the landscape. I researched charts on early alphabets and discovered that north Semitic Hebrew antedated other alphabets that this ancient alphabet had undergone 50 permutations of the 22 letters over many centuries. I began to walk about the landscape with a Hebrew alphabet chart showing the 50 permutations over time, and systematically documented the entire Hebrew alphabet in many of its transformations. The earliest forms are identical to those found in nature. Over the centuries they have become somewhat elaborated, but still closely resemble their earliest structures.

Tracing my own process, I had become convinced that as early man and woman walked their terrain, any terrain, their eyes peeled for food and foe, there were certain forms in nature that they, as I, noticed repeatedly. These forms affected them physiologically. Optical neural stimulation affected enzyme hormonal production, which changed the emotional state. I conjectured that the emotional affect was positive, since the act of noticing was repeated. With continuous repetition, these

simple forms, which I began to call alphabetic morphology, became imprinted archetypally. Consequently, when the time came for the formation of alphabet, these were the forms that were chosen universally. Form evokes feeling. Feeling conjures metaphor. Metaphor demands expression.

Nature had become a field of information. In time I found the entire Hebrew alphabet in all its 27 permutations, illustrating the reappearance of patterns over time.

The first form of the last letter of the Hebrew alphabet *taf* is identical to the last form of the first letter of the Hebrew alphabet, *aleph*. The form is a crossing of two strands, a cyclical repetition extension of itself. Is this not the essence of genetic transference? Much like a child learning to read, after first recognizing individual Hebrew letters, I soon found groupings of letters. Words were formed by natural processes in the landscape.

At that point, I believed that I had isolated five shapes that are consistent throughout the evolution of alphabetic form. I hypothesized that these forms were used universally because these shapes are found internally in physiological structure and process, and are rediscovered externally in nature: the line, as found in a portion of a stick, horizon, and upright or prone human. The angle or triangle, as found in the branching of trees and the shapes of mountains; the circle, spiral and a portion of the circle and spiral, which are elaborations on the arc, as found in the sun, moon, circumference of bloom, seashells and half moon.; the meander, as found in roots, river patterns and movements of snakes; and, the random crossing of lines, such as sticks, creating an X.

In *Cabala*, visualization and meditation on the form of every letter of the Hebrew alphabet, alone or in combination, changes not only the psychophysiology of the practitioner, but is also believed to change the nature of cosmology in the moment.

In 1986/87 I traveled the world documenting ancient to modern languages and found that these five forms were used universally. It was clear that although cultures were different, the physiology of perception is pervasive, therefore the same forms were used.

Do we see because of what we think, or do we think because of what we see? Through the process of the paintings, I had learned that nothing can exist in isolation, that the viability of any one thing is determined by the existence of another, and that all things affect each other and are intrinsically interdependent at the smallest and largest levels. Why do we recognize form? The answer to that seems to reside within the oscillating relationship between perception and cognition. I believe that a mirroring process occurs between the physiological structure of the perceptual apparatus and that which is perceived. In other words, there exists an innate proclivity to recognize that which is fundamentally familiar.

A concept of familiarity means that we discriminate and choose that which fits comfortably in relation to the known, that which is innate at the most basic level of being. The helical movement of DNA, the crossing of visual pathways of the optic chiasm in the actual process of vision, the shapes of neurons involved in the process of seeing and cognition in the visual cortex of animals, such as cats, monkeys, and humans, as well as other physiological structural patterns, echo perceived external shapes.

My understanding of the power of reflective cognition laid the groundwork for future ideas and theories that I have evolved over time dealing with form and healing.

All forms catalyze direct psychophysiological affect in the viewer. Some are more blatant than others, such as sexually explicit imagery. Yet everything we experience with our senses affects our bodies as they are delicately entangled with our

perceptions. Every emotion precipitates biochemical reactions that change the physical state of each cell of our bodies.

Form evokes feeling. Feeling conjures metaphor. Metaphor demands expression.

Having lived in many cultures worldwide, I have experienced form used in healing as fundamental, time-honored therapy, eg. Tibetan mandalas, Navajo sand paintings, Balinese dance, images of saints and holy persons, and sacred architecture in various cultures. In the West, we are only beginning to know that art and architecture can concentrate the ingredients of healing beauty.

From May 1988 to September 1990, I lived alone in a forest in North Eastern Arizona. I learned to survive in subzero temperatures with no power, running water, heat, and I lived with the large animals such as bear, elk, deer who came to accept me as another creature in the forest. From these animals I learned that I, too, am a herding animal and that only within the herd can one be heard.

In March of 1990 I received a letter from Dharamsala, India, inviting me to come to the Himalayas, where the Dalai Lama would be giving *tantric* teachings for the first time. No Dalai Lama had ever presented the formerly secret teachings before. I left my snow-covered mountaintop and arrived in Dharamsala, where I sat with 300 monks to receive the tantric teaching of *Bodhicitta* (compassion)— transformative practice for body, speech and mind. We were given specific instructions to visualize a white sphere (*Bodhicitta*) that embodies compassion. Accompanied by *mudras* and *mantras*, the Dali Lama instructed us to imagine the white sphere of compassion sequentially nourishing every organ and system of the body, from the top of the head down the right side of the body, up the left side and out the top of the head to provide compassion for all sentient beings in the universe.

Not only did we feel spiritually and emotionally ecstatic, but our bodies were feeling physically very well during these visualizations. I learned that 'Tantric mystic physiology of the subtle body is directly related to the somatic physiology of regular medicine, and the tantric practices of manipulating it bear directly on tantric healing.' (Gyu-Zhi, as quoted in Tibetan Medicine and Psychiatry: The Diamond Healing, by Terry Clifford.)

## MOVING FROM THE SACRED TO THE SECULAR

I had already determined that recognition is proprioceptive, hard-wired into physiological systems. Therefore the paradigmatic model of contact and communication must lie submerged in our deeper recesses. If contact and communication is the glue between both animals and humans, valence attracts and stabilizes chemical combinations, and gravity tethers planets and galaxies, I believed there must be a profoundly embedded paradigmatic reflexive model that allows us to perceive positively affective forms.

I began to study cellular behavior, as it seemed to be a discernible unit of life that still tends to live in groups, as do animals and humans. I learned from Dr. Ross W. Adey's research (*Cell Membranes and Cellular Communication*, film) that 'cells "whisper" together through their cell membranes that vibrate in the electromagnetic field created by the valence of various facilitating hormones, minerals and neurotransmitters.' Adey found that the presence of calcium is essential for cell whispering. If cells cannot communicate they begin to clone themselves, meaning that they become cancerous. Much like the behavior of cells, the entire human organism must have another who mirrors, but is not a clone. We cannot mirror ourselves, although we may try to as narcissists. If we are physically isolated, we may begin to talk to

ourselves. If we are emotionally isolated, we may produce multiple personalities. Our emotional system searches from birth for resonating contact, not duplicating or identical sameness.

Reflection, interdependence and contact are hardwired in our physiological bodies. The focus of consciousness clearly points toward behavior benefiting the greater good, or as the Tibetans say, 'right action'.

## THE ACCIDENT

On June 29, 1999, I was in Queen Charlotte Islands, (recently renamed Haida Gwaii), a remote archipelago in the Pacific Ocean, two hundred miles off the coast of British Columbia. This isolated place has been the home of the *Haida* and the *Kwakiutl* (also known as the Kwakwaka'wakw) Indians for 15,000 years. On my last day there, driving on a remote road the steering wheel of my rented car pulled to the right, the car rolled three times, crashed into a pole, rolled down a ravine, and I was left crushed, hanging upside down in a demolished car. A single vehicle had preceded me down that road. The driver was a nurse, who by profession was hyper vigilant. When she noticed that my car no longer followed hers, she turned back and saw the wreck far below the road. She returned two hours later with two Haida paramedics, who found what they thought was a cadaver in the mangled car. The paramedics had just acquired a 'Jaws of Life' machine, with the manual in Japanese. Unable to operate the machine, they oiled the body with whale blubber and extracted me from the wreck. I woke into consciousness hearing the words, 'How the #&\*! do you get this thing to work?' I knew I was home on earth, that I was very seriously injured, and that I had much work to do. I immediately began visualization, starting with blue ice throughout my body to temper swelling. Morphine was administered and I was transported to the infirmary as there was no hospital on the island.

After five days in the infirmary, I decided to return to Los Angeles. On morphine-to-go, I had to get to a ferry to another island, then a small plane to Vancouver, and finally a jet to Los Angeles. My shocked doctor saw me as the walking dead. I had a flat EKG. I had broken all my ribs, sternum, scapula on both sides, three vertebrae, crushed heart, crushed head, broken femur and tibia, and there were five millimeters of bone fragments in my spinal cord. The prognosis was dire. I did not have surgery, but came home with a removable body cast made of plastic lace, stays and Velcro. Unable to move, I spent my time visualizing the reconstruction of my body, cell by cell, system by system. With the aid of medical texts, my visualizations were extremely detailed toward the goal of achieving an optimal state for each cell and organ. Within two months I could walk upstairs to my studio and I began to paint seven-foot tall diamond-shaped paintings to affirm the reconstruction of my body from the inside out. Drawing on the power of the Hebrew letters, I once again inscribed the images with Hebrew words, the first being Mi Yamoot ve Mi Yechyeh?, meaning Who Will Live and Who Will Die? As I 'rebuilt' the spinal cord, the ribs and the cells, the white spheres appeared, organized in a discrete, recognizable pattern, identical to that which I had been taught in the Bodhicitta visualizations. I recognized that this pattern is congruent with acupuncture, moxibustion and meridian points. I painted the opening of the heart so that I could "wrap" my first given name Chassia (refuge) around my visualized spinal column. When I was feeling better and stronger, I could turn my vision outward to see the beauty of flora again, and I could hold the energy rays radiating to and from my heart, felt it strengthening as it was once more attuned and connected to the healthy rhythms and vibrations of the universe.

I felt – and continue to feel – enormous gratitude for the gift of life, and I hope that the tasks for which I have been spared will be accomplished with grace equal to that which I have been granted. One of the many Hebrew words for grace is *chessed*, which I inscribed in one of the *Diamond* paintings. I had come to a profound understanding of the seeming internal chaos held together by a strong force/volition at the heart. All is simultaneously substantive, dimensional and transparent, illuminated by the entire spectrum, revealing a matrix of interpenetrating layers of life. I read later in the *Gyu-zhi*, 'The whole of conditioned existence consists of radiations of energy vibrations emitted as rays or as fields of force and at varying rates of speed and thus solidity, intersecting and interacting in accordance with the harmonics of karmic balance.'

I inscribed Hebrew words *hodaya* (gratitude), *or* (light, skin),, and *ruach* (wind, spirit), into later *Diamond* paintings., With each breath, the wind/spirit flows through us and nourishes all atoms, molecules, and worlds; we are perpetually, inextricably connected.

Lying on the tundra under the Aurora Borealis, at the North Pole in 2006, I was embraced by the cosmic light and sound show, the most sublime experience of my life. When each of the veils of color touched the ground, a sound was emitted in the equivalent frequency as it was transduced from one form into another. Light, shadow and sound were one. The *Cabala* says that Adam was created as the shadow of the reflection of the substance. The more clearly we understand the nature of the reflection, the more profoundly we understand the nature of the substance.

The name of the key work in the *Cabala, Zohar,* means splendor. The same word, when pronounced *zahir,* means be careful – pay attention, be aware. Until you are ready, you cannot unravel the mysteries. You have to be emotionally and spiritually prepared for the 'splendor'. Whether you explain the universe through the strings of 'string theory' or the spheres of *bodhicitta,* or meditate on the forms of letters as they define and refine the consciousness of the universe, the atoms of life that we breathe in and out of each other hold the universe together. We are all riding bareback on each other's souls, and share the responsibility for 'right action'. Divinity is in humanity, and spirituality is in behavior. As we accept the gift of life with each breath we become the personae who animate the universe; and we both create the illusion and manifest the vision of a compassionate universe.



Figure 1. Reconciliation, 1979, O/C, 30" dia

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