

The Mansion of Thought – Making Knowledge Visible in Three Dimensions, East and West

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Dedicated to Eleanor M. Garvey, the scholar who figured out what I was doing, and enlightened me

Introduction/Author's Apology

This project came about because a scholar noticed my way of working was similar to a Renaissance memory theater: architecture, real or imaginary, used as a device to memorize knowledge. Some people thought a memory theater, or a page of an emblem book, could even propel them to total knowledge and spiritual enlightenment at the same time. Giordano Bruno(1548?-1600) was burned at the stake for promoting this mixture of spirituality and science. Tibetan mandalas work in a similar way.

To be honest, my aim was to communicate facts in the most innovative, if eccentric, ways I could, the logical thing to do for a fine arts and semiotics major. In order to share what I learned, I began attaching ideas or significance to every aspect of my artists' books whenever possible: the name of the typeface, the number of copies, the materials and process used, all contained invisible knowledge connected to the meaning of the project. This attempt to be useful and pragmatic regarding communication, I discovered, came with an enormous fringe benefit. Unintentionally, each edition became a memory theater, allowing me to automatically memorize the research for, and characteristics of, every work I created, to be used on command in public lectures or teaching. This was the purpose of architectural mnemonic devices in Ancient Rome: to facilitate public speaking or rhetoric. Granted, this information will always just add up to piles of arcane trivia, but the more fixed points of knowledge I have in my brain, I've noticed, the more easily I can understand and remember new things that connect to this information.

I was essentially in the dark about what I was doing, like the prisoners chained in Plato's cave, looking at flickering images on the wall, and thinking that to be reality. Along came the curator and scholar Elli Garvey to Bologna, on a mission to write an essay on my work for an exhibition catalog. She unchained me, and brought me out into the light, and over to Via Goito, where we visited Palazzo Bocchi. In my own adopted city of Bologna, Italy, almost 20 years ago, Elli taught me about memory theaters, emblem books, and a man who created both: Achille Bocchi(1488-1562). The Hebrew and Latin text on the cover of the book mimics that running along two facades of Bocchi's Renaissance palazzo, as described in the index below. This work may be mused upon and played with, entertaining with unusual images and geometric possibilities. Or it may serve as a starting point to learn about a series of cultural and religious practices and artifacts, should the viewer choose to read about any of the single images that elicit curiosity.

Which brings me to my apology. The fundamental problem with all memory structures is that they might only be useful to the person who created them. People got into a lot of trouble in the Renaissance for coming up with imperfect memory theaters, which ultimately didn't deliver the universal knowledge promised to the wealthy or royal patrons who commissioned them. Also, there was a tradition, dating from Babylonian days, to only give the keys of knowledge to people, initiates, that were prepared to receive it and would use it in proper, safe, ways. So instructions weren't written down. And learning, mostly orally transmitted in both popular and hermetic traditions, was largely lost, or incomplete. Thus we have lots of questions about the diagrams and structures created over the last 4,000 years to aid knowledge and enlightenment. The index and essays of this book outline some of the main categories and traditions of knowledge structures, woven into architecture, gardens and games around the world. I have risked doing something that may be considered superficial and overly complex at the same time. There is no key to total knowledge, or perfect memory, but the human trait of attempting to make knowledge visual is worth exploring.

Acknowledgements:

This book was entirely inspired by Eleanor M. Garvey, Retired Philip Hofer Curator of Printing and Graphic Arts, Harvard University. She shared some key texts in the history of mnemonics and emblem books, which led to a two-decade exploration of the modeling of knowledge in Eastern, Western and Mesoamerican traditions. I would like to thank many other scholars that explained things to me in conversations and emails, including Paula Findlen regarding Renaissance material, Margaret Brose on Dante's structure of Hell and Nahmiel Ahronce for his help with the Hebrew text of Psalm 120 in order to recreate the Palazzo Bocchi frieze. I am equally grateful for information and texts from the Fondazione Museo Ebraico di Bologna. Beniamino Sidoti was particularly helpful regarding both mnemonics and the history of games, and led me to the works of the Italian game scholar Gianfranco Staccioli. Invaluable discussions with two former Tibetan monks informed this work: Yeshe Sherab in Maine and Tenzin Samten in New York, both phenomenal creators of sand mandalas and religious offerings. Fabio Rambelli provided insight into the enigmatic Japanese manuscript on construction rituals. Isabella Baldini and Enzo Lippolis contributed Latin translations of two Christian manuscripts, and helped find Latin sources for the Teatro Anatomico ceiling. Walter Murch provided interesting discussions on the Pantheon and Copernicus. Signora Boera Pinotti offered essential guidance regarding the iconography of the San Giovanni Evangelista Abbey library. As this is an electronic document, printable for free as a PDF on command, there is still hope that further corrections might be made, and blanks filled in. I apologize for any errors, which are certainly of my own making, not by the aforementioned scholars. My profound gratitude goes to the public and private collectors that made this work possible through the purchase of the original watercolor paintings. These individuals and institutions received a special document proclaiming them Walter Benjamin Subscribers. Each subscriber is entitled to a free copy of the book with a special stamp and the artist's signature on the back cover.

A note on the images:

The 66 images contained in the work are all based on historical material: carvings, prints, manuscripts, ceramics and sculptures. Many of the images come from architectural manuals and religious texts. All the images were painted with a tiny watercolor brush, as I gazed at reproductions of the originals, without mechanical means. The text in and around the images was removed, in an effort to unify the many styles and origins of the imagery. The current location of each artifact is listed to the best of my ability. I chose images mainly from cultures using written language so that each item had a greater chance of being defined by the culture that created it, as opposed to being solely the result of guesswork by outsiders.

INDEX OF IMAGES

CASE FOR BOOK



Case front cover



1., 2. Two of four contiguous sections of the tabernacle, Engraving, *Antwerp Polyglot Bible*, 1572.



3. Christ on the architectural floor plan of Noah's Ark (same source as above).

Images 1, 2 and 3 on the case, appearing within the book as items 50 and 52, were stumbled upon as frescoes painted on the back wall of an abbey library in Parma, Italy. The San Giovanni Evangelista library is covered walls and ceiling with colorful symbolic and often enigmatic frescoes grouped in themes and meant to be inspiring and informative for the monks copying out texts and studying there. (Three medallions from the ceiling are discussed at items 24, 26 and 28). The planks of wood with anthropomorphic wood grain and the image of Christ in Noah's Ark-itectural plan were painted on the abbey wall in 1573-1575, but they were based on images from the first Bible with engraved illustrations, known by some as the *Biblia Regia* or the *Montano Bible*, by others as the *Antwerp Polyglot Bible*, created by Benito Arias Montano with the permission and patronage of Phillip II of Spain. The text and images were printed by the leading printer in Europe, Christopher Plantin in Antwerp, who was promoting this project for some time, originally seeking Protestant support. The images here, from Tome VII of the bible, were consulted in the Biblioteca Palatina in Parma.

Continual references to non-Christian cultures and languages in the library's iconographic cycles, including mottos and devices from Greek and Latin sources, show efforts of some Christian theologians in the Renaissance to feature Christian and pagan knowledge as compatible in the areas of architecture and science. Religious figures and artists that were part of the Humanist movement in Europe used diagrams and architecture which included references to the theories of proportions based on the human body put forth by Roman architect Vitruvius in his famous treatise *de Architectura*. But the human body was also a convenient receptacle for knowledge earlier, in medieval drawings as well, with Christ's body frequently used to show genealogy and consanguinity charts, and illustrate all sorts of knowledge about the Christian church. The use in the library of an astounding array of imagery reflects the ecumenical leanings of the Montano bible, however, itself printed in Greek, Latin, Hebrew and Syriac. The abbot and the Benedictine monk that designed the fresco sequences in the library, Abbot Stefano Cattaneo da Novara and Vitale da Verona, had mottos and sayings painted on the ceiling in the same four languages. These visual intentions, demonstrating that ancient knowledge dovetailed with Christian archeological and Biblical evidence, were noble, but Christ is a little too long and skinny when adapted to the ark's floor plan. For the influence of Vitruvius and St. Augustine on this unusual ark, see item 29.

The Tabernacle contained and protected the ten commandments, allowing them to be carried around by the Chosen People to various documented locations in the Holy Land, featured on a fresco map on a nearby wall, with Roman numerals on the tents marking the Tabernacle's pit stops. The anthropomorphic boards of the Tabernacle likely also relate to the sacred proportions of architecture, but it is hard not to fathom a connection with the sacred and legendary sources of the wood itself used to build key Biblical structures. Viewers today are likely to recognize something else in one of the four Tabernacle boards depicted: what looks like the prototype for Edvard Munch's "The Scream".

In some versions of the Medieval text *True Stories of the Cross*, seeds from the Tree of Knowledge of Good and Evil were planted in Adam's mouth at Golgotha at the end of his very long life, from which sprouted wood used for, variously, the crucifix, Noah's Ark, Solomon's Temple, the Rod of Moses, and other things. Adam's skull is painted at times at the foot of the Cross, as if the sacred tree, used for the crucifix, has sprouted directly from his cranium. The tree as a structure of knowledge is one of the most pervasive throughout history, and Christians incorporated it into their diagrams, as discussed in item 58. But the Holy

origins of the word in these Biblical structures takes an amusing guise here, part El Greco Mannerism, and part Greek and Roman theories on proportion in architecture.

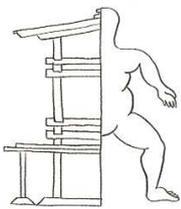


4. Fresco of Buddha, 200-300 AD, Balawaste, Central Asia, National Museum, New Delhi. At one time, Buddha was not depicted in human form, but only through symbols associated with him. The same is true in Christian Art, of both God and Christ, deriving from earlier iconoclastic Judaic traditions, which limited what imagery artists and scribes could use in art and text. Thus a bodhi tree or a wheel or stupa (reliquary structure) or a trident, or empty throne carved in stone or incised in bronze was a stand-in or proxy for Buddha, like the fish or the monogram or the cross for Christ. The extremities, the hands and the feet, seem to be

the first acceptable body part to creep into view, such as the hand of God, and Buddha's footprint with the symbols of the wheel and trident on it, the wheel being his teachings, Dharma, or doctrine set in motion.

The human body was a convenient format to display information, such as cosmological universe structures or constellation charts. Some of the images painted on this Buddha or Bodhisattva's torso are symbols frequently found in Buddhist iconography, for example the treasure vase. The proximity of the treasure vase on the Buddha's chest, centered over the top of a horse's back, brings to mind the concept of Buddha as a chakravartin, translated as "universal monarch" or "wheel turner", a figure likely springing from the pre-Buddhist Vedic and Puranic epics of ancient India. Traditionally, the chakravartin exhibits many physical signs at birth indicating his destiny as world leader, including a protuberance on the head, called the ushnisha, and a spoked wheel mark on the soles of the feet. This figure has a spoked wheel, associated with the sun, on his right shoulder, and a cranial bump. At the time of a chakravartin's birth, seven precious possessions or jewels spontaneously appear, including the precious jewel, wheel and horse. The octagonal and oval gems on ornamental bases on either side of Buddha's chest fit the description of the eight-faceted precious jewel or wish-granting gem, smooth and radiant as the sun. It is often carried on the back of the precious horse, spreading blessings with its divine radiance, which can regulate the temperature and protect from storms, satisfy thirst, cure disease and prevent untimely death. The precious and tireless horse can circle the vast Jambudvīpa continent, common to both Buddhist and Jain cosmology, three times in a single day, transporting with ease the chakravartin, or the precious jewel, on his saddle. The chakravartin also manifests with seven secondary possessions of mythical proportions, associated with ancient Indian royalty, including magic shoes and a special sword. The geometric diamond shapes on the Buddha forearms may be likened to vajra blades with indestructible flames of wisdom, an invincible sword that conquers without spilling blood. The vajra represents both a ritual weapon and a scepter, symbolizing the unbreakable qualities of the diamond and the power of the thunderbolt. The rectangular club or bar-like version of the vajra was more common in the Buddhism of early Indian and Central Asian art, on the Buddha's biceps. Triangles and circles are placed about the torso. Interpretations of basic geometric forms vary in Buddhist and Hindu religious traditions, but they are a constant means for people to focus their minds on religious practice, the shapes being links to doctrine and deities.

Case back cover, with description of book



5. Woodcut image from the colophon of *Jisaishiki* (groundbreaking ceremonies), by Tomoyama Motome, Japan, 1799. Tokyo National Museum.

This image, and another at item 47, relate to Shinto rituals performed at every stage of building and construction. The Japanese tradition of marking off a consecrated space with a special rope, adorned with paper cuttings to make it more visible, has lasted over a thousand years. The rope, made of rice straw and twisted to the left, separates sacred spaces from secular ones. It was hung around altars, worship halls, sacred trees and groves, a sign of divine power and protection, meant to prevent pollution or impurity

from entering the sacred area. When a structure, such as a house, is going to be built, the process begins with a groundbreaking ceremony, which includes this demarcation by the sacred rope. The cut and folded paper "shide" which are still seen today, is represented in the image at item 47, with a humanoid figure opposite it on the other side of the stick. The humanoid figure on the back of the case, instead, has a building on its other half. The temptation, with Western eyes, is to think about relating the body to the architecture in terms of proportion and the golden mean, à la Vitruvius. But this is more than unlikely. The book, of which this is

the colophon, is about groundbreaking ceremonies, not harmony in proportion. It concerns spiritual harmony brought about with proper rituals, for protection.

Some sources refer to “shide” as “gohei” stating they serve to absorb misfortune and danger from the outside, symbolizing purity in the Shinto faith. They are also attached to wooden rods or wands used in rituals, which looks like the case in item 47. The rope they hang on, used to make an area sacred, is also seen as a seal to keep good fortune, and protective gods, from leaving.

Construction rituals in Shinto tradition involve both the pacification of soil deities and the invocation of tutelary deities for the protection of the building. There are ceremonies regarding the protection of architecture in European traditions as well, often relating to the ridgepole of a building. The humanoid, anthropomorphic figures absent of features could represent paper figurines called “hitogata” used in transfer magic. The building’s potential problems could be transferred to the paper hitogata, which would be disposed of in a special ritual. Or the human figures might be a substitute body given to the earth gods as a sacrifice. Buddhists in Tibet created architectural manuals specifying proportions for the purpose of harmony, seen at items 45, 48 and 64. But the human figures here relate to building rituals as opposed to the architecture itself, except to insure its sound structure, in its construction and in avoiding harm.



6. “The Universe” Sengai Gibon (1750-1837), ink on paper. Idemitsu Museum of Arts, Tokyo. Edo Period, early 19th c.

This watercolor was based on the Zen painting by renowned Buddhist monk Sengai Gibon, the 125th abbot of Shofuku-ji, the oldest Zen temple in Japan in North Kyushu. It was not given a name by its creator. It was merely signed. In English it is often called The Universe, and sometimes it is given

the title, “Circle, Triangle and Square”. People speculate on the “meaning” of these three geometric shapes, which look like they might have been made by the Abstract Expressionists in the 1950’s, or by proponents of geometric art. We could use this image containing the three basic building blocks of world cosmology and architecture to remind ourselves to be cautious in assigning meaning: not everything is knowable, or necessarily explained in sound bites. There is also evidence from Eastern and Western religious traditions that certain visual imagery and constructions are intended as a meditative aid, helpful in the process of obtaining a sense of the divine, or for reaching an enlightened state. Some intellectuals in the Renaissance thought they would gain encyclopedic knowledge together with spiritual enlightenment, but total knowledge seems unattainable these days. Some of us would be happy just for a basic grasp of the underpinnings of visual knowledge, although simplicity, as Zen art teaches us, is deceptive. You can’t correct an ink painting, and in this tradition of Zen ink painting the arm is not braced, decreasing control. What looks simple comes with practice.

The Zen artist-priest Sengai Gibon’s paintings are very rough, with spontaneous-looking brushstrokes, geared to convey Zen principles and aphorisms in a form easy to remember, with poems or annotations attached. Yet this enigmatic work of three slightly overlapping shapes presents the viewer with a koan, or mysterious meditative question. The circle, alone, is often painted by Zen masters, and defined as the universe, the void, the moon, the infinite, or, as Sengai Gibon humorously wrote once, a rice cake. So for 200 years, people have been wondering whether to interpret this painting as the three jewels of Buddhism (the Buddha; his Dharma or teaching; and the spiritual community or Sangha), as earth, humanity and heaven, as the forms of basic mandalas and pagodas, or as three schools of Zen Buddhism, or simply as a circle, triangle and square. Perhaps he is playing with the people obsessed with attaining what can’t be owned, or possessing what doesn’t last, like the endless stream of visitors appearing at his hut with blank pieces of paper, and expectations. Another simple Sengai painting, of a gourd bobbing on the sea, served to indicate the slippery gourd as the path of life, or the way to enlightenment, which slips out of sight every time we think we have it in our control. The floating gourd is an island paradise called Penglai in Ancient Chinese traditions and Zen rock gardens, identified with turtles and sacred mountains as icons of the universe. Sengai Gibon suggests that we should identify with or unite with the ultimate, shown as a bobbing gourd, instead of looking at our goals as external things to attain. A lesson for control freaks and perfectionists everywhere.

Flap one (human body)

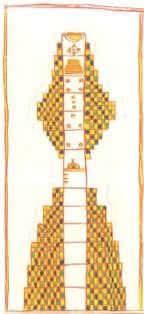


7. Manuscript of hand as mnemonic 14th c, Biblioteca Ambrosiana, Milan.

This image is based on a manuscript illustration from an illuminated, as opposed to a printed, book. It shows a cleric, a Catholic monk, indicating a hand diagram used to teach a system for reading musical notes. The hand mnemonic or memory device, known as the Guidonian Hand, was invented by the Benedictine monk Guido d'Arezzo (992-1050AD) who studied in the Pomposa Abbey, between Ravenna and Ferrara. In 1023 he starting teaching his musical memory systems in Arezzo, Italy, where he wrote an important work titled *Micrologus*. Guido is credited with perfecting

the system of musical writing using parallel lines, known as the musical staff. This innovation proved to be historic – the lines allowed the sounds to be recorded visually, so that music could be circulated and passed down just as the alphabet allowed for spoken language to be recorded.

Guido also contributed another memory device, not based on the human body, but on a song, in order to teach the first six notes of the musical scale. The Hymn of San Giovanni, in Latin, incorporates the musical notes “Ut, Re, Mi, Fa, Sol, La” as the first syllable of each verse. Music and rhyming text have been used to remember things much longer than visual memory techniques, as many cultures depended on oral transmission as opposed to written language. And even in cultures where text recorded information, usually only the reigning elite and clergy were allowed access to written or printed material. This was partly to guarantee that information would be interpreted “correctly”, towing the line of the group in power. Thus people were sentenced to death in Europe for translating the Bible from Latin into local tongues, like English, a dangerous thing. However, the visual transmission of ideas has always been incorporated into the material culture, or artifacts, of different peoples, as the scope of this book demonstrates.



8. Jain manuscript painting of the length and dimensions of the cosmic man. Gouache on paper, 17th c Gujarat, India.

This wasp-waisted, stylized, depiction of cosmic world man's appearance represents the seven hells below the waist and the seven heavens above the waist, known as the lower and upper worlds. Mapping the Jain universe as a three-dimensional human body incorporates the concept of a vertical axis mundi, or column, as the central structure of the world. Confoundingly gargantuan measurements accompany this diagram of “loka-perusa”, although the Sanskrit texts on and around the figure have been removed. The yellow waistline of the middle world is wafer thin. The rose-apple tree continent, or island Jambudvipa, in this little yellow strip, practically disappears when seen sideways. Usually it is depicted as seen from

above, from a central vantage point, as in an architectural drawing, held or placed sideways like a cymbal. For other references to the 3-tiered structure of the Jain cosmos, see items 16 and 54. The “thick darkness hells” are apparently as wide as they are tall, seven rajjus across. So this sketch is lacking in perfect mathematical proportions, but the 17th century artist-scribe that created the diagram gives an idea of the shape of the world, and the immense distances the souls have to travel in rebirth, until they reach enlightenment, or perfect knowledge, at the dome of perfection (siddhi) at the top, 14 rajjus in all. For the rajju measurement, see item 11.



9. Jain manuscript of constellations. Gouache on cloth, 18th c Rajasthan, India.

This is an image of the human body as a structure for the constellations. Although it might not seem so at first glance, it is also a way to display the constellations as a circle. The text identifying each constellation has been removed, but the intention is to read left to right, from the Pleiades at the top of the chest. The construct of showing the constellations in the circular format is not specific to the Jains. Indians of different religions represent 28 nakshatras, or fixed groups of stars, in an ecliptic. In science this refers to a great circle inscribed on the earth, inclined at an angle, that represents the motion of the sun during the year. It is the intersection plane of the earth's orbit with

the celestial sphere, a visual format useful in indicating and defining the seasons.

Flap two (tree)



10. Woodcut illustrating *Arbor scientiae* by Ramon Lull (1235-1316). Lyon edition, 1515. Ramon Lull was a Medieval Spanish courtier and troubadour who devoted himself to mystical memory techniques after a religious epiphany. He authored various treatises on memory with images showing the framework to put his techniques into motion. Lull used the structures of wheels and ladders as moving machines to understand and remember ideas in a system based on the Holy Trinity, and the circle, square and triangle. The Dominicans apparently weren't interested in Lull's ideas, but he was successful in circulating his

treatises through the help of Franciscan monks. His style of memory theories places him with the Neoplatonists. This means that Lull followed the geometric order of Aristotle's work *De Memoria*, along with the Platonist philosophy of St. Augustine and the Neoplatonist John Scotus Erigena. For Lull, his system of universal knowledge had a spiritual basis, that of the divine attributes or names of God. The Dominicans, under the tutelage of Thomas Aquinas, propagated lock, stock and barrel, the classical memory studies of Cicero and *Ad Herennium* revived in Medieval times, which originated as a tool to facilitate rhetoric, or public speaking. This involved memorizing information by attaching it to a striking image placed in a room of an imaginary or known architectural structure. Lull, instead, had a fondness for tree diagrams, but also for concepts resembling contemporary Spanish cabala practices. His memory studies based on the divine names of God did appear to be heavily influenced by the names of God placed on the mystical Judaic tree diagram of the Sefirot, item 60, and the practice of meditation upon combinations of the 22 letters of the sacred Hebrew alphabet. Meditating on the names of God was also an important part of the contemporary mystical Sufism of the Muslim faith in Spain, and played a role in the Christian traditions of Augustine as well.

However, Lull stated that his goal was to convert Jews and Muslims to Christianity with his memory practices, maybe because these methods would seem familiar to the other religions, or maybe it was a good way to interest the itinerant monks proselytizing all over Europe and beyond. Lull was championed by the Neoplatonists of the Renaissance 200 years later to the point that they even authored false works by Lull, printed in many editions. Pico della Mirandola and Marsilio Ficino in Italy, both members of the Neoplatonist academy in Florence, were great admirers of Ramon Lull, and his apparently mystical hermetic philosophies.

The tree structure depicted here is but one of a forest of tree structures in this book, which when combined aspire to reveal universal knowledge. The text has been removed from the roots and the branches, but the nine circles at the left contained the names of the 9 principles or Dignities of God, the foundation of existence for Lull. Everything is based on the number three and triadic structures, the Trinity, or triangle, and also upon the four elements, or square, enclosed in a circle. I quote a passage from this "tree" book by Lull, reprinted in Frances Yates' classic book on memory studies *The Art of Memory* (1966):

Circle is defended by Aries and his brothers and by Saturn and his brothers as the figure most like to God, with no beginning or end. Square maintains that it is he that is most like to God in the four elements. Triangle says that he is nearer to the soul of man and to God the Trinity than are his brothers Circle and Square.

Lull was famed for knowledge structures that, although represented in 2D, functioned as machines which moved both vertically and horizontally. The person using the knowledge machines moved, mentally, up and down ladders, pausing at different rungs to engage with turning wheels offering different combinations of ideas. Lull called this moving meditation device "ars combinatoria". There were a few types of his spinning knowledge machines, which added the element of movement to earlier versions of memory techniques based on static structures, such as buildings with rooms with striking tableaus inside, to be mentally traversed.



11. The Rose-Apple Tree (The Jambu tree) of the Jain cosmology. Ink and gouache on paper. 18th c, Rajasthan, India.

(Item 59 carries the same description, as it depicts the same tree, even though it is a distinct image)

The Jain religion of India has produced very interesting manuscripts intended as teaching aids for the elaborate Jain cosmology, or structure of the universe. These images are

covered with and accompanied by text, which I have removed in my watercolor adaptations of the visual content. The Jain manuscripts are fascinating for their attempts to reduce very complicated and precise data and measurements into symbolic geometric structures. The extremely specific mathematical calculations referring to distance and speed described by the Jains make the Humanist antiquarian and scientific ponderings of sacred architecture look like remedial math. The most outrageous mode of measurement used by the Jain scribes in the Middle Ages would have to be the “rajju” or rope unit: the distance covered by a God flying non-stop for six months at a speed of 2,057,152 yojanas (10,000,000-24,000,000 miles) a second. To put this measurement to use, in the representation of the universe as the figure of a “cosmic man”, a height of 14 rajjus is frequently cited, with the seven heavens and the seven hells being each 7 rajjus high.

This image illustrates simultaneously the top and the side view of the Jambu tree, with four branches aligned with the four cardinal directions, and a fifth branch marking the center, shooting up at 90°. This is on the continent of Jambudvipa. The bird Anadrhta, the guardian divinity of the continent, nests in this tree, which has branches of gold, roots of diamond, and leaves and flowers of gemstones. Specific measurements are given for the roots, trunk and branches. The graduated length of the branches gives the impression of a spherical tree, underscored by the concentric red circles superimposed. But the circles depict the aerial perspective as well, illustrating the North-South East-West layout of the branches, in a quincunx format. The four branches of the cardinal directions have thrones and divine palaces on them. The central vertical branch has a sanctuary of the heavenly deities, or Jinas. The tree itself rests on pedestals and terraces of gold and jewels. Another, aerial view of the dwellings of heavenly deities in the Jain cosmology is found at item 66.



12. Engraving of Alchemy tree (*Arbor philosophica generalis seu iniversalis*) by Samuel Norton, *Alchymiae complementum et perfectio*. England, 1630.

This scientific tree comes from a book on alchemy by Samuel Norton (1548-1604), published posthumously. This is one of a number of tree structures in the book, which use units of 3, 7 and 10, numbers important for Christianity and for alchemy. Three stands for the Trinity, but also, for Christian practitioners of Cabala and alchemy, body, spirit and soul. Or for the Neoplatonists in the vein of Augustine, it could signify the three powers of the soul as Intellect, Will and Memory. Seven is both a Biblical and celestial number, referring to the planets, and ten for the alchemists is connected to the Sefirot tree of the Cabala (see item 60). This particular tree regards health, with the imperfect body indicated on the left, and the perfect body indicated on the right. Alchemists were early scientists and philosophers obsessed with the creation of pure metals (gold, silver) from impure, less valuable ones, and with the Philosophers’ Stone, an elixir with healing properties, possibly bestowing eternal life. Samuel’s great-grandfather, Thomas Norton (1433-1513circa), was a poet and alchemist famous for the poem *Ordinall of Alchemy*(1477).



13. Caiman as Maya ceiba world tree, base-relief stone carving, stela 25, Izapa, Guatemalan Pacific coast, Late Preclassic Period (100BC-200AD).

The cosmic tree or tree of life is central to the ancient Maya structure of the universe. A tree in the center of the world and four trees at the four cardinal points acted as pillars holding up the heavens. The central tree, very often connected to the ceiba or kapok tree, linked to the underworld with its roots, and to the heavens with its elevated canopy. In this tree image, a diving caiman represents the roots and base of the tree. The tail and back legs are substituted with branches and a bird perched on top, to evoke the heavenly abode of the gods, or a soul that has not yet passed to the underworld. The caiman is a Mesoamerican symbol of the earth, and the spikes on its reptilian back have been identified with the thorns on the trunk of the ceiba tree. It has also been reported that the soil structure of the Maya agricultural land resembles the back of this reptile. While there is more than one candidate for the tree of life in the Maya universe, and some theorize that it was solely the tree located at the center of the four directions, the virtually unchallenged height of this tree, with a very straight trunk and distant green crown, make it stand out in its tropical environment. Trees in general provided food and housing, fuel and shade, making them synonymous with abundance and everlasting life. But the umbrella-shaped canopy of the ceiba tree serves as a congenial host for many species of plants and animals, including birds, insects, reptiles and amphibians, even frogs that live in pools on the branches and in the trunk. The silky floss in the fruit pods of the tree was used in ancient times to weave Maya mantas or blankets, and the lightweight wood of the trunk was utilized for canoes. But the voyages offered by the ceiba tree itself were symbolic journeys up and down its trunk to the spiritual and celestial realms, a conduit to the

heavens and the underworld associated with the Milky Way, seen vertically in August on the Yucatan peninsula.

Flap Three (miscellaneous armatures)



14. Jain diagram in form of vase of plenty, gouache on cloth, 19th c. Jaipur, India.

This is essentially a structure or support for prayer, color-coded to aid meditation, and geared to invoke serenity. The text covering each element of the diagram has been removed in this watercolor adaptation, as well as eyes, representing clairvoyance and omniscience, and protective deities, on either side of the neck of the vase. The features of the diagram, and the superimposed annotations, make visual the fundamental principles of Jainism. But

the circle at the center, surrounded by eight lotus petals, is a well-known, basic format for an auspicious diagram, into which a different holy figure or sacred syllable, known as a mantra, may be placed to suit a different purpose. Here the Om and Hrim symbols are placed at the center, surrounded by the vowels of the Nagiri alphabet of India. The 16 outer petals featured inscriptions of the vowels and the different classes of consonants. Written prayers are repeated throughout the structure on the concentric circles described as ramparts, giving a three-dimensional reference to the image, which is both vertical, as the treasure vase, and horizontal, like the depictions of the Jain world seen from above, from a central vantage point. This is also true of Buddhist auspicious diagrams known as mandalas, representing 3-D architecture from above.

The vase of plenty is related to the concept of the treasure vase prevalent in Buddhist iconography, and is a symbol or structure of knowledge present in numerous religions. It relates to wish-fulfilling, endless blessings, and both the tree of life and the fountain of life found in paradise gardens. It is connected to both heaven or paradise, and good health, healing and eternal life. In both Jewish and Muslim faiths, which have traditionally limited the use of visual images, especially of people and animals, text itself takes on physical shapes, conveying an image with letters, like a shape-poem. Because this book specifically removes text from the chosen imagery, the fascinating calligraphic art of these primarily aniconic religions is not represented here. While images may be underrepresented in the art and architecture of these faiths, aesthetically pleasing text literally surrounds followers in buildings and temples, and covers objects of daily life and ritual. Arabesques of vines and leaves are permitted in Islamic architecture, however, as well as geometric patterns. Signs of life often sprout from a vase, frequently painted on Islamic tile work. This vase from which life creeps is often referred to as a tree of life, present in the Islamic version of paradise along with the rivers of life. Vases of plenty are also connected to floating gourds likened a mountainous island paradise in ancient Chinese and Buddhist cosmologies, often given the name Penglai (see item 67).



15. Ceramic structure representing the cosmos, Congo (early 19th c?) reproduced in the book *Cartographia – Mapping Civilizations*, Verga and Library of Congress (see bibliography).

This structure is described as a ribbed ceramic cemetery stele. It is hollow and perforated. As opposed to a vessel, it is a visual depiction of the cosmos placed on a grave. In the belief system of the culture to which this ceramic cosmology belongs, after death some humans were reborn in the underworld, and would need to know how to navigate the territory. This geography was taught during initiation ceremonies, but the structure of the universe on a grave could only be

construed as helpful in the afterlife. The cosmos is represented here as a cross of diamonds with circles at the cardinal points, and four circles representing the daily movements of the sun: dawn, noon, sunset and midnight. Apparently the horizontal lines are identified with water, and heaven is at the top.



16. The Jain heavens as a drum. Gouache on paper. Rajasthan, India 16th century.

The world, or rather, the universe in the Jain cosmology is known as loka and divided into three parts: the middle world, tiryag-loka, which is a horizontal disc, like a cymbal, but is represented as seen from above; the pyramid of the seven hells, known as adho-loka, where the wrathful deities and infernal beings dwell; and, depicted here, the upper world with

levels where various heavenly deities dwell, called urdhva-loka, represented as a drum standing on end.



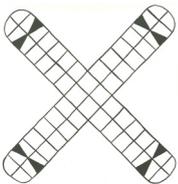
17. The Jain eight black fields. Gouache on paper. Rajasthan, India, 17th century.

This Jain image describes, with geometric figures worthy of a Russian artist in the Constructivist vein, a part of their cosmology situated in the third layer of the Brahmaloka. There, according to this manuscript, at the third layer in the fifth heaven, among the Lokantikas gods, are eight dark masses known as the black fields. They are very thin triangles oriented north and south, and very thin squares oriented east and west. The tiny colored dots represent the Lokantika gods. The black shapes are described as watery places with swollen vegetal matter enabling the enemies of the gods to be hidden for short periods of time (like a temporary cloak of invisibility?) according to *The Jain Cosmology*, by authors Caillat and Kumar, in the bibliography. Every living being is born in these watery masses several times in their transmigration, the same area where gods, Asuras or Nagas, produce rain or thunder. The swollen particles of black, watery matter flow from the Arunavara ocean of the middle world to the heights of Brahmaloka, where they stay put.

When I showed this particular image to a Tibetan monk formerly responsible for making domtor butter sculpture offerings for His Holiness the Dalai Lama at Dharamsala, he recognized this particular shape in these colors to be an offering dedicated to the wrathful deities of the Buddhist pantheon. He was surprised to find this same format was a cosmological diagram of part of the Jain universe.

Case opened flat

Center image



18. Mesoamerican game known as Patolli, 15th c manuscripts.

Patolli was a game played throughout pre-Columbian Mesoamerica by the ancient Maya through to the Aztecs at the time of the Spanish conquest. It has aroused a great deal of curiosity because of its striking parallels with the ancient Indian game of Pachisi. The similarities of these two games in so many specifics add to the commonalities between ancient Indian and Maya cultures, in architecture, writing systems, iconography and cosmology. But, as the essay on the inside of the case points out, the Ancient Chinese game of Liu-po or Liubo may be the ancestor of both games. One reason for displaying it at the center of the cross-shaped or orthogonal case is that it highlights the structure most common to all cultures: the four cardinal directions, inspired by observations of the sun and the stars throughout the year.

Like many ancient games around the world, Patolli appears to incorporate ideas about the structure of the universe and movements of celestial bodies. Archeoastronomers have written papers analyzing carved and drawn or painted representations of Patolli and its presumed precursor, circumscribed in two rings, referred to as “pecked crosses”. The numbers generated from these diagrams coincide with the most important cyclic intervals in ritual calendars: 20 named days, counted in groups of 13, for a cycle of 260 days, referred to by the Maya as the “wheel of the day”. This same number, using intervals of 78, is incorporated into ingenious Maya calculations of the orbit of Mars, with its synodic cycle of 780 days. It was a different, yet effective, approach that long preceded Kepler’s realization of the elliptical orbit of Mars, based on decades of observational data collected by Tycho Brahe.

The Maya were very interested in the height of the sun for their zenith sun-based seasonal calendar, and they created specialized architecture for calendrically timed rituals. The buildings, orientated specifically in regard to celestial phenomena, even displayed calculated effects of light and shade, which would have enhanced rituals in the eyes of observers. The rising sun was linked metaphorically to the kings’ rise to power, and Maya kings were linked to certain constellations as well as the Milky Way. Patolli is clearly connected to the Maya calendar, and whether it had a ritual function initially or not, before it became a ruinous gambling game with enormous stakes, there are indications that a specific god was one of the players. Things offered to this spirit player went into a special “kitty”, like free parking in Monopoly. Winner took all, like the game of war.

When carved into rock or in stucco floors of ceremonial buildings, the positioning of the cross-shaped diagrams suggest they functioned as astronomical orientation devices, signaling celestial phenomena as well as directions significant for rituals, possibly indicating the opening of ritual caves. Orienting buildings or

cities toward ritual caves and sacred mountains has been documented in other ancient cultures, most notably on the island of Crete. It has also been noted that images used to represent the “year glyph” in indigenous writing appear to be two trapezes at right angles, attached to a ring, that function as a sundial marking not just time, but the height of the sun and the equinoxes.



19. Chinese bronze TLV mirror, Han period, Freer Gallery of Art, Smithsonian Institution, Washington, DC.

This type of ancient Chinese Han mirror has the same “TLV pattern” found on sundials, divination boards and the game liu-po or liubo during the same period, between 100BC and 100-150AD. All these objects, as well as the lo shu diagram of the magic square of three, put identical ideas about the structure of the universe into visual form. This cosmic pattern represents China, the Middle Kingdom, or Middle Nation, as a square central earth with

four gates in the cardinal directions, and a circular heaven above, conceived as a flat disc, supported by cosmic pillar-mountains, or as a curved dome. In the middle of the circular heaven, a round perforation, like the pupil of an eye, allows the Sky-Emperor, or the One supreme being, on a throne at the top of the axis-mundi, to observe events below, and to receive the incense and smoke of ritual sacrifices wafting upward. The oculus and these magic mirrors in general had strong associations with the sun and the moon.

Primarily the mirrors featured in magical rituals and occult practices involving self-hypnosis or meditations on the meaning of the universe, which at that time emphasized the all-powerful force at the center. The mirrors express this with a raised bump, loop or boss which initially stood in for a cosmic building called the Ming T’ang, and later was associated with the world-mountain K’un-lun. The same cosmological structure of the square earth with the four gates, speculated to be the T shapes at the cardinal points, is common to Tibetan mandala patterns as well, an aid for meditation to which these Han mirrors relate without doubt. In Chinese literature, the four gates of the Middle Nation opened into four regions of the barbarians, referred to also as the four seas.

Houses of the zodiac and planetary movements featured in the universe structure of this mirror as twelve circles, or small raised bosses, on the border of the mirror’s square. The central cosmic axis of the earth in line with the oculus marked the spot where the immobile Pole star was orbited by other celestial bodies. But actual sundial structures have been noted by archeoastronomists in this mirror, noting that the T, L and V markings appear to have a practical function in the real Han sundials. Scholars have indicated that the L markings have been referred to in Han writings as caves, clearly leading through tunnels to dank regions represented by aquatic creatures. They are thought to be gates to the outermost part of the universe, through which wind and rain entered from dark swamps.



20. European “Cretan” or “Classical” labyrinth design.

This diagram is present in late-Neolithic and early Bronze Age contexts in Europe, from 2500-1800BC onward, as well as locations in Asia, Africa and North America. The image here also shows the way the design begins, with a cross and four points. This is the only known labyrinth design until about 1000AD. This same pattern circulated, carved in stone, chalked on walls and created out of boulders and turf, over a huge geographical area, from Crete to Scandinavia to Arizona. It is a seven-ringed design contained within eight

concentric rings of barriers. This labyrinth design may have been so popular due to the fact it is drawn starting from a cross shape with dots in the four corners, an easy point of departure.

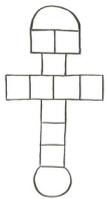
Sometimes this pattern is moulded slightly into a square, such as the version on the reverse of Greek coinage from 300-70BC. Crete had associations with Daedalus at the Palace of Minos, which supposedly contained a labyrinth. Archeological evidence hasn’t revealed a labyrinth there, but it is likely that the labyrinthine design of the elaborate palace at Knossos itself gave rise to the legend.

It is quite possible the precursor to this design was the spiral, connected to a journey of the spirit through life to death, or to a spirit realm where ancestor souls reside. It has also been tied to birth, a reverse journey from the inside out. The spiral, and the labyrinth, at the center, may have represented the omphalos, the sacred center of the world. Early meanings may only be postulated, but later associations of the center of the labyrinth provide a few consistent categories or typologies of the function and meaning of this physical and

spiritual journey, created in two and three dimensions. The center of the labyrinth in Europe represented a named walled or fortified city, often holy, a sacred mountain or tree, or a virginal woman.

Romans made unicursal labyrinths, created in mosaic, which represented walled cities with named fortresses such as “Troy” at the center. The boulder labyrinths in Scandinavia, many along the Baltic coast, were associated with pagan as well as Christian walled cities: Troy, Jericho and Jerusalem. Over 500 examples have been recorded, and some may date to the Bronze Age, associated with prehistoric burials, but the majority are presumed to date to medieval times. The tradition of fisherman walking through the labyrinths to protect themselves from harm, or augment their catch, or for luck in the winds, purportedly existed into the early 20th century. Prayers never hurt, and the symbolic journey in and out of the labyrinth would have provided a meditative focus before putting out to the sea of the unknown, the unpredictable and treacherous depths, from which all sailors pray for safe delivery.

Labyrinths in this design were cut into turf, exposing the chalk beneath, in towns in England and a few other European countries post-1000AD. Like the boulder labyrinths, they were created on a scale to be navigated on foot, either walking or running. Threading these paths was connected to courtship rituals, and to fertility rites at Easter and May Day. The boulder labyrinths also had associations with courtship, supposedly with a virgin placed at the center of the symbolic walled city. A virgin, or a tree, at the center of a walled area cannot but evoke the idea of the medieval walled paradise garden with the Virgin Mary at the center, known as the Hortus Conclusus or walled garden. This is likened to the walled garden of Eden, with the Tree of life, and the Tree of Knowledge of Good and Evil, and all the vegetation and fruits of the world, gathered into one harmonious protected place. Alternatively, specific trees, like oaks, or sometimes a “world tree”, like Yggdrasil in Norse mythology, were symbolically important in pagan cosmology or structures of the universe. A tree at the symbolic center of the world, represented as a labyrinth, would be appropriate. Labyrinths are notoriously difficult to date, but there is no question they were linked to spiritual and ritual quests, journeys of human trials and rites of passage.



21. European hopscotch format (known by many names, including Heaven and Earth, and The World), from contemporary Italian game treatises.

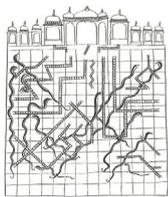
Historically, the game generically known as hopscotch was not played by children on playgrounds or sidewalks or driveways wherever a chalk diagram could be inscribed. It was played by Roman soldiers all over the Roman Empire, from the Middle East to France, England and Germany. There is a hopscotch diagram in the Roman Forum (Rome, Italy) and tradition would have it that there is a special paved area in Jerusalem where the Roman soldiers played it called the Lithostrotos, named by St John as the same place Pilate brought Christ on the morning of Good Friday.

The Christians imbued this game with religious significance, as did the Muslims. The diagram was perceived as a ladder to heaven, likened to Jacob’s Ladder, a symbol of ascension to heaven. The game was understood as a spiritual progress or journey, with players confronting difficulties and avoiding dangers and temptations as they wobbled along hopping on one leg. While eternal life was the goal, the players didn’t remain in heaven, they returned to earth, hopefully enlightened through their trials. In Christian cultures the rectangular formats of hopscotch almost always lead to heaven or paradise – in Muslim traditions they lead to Adiana.

The spiritual journey of this diagram starts on earth, marked T for terra in this Italian format, and finishes in heaven marked C for cielo. Some of the dangers to be avoided in both the Muslim and Christian versions have been recorded as Hell, Wine Merchants or Flames, often indicated by a circle, which would make you lose your pebble or tile or rock playing piece if it lands in it. In the over 4,000 year old recorded history of board games there are examples of games initiating as religious, divination and astrological practices, and later losing that significance. The reverse is also true, when games without a known, pronounced religious significance gained one over time. Hopscotch can easily be likened to a unicursal labyrinth, a pre-determined, forced path with no choices in the way to proceed, and no dead ends on the way to the center. After the journey to the middle, the path is re-traced back to the outside world, initially along a spiral course. Many Roman traditions, holidays, festivals and gods were Christianized, so the possible application of Christian didactic and moral ideas to a game spread by Roman soldiers would not be surprising. Unicursal labyrinths were set in cathedral floors to be completed as symbolic journeys of pilgrimage, for people unable to journey to the Holy Land, or for penitence, which itself was one of the reasons for undertaking a

pilgrimage, or going on a Crusade. Real and symbolic pilgrimages were perceived as ways to expiate sins or even atone for criminal convictions. Instead of going to prison, a medieval “get out of jail free card” conscripted you to a Crusade.

The religious nature of hopscotch would have been reinforced by the fact that this diagram resembles the architectural plan of a cathedral, with the shape of the cross and the curved apse at the back. At one point in time, the game musical chairs was known as Going to Jerusalem in the United States. Only the hardest and most aggressive participant completes the pilgrimage in this somewhat rough game of elimination. Perhaps at times giving a religious appearance or name to a game might allow for a bit more fun in strict religious environments. Robert Louis Stevenson was reared by a very pious Calvinist nanny. Stevenson’s mother sewed a little pack on his doll’s back so that he could play with it on the Sabbath, and pretend it was the character Christian on his trial-filled pilgrimage to the Celestial City in the novel *The Pilgrim’s Progress* (1678). The topos or theme of the spiritual journey around the four cardinal points or up and down via ladders or mountains to Holy places on high is prevalent in traditions of pilgrimage, games and spiritual writings throughout recorded history. Examples of humans traversing structures of sacred and celestial geography pervade architecture, material culture and literature, ancient and modern. The structures, physical or in rhythm and rhyme, help memory and reinforce knowledge, for pre-literary societies or analphabetic populations.



22. Snakes and ladders game, gouache on cloth, 19th c Rajasthan, India. British Museum. This watercolor is a simplification of a colorful painted cloth game board. In the West, snakes and ladders was eventually translated into chutes and ladders, taking on the appearance of a kids’ playground as opposed to a quest for eternal life in heaven, or the liberation of the soul from human suffering, depending on the varying religious versions known to exist. Hindi text was removed from all the squares of this game of moral and religious instruction. Ladders lead the virtuous toward the pavilions inhabited by gods and consorts in the heavenly realm. The players move according to throws of dice or cowrie shells.

This game is found in Hindu, Jain, Muslim and Tibetan Buddhist versions. As game boards consisted of relatively ephemeral materials, such as cloth and paper, and likely saw a good deal of action, most examples that survive today come from the last two centuries. Some copies of the Jain version, known as Gyanbazi, are dated to the 16th c however. In Nepali, the game is known as Nagapasa, or snake dice, or alternatively Vaiuntha Khel or the game of Vaikuntha. In Hindi it is gyan chaupar or the chaupar of knowledge, or moksha patamu. Moksha translates as salvation, and Patamu signifies lower forms of life. So, to save souls from being born yet again into lower regions of the Hindu cosmological structure, the game conveys learning regarding vices and virtues in every square. Not all versions have the ladders which help followers ascend to an enlightened state, liberation of the soul from rebirth, nirvana or immortality, depending on personal goals, but almost all have snakes along which negative behavior causes backsliding down to more hellish regions of the board.

While this particular game lost its moral content in the West, when the British imported it from India in the 19th c, race games infused with religious lessons and didactic content have been around Europe since the 1600’s. The most famous example is the variant versions of the “Game of the Goose”, a spiral-shaped itinerary along which players learned not just behavior but history and literature in later versions.

BOOK CONTENTS



23. Cover: Palazzo Bocchi and Francis Bacon’s Home – Hebrew and Latin

It would be important to pause a moment here to give a general description of the front and back cover of the picture book, with six images on each side, placed within a geometric pattern. This is an example of the risks of creating a memory structure: unless someone reads these words, the knowledge or meaning is invisible, thus only useful to the author. But I’d like to think it is fun to look at, that it might be appreciated on the surface. While this is a work about categories of formats for modeling knowledge, it is also of interest to me to circulate images that I find curious and worthy of more attention, if only to make someone chuckle.

The framework of the cover is dedicated to two scholars fascinated with learning and memory: Achille Bocchi (1488-1562) and Francis Bacon (1561-1626). The Hebrew frieze on the front and the Latin frieze on the back are actually carved into the façade of Palazzo Bocchi, on Via Goito in the historic center of Bologna, Italy. The placement of the twelve images within a geometric pattern of diamonds and circles pays homage to Francis Bacon. He had images painted on window panes, in a special gallery of his house at Gorhambury, to be used as mnemonic devices, according to his biographer Aubrey, quoted in *The Art of Memory* by Frances Yates (1966). While Bacon furthered scientific method and designed the first scientific research institute in his scholarly works, he was also a keen advocate of memory techniques, for the purpose of advancing science, called natural philosophy in his time. The borders of Bocchi's frieze on the cover form overlapping triangles common in Hindu, Buddhist, and Jewish iconography. It is hard to get very far from the circle, triangle and square when it comes to making ideas visual.

Bocchi created a theater of memory out of bricks and stone, his palazzo designed with arcane visual knowledge inside and out. Bacon created one in a book, *New Atlantis* published around the time of his death. The Renaissance was a period in which purpose-built architecture arose, expressing ideas about the function of a building with its shape and use of space, and with visible and invisible symbolic value attached to architectural elements. In Bacon's fictional place called Bensalem he describes in detail a highly symbolic and pragmatic research institute named "Solomon's House" taking a cue from the biblical house of wisdom founded on seven columns in Proverbs. Bocchi is concerned with the acquisition of knowledge, and in truthful and virtuous or upright behavior, indicated by the script on his house and themes in his famous emblem book *Symbolicae quaestiones* (see item 26). The Hebrew frieze, a unique architectural element with no other contemporary examples in Italy, or likely even in Europe, comes from Psalm 120: Lord, deliver my soul from lying lips and a deceitful tongue. The Latin frieze on the other side of the doorway comes from Horace's first book of Epistles: With good behavior, you will be king.

Front cover with Hebrew text



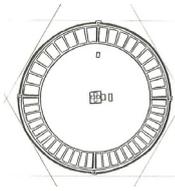
24. Snake around palazzo, fresco, 1573-74, library ceiling of San Giovanni Evangelista Abbey, Parma, Italy.

This is a watercolor adaptation of one of hundreds of emblems, allegories and rebuses and texts painted in a complex iconographic scheme meant to inspire, warn and goad the religious scribes and scholars working beneath. Every message and theme hasn't been yet deciphered. But there is an overall theme about learning requiring dedication and patience, along with moderation, prudence and equilibrium as fundamental qualities guiding

progress in life's endeavors. Three of the 18 circular emblems in the center of the ceiling arches are depicted at items 24, 26 and 28. The first two are drawn from a two-volume work called the *Hieroglyphica* of Horapollo, published in the Renaissance, but thought to be written in the 5th century by Greek-speaking Egyptians. The idea of Horapollo was to guide in the understanding and writing of Egyptian hieroglyphics. It would appear that both Horapollo and his Renaissance illustrators a thousand years later botched things, but a huge trend was launched in symbolic literature and illustration. Horapollo was printed in Venice in 1505, a quarter century before what is considered to be the first emblem book, the *Emblematum liber* or *Emblemata* by Andrea Alciati. Emblem books came to be a very popular form of Humanist literature, most examples of which consisted of pages containing a title or motto, with an illustration and a description or epigram beneath. For Humanist scholars, the sum of these words and pictures was greater than their whole. Focusing intently on one page could catapult you to deeper truths approaching universal knowledge, both intellectual and spiritual. To a speculative lay person like myself, emblem books almost appear to be the Renaissance scholars' answer to the mandala, a visual aid for meditation, helping toward the process of enlightenment. There were ideas floating around, promoted early on by Leon Battista Alberti in *De re aedificatoria* (1452), that Egyptian hieroglyphs were a lost universal language. Subsequently, some Renaissance memory techniques adopted the concept that ideas of things could be directly conveyed through hieroglyphs. Knowledge and wisdom could leap forth from the page, through the act of contemplation. Fake hieroglyphs abounded, as well as false translations, but the emblem book was born.

While a French version of Horapollo's *Hieroglyphica* shows a snake around a house with a pitched roof, the Italian version on the monastery ceiling sports a Renaissance palazzo with Guelf crenellations, indicating allegiance to the Pope. The building itself is not dissimilar to the palazzo of the Bolognese emblem book

author Achille Bocchi, from whose emblem book the image at item 28 originates, with a fortified base of the building like the base of a medieval tower, and an arched entrance of jutting stones. But since Horapollo's emblem supposedly signifies the king as rector, governor or Lord of the world, a stately palazzo does seem more fitting to represent a king or ruler, rather than a simple house.



25. Architectural drawing of Bagdad rebuilt as the City of Peace, Madina al-salam, 762AD. This watercolor is an amalgamation of three similar architectural drawings of the supposed plan of the newly constructed city of Bagdad, when the Abbasids moved their capital from Damascus. Almost no trace of this round city, named the City of Peace, remains on the banks of the Tigris, but it was once 2638 meters across from one side of its double fortifications of mud brick to the other.

The circular format is considered to be one of the most important examples of early Islamic city planning. Earlier models for circular plans exist, used for military garrisons in Assyria, and later, in the Sassanid Empire (224-651AD), the last pre-Islamic Persian empire, in the settlements of Zincirli, Mantinea, Harran and Isfahan. Regarding the concept of the circle as the ideal shape of a city, inspirations may be sought in many directions, west to the Greek and Roman theories of architectural harmony, and East to the Buddhist and Hindu significance given to the spoked wheel representing the sun and the supreme ruler, or Chakravartin, later used as a symbol standing in for the historical Buddha. If it is true that Khalid ibn Barmak, the son of a powerful Buddhist abbot who became the secretary to the first Abbasid Caliph, was involved in the planning, as some scholars think, the circle may be connected to notions of a universal ruler, with his palace at the center of the circle, in line with the cosmic vertical axis of the earth. The huge green dome atop could have underscored this symbolism, likened to a mountain paradise garden at the hub of the universe.

The Hindu and Buddhist concept of the chakravartin ruler, identified with both the sun and the wheel, associates the spokes of the wheel with the four cardinal directions over which the Chakravartin has sovereignty. In Caliph al-Mansur's "City of Peace" the four gates lead instead to the most important regions of the Islamic world: Kufa, toward Mecca, Basra, toward India, Khorasan to the Northeast and Damascus to the Northwest. While this orientation might imply sovereignty over the Islamic world, the cardinal points might be inferred regardless, as they occur at mid-points between the gold domed gates of the city. Apparently, the divisions at the outer edge of this aerial view of the city were occupied by specific ethnic and tribal groups of the empire, a microcosm representing the populace of the Caliph's realm, radiating out from the centralized administrative buildings, mosque and palace at the hub of the wheel.



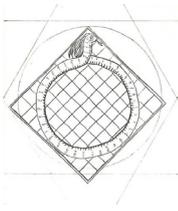
26. The serpent Ouroboros, fresco, 1573-1574, library ceiling of San Giovanni Evangelista Abbey, Parma, Italy.

This is a watercolor adaptation of one of hundreds of emblems, allegories and rebuses and texts painted in a complex iconographic scheme meant to inspire, warn and goad the religious scribes and scholars working beneath. Every message and theme hasn't been yet deciphered. But there is an overall theme about learning requiring dedication and patience, along with moderation, prudence and equilibrium as fundamental qualities for the acquisition of knowledge. Three of the circular emblems in the center of the 18 ceiling arches are depicted at items 24, 26 and 28. The first two of the three images are drawn from a two-volume work called the *Hieroglyphica* of Horapollo, published in the Renaissance, but thought to be written in the 5th century by Greek-speaking Egyptians.

At the time the ceiling was painted, scholars associated this emblem of the serpent eating its tail with years of time, or eternity. According to the scholar Robin Raybould, for Horapollo, or whoever the real author or authors were, Ouroboros represented the universe, while eternity, instead, was signified by the sun and the moon. Interestingly, in the emblem here the sun and the moon are visible above the hybrid reptile, as they are in the woodcut illustrations of the Horapollo, so the image combines both concepts. The figures within the monster's circle have been interpreted as Hermes on the left, a sun goddess in the middle, and Charity on the right.

The snake, or hybrid reptile with wings, biting or swallowing its tail was depicted in medieval manuscripts by the 12th century. Representing a circle with its body, this diagram has been used to symbolize ideas in

esoteric and scientific traditions alike, including alchemy. One or two reptiles attached in a circular chain illustrated the idea of a chemical process, repeating itself over and over. In Christian religious or spiritual contexts, the idea of cyclical time, death and rebirth, the end of the world and the beginning of Creation, all find expression in this reptilian geometry.



27. Ideal city plan, Nepali architectural manual, ink on paper, 19th c(?), Nepal. From *Nepal Mandala* by Mary Shepherd Slusser, Princeton University Press.

Hindu and Buddhist builders' manuals proscribing the correct proportions for harmonious and auspicious structures have existed at least since the Gupta period(320-550AD) in India. This Nepali manual contains a mandala, or symbolic diagram, of a snake joined to its tail in a circle. Mandala in Sanskrit actually means circle, but it later came to refer to a design created as an aid in meditation. The mandala here is intended to convey an ideal plan for a

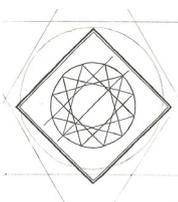
city, a circular format on a grid of 81 squares. The circle as an ideal plan for a city has been put forth from ancient times in many cultural contexts, and snakes forming a circle with their tail have an equally rich history, as discussed in the previous item. Perhaps the snake isn't an arbitrary choice here, simply representing a circle. In numerous Buddhist and Hindu examples, snakes are positive, protective figures. The snake is also central to the construction of the cosmos, in that it was wrapped around the core matter of the universe, the sacred world mountain Meru, or Sumeru, and tugged on back and forth by celestial and demonic forces until other elements churned out of the cosmic ocean, like the sun and the moon. A stone snake balustrade illustrates this myth on a monumental scale in the Angkor Thom complex, Cambodia.



28. Mercury handing Ulysses the moly plant, fresco, 1573-74, library ceiling of San Giovanni Evangelista Abbey, Parma, Italy. Ceiling image taken from Achille Bocchi's emblem book *Symbolicae quaestiones*, published in Bologna, 1555.

This is a watercolor adaptation of one of hundreds of emblems, allegories and rebuses and texts painted in a complex iconographic scheme meant to inspire, warn and goad the religious scribes and scholars working beneath. Every message and theme hasn't been yet deciphered. But there is an overall theme about learning requiring dedication and patience, along with moderation, prudence and equilibrium as fundamental qualities guiding progress in life's endeavors. Three of the 18 circular emblems in the center medallions of the Parma ceiling arches are depicted at items 24, 26 and 28.

This ceiling fresco derives from one of the 151 printed images in Bolognese scholar Achille Bocchi's emblem book. Mercury is handing Ulysses the moly plant, identified by white flowers and black roots, that has the mythical reputation of being difficult for mortal humans to dig up. Gods, on the other hand, can uproot it without much trouble, and this scene depicts, on the surface, mercury bearing the remedy of the moly plant as an antidote to a potion of the enchantress Circe. For the scholars toiling on their path of learning on the library benches below, it is likely an allegory with the moly plant representing an aptitude and facility for the communication of learning, which only great efforts will achieve. According to scholar Elizabeth See Watson, having the moly plant handed over by Mercury puts this messenger god into the sphere of learning and virtue. Mercury/Hermes features on the crest for Bocchi's palazzo in Bologna, and is incorporated into the unofficial name given to the informal academy Bocchi headed, the "Hermathena". Did the Benedictine brothers reading and scribbling away know that Bocchi used Ulysses in his verse, to show that learning and studying is not enough, that scholars must travel to inform their learning with empirical experiences? It would appear that Bocchi's student Ulisse (Ulysses) Aldrovandi (1522-1605) took his professor's advice to heart, and went on trips early in life before creating the collection that was to become just about the first public museum in Europe. It must have been good advice to temper all that studying and writing with experiences out of doors, because Aldrovandi lived to be 83 years old. Perhaps all his time scouring fish markets for weird items and founding a botanical garden in Bologna helped.



29. Interpretation of Vitruvian Roman theater from *De re aedificatoria* (1485), by Leon Battista Alberti. Woodcut.

It would be difficult to overstate the influence in the of *De architectura*, the architectural treatise written by Vitruvius in the 1st c BC. Many ancient classical treasures, artistic and literary, were brought to light in the Renaissance by monastic scribes, archeological digs and contact with cultures east of Christendom. Some classical authors and philosophers

found their way into Christian sources early on, such as knowledge of Plato and Aristotle through St. Augustine. But with the advent of the printing press, ancient texts exploded across Europe, changing the very face of things, most visibly, architecture. New ideas and ideals began to be incorporated in private, public and religious architecture, in both the shape and the decoration of the buildings, inside and out. Never before, and perhaps never again, will patrons and architects try to cram so much significance and visual knowledge into buildings, on such a broad scale.

This round model of a theater, published as a woodcut, illustrates Vitruvius' description of an ideal theater plan. Vitruvius didn't illustrate his ten book treatise, so artists and architects in the Renaissance circulated their own interpretations, published or in manuscript form. Leonardo da Vinci has done the most of any artist to stamp the ideas of Vitruvius into us all. His Vitruvian man with arms outstretched within the square and the circle pops up everywhere, although most people would be challenged to come up with the source of its image. Items 46, 49, 51, 53, 55 and 62 stem from less-well known attempts to illustrate *De architectura*, by architect and artist Francesco di Giorgio Martini, from a manuscript known as the codice Saluzziano 148, in the Biblioteca Nazionale, Turin, Italy. The complete work is called *Trattato di Architettura*, 1470 circa.

Through Vitruvius, and the people most responsible for circulating his ideas, such as architect Leon Battista Alberti, "theater" took on a whole new spate of connotations. Alberti's *De re aedificatoria* circulated in manuscript before being published in 1485, and served as a launching pad for pagan ideals that would appear in new shapes of churches in the Renaissance, based on the circle, as well as circular anatomical theatres for anatomy lessons. The Vitruvian man still worked fine lying down in the old cross-shaped churches(sort of), viewed from above. Some people even put him into Noah's ark (item 3), although Montano surely intended that particular man to be Christ, even though he doesn't actually write that. The author is too busy writing about the technical details of the ark, which was already associated with Christ's body in St. Augustine's *De civitate dei*. Montano owned a copy of Vitruvius, with its passages on the proportion of the human body, and symmetry. Alberti discusses Noah's ark too, and the humanist Gianozzo Manetti drew similarities between the ark and St. Peter's basilica in Rome, according to Zur Shalev in his very helpful article on Benito Arias Montano cited in the bibliography.

Many examples exist of circular forms being ideal models for both buildings and cities(items 25 and 27), identified with the central point as the belly button or sacred omphalos of the world, just as the Vitruvian man illustrated by Leonardo and others has his belly button in the center of a circle. For the Greeks, Delphi, the place of pilgrimage for oracles, was the omphalos of their world, marked by a sacred stone. The tree of life or lotus springing out of Vishnu's navel establishes the axis mundi at the center of the earth in ancient Indian lore. This association of human anatomy with architecture expresses the proportions of the human body as a map of the universe in miniature, a microcosm. Leonardo consulted Alberti's book as well as Vitruvius before creating his famous drawing. Francesco di Giorgio Martini's attempts are less elegant but more amusing than Leonardo. His people don't seem to fit properly in the diagrams of columns, and look a little forlorn, at these attempts to illustrate Vitruvius.

Back cover with Latin text



30. Islamic ceramic bowl, 10th c Nishapur, Iran. Los Angeles County Museum of Art.

This watercolor is a sketch of the pattern in a bowl, brown on ochre ground, representing the concept of a bird's body used as a structure of the world. According to the scholar Vincent Virga, the idea of the bird as a symbolic structure dates from the 6th c AD, with a bird's head initially identified with China, the right wing interpreted as India, the left wing as the North Caucasus and the tail relegated to Africa. In this bowl, instead, it is believed

that the head of the bird may be identified with Arabia, and the eye itself might be conceived of as Mecca. The wings are thought to encompass Asia and Africa, while the tail, barely visible, might be Europe.

The original bowl from which this painting derives does not have any text on the surface, unlike so many of the items pictured. Often, due to aniconic traditions, Islamic and Judaic imagery consists wholly of words, shaped into calligraphic forms of textual splendor. As text has been categorically omitted from the images of this work, allowing for an unencumbered reflection upon the art, and to unify these very disparate images, the aforementioned traditions are underrepresented here, despite their symbolic value.



31. The cosmos as horoscope, *De umbris idearum*, by Giordano Bruno, 1582. Woodcut. This diagram is part of Giordano Bruno's first work concerning the art of memory. As alluded to in the introduction, Bruno was burned at the stake in Florence in 1600 by the Inquisition for both his spiritual and cosmological ideas, published in a series of illustrated books in France, England and Germany. Bruno started out as a Dominican friar at age 15 in Naples, Italy, steeped in the craze of mnemonic studies so popular with the Dominicans at that time. But he departed from the monastery and from accepted applications of memory techniques, publishing several controversial works challenging both the Calvinists at Oxford and the Inquisition. While it is true he was thrilled about Copernicus' heliocentric plan of the universe, this wasn't from the point of view of a rational scientist. Bruno thought a sun-centered universe confirmed the sun-focus at the heart of ancient Egyptian mysticism and hermetics included in some memory-technique treatises. Bruno credited himself for what he believed to be earthshaking metaphysics, in his own diagram, suggesting he managed to further the ideas of Ramon Lull (see item 10) whom he also listed as an inventor, along with the traditional founder of memory studies, the ancient Greek writer Simonides.

This woodcut, with the text removed, shows Bruno's use of the 12 houses of the Zodiac as a structure for his memory studies. It contains the Christian world map at the center, surrounded by the primary geometric shapes of squares, triangles and circles, of which Bruno was particularly fond. To give a brief idea of the underpinnings of Bruno's spiritual memory mechanisms, he is captivated by a mystical work entitled the *Asclepius*, part of the Hellenistic Greek occult philosophy known as Gnosticism, lost for centuries to the West until it was translated under the patronage of Cosimo de Medici. From this text Bruno got ideas about Egyptians making statues of gods into which celestial powers could be drawn. He also includes in his memory structures figures of planets, holding talismans, from the most important Renaissance book on hermetic and Cabalist magic, *De occulta philosophia*, written by Cornelius Agrippa (1533). Bruno believed that through his memory structures, the celestial realm could be manipulated, changing stellar influences on Earth. He thought that contemplation of his diagrams could ultimately lead to a complete knowledge of the past, and all its history and inventions. But, to his credit, it appears his goal was to develop the powers of the soul in order to become united with the divine, not to manipulate others.

There were ideas floating around, promoted early on by Leon Battista Alberti in *De re aedificatoria*, that Egyptian hieroglyphs were a lost universal language. Subsequently, some Renaissance memory techniques adopted the concept that ideas of things could be directly conveyed through hieroglyphs. Knowledge and wisdom could leap forth from the page, through the act of contemplation. Fake hieroglyphs abounded, as well as false translations, but the emblem book was born.



32. Detail of the Buddhist Wheel of Life, gouache on cloth, 19th c AD Tibet, British Museum. This is a watercolor based on a small detail in the center of a 19th century painted Tibetan textile (known as a thangka) housed in the British Museum. It is the hub of the Buddhist Wheel of Becoming, with three animals attached together to form a wheel of perpetual movement which drives the cyclical existence of life, death and rebirth, known as samsara.

The hub is the central part of a diagram of a wheel with six spokes, dividing the world into six realms where beings are born, from hungry ghosts to deities, trapped in the cycle of reincarnation. With the attainment of enlightenment, the soul is released from this cycle of rebirth, attaining nirvana.

The negative qualities represented by the snake (anger), pig (ignorance) and cock (greed or attachment) inhibit humans from breaking free from samsara. Good deeds are believed to result in a higher rebirth, just as harmful behavior, or bad karma, leads to lower rebirth. The Wheel of Birth, Death and Rebirth, as it is also known, is most commonly depicted in Tibetan and Japanese art of Vajrayana Buddhism, but the concept originated in Hindu philosophy.



33. Chinese Bronze Mirror, 4th c. BC, Staatliches Museum für Volkerkunde, Munich. This is known as a Shan mirror, referring to the four T-shaped ideograms which signify "shan" or mountain. It was created during the Middle Warring States period (475-221 BC) in the Chu region of Hunan and Hubei provinces. While it predates the bronze mirror described at item 19 by 200-400 years, it still represents a model of the universe with a

bump or boss in the middle of the square earth, at the center of a circular heaven, a dome or disk supported by four pillars or mountains at the four cardinal points. For a description of the function of these ritual objects found in tombs, see item 19.



34. Jain sacred mountain ranges, gouache on paper, 18th c Rajasthan, India.

This is an adaptation of an image of the Jain cosmology depicting two sacred mountain ranges occurring at the cardinal points around the Jambudvipa rose-apple continent. Precise yet staggering measurements and distances are given in the tables and text surrounding the image of the four Velamdharma and the four Anuvelamdharma mountains, which apparently lie 42,000 yojanas from the shore of Jambudvipa. References to distances of a yojana range

from five to twelve miles, with certain trusted scholars giving nine miles as the correct unit. It is an ancient Indian measure that predates the Jains. These are pretty tall mountains at 1,721 yojanas high, and pretty wide if at their summit they are 424 yojanas in diameter. That makes them up to 5,000 miles across at the summit, and up to 12,000 miles across at the base (1,022 yojanas). For more on precise and fantastic Jain measurements, see item 11.



35. Maya Polychrome Dish, ceramic, Late Classic Period (600-800 AD), Guatemala or Mexico. Musée de Quai Branly, Paris.

This image is sketched from a red, ochre and black dish depicting, according to scholar Maria Longhena, the god Hunab Ku, “the first creator”, pictured here with the attributes of the youthful god of corn, resurrected or reborn through his own cracked skull. The figure is surrounded, at the four cardinal directions, by the symbol associated with cave entrances,

which provided access to the watery underworld from which the Maya believed life emerged. The water lily, or lotus, and its rhizome, also sprouting from the cranium, mark the boundary between the terrestrial world of humans and the watery spirit realm below.

The name Hunab Ku incorporates the number one, Hun, represented by a single point or circle in the glyphic writing of the Maya. This god is associated with “one” and “unique”, although he was known by various epithets, such as The Great Hand, The Heart of the Earth and Only Spirit. He was a dualistic being with a female counterpart, adding a binary or oppositional nature of duality to the creator god placed at the center of the Maya universe structure, at the axis of the world embodied by the ceiba tree. Both the god Hunab Ku and the ceiba cosmic world tree were identified with the caiman. For Maya cave imagery, see item 66. For Caiman imagery see item 13.

Book open:

Side one, one image per page, black and white (8 pages):

Panel one



36. The Anatomical Theater in Bologna, Italy. Composite image of engravings, drawings and woodcuts, 17th c Italy. Gabinetto disegni e stampe, Biblioteca dell'Archiginnasio, Bologna.

This watercolor image of one of only two extant anatomy theaters in Italy draws upon six historical images plus direct observation. Text was removed from the plaques around the walls and the ceiling. It is the only architectural space depicted in the book that actually still exists, and may be visited, apart from the abbey library S. Giovanni Evangelista in Parma and the Buddhist monument Borobudur on the island of Java, Indonesia. There is a botanical garden at Padua, but the one pictured in the book was never completed.

This space is included because of the symbolic and metaphorical decorating scheme intended to enhance the acquisition of knowledge by students and the general public attending dissection lectures in this anatomy theater. The statues of famous doctors from ancient times and busts of renowned anatomists, the two anatomical figures behind the professor's chair, or cattedra, and even the 14 ceiling sculptures of constellations surrounding Apollo, the founder of medicine, all play a role in conveying information considered necessary at the time. The ceiling in particular is loaded with meaning, even if it only referred to the science of astrology, for which a department chair at the University of Bologna was established in 1334. The “lettore” named to this post was usually a mathematics professor, and had the serious responsibility of

creating an annual astrological calendar, or “taccuino” indicating what days doctors should perform bloodletting and what days they should prescribe purges.

But there are implications that the ceiling has more to tell, considering the text bordering the octagon framing the 3-D statue of Apollo suspended in space above the marble slab. An anatomy theater in the building was approved in 1595, although public dissections had been taking place since 1315, most recently in temporary wooden constructions set up during the winter in churches. The university itself, the oldest in Western Europe, founded in 1088, didn’t even have a home, architecturally speaking, until this particular building was dedicated in 1563. Not just anatomy lessons were outsourced, the law school and the arts and sciences met at professors’ homes and various public spaces for about 500 years. To bolster flagging prestige, the university created a glorious official seat, next to the biggest church and central piazza of the city. The building of the Archiginnasio also reflects, together with the Anatomical Theater, a unique moment in Italian architecture, when the leading professors and intellectuals of the time, including theologians, wanted to design spaces with symbolic content relating to numbers and universal knowledge, and specific to the activity going on inside.

The initial theater was in a small room adjacent to the depicted space, until this purpose-built scientific extravaganza was constructed in 1637, and restored a century later. Earlier drawn and constructed anatomy theaters relating to Classical architecture were round or oval. Circular buildings were associated with the concept of “the ideal city” put forth by the Ancient Roman architect Vitruvius, harmoniously located at the center of what was then conceived of as a circular cosmos. Bologna’s square model would seem to liken the idea of the theater to contemporary performing spaces, in square piazzas, with facades of buildings visible under the stars. It is difficult to know for sure, but the figures holding up the wooden canopy over the professors chair can’t help but summon up the muscular telamones supporting the entrance to the famous Palazzo Bargellini constructed 20 years earlier. They are not just architectural decoration, however. The original statues were intended as an anatomically correct man and woman, a didactic aid, though obscured a bit by drapery. Engravings of these figures show them to be very burly, with flowing drapery, strikingly similar to the monumental telamones outside Palazzo Bargellini today. But they were scientifically updated in 1733, when the leading sculptor of anatomical waxes, Ercole Lelli, proposed two skinned figures, known as the “spellati”, so university students might be able to study muscles without a cadaver.

The cramped concentric ovals of the anatomy theater at the University of Padua allowed for as many people as possible to closely hover about the dissection. Bologna opted for a breezier model, with the theme of the architectural facades allowing for the convenient placement of historical figures in medicine in the window niches, and text in rectangles above, suggested by Ovidio Montalbani (1601-1671), the professor invested at that time with casting the annual medical horoscope. It has been speculated that he also chose the text around Apollo, god of the sun, and of poetry, and designed the symbolic theme in general. The first three of the four lines in Latin can be traced to the ancient authors Manilius (*On Astronomy* or *Astronomica*), Ovid (*Metamorphosis*) and Lucretius (*On the Nature of the Universe*), but the fourth has eluded this author.

I will sing the things that must be known about the sky and the marvellous stars (Manilius)

Medicine is my invention, and I am known across the earth as creator (Ovid)

There is nothing more distinguished than to consider attentively what is visible on earth (Lucretius)

And everything is subject to our power. (?)

Ovidio Montalbani, who quite possibly grouped those lines together on the ceiling, was not merely entrusted with university astrology. Before being nominated as professor of eventually six disciplines: Philosophy, Logic, Medicine, Mathematics, Moral Philology and Law, in a teaching career that exceeded four decades, resulting in a 40th anniversary recognition by the Pope, Montalbani was elected to the 15-member Medical College of the city, with total power over medical laws and licenses and medical practices by the time he was twenty-five. He also became a judge, and a member of numerous local intellectual academies with funny names, as well as the Keeper of the Ulisse Aldrovandi Museum in 1657, responsible for publishing some of Aldrovandi’s posthumous works. Did this celebrated polymath of the 16th century, a member of academies batting around ideas about ancient philosophy, Platonism and mystical knowledge regarding chemistry and the shape of the universe, infuse a pattern of knowledge across the walls and ceiling of the anatomy theater? Whether or not the specific ideas of Paracelsus or Marsilio Ficino, asked to revive Platonism by Cosimo de

Medici, were incorporated here would need to be explored, but some historians have indicated a link of the ceiling with Cicero's passage "The Dream of Scipius" in Book VI of *La Repubblica*. A hundred years earlier, Copernicus studied at the University of Bologna. Some people speculate he got inspired by the Pantheon in Rome, where he took some time off from his studies to visit in the Jubilee year of 1500. The Pantheon is and was at that time the largest surviving dome of the ancient world. In the center of this dome is a round hole open to the sky, surrounded by rings, likely created by sun-centered Mithraists in Emperor Hadrian's circle. Montalbani put Apollo, holding a lantern, in the center of the ceiling. Scholars were executed for publicly supporting Copernicus' heliostropic model of the solar system in the 17th century, so there might be reasons to keep the ceiling decoration enigmatic.

In Scipio Aemilianus's dream, his grandfather, Africanus, appears to him and gives him advice and encouragement regarding his future (before he pillaged Carthage). He instructs that a particular astrological moment of numerical perfection, in Scipio's life, indicates his highest destiny. He then conveys the wisdom that a special place in heaven is reserved for those who preserve or defend their country, or who make it greater. Finally, that rulers and preservers of states, bound together by law and custom, come from heaven and return there, to the Supreme God, ruler of the universe. This would certainly cast an auspicious and purposeful light, from the lamp suspended from Apollo's hand above the cadaver, on these gatherings of learning, which took place on days indicated by the official horoscope. But the numbers Africanus pronounces are "7 times 8 revolutions of the sun", both of these numbers indicating "some quality of perfection". Many people glance at the ceiling and assume they are signs of the zodiac – but only five of them are. There are 14 constellations grouped about Apollo, making 15 figures total in the wooden-coffered heaven above. Apollo, the sun, is round, euphemistically, and is often found in architecture inside an octagon, within which circles perfectly rest, the result of perfect squares overlapping. Both circles and the number 7 are associated with heaven. Apollo's octagon has 8 sides. Three of the constellations on the ceiling, plus Apollo, are apparently linked with medicine.

I will sing the things that must be known about the sky and the marvellous stars (on Astronomy)

This is an encouragement toward learning what is marvellously worthwhile to learn. Marcus Manilius wrote his treatise on astrology in verse, a didactic poem, in the time of Augustus, 1st century AD. It was considered a very learned work, in which the "houses" of the zodiac, called temples or *Templa* by Manilius, were mentioned for the first time.

Medicine is my invention, and I am known across the earth as creator (Metamorphosis)

This is Apollo speaking, inventor of medicine, ruler of the arts and their muses. Creator could be conceived of as artist. This is from Ovid's Book I, with Apollo addressing himself to Daphne, who is fleeing from him.

There is nothing more distinguished than to consider attentively what is visible on earth (Lucretius)

This is surely an indication of the importance and value of the empirical science of anatomy, not only justifying but commending the people that were applying themselves to the anatomical lesson below. From the end of the 1400's, artists and intellectuals were in the grip of ancient Roman architect Vitruvius' work *de Architectura*, written in around 25 BC. Vitruvius expresses his admiration for Lucretius' *On the Nature of Things*, or *On the Nature of the Universe*, which must have sparked the admiration of others. It is an Epic philosophical poem in hexameter, which resurfaced in Florence, Italy in 1417. One of the most complete explanations of Epicurean physics, it argues the case for natural phenomena having an impact on the nature of things, as opposed to superstition. It contributed to the development of the theory of atomism, describing regular motions of tiny atoms in empty space. Also, for people involved with studying cadavers, the notions in this work stating that after death there is no physical sensation or thought, and that a dead person can't miss being alive, might be comforting.

And everything is subject to our power. (?)

This author doesn't know who is speaking here. But the belief in the power of the stars to indicate the appropriate timing of medical practices, and other events on earth, is evidenced by university and civic appointments of astrologers at the time Bologna's "Teatro Anatomico" was built.

The slab for the cadaver, laid out in the center of the room, directly in line with Apollo at the center of the constellations, is suggestive of the most pervasive metaphor of the times: the microcosm and the macrocosm, the world in miniature on earth, the divine reflected in man. In the Renaissance, this information was elegantly displayed with geometry and numbers, which were part of the divine order for the Greeks, Romans and the Renaissance Christians. The universe was still round, and revolved directly around Earth. Man's body fit into the square and the circle, his limbs marking the cardinal points. Scipio's Dream by Cicero would seem to fit perfectly here, with grandfather Africanus telling Scipio that humans were brought to inhabit earth at the center of this holy place, and given souls made out of the eternal fire of stars and constellations, themselves spherical bodies moving with marvellous speed in their own orbits and cycles. As does Africanus' exhortation at the end of the dream, to use the immortal force bestowed by the creator for the most shining works possible, good works that serve the state. The literature of Greece and Rome provided the basis of education for elites of the Renaissance. Perhaps Ovidio (Ovid) Montalbani, Ulisse (Ulysses) Aldrovandi and Achille (Achilles) Bocchi didn't feel any particular inspiration by their names, which might have been the Tom, Dick and Harry of the time. But it indicates that there were intellectual influences beyond the Bible in the imagination of these Bolognese men of science, who left their symbolic mark on the city through their visual organization of knowledge.

Panel two



37. Engraving from *Garden of Simples in Padua* by Girolamo Porro. Padua, 1591.

This watercolor image is modeled after an engraving meant to depict the botanical garden of Padua, the foundation of which was authorized by the Republic of Venice in 1545. The numbers inscribed in the blank spaces of the print have been removed in the adaptation of the image, but Porro's intention was to create a note-taking system for visitors. However, this particular design of the garden was not actually in place at the time he created this book

of blank pages, numbered according to the different areas on the illustration. It was actually a hopeful projection, an ideal format dreamed up to neatly package plants from the four known continents in each of the four quadrants. A later depiction of the garden does reproduce this format in one corner of the image, but who knows if that was also wishful thinking. Regardless whether this universe of nature was ever completed in a useful, didactic structure, it reflects the constructions of universal knowledge being made at the time, as wooden and paper models, and occasionally as full-blown architecture. Often these theaters of knowledge never made it past the drawing stage, due to technical difficulties, or insufficient funding. Both of these problems stymied Kepler, who labored over a paper model of the universe based on nesting geometric shapes in a sphere.

Botanical gardens and museum collections of curiosities burst onto the scene in the second half of the 16th century. The race was on to contain the whole of nature in one space, fresh or dried flat, in a structure symbolically related to the content. Collecting great quantities of items from the natural world together in one place reflected the idea of a garden paradise. It alluded to Eden, with its tree of knowledge of good and evil, and tree of life. Even the perpendicular avenues and fountains at the center reflected principal rivers of the continents, and paradise rivers connected to the fountain of life. This was true of both Christian and Islamic gardens, whether or not they contained medicinal plants. The structuring or layout of these gardens and museum-laboratory-library complexes tried to aid memory and the acquisition of knowledge. But when science became more specialized in the Enlightenment, botanists and chemists found it easier to grow and study plants in simpler beds, as opposed to geometric mazes. The circular plan with square beds representing the earth, and compositions of triangles reflecting the Trinity, fell from grace. New systems of scientific classification cropped the cosmological map of the Renaissance universe.

Panel three



38. Memory theater of Robert Fludd, *Ars Memoriae*, Oppenheim, 1619. Engraving.

This image based on one of three "theaters" depicted in the late Renaissance memory treatise by Englishman Robert Fludd (1574-1637). He was an Oxford-trained physician, mathematician and astrologer criticized by theologians and scientists, including Kepler,

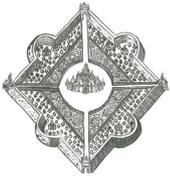
whose own goal with astronomy was to convey the wisdom of God. For Fludd's detractors, he was promoting Hermetic Cabala, mystical occult practices seen as conflicting with Christianity. It appears to scholars that have studied the mnemonic systems put forth in the Renaissance that Fludd's technique does relate to the genuinely occult memory system invented by Giordano Bruno, in some ways. But there don't seem to be any indications that Fludd believed in rejecting Christianity in favor of the magical practices Bruno credited to the Egyptians. Fludd proposed what resembles the usual ancient Classical memory techniques based on associating words or images with architectural elements of a real or imagined building, to facilitate memorizing something, like a speech, or a shopping list. Fludd's semi-original twist was to combine the mental buildings, and their attached words, with the 12 signs of the zodiac, and the gods associated with each sign, to add another layer of mental connections. Also, as the horoscope for Fludd represented concentric rings devoted to the seven planets, and an eighth ring devoted to the 12 zodiacal houses, his technique involved movement of celestial bodies. A spinning wheel perhaps, not just a static building. Actually, he had a seven-tiered pyramid structure to move ideas up and down as well. No one knows for sure what he meant, as these and other techniques for learning, published by fellow followers of secretive philosophies, often came with imperfect instructions. And the illustrations didn't quite correspond with the text, as is the case here.

But the most interesting thing to think about today is that this image may be the closest we have to a depiction of Shakespeare's second Globe Theatre, on the banks of the Thames. It is puzzling why no one thought to make a drawing of the inside, or even the outside, of the Globe, considering it burned down once already in 1599. But things do get lost, so documentation may have gone missing. The only sketch of an Elizabethan theater preserved is a pen and ink drawing by a Continental tourist, named De Witt, of the Swan Theatre. In her book *The Art of Memory* (1966), Frances Yates first proposes the theory about the Globe Theatre in a chapter on Robert Fludd. The modern reconstruction of the Globe in London today suggests that people have taken her hypothesis seriously. One convincing link is that Fludd advocated strongly for using *real* not invented architecture as a way to memorize things. This suggests he had a specific building in mind, one that many people were familiar with. Yates quotes Fludd's definition introducing his illustration: "I call a theater (a place in which) all actions of words, of sentences, of particulars of a speech or of subjects are shown, *as in a public theatre in which comedies and tragedies are acted.*" It would seem like more than a coincidence that the Elizabethan proscenium had the zodiac painted on the ceiling of the projecting part of the set, referred to as "the heavens". And whether or not Fludd planned this, his book presents the zodiac on the left hand page and the theater stage on the right hand page, so the heavens rest on top of the stage when the book is closed.

There are interesting clues pointing to the adoption of the actual Globe Theatre by Fludd in his memory treatise, the second book of a 2-part series dedicated to James I, whose support and patronage he sought. Fludd's father was an important official in Elizabeth I's court, so he certainly would be familiar with the art of currying favor. King James contributed considerably to the expense of rebuilding The Globe, so Fludd might have chosen to incorporate a building which would honor him. In this watercolor adaptation based on Fludd's illustration, the text "Theatrum Orbi" has been removed. This could be interpreted in the memory treatise as "The Theater with the world" according to Yates, but it is hard not to make a play on words with *orbis*, world, and globe. Shakespeare's "All the world's a stage" fits with Fludd's cosmic Renaissance ideas of the microcosm in relation to the macrocosm, of man as a tiny reflection of God, in the terrestrial sphere at the center of a harmoniously constructed universe.

One of Shakespeare's patrons was Fulke Greville, a noble very close to poet Sir Philip Sidney. They were friends of Giordano Bruno, who lived in London for three years and dedicated a book to Sidney, when Shakespeare was around twenty, although it is not known exactly what year he came to London. Astrology and astronomy were still synonymous at that time and taught in universities. City governments appointed an official astrologer in some cities in Europe through to the 19th century. Ideas about the heavens affecting events on earth were part of memory treatises, like the one Bruno dedicated to Sydney, *Italian Dialogues* (1584-5). It wouldn't be surprising that this atmosphere would extend to the design of a theater, or soliloquy.

Panel four



39. Uraniborg, the house and laboratories of Danish astronomer Tycho Brahe (1546-1601). Engravings. Tycho Brahe, *Astronomiae instauratae mechanica*. Wandesburg, 1598.

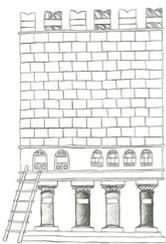
This image is a combination of two prints adapted from the astronomer's book, which he published with his very own printing operation established within the walls of his vertically-integrated scientific complex, created with both symbolic and practical ideas in mind. This hands-on scientist, who allowed for a new, irregular, picture of the heavens to emerge

through patient observations with the naked eye alone, was a man of his time regarding the symbolic design of Uraniborg. Natural history collections, botanical gardens, observatories and anatomy theaters, where lessons on dissection were given, began to be combined in unified complexes of laboratory, museum and library. The artistic and architectural designs of these didactic spaces conveyed a unification of the celestial and terrestrial worlds, macrocosm and microcosm, man's relationship to the perfectly spherical universe with earth, not the sun, at its center. Ironically, Tycho Brahe's observations established that planets move in ellipses, not circles symbolizing perfection.

Tycho's 16th century book is an example of publish and perish: the purpose-built cosmological complex of Uraniborg was abandoned and destroyed around the date of publication, due to political rifts partially the result of Tycho's notoriously difficult personality. This turned out well for astronomy, the old model effectively demolished when Tycho fled to Prague and took in Kepler as a protégé, who continued recording the decades-long observations of planetary orbits. All that remains of Uraniborg, itself symbolically named for Uranus, the goddess of astronomy, is these images, the typical fate of most of the purpose-built Renaissance scientific and botanical architecture. Tycho Brahe spent two decades building his castle complex with scientific laboratories and observatories surrounded by a botanical garden with medicinal plants, and plants specific to the chemistry of the time, known as alchemy. Before starting his construction, he travelled to Italy to study the architectural ideas of Serlio and Palladio, loaded with ideas from Vitruvius.

Tycho oriented his central building in the center of a perfect square, positioned on cardinal points to aid astronomical observation, surrounded by a scientific garden divided by avenues indicating the cardinal axis. Whether or not his philosophical ideas, au courant at the time, about an ideal scientific working-space being facilitated by concepts of proportions and sacred geometry in the universe, he did make the highest quality observations at that time. Brahe's careful observations of a comet in 1577 demonstrated that the comet was farther away than the moon, which contradicted Aristotle's theory of comets as part of the Earth's atmosphere, perhaps burning gases. This observation, coupled with an earlier one of a supernova, which appeared all of a sudden in 1572, demonstrated that the universe could not be unchanging as posited by Aristotle. Aristotle's model of the universe as elegant, transparent, crystal spheres with stars attached would ultimately be smashed by scientific instruments. Actually, Tycho made observations by eye, and he was still the first astronomer to see the planets as self-supporting, without any crystal sphere armatures.

Panel five



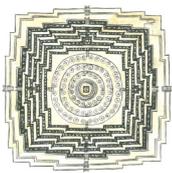
40. Catholic memory palace, turrettus sapientie (tower of wisdom) in *Libro delle Figure*, illuminated manuscript, parchment, 15th c Italy. State Archive, Milan (see item 58, part of same manuscript).

This image is adapted from a colorful manuscript completely covered with Latin text indicating, from the bottom up, the steps to the highest attributes attainable: innocence, purity, fear of God, chastity, self-restraint and virginity. Each architectural level is annotated in red, named as: foundation, base, columns, capitals, doors, windows, and merlons or crenellations. Humility is the foundation of the tower, which is supported by the

columns labeled with the necessary characteristics of rectitude, stability, strength, justice and sweetness, diligence and truth. A ladder with names on each of the seven rungs, including penitence, prayer, alms and fasting, leads to the doors of obedience and patience, and the windows named with virtues. Each brick or stone block, in alternating red and black text, instructs the reader what to do and what not to do in order to progress up to the crenellations at the top, such as "Don't steal" and "Don't be hysterical" and "Seek peace". This manuscript shows that Catholics availed themselves of architectural memory devices, not just the more frequent tree formats. Affixing knowledge or words to windows and doors and columns would appear to come from ancient Classical memory-treatise techniques, adopted by both the Franciscan and the Dominican

Orders to facilitate memorization. The Tower of Wisdom was just one category of a series of diagrams, many of them trees, grouped together in what is known as the *Speculum theologiae*. There is no known author of this text, which began to be copied over in monasteries in the 12th century, and differs from copy to copy. It usually includes a wheel diagram based on the number seven, trees of virtues and vices, and a tree of St. Bonaventure's 13th century text *The Tree of Life or Lignum Vitae*. Item 58 below is an example of a tree of the ten plagues of Egypt and the Ten Commandments, and the function of each. A beautiful example of St. Bonaventure's book *Lignum vitae* transposed into the diagram of the Tree of Life may be viewed on the wall of the refectory (now the museum) of the church Santa Croce in Florence, Italy. Painted by Taddeo Gaddi in 1335, it is covered with Bonaventure's text about the mysteries from the life of Christ, as twelve scroll "branches" and twelve circular "fruits". Sometimes a whole church could serve as a memory device. Brother Agostino del Riccio (1542-1598) wrote about how to use Santa Maria Novella, across town, as a memory system incorporating the chapels and altars as places to mentally store knowledge.

Panel six



41. Architectural drawing of Buddhist monument Borobudur, view from above. Java, Indonesia, circa 800 AD.

When this watercolor rendition of a bird's eye architectural drawing was shown to a Buddhist monk formerly responsible for creating ritual sand mandalas and domtor butter sculptures for His Holiness the Dalai Lama, he matter of factly stated that it was a particular ritual diagram. He had no idea that this mandala had been created in three dimensions in stone on Java 1200 years ago. And yet, he had memorized book-length texts to be recited during the creation of flat, ritual sand drawings, with the purpose of guiding those present through the mandala's invisible three-dimensional palace together, mentally, in meditation.

The ritual diagrams known as mandalas evoke the memory architecture of ancient Classical mnemonic techniques: buildings to be travelled through mentally, with vivid descriptions of striking figures, architectural elements, and colors, attached to a memorized text. For the Buddhists, the text and the diagram are one. Art with instructions, in which the message is reinforced by visual depiction, imagined in three dimensions. Is the art a memory aid for the text, or the text a memory aid for the art? Each reinforces the other. It is art with a purpose, enabling those present at the ritual to concentrate deeply, while completing this mental journey through the invisible palace together. A sort of pilgrimage circumambulating significant symbols and ideas with the goal of achieving an enlightened state. The ancient Greeks and Romans were applying their memory palaces to remembering texts, but not necessarily spiritual ones, just public speeches, facilitating the study of rhetoric. Although they certainly applied mnemonics to the accumulation of systems of knowledge. When ancient techniques were rediscovered in the late medieval and early Renaissance period, religious orders and intellectuals used them for memorizing spiritual and scientific material. In some philosophical traditions the memorization was attached to mystical and occult practices, and lead to excommunication and even death, for the unrepentant Giordano Bruno. Memorization strengthens the memory muscles of the brain – use it or lose it, in atrophy, so to speak. 3-D models of knowledge have not always been created with the intentions of spiritual enlightenment, but for the Buddhists, Hindus and Jains, it has been a primary goal in both architecture and ritual diagrams, documented through descriptive text.

In Borobudur, the pilgrims move clockwise up through a 3-D mandala, gazing at carved teachings relating to episodes of Buddha's life and the Jataka tales, as they make their way symbolically through the three levels of the cosmological design, interpreted in various ways. Undoubtedly the knowledge depicted on the terraced passageways communicates ideas about the path to enlightenment as the pilgrims progress up the gigantic stupa to the highest, unencumbered platform. Some authors assert that the monument represents the three cosmic spheres: Kamadhatu, the sphere of desire, the realm of uninspired, undirected men; Rupadhatu, the sphere of forms, where adepts begin to find their path; and Arupadhatu, the sphere of absence of physical form at the summit. It was constructed to face the four directions with 92 outward-facing Buddhas doing mudras correlating with the north, south, east and west.

Panel seven



42. The built mind inside the City of Truth. Engraving. Bartolomeo Del Bene, *Civitas verisive morum*. Paris, 1609.

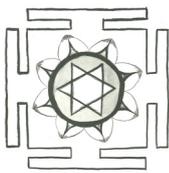
This image is derived from an engraving for a work written in 1585 by the cleric and Humanist Bartolomeo del Bene, but published posthumously in 1609. The work, an allegorical epic poem written in Latin in hexameter, gives visual form to Aristotle's Nicomachean ethics. It is an entertaining architectural format created for the French courtiers of Henri III, explaining the Greek philosopher's famous attempt to define happiness and the way to achieve it. Aristotle's work becomes a 30-day journey through the structure of the mind, as conceived medically at that time, with an allegorical picture corresponding to each day of the spiritual voyage, with Aristotle guiding the Duchess Marguerite of Savoy through the 3-D knowledge land.

Del Bene was a writer of odes and a member of the French court, destined to journey on behalf of his patrons between Paris, Tuscany, Rome and Turin, seeking sinecures and carrying out useful errands. But he managed to spend time with intellectuals, loosely grouped in academies with funny names, interested in exploring connections of ancient philosophy to contemporary science. This didn't necessarily conflict with Christianity, as many of the Humanists, who also belonged to religious orders, sought to point out. But it was essentially Aristotle's or Plato's version of things, depending upon the school of thought.

This particular image is a close-up of the mountain-like center of the City of Truth, which is reached after passing through one of the five gates in the city walls, each dedicated to one of the five senses, and proceeding along avenues and through palaces overlooking the valleys of vices. The goal of the journey is to reach the five temples at the top of the mountain: knowledge, art, prudence, intelligence and wisdom. A central axis consisting of a vertical flame, shooting up to the heavens, represents the splendor of the mind and the power of the will, according to Del Bene. The temples on top may be reached by steep staircases surrounded by statues standing in for Aristotle's concept of the three internal senses: common sense, imagination and memory.

The good life, for Aristotle, is achieved through a virtuous character, which is not fixed, but instead, like health or knowledge, is something that requires dedication and maintenance. The virtues of character, known as the four moral virtues, are magnanimity, justice/fairness, practical judgement, and being a good friend. Good habits help, but constant effort is needed. Thus man's function, the activity of man's soul in accordance with virtue, sounds like the description of a good marriage.

Panel eight

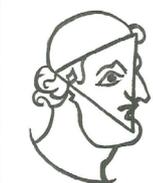


43. Yantric manuscript. Gouache on paper. 19th c Bengal, India. Collection of P. Withofs.

A yantra, used in early Vedic practice and later Hindu, Jain and Buddhist traditions, is a visual equivalent of the sacred syllables known as mantras chanted aloud or silently in ritual meditation. These abstract geometrical designs function as a focal point for concentration, to aid meditation. They are created in a precise way in both form and color to indicate the ritual or deity to be invoked. In this instance, the mantras painted on four petals and in the center of the circle were removed in the watercolor adaptation. There was no yantra title inscribed on this particular diagram, but Tibetan Buddhists identify the overlapping triangles with the deity Mahakala. The Jains sometimes place a Tirthankara (enlightened human) inside the triangles, together with sacred syllables. As noted in the Jain vase of plenty diagram, item 14, the circle surrounded by eight lotus petals is a common format for visual aids in ritual practices of the Indian subcontinent.

Side Two (multiple images on each of the 6 pages)

Panel Nine (human body and architecture)

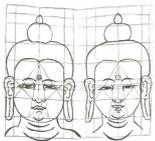


44. Geometry in human body. Villard de Honnecourt, ink on parchment, France, circa 1220-1240. Bibliothèque Nationale de France, Paris, MS Fr.19093.

This watercolor is based on an ink drawing from a medieval manuscript called a model-book, a sort of sketchbook with text intended as a didactic manual. These curious pages,

assembled from loose sheets and sewn together as a bound book, were intended by the author/draughtsman to be useful in masonry, carpentry and drawing. Some of the images, including this one, intend to convey ideas about geometry and proportion.

This 33-page work is the most well-known and studied manuscript of its kind, yet all that is known about the author is his name. Even his profession or education is difficult to decipher. Villard de Honnecourt may have been an architect, artist or craftsman – maybe a mason or metalworker. And whether he was literate, or had someone help with his annotations, will likely never be known. It is possible his amusing drawings in leadpoint and ink on parchment of people and animals, composed of geometric shapes, like tangrams, were influenced by some sort of exposure to the writings of Vitruvius. If so, he was unique in his interpretations applied to drawings of horses, dogs and humans. Some of the images, crowded willy-nilly onto the pages, look more like 20th century cartooning manuals than Medieval aids in drawing and proportion. It looks to me that this man has ice cream on his mind, but waffle cones wouldn't be invented for another 600 years.



45. Builder's manual for the proportioning of images and monuments, ink on paper, 19th c Nepal. Collection of G.Virtue.

Items 45 and 48 come from the same accordion-fold manuscript, a Buddhist manual providing detailed instructions for the construction of sacred monuments, known as caitya. Commissioning a sacred work of art is considered to be a meritorious act important for all

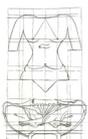
Nepalese Buddhists. While this particular manuscript was purportedly copied out in the 19th c, Buddhist and Hindu building manuals indicating the correct, sacred proportions to be replicated have existed at least from the Gupta period (320-550AD). The goal was to indicate and ensure the correct relationship of the parts to the whole, whether in a face mandala, as this image is categorized, or in the construction of sacred architecture, including the images adorning it.



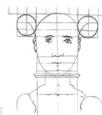
46. Proportions of a column capital, Francesco di Giorgio, after Vitruvius (see item 29).



47. Woodcut image from the colophon of *Jisaishiki* (groundbreaking ceremonies), by Tomoyama Motome, Japan, 1799. Tokyo National Museum (see item 5).

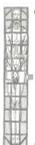


48. Builder's manual for the proportioning of images and monuments, ink on paper, 19th c Nepal. Collection of G.Virtue. See item 45.



49. Proportions of a column capital, Francesco di Giorgio Martini, after Vitruvius.(see item 29).

Panel ten (humanist incorporation of Vitruvian theories in Christian structures)



50. Christ in Noah's Ark, illustrated bible(see item 3).



51. Proportions of a column, Francesco di Giorgio Martini, after Vitruvius(see item 29).



52. Four contiguous sections of planks from the tabernacle, illustrated bible(see items 1,2,3).

Panel eleven (human body in architecture, Vitruvian and Jain)

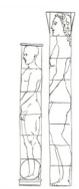


53. Proportions of an Ionic column, Francesco di Giorgio, after Vitruvius (see item 29).



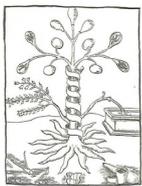
54. Jain manuscript painting of layers of heavenly deities' palaces, gouache on paper, 18th c, Rajasthan, India.

This is an adaptation of a structure displaying 62 levels of palaces or vimanas inhabited by celestial gods. It is at the top of the axis of the world in the center of the Jain cosmology. The Sanskrit text, describing precisely the names of each level and the resident gods, has been removed, enhancing its appearance as a column or spine, both accurate impressions. The Jain cosmology likens the axis of the universe to a cosmic man with a column of the levels of world centered along his body from head to foot, as depicted in item 8. Without the Sanskrit words and tables, it looks like the colorful, geometric artwork of Swiss artist Paul Klee.



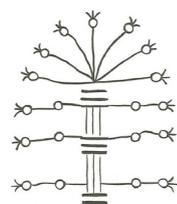
55. Proportions of an Doric column, Francesco di Giorgio Martini, after Vitruvius (see item 29).

Panel twelve (tree typologies)



56. The tree of life, from *Quinta Essentia*, by Leonhart Thurneisser zum Thurn, Leipsig, 1574. Engraving.

This is a German emblem book, with rhyming verse above and below the image, and Latin inscriptions on the tree and the objects. As in all the other watercolor images of this book, the text was removed to unify the images. The scroll curling about the trunk of the tree delineates six chemical processes, like reduce, coagulate and distil. The roots of the tree of life have names of metallic elements and organic compounds: potassium nitrate (saltpeter), tartaric acid, arsenic, mercury and antimony. Some of the glass vessels on the end of the tree branches contain birds, others symbols of alchemy. The diagram would seem to indicate that the processes combined with the elements produce an elixir of life, pouring out of the tree branch/spout at the right into a basin entitled Oleu Virtutis. The tools to help you are below the roots, consisting of a balance and mortar and pestle. The title of the book, *Quinta Essentia*, indicates it is a treatise on alchemy. After the four elements of earth, fire, air and water, the fifth “necessary” or quintessential element was variously interpreted as the essence of life, the substance of celestial bodies, or the purest matter extracted from chemical substances, equated at times with the Philosopher’s Stone and immortality. Emblem books themselves were thought by some Renaissance philosophers to act as a portal to knowledge and enlightenment while focusing intently on the meaning of the complex images and surrounding text. Unfortunately, these mnemonic devices were undoubtedly most useful only to the people creating them, although some hastened their author’s death, like Giordano Bruno (see item 28 for Giordano Bruno, items 24, 26, 28 for emblem books).



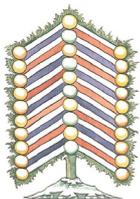
57. Late Assyrian Tree of Life, stone carving, 1500BC.

Whether it is called by scholars the “sacred tree” or “Tree of Life”, a stylized tree with religious significance has been present in the material culture of Mesopotamia since 4,000BC and present in Egypt, Greece and the Indian subcontinent by 2,000BC. In a number of cases, the tree is a personification of a king, a divine ruler or spiritual leader, or an earthly monarch wanting to appear as a divine ruler descended from a supreme god. The tree in Mesopotamian contexts is also associated with a divine world order, maintained by the ruler as the central trunk or pillar of equilibrium. The tree can represent at the same time the macrocosm, a harmonious structure of the world, and the microcosm, with an ideal man created in the image of god.

Some interesting research conducted by Simo Parpola, University of Helsinki, published in the *Journal of Near Eastern Studies*, suggests that sacred tree variations which emerged in the Late Assyrian Period under Tukulti-Ninurta the First have much to convey about sacred genealogies, ascetic practices geared toward enlightenment, and even the meaning of ancient literature. After noting the marked similarities between the later Sefirotic Tree of Jewish mysticism, the scholar was able to identify specific Assyrian gods and their number values, and a supreme god Assur, with precise elements in the tree diagram. The similarity between the Jewish mysticism, known as Cabala or Kaballah, and Middle Assyrian traditions, which both used the numerical value of letters of a word (gematria), and used certain words as abbreviations for complete phrases, or letters of syllables as abbreviations for words (notarikon), has allowed for some striking information to sprout from the tree. The alphabet figures as the instrument of Creation with a capital C in both religious philosophies. The creation of the cosmos and the creation of language are strongly linked, and combinations of syllables leading to the creation of man appear in both traditions, referred to as secret knowledge in the scribes' annotation or colophon at the end of relevant texts.

After Parpola establishes where the various deities and number values reside on the sacred trees of Mesopotamian origin, deity genealogies of fathers with sons, or a daughter, below them correspond on the right, central and left columns of circles. Surely this must be the first example of a genealogy in tree format, just about the only tree diagram people are still familiar with today. But another pattern emerges, that of a proscribed path of spiritual progress from the bottom to the top of the tree, resulting in enlightenment, or for very few balanced and studious initiates, the ability to communicate with the souls of the dead in a self-induced trance-like state. But for fans of *Novels of Purpose*, or the didactic value of literature, Parpola also presents a hermeneutic or explanatory interpretation of just about the oldest novel known, the Mesopotamian *Gilgamesh Epic*.

This text encourages the reader to look closer to discover its gate to hidden secrets, toward the end of the book, and the secret gate would appear to be a reading of the text as an instruction manual to using the sacred tree diagram. Different aspects of *Gilgamesh* in the text are consistent with descriptions of mystics and trance-inducing practices, identified in Jewish mystical texts as the "ascent to heaven". His spiritual journey from a sorrowful earthly terrain, along a path of self-knowledge, filled with trials, tests and temptations, resulting in wisdom and eternal life in a garden paradise, crowning the tree, fits with the qualities assigned to the gods in each circle along the way. The standard Akkadian 1300BC version of this ancient literature consists of 12 tablets found at Ninevah, although the text is considerably older. Tablet 12 has appeared not to fit with the whole in the eyes of scholars reading the surface of the cuneiform text. In Parpola's analysis, Tablet 12 makes perfect sense, as spiritually enlightened *Gilgamesh* is able to evoke his "divinatory" dream-state on command, and obtain secrets from his dead friend *Enkidu*, before returning to the world of the living, where he may share his wisdom.



58. Christian manuscript mnemonic tree, *decem legis mandate* (Ten Laws Given) in *Libro delle Figure*, illuminated manuscript, parchment, 15th c Italy. State Archive, Milan.

This is a Catholic tree diagram used to model and communicate information regarding negative or sinful behavior. This particular typology was generally found together with a group of text-covered diagrams known collectively as the work *Speculum theologiae*, first appearing in manuscript form in the 12th century. In this watercolor adaptation, the Latin text has been removed from all the circles and the strips connecting them. The left column of circles lists the 10 plagues of Egypt, with adjacent text moving upward toward the trunk of the tree explaining why each plague was sent. The center row of circles, at the trunk of the tree, lists the ten commandments. The texts proceeding downward from each circle, forming the right-hand "branches", explain what each commandment prevents, or counteracts. The column of circles at the right represents negative, abusive people and gives examples of what these people lacking will-power do, such as being given to vices or not respecting the Sabbath.

A number of trees are used allegorically throughout the Bible, from Genesis to Revelation, and given symbolic names, so it is not surprising that they are so pervasive as armatures for Christian knowledge. The Crucifix, and Christ, are often incorporated into the tree diagrams, although trees of Jesse abound, as well, as devices for communicating textual information. The uses of three columns of ten circles, with the central column being the trunk of the tree evokes the mystical Sefirotic Tree diagram, central to the Jewish

mysticism known as cabala or Kaballah, which was adapted by Christians with a few slight changes (see item 60 below).



59. The Rose-Apple Tree (The Jambu tree) of the Jain cosmology. Ink and gouache on paper. 18th c, Rajasthan, India.
(Same as item 11 but the branches are actually a gold color, as they are described in the text.)



60. The Sefirotic Tree

This tree diagram is a fundamental element of practical and theoretical Cabala, the Jewish mystical doctrine. The Sefer Yezirah text was likely composed between the 3rd and 6th centuries BC, while Cabala as a doctrinal structure is believed to date to the 1st century AD. The earliest surviving manuscripts only date however from the 10th century AD, when Cabala doctrines spread to Europe in the Middle Ages from the Rabbinical schools of Babylonia. The origins of the Sefirotic Tree are connected to the patriarch Abraham, to whom this structure, tradition holds, was revealed. Scholarly work thus far places its genesis in Babylonia. The rules of Talmudic hermeneutics were explained by Rabbi Hillel, a first century immigrant from Babylonia. To see possible connections with earlier tree diagrams from the same geographical area of Mesopotamia, read item 57 above.

The circles in this watercolor rendering of the standard Sefirotic Tree have been voided of text, but each circle is associated with a number and a name describing a quality or divine attribute of god. The diagram is a schematic Cosmic Tree of Life, indicating the Path to follow, from bottom to top, to obtain the Crown of Heaven, number 1, Keter, at the apex. The word sefirot is defined as countings or numbers, and each letter of the Hebrew alphabet is assigned a number value along with its name. The circles are numbered 1-10. Almost nothing was known about Cabala until the late Middle Ages because it has been transmitted orally, considered to be secret knowledge revealed only to stable, balanced, learned initiates. Colophons, added by scribes as notes at the end of manuscript texts, declare the holy knowledge to be secret, with instructions to show it only to initiates, not to anyone else.

The Sefirotic tree is also representative of three pillars, with the Pillar of Judgement and the Pillar of Mercy flanking the central Pillar of Equilibrium. The zig-zag movement through all the circles moving from the bottom up from right to left to right among the three pillars is reminiscent of ancient boustrophedon writing, like an animal plows a field, or a computer prints lines of text, or how a clay tennis court is swept. It is a symmetrical diagram with the balance maintained by the central trunk. The circles on either side of the trunk, or pillar of equilibrium, are considered polar opposites of each other, which play their part in the cosmic harmony of the universe. The Sefirotic Tree also summons up the structure of the cosmic body of the archetypal “perfect man” known as Adam Kadmon.

After the literature of Cabala practices was introduced to Italy in 870AD by the Babylonian scholar Aaron ben Samuel, Christians began finding divine revelations in its texts which it was assumed would help to understand Pythagorean teachings, Plato and secrets of the Catholic faith which was Jewish in origin. As time went on, theologians and humanists adapted Cabala to suit their own needs. The names of the Sefirot were translated, and Adam Kadmon could be identified with Christ. The fundamental concept of the Three World Ages in Cabala, the three successive stages in the creation of the world, and the three-fold process of the Divine Mind appealed to the Christian associations with the number tree, in the Holy Trinity, which could be perceived as the reigns of the Father, Son and Holy Ghost. Many Renaissance theologians, scholars, purported mystics and philosophers used the Sefirotic Tree for their own structures of knowledge, often combined with the teachings of alchemy and astrology.

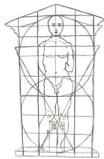


61. Maya ceiba world tree at the center of the universe, p.75-76 of the Madrid Codex, Museo de America.

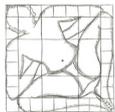
The ancient Maya cosmology placed four trees at the four cardinal points and a green ceiba or kapok tree (*Bombax ceiba*) in the center, which connected the terrestrial plane to heaven high up at its perpendicular branches and umbrella-shaped canopy, and to the underworld, through its roots. The stylized tree, likened to a geometric cross both vertically and horizontally with branches reaching out in the cardinal directions, is referred to as both the cosmic tree and

the tree of life. It is a key element in prominent Maya artifacts, such as the stone sarcophagus lid of the ruler Pacal at Palenque. In that more complex tree image, the cosmic tree shows its attributes as the axis of the Maya cosmology, with the king Pacal travelling down the trunk to the underworld, known as Xibalbà. Wacah Chan was the name referring to both the cosmic tree and the king, and these two concepts were linked visually. Images of Maya rulers show they personified the sacred tree in their ornamentation and dress, including what appear to be ceiba flower ear ornaments. The perpendicular branches of the ceiba tree on Pacal's tomb sprout jewelled dragon heads at their extremities, with curling motifs projecting from their mouths that some scholars have likened to the curved petals and stamen of the ceiba flower. A supernatural sacred bird, also associated with the central fulcrum of the Maya world structure, presides at the summit of the cross. The roots of the tree enclose the four-sided, or quadripartite, monster mouth of the underworld (discussed further at item 68).

Panel thirteen(humans, architecture, inner sacred spaces)



62. Proportions of a church, Francesco di Giorgio Martini, after Vitruvius (see item 29).



63. Cosmic man, Mahapurusha, ink on paper, Hindu architectural manual. From *The Hindu Temple*, George Michell, University of Chicago Press.

Construction manuals of Hindu and Buddhist sacred architecture literally illustrate the idea of temples as sacred geometric diagrams, whether or not the measures of sacred proportions are visible to the naked eye. While an inner temple floor plan may not show patterns of concentric squares implying planetary information or the physical anatomy of a cosmic being projected into the space, the builders' manuals leave no doubt. The temples and shrines are the macrocosm in miniature. The human body expressed in architecture, in its spiritually perfected form, relates to the structure of the universe, sitting in a lotus position, or other ascetic pose, or standing, with the spine as a pillar aligned to the cosmic axis of the world. But the goal is not to merely communicate ideas – the goal is harmony, or perfection, that sacred images and areas might be inhabited by spiritual beings, or deities. This is expected to increase the effectiveness of worship, which itself will create harmony in the universe, a win-win situation, no?

Sacred mathematics and geometry are an integral part of Hindu, Jain, Buddhist and Muslim doctrine. While there is Greek philosophy regarding proportion and harmony underlying Christian thought, it had its day in the Renaissance, after which math and astronomy charted new routes. But mathematics will always be associated with perfection, if not religion, although some religious doctrines do not recognize a distinction between sacred and secular.



64. Indian Primeval Man and Cosmic Symbol, ink on paper, 19th c.? Nepal.

This watercolor is based upon an image from a Nepali builder's manual from the 19th century or earlier. This Buddhist "cosmic man" is made to fit in a mandala of 81 equal squares. The idea is that a space constructed in these proportions would be particularly auspicious, because (an invisible) cosmic man would fit perfectly in the floor plan. This image would be implied, but not drawn, on the temple floor. (see item 63 above for a Hindu version)



65. Stupa diagram

This stupa, or in Tibetan, chorten, is essentially a reliquary tower, although it may be small and portable or huge and monumental. Stupas are both symbols of spiritual progress, and a place where that progress may occur. Small stupas are put on private altars, with other sacred objects or texts to represent the three faculties of Buddha's Body, Speech and Mind, according to John Blofeld's *The Tantric Mysticism of Tibet*. Monumental chortens or stupas are the focus of pilgrimage, circumambulated in a clockwise direction by pilgrims, so that their right shoulder is always facing the reliquary tower, as a sign of respect. Stupas evolved from the hemispherical tumulus grave mounds used by ancient cultures to honor important people. The Great Stupa at Sanchi in India

exemplifies the tumulus form, and is considered the oldest and probably the most important of all surviving Buddhist monuments, one in a circuit of four stupas commemorating the birth, the awakening, the first sermon and the final nirvana of Shakyamuni or the historical Buddha (563?-483?BC).

Stupas contain holy relics of the Historical Buddha or important Buddhist teachers, and occasionally sacred texts, serving as memorials. But they also are a three dimensional model of the universe, making visible Buddhist teachings and the upward process of enlightenment. There is very specific symbolism in the diagram painted here: the Buddhist community, the four stages of spiritual progress, and the five elements of earth, water, fire and air, plus the intangible mind, spirit, void or “ether” at the top, according to Blofeld. Different schools of Buddhism have various interpretations of the geometric elements incorporated in these cosmological towers, but the shapes serve to remind followers of Buddha’s physical body, his teachings and his enlightenment. Pilgrims still visit stupas with the belief that being in the vicinity of the relics increase the possibility of happiness in this world or salvation in the next. To create or commission spiritual structures, big or small, is a goal of Buddhist adherents in their lifetime. The Mauryan Emperor Ashoka (271-231 BC) set the bar, creating supposedly 84,000 stupas, as well as carved columns to promote Buddha’s peaceful teachings across Asia, topped with a wheel as a symbol of both Buddha’s body and his teachings, or Dharma.

The burial mound-shaped stupas developed into various structures wherever Buddhism spread. In Korea and Japan they are pagodas. But their reliquary function is the same, as is their symbolic value as models of the universe, with tree and mountain associations. Trees are connected to important episodes of the Historical Buddha’s life, but the Rose-Apple Tree on the summit of the sacred Mount Meru (the same in the Jain diagrams at items 11 and 59) is perceived as a cosmic pillar connecting heaven and Earth. Traditionally, there is a wooden post set into the ground and rising up out of the top of the stupa, itself representing the world axis or cosmic pillar.

Panel fourteen (plans of heaven and hell)



66. Jain heavenly deities palace formation, gouache on paper, 16th c Gujarat, India.

This manuscript presents a bird’s eye view of architecture in the Jain cosmology. The palaces, or vimanas, of the heavenly deities are indicated as triangles and squares organized along the cardinal directions on circular tiers. The tiers, or levels of the upper world, decrease in size as they rise in height, like the layers of a wedding cake. Vimana, in Sanscrit, means well-proportioned or well-measured. The Jains are famous for their

elaborate use of math and geometry to describe the minutiae of their dizzying universe structure. The text has been removed from this and all the other Jain diagrams, but these annotations do not always agree the with images, which were visual aids for adepts explaining concepts to other followers. Some things just had to be imagined. The palaces did not always have the same shape or layout in the diagrams, but each one was supposedly as big as a town, and the palaces in the upper world were identical in size and disposition to the vimanas of the wrathful deities in the lower world.



67. Rubbing of a Han stone relief, Tomb of Wang Te-Yuan, 100AD, Sui-Te, Shensi Province, China.

This watercolor mimics a rubbing of a carved door frame from an ancient Chinese tomb. The image has been interpreted as an incense burner in the shape of a magic or universal mountain island paradise. This kind of incense burner is called boshanlu, although, like many terms in this text, it has a number of variant spellings. It appeared on the scene in the

Han Dynasty, at a moment when incense began to be imported to China for the first time, and when there was an increasing obsession with, and curiosity about, the three magical mountain islands in the Eastern Sea, the most famous of which was Penglai. They were known as the Fortunate Isles, or the Islands of the Blessed. No one was sure if the sacred mountain islands existed, off the coast of Shandong, and the mountains and the Immortals inhabiting them supposedly disappeared into mist when approached. The Han Emperor Wu, who came to power in 141BC, tried very hard to discover this divine aquatic mountain paradise, especially since a drug preventing death was presumed to be found there, and alchemy experiments had not yet resulted in the elixir of eternal life. He even built an artificial lake with three islands in it near his new palace in 104 BC. Mountains in general were associated with paradise and immortality, and scoured

over the next millennium for mushrooms and herbs thought to confer immortality. But this particular mountain paradise, Penglai, resting on floating islands, was never found, to the disappointment of many, especially those who perished after being sent off to find it by various Emperors.

The incense burners, as well as mountain-shaped mortuary jars, kept the concept alive, however. The hot incense smoke flowed out through tiny holes in the jagged mountain peaks rising over waves, recreating the mythical mists shrouding the elusive mountain paradise. This portable landscape in miniature, placed on a scholar's desk or in a shrine, might lose its scale while shrouded in fragrant incense during meditation, just as the rocks still found in Buddhist gardens today may be visualized as mountains or islands in the sea. The boshanlu were adopted into Chinese Buddhism later, for liturgical purposes, although they arose in China in a Confucian context.



68. Stone base-relief of a cave entrance, Olmec site, Pre-classic period (1500 BC-200AD).

The monster-mouth in Mayan iconography represented the entrance to the spirit realm of the watery dark underworld from which life emerged, and to which life returned, excepting the few who managed to access the 13-tiered paradise world in the shady canopy of the ceiba tree of life, foraging cocoa beans to make chocolate drinks when they were thirsty.

The jaws of the two-headed sacred snake served as portals for shamanistic journeys, and the snake's body winds through the branches of the sacred world tree, but the Jaguar mouth was

the symbolic gateway to the subterranean spirit world, accessed through deep mountain caves. Like the cave realm it presided over, the Jaguar god was associated with rain and fertility, both necessary to life. Caves were viewed as sacred sites linking the daily, terrestrial world to the underworld, and were used by the ancient Maya for rituals and elite burials. Sacred wells, naturally occurring cenotes, a fundamental source of water on the Yucatan peninsula, were also regarded as passages into the dark spirit world, containing nine regions or levels. The rectangular plazas of Maya monumental sites have been described as symbolic lakes providing access to the land of the dead, and the Maya rectangular I – shaped ball courts symbolized holy caverns serving as entrances to the underworld. Understandable, as players were killed after matches.

The sun apparently assumed the form of the jaguar god at night, when it disappeared from view on its nocturnal travels. The ancient Maya were familiar with the Jaguar's ability to see well at night, and prey in the dark. But the passage through the ferocious jaws was for two-way traffic on ritual journeys to and from the spirit world, by kings like Pacal on his sarcophagus cover and by mortals, spirits and gods.



69. Hell as Artificial Memory, Cosmas Rossellius, *Thesaurus Artificiose Memoriae*, woodcut, 1579, Venice.

This image is from a memory treatise by the Dominican brother Cosmas Rossellius. The book adopts Christian structures such as heaven and hell, pictured here, as well as constellations, to be used as memory devices in the Classical vein of mnemonics. A

series of things to be memorized would be mentally attached to, or visualised in, the different areas of hell, limbo and purgatory in this case. When recall was necessary, the person who memorized these facts would just systematically travel mentally through hell in a specific order, releasing the facts he or she memorized in a public speaking engagement, or discourse. The names of the types of sinners, including the more generic categories of Heretics and Jews, were removed in my watercolor adaptation of this Renaissance woodcut.

When this most well-known memory system of place-names or loci was created, supposedly by Greek poet Simonides in 500 BC, and developed by Latin rhetoricians, familiar architecture was suggested for structures to memorize ideas: famous theatres and public buildings. Christians, like the Dominican Thomas Aquinas, wanted to harness pagan memory techniques to aid Christian adepts in their learning. Dante, in his *Divine Comedy* (1321), has been credited for heavily influencing Christian perceptions of the structure of heaven and hell, with the very detailed description in Part I, *The Inferno*. His influence is evident in Rossellius' illustration. Dante's nine concentric rings of hell, with areas for specific kinds of sinners, turned out to be a popular model for the Christian imagination.

In Dante's poem, the poet Virgil accompanies a pilgrim through the rings of hell. Dante had many reasons for choosing Virgil as a central character in the work, and his admiration for the pagan poet extended to

borrowing many ideas for the descent to hell from book 6 of Virgil's Aeneid. But Dante drew inspiration for the concentric circles of his cone-shaped structure from his conception of astronomy at that time, based on the spiraling of the planets around unmoveable Earth. Ideas come from Cicero's The Dream of Scipio, as filtered through Macrobius' commentary on that work, known to 6th century philosopher and statesman Boethius. Dante sampled from a number of sources to construct his hell, but he departed from the seven deadly sins and created a multi-tiered Hell divided into three main categories. Even more creatively, Dante practically invented the surrounding areas, placed on Rossellius' woodcut, of Limbo and Purgatory, giving shape and definition to these zones not yet clearly defined in church documents. That way the Pagan writers Dante worshipped, such as Virgil, his model and maestro, could be in Limbo, the outermost ring with the unbaptised babies and the Patriarchs, on the other side of the river from hell. After all, in his eyes ancient authors were the most enlightened people before the coming of Christ. Not having performed a sinful act, they shouldn't be put in hell, as theirs was a sin of omission – they couldn't believe Christ to be their savior because he wasn't born yet. As for Purgatory, no Christian saints had talked about going there, or what it was like. Dante created it from the displaced earth knocked out of the cone-shaped hell when God heaved Satan as far away as possible to the center to the Earth. So Purgatory became a mountain in the southern hemisphere, duly noted by hell cartographers in the Renaissance.

The construct of journeys through buildings, cities and even the human body, has been adopted not just by advocates of memory studies, but also by novelists, as convenient structures to organize their thoughts in. The framework often allows authors to hide their ideas and opinions in a complex allegory, so that they might not be persecuted or thrown in jail. Dante found Virgil's journey in the Aeneid to be useful, and so did the memory treatise writer Giovanni Battista Porta in 16th century Naples. He believed the description of a series of rooms painted with pictures, shown to Aeneas by Dido, to be a system for her to remember ancestral history. There are many speculations as to the meaning, purpose and authorship of the Renaissance novel *Hypnerotomachia Poliphili* (1499), but this enigmatic love story with a voyage through endless minutiae regarding the architecture, gardens and statues of a villa seems like a memory treatise. Scholars have pointed out connections in this book to Horapollon's emblem book of pseudo-Egyptian knowledge (see items 24 and 26), but to someone like myself somewhat familiar with the history of mnemonics, it would seem that the author of this work, who even put diagrams inside, wants the novel to be used as a framework for memorizing ideas. It is also certainly an allegory of knowledge relating to love, sacred or profane, but no one has figured out the meaning. A modern example of an author using a framework, not for a novel but a non-fiction book, would be Harold Bloom's *Genius* arranged according to the ancient religious philosophy of Kabbalah or Cabala, using the Sefirot. I discuss a Sefirot diagram at item 60, a structure based on the number ten, which Bloom found useful to organize his groupings of authors and thinkers within. For some of us, adopting this structure might seem meaningless, but this is always the risk of a theater of memory.

Curse colophon:

Beware, readers, if you think the author has memorized all the information above. She is only an eternal beginner, trying to grasp at knowledge, in hopes of avoiding the pitfalls observed by Balzac: repeating aloud at night what she read that morning, appearing to be an expert, only to forget once more when the facts leave the hippocampus the following day.

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