Idempotency Video Study Guide

Instructions. The study guide "Idempotency Workbook" is available on YouTube at **https://youtu.be/yxapOuEurzk**. There are nine series of images grounded by different strategies that use idempotency to effectively limit the motion of the subject, usually through circling, symmetrical movement, or other patterned circulation, to simulate the dream's paralysis of the dreamer during sleep. Dream logic inverts the Euclidean figure–ground relationship, where the subject is able to move freely across a ground fixed by a horizon, objects, and landmarks. In the dream, where the dreamer must be fixed (idempotency), the ground must move over the figure.

Figure 1. Observatory at Chitzen Itza, Yucatan. Without telescopes, Mayan astronomers were able to use building features to gauge the movement of stars to an incredible degree of accuracy. Thanks to the idempotency idea, they were able to create a calendar superior to any produced by European, Indian, or Chinese cultures.

This logic can be transferred to waking experience where idempotency is realized through topological inversions that "bring the world to the observer." The most common example is the museum, where samples of art from all over the world are arranged according to chronological or geographical models. Idempotency however is possibly the most ancient and compelling spatial logic, beginning with the observatories set up by first peoples to gauge the movements of stars, in effect watching the universe move over and around architectural measuring devices.

Idempotency is a word virtually unknown by architectural theory. In the video podcast, "Authentic Travel: An Ersatz Experiment," a theoretical link is found in Henry W. Johnstone, Jr.'s Categories of Travel. These Categories comprise not just a list of observations on the nature of "authentic travel" but a true system formed by a gap that is simultaneously interior and exterior. This "extimity" (a term coined by Jacques Lacan to describe inside–out conversions) is not an external attribute; it makes the system dynamic, it invests each Category with its own topology. Like the figure–ground conversion of idempotency, the Categories of Travel employ a logic of cross–inscription (self–intersection) that results in non-orientation (the True Traveler's ability to be at home in a foreign situation, paired with the uncanny un-homeyness of home itself).

In the sets of visual examples presented in the video podcast, look for how idempotency is the effective force. One related process will be evident. In the figure–ground reversal, there is a suppression of some signifiers that is echoed by a sudden release at a critical point. This is true of dreams as well as architectural designs, where a limitation is imposed (the insularity of a site, the choice of uniform building materials, the special engagement of the site, etc.) that allows the

architect to construct an experiential climax, where signifiers that had been latent suddenly are revealed. The experience aims to be meaningful rather than an instructive presentation of meanings. It should be, as we say, "beyond words." This sequence of suppression followed by release is common to all works of art. In music in particular, a motif is introduced but then subjected to concealing distribution within added musical elements. It is, however, collected by a reverse process — commonly, "fugue." This loss and recovery strategy makes a conclusion possible and effective, something that the audience both expects but cannot imagine themselves. In literature, the fugue idea is called chiasmus, with the same result. A mystery story, for example, presents the reader with all the evidence needed to "solve the crime" but patterns it so that the outcome will still be, predictably, surprising.

Travel experience fails or succeeds in relation to this outcome. The True Traveler must distinguish him/herself from others who simply move around a Euclidean field in terms of this suppression/release of latent signifiers. The True Traveler aims at meaningfulness, apart from the simple collection of meaningful travel experiences. In each set of images, look for this pattern of suppression/release and define the *material circumstances* of the experience of meaning-*fulness* as apart from linear accumulation of meanings. Topology may be involved directly, as with the conversion of an island to a "world," from contained to container. Self–intersection and non-orientation have many forms. Circulation designs can be patterned to disorient or re-orient the walker. Symmetry can be set up to produce internal mirroring on a site. Visitors can see other visitors as avatars of their own presence.

There is no need to produce a "correct answer" but instead find some interesting relation that allows us to expand our idea of idempotency, figure–ground reversal, authentic travel, or extimity. The user of this field guide must judge for him or herself whether reflection has been useful. These "answers" are, therefore, simply nudges to assure the visitor that new meanings are just around the corner.

Series 1

The Private Collection. In this series of paintings, a private art collector shows off his wealth by commissioning a painting displaying reproductions of his holdings in a single image. The architectural accommodation of such totalities verges on the impossible, as indicated by the ways that paintings are tilted, perched, and squeezed into every available space.

Obviously, the material of the various paintings are brought within the view of a single viewer, the wealthy owner, who may gleefully enjoy his material mastery by seeing his purchases all in one place. He may re-arrange the images so that aspects of their subjects or production can be thematized. This idea is extended to the museum, acting in the place of the wealthy private collector. The museum itself stylizes movement through it and may reference cosmic coordinates, relations to the landscape, sky, and earth. It may use labels to instruct the visitor in *how* to enjoy the artworks. As instructions, these placards implicitly suggest that, at the end of the collection, the visitor *should experience* something meaningful, some transformation.

At any point in the museum environment, the material conditions of display may be employed "spiritually," as in the case of Frank Lloyd Wright's Guggenheim Museum in New York or Frank Gehry's museum in Bilbao, Spain (or others). Galleries at Insel Hombroich (Series 11) make particular references to the sky and horizon, isolating even further the visitor to this already–rural setting.

The assembly of images around a centralized viewing system relates directly to the situation of the dream, where the dreamer is paralyzed. It is also mirrored in the way audiences of theater and film presentations are required to sit still and remain silent. Stillness and silence themselves become desirable in museums where sites afford the use of plants, water features, or views of the landscape to create the sense of being in a center and, at the same time, at a margin. These are indisputable characteristics of projective geometry, where the horizon, lying at unreachable infinity for Euclid, is incorporated in the midst of detailed transactions of the interior.

Series 2/2a

John Soane's microcosms. Within the limitations of the site of the London townhouse, Sir John Soane was able to use light to create the sensation of a jewel's interior glow. In addition, Soane was an avid collector of antiquities — paintings, sculpture, artifacts of all kinds. He amassed his private collection within a series of apartments he purchased and added to the original townhouse, creating a labyrinthine "route of instruction" climaxing in a room fit with swinging panels displaying (mostly) Hogarth paintings on both sides.

One wall of this dramatic room opens, in contrast to the others, on a vertiginous space with a view of the "Monk's Parlour" below, including a grave (the family dog is buried there). This

space is embellished with a model of Soane's design for the Bank of England as well as a female figurine, gesturing to the indefinite "beyond" that connects this space both skyward and, in a *memento mori* line, downward.

The two fantasies by Soane's long–term draftsman, Joseph Gandy, demonstrate the effective principle of confinement and fanned display, a statement of the architectural totality critical to the hallucinations of idempotency. In the illustration of the Bank of England as a ruin, it seems that this center of British Wealth has been compared to Pompeii, where the hoped–for solidity of value is suddenly reduced to rubble. But, as with all ruins, there is reference to a higher beauty in the sublimity of destruction. In the dream, negation itself is negated. We may meet dead acquaintances without being alarmed. "Condensation" combines multiple experiences and effects into single, compact representations that reveal the complexity of our wishes. In the same way, architecture can re-combine dispersed elements and themes to present them in relation to our desire. The "reading" of this ruin suggests that the meaningfulness of fortune may come only when that fortune has been lost entirely.

The use of light in Soane's museum–house is combined with his specific creation of *poché* spaces separating interior rooms from exterior walls by an extra, thin space fit with panels, shutters, curtains, and mirrors. This logic is continued in other forms, especially in ceilings that seem to be suspended and held in place by the sheer force of reflection.

Series 3

Toy architecture. Some architects may have played with building blocks or other toys in ways that influenced their subsequent development as architects. Most famously, Frank Lloyd Wright had played with Froebel building blocks as a child; it seems that Lutyens must have been exposed at some point to the "Baukasten" clay blocks, available in his childhood.

Toys systematize shapes, edges, and surfaces so that a variety of diverse forms may be built from the same set. No matter how different the products, they all reflect a certain tone and style based on the uniformity of the pieces. Toys reveal the following rule of idempotency: limitations result in the opposite, infinite extension. In the dream, the limitation (anesthesia of the dreamer) results in the immediate compensation by the dream hallucination. Some waking subjects with damaged perception (hearing, but more usually sight) experience hallucinations in the same way. Without moving or sleeping, the hallucinating subject may see far–away worlds brought within reach. Myriad characters, sets, and experiences come "out of nowhere" in a vivid array of elaborate costumes and complex events. The neurologist Oliver Sachs has described these in detail in his book, *Hallucinations* (2012). The connection between *limitation* and *extension* seems to be deeply embedded in the brain, but the *mind* experience's neural shortcomings as direct and unlimited wealth.

The model of the circle constructed thanks to a fixed center is relevant. Although for the circle to curve precisely, the point must remain in the center, motionless. But, when the circle completes its 360° journey, the point seems to have migrated to the circumference as a kind of limit. This moment of non-orientation can be explained idempotently by the geometry of the circle as a curved line whose closure is negated once the third dimension (the compass) has been excluded. *As self–constructing*, the 2d circle has no access to this third dimension. The central point cannot exist in a mechanical relation to the circumference. The center must be "implicit" within the curve of the circle, and as such, it is found in the form of a gap at the point where the circle completes itself (self–intersection).

Play experience employs this same principle in the way the child must be both the agent and audience of the play experience. Limitation comes in the form of the restriction of the play domain by the reach and materials–at–hand of the child. A toy does not have to resemble its reference very well. A doll does not have to do everything a human can do. A toy car can be a block with marks. The domain of play can be a sand-box, a bed, a space beneath a table or a chalk-defined set of squares on a pavement. The toy space can be internalized as well, within or on the surface of the child's body, employing fingers, toes, or other physical features.

Idempotency is the basis of what Freud called autoeroticism, the child's ability to reverse figure–ground relationships to be both the producer and consumer of the play experience. But, this *principle* of operation can appear as a *motif* in the play experience, as boundaries in play are topologically inverted, destroyed, or rescaled. Only with the advent of the (Euclidean) mirror stage, made famous by Jacques Lacan, does scale consistency become an issue. Then, the signifiers that were "free floating" in the autoerotic domain must be stuffed inside the *poché* concealing them as latent. This concealment has an advantage, however. Concealment is both a cancellation allowing the child to "renounce" his/her autoerotic self (= "growing up") but, at later stages even into adulthood, revive these signifiers in the form of uncanny encounters: coincidences, experiences of disorientation, or *déjà vu*, where time is folded over itself.

In general, these later sudden emergences of uncanny phenomena employ an "origami" principle. Time and space seem to fold and layer. Concentricity seems to get out of control. Subjects can meet doubles who challenge their right to exist (for example, in Plautus's play, *Amphytrion*). Literature's four canonical motifs of the fantastic formalize these origami experiences: the double, travel through time, the story in the story, and the contamination of "reality" by the story or dream. In culture, sciences of divination have formalized the same uncanny encounters in the forms of the miracle, the omen, *ostentum* (show), prodigy, and monster. At the level of play, the child invents all of these by him/herself.

Further questions: How does any building "system" use the logic of toys to allow for (seemingly) infinite extension of a finite set of building rules/materials?

Series 4

Anamorphosis. This phenomenon of latent images concealed within main picture presentations, or the construction of images that are incomprehensible unless a viewer find the precise viewing spot that allows the blurs to suddenly pop into intelligible view, traditionally begins with the famous painting of two rich gentlemen, completed by Hans Holbein in 1533 (*The Ambassadors*). The seeming blur at the feet of the subjects can be appreciated as the image of a skull, a kind of *memento mori* to balance off the two Frenchmen's obvious display of wealth. But, the date on the reverse of the painting gives away a secret. It is over-precise: April 11, 1533, *4 p.m.* This was the precise time thought to be, by some astrologers, the end of the world, the Apocalypse. At 4 p.m. the sun would have been 27° above the horizon of London, completing a pattern made by the number 9, found in the angles of lines connecting the horizon, the anamorphic skull, and the half-hidden crucifix at the upper left–hand corner of the painting (John North, *The Ambassadors' Secret*, 2002).

Apart from this overdetermining geometry concealed within the 180° presentation of the main painting, the viewer of the skull must *kneel* beneath the cross and contemplate the Golgotha of Christ's crucifixion. The word "Golgotha" itself means "the place of the skull." The bone of the skull itself has an extensive history in eschatology (knowledge of things related to death). The period of mourning in most cultures is related to the number 40 in some way. This is the number conventionally defining the time it takes for flesh to rot from the skeleton, but it is "pictorially" extended as the time the soul takes to complete an intermediate period of suffering and wandering, formalized as a labyrinth. In this interval, the deceased does not fully realize that it has died. This category "between the two deaths" is employed in fiction as a period of wandering, where the soul risks getting lost, wandering, or stuck. Only with the conclusion of successful trials and judgements can the soul find *rest* — idempotency — that is implicit in the fractal design of the labyrinth. Fractals negate scale relations, equating the very small with the very large. Also, they are spaces folded in an origami way.

Although anamorphosis seems to suddenly emerge in the 16c., Lacan reasoned that "there must have been something going on before that time" under a different name, and with different media involved. Possibly, we might cite the use of projective geometry (non-orientation and self–intersection) of the uncanny, in folklore, rituals, and ancient belief systems as "anamorphic" in the way they put latent signifiers to use.

Series 5

Garden microcosms and optical reversals. Landscape architecture weighs in on the case for idempotentiality with the garden as a means of collecting diverse types of plants, organizing them within programmed patterns of ritualized movements, and offering the eye pre-packaged

associations of ground, water, light, and sky. In the examples of Monet's famous garden a Giverny, there seems to be no symmetry. The visitor frequently loses track of where he/she is in the garden and, instead, focuses on the water-lily covered ponds and stream, where reflections of clouds and sky further disorient the view. The idempotent design is to negate even small shifts in the point of view, finding at any one point simply *another version* of the same "whole" offered by vertical inversion (looking down to see up). That this was a conscious strategy of Monet's is evident from his famous series of paintings of water lilies, where the surface of the water is a means for framing the sky in unexpected ways.

A similar kind of anamorphosis is evident in the paintings of James Whistler but especially Joseph Turner, where the atmosphere plays the role of a transformative optic device, pulling in objects, light sources, and the viewer him/herself into the same blob of evanescent fog. One must imagine the atmosphere as central, and everything around it peripheral but pulled in by an optical gravity, mixed, rendered indistinguishable and, hence, idempotent. Here, motion makes no difference. The fog universalizes all points of view, and in some cases literally prevents movement. At the same time, the fog as optical makes distant objects seem close at hand, just as it re-energizes and re-defines light as interior, coming from within rather than from behind the cloud.

The same effect comes from the 2d patterns designed to stimulate binocular depth for viewers who learn how to "look past" the literal image into the distance, so that their eyes will gain neural access to the 3d mechanisms that perceive shapes within the otherwise–random pattern. Clearly, the "latent signifiers" here are the patterns of overlap that will be combined with a forced parallax looking. Like the stereoscopic travel photographs popular at the turn of the century, the sensation of depth–perception must be optically forced, to allow the slight difference between two views to simulate the third dimension. Technically speaking, parallax *substitutes depth perception* for physical movement. It is itself a case of micro-idempotency! In the dream, the dreamer's paralysis produces an analogous "depth" in the dreamer's forced/false sensation of movement within a Euclidean world, even though he/she is actually immobile.

Series 6

Babel and the relation of idempotency to language. The idea of the naïve informer is that evidence taken from folklore, customs, rituals, artworks, literature, and architecture "does not care" if we understand its principles or not. That's good, because these human products are made without the maker's explicit knowledge of principles. They work "as if" they knew the rules well, but if asked, no maker can explain the theory behind what he or she makes. The knowledge is implicit to the work itself. It is a form of *kenosis*, of "knowing without knowing." In fact, *kenosis* is so essential to the construction of the work of art that we should consider how it is connected to the other essential feature of art, idempotency.

This issue becomes compelling when we turn to images that seem to offer "theoretical accounts" of idempotency and latency even though the makers of these images, and the traditions from which they draw, have no such theoretical awareness. As "naïve witnesses," the truths of such images are more than facts, they reflect on the entire process of cultural production as a "truth of truth." The legend of the Tower of Babel is one such cultural product that seems to "know implicitly" without being able to say explicitly. It "knows without knowing." It is *kenotic,* condensing multiple images and ideas in the same way a dream metaphorically condenses multiple signifiers into a complex cipher, to fascinate and paralyze the viewer.

The story is, originally, about worship. Drawn from the Sumerian tradition of building ziggurats for the king to meet personally with the dove–goddess Ishtar / Inanna, a pyramidal form "penetrates" the perceptual sky to reach a pure "ether" beyond. The Greeks and Romans had a similar role played by Athena, who breaks through Jove's skull (= sky dome) to reach a "pinnacle" that is brought to earth in the form of the citadel, in particular the Acropolis at Athens. In this meeting of immortal Queen and mortal King, a special language is spoken, unknown to the general population but somehow guessed indirectly by the workmen who construct the pyramid, realizing that, just as the pyramid has effected a connection between the earth and the heavens, the language connecting the diety with the mortal must use the same construction principles. Masons in many cultures have had the belief that they possess a secret language, a "silent language" of form–making and material shaping.[1]

Ambiguities hold the key to the Tower of Babel images. Originally, Bab-El meant "the Gate of God / Heaven," the clear intended function of the Sumerian version. That this was related to a pun, the Hebrew for "babble" (מִגְדַּל בָּבֶל), changed the story into one of an "assault on Heaven," punished by God when he destroyed the upper reaches of the tower. In a way, the two stories combine, since the "ruin" of the top of the tower corresponds to what, when seen from below, amounts to a reduction of form to meaninglessness. In the same way that someone without a code–book sees a cipher as a confused mass of disorganized signs that, in reality, hold a secret message, the Tower of Babel is a literal account of latent signifiers. It's both a trash–pile of signifiers (a babble) and an imminently important communication. A divine source presents a miraculous communication to a mortal who has "ascended" to its level, the azure of the divine, presumably thanks to the precise angles and interlocking stones used by the steps themselves. "Getting there is half the fun." This means that the 180º of travel, completed by the aimed–for 180º of the goal, completes itself with the retroactive realization that the steps themselves held

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[1] It is possible that, when Parisian masons violently rejected Girard Desargues' system for determining the graphic stereotomy needed to specify the precise shapes of building stones, they were objecting to the *correctness* of Desargues' use of projective geometry. Desargues', like the ancient snitch Diogorus may have committed a similar crime in divulging parts of the Eleusinian Mysteries. The playwright Aeschylus was thought to have given away some key details but was acquitted after trial.

the whole secret (360º x 2 = 720º). This it becomes possible to say that the viewpoint from the top of the pyramid sees *outward*, a 380º of receptive viewing, but also that it is capable of projecting its own rays ("extromission") outward as means of panoptical control and power. The idempotency of this center is what is meant by the center of the circle also being on the circumference. And, as the divine eye at the apex of the pyramid on the U. S. dollar bill suggests, the center is simultaneously the periphery, a principle of projective geometry and also "masonic wisdom" (this image was supplied by the U. S.'s founders, almost all of whom were Freemasons).

Series 6a

The ædicula. Small, replica buildings, often found inside other buildings, offer a different take on the Tower of Babel's equating of center with periphery. The usual jewel–like design is not simply a character or quality, it is a blue-print for how idempotency allows for a simultaneous inward–outward perception and, consequently, an interplay between centrifugal radiation and centripetal *gravitas*.

The final image of the Palladian folly at Stourhead is more a case of collection mania, but the previous well–known examples use the principle of building–within–a–building. In short, this is the condensation of a sequence, ABABA…, to the configuration of AA…, where the first building is re-instantiated without the required buffer in an alternation of building/space/ building/space …. (the case of a street/building/courtyard as ABA). The negation of B is done through scale, which must be condensed or collapsed to accommodate the larger–than–usual size of the smaller contained building. The viewing point from which the original courtyard would allow the freely wandering viewer to see all sides of the enclosing building has been appropriated by the ædicula. Viewers cannot find the best position from which they might appreciate the original building surrounding the courtyard. They must instead enter (or, preferably, *ascend*) into the ædicula to witness the enclosing building based on new terms of circulation. Bramante's tempietto San Pietro in Montorio seems to offer no view at all, but instead condenses its architectural perfection as a "stone jewel" imprisoned (held immobile) by the confining church around it. It is "blinded" by this enclosure, but it compensates for this through an architectural "extromission." Just as the blind are credited with clairvoyance, the ability to see the future as well as the truths of past and present, negation is required to confer super–powers. This can be seen as a special case of the ædicula's scale condensation: what is lost in physical size is compensated by perfection of form.

Series 7

The Wunderkammern, or "Cabinet of Wonders." Miniaturization, compaction/condensation, and 180º display make the cabinet of wonders able to demonstrate a fundamental principle of

idempotency: that a GAP (the front of the cabinet that allows spectators to inspect it) precedes an artificial reconstitution of a "world" of thematically related objects, made to fit within a framework of the physical display. This world inspires a sense of a 360° that takes over the space of the "negated" viewer, held in place by the fascination of the objects themselves, rendered dead and set within the space "between the two deaths," where the trial of the usual deceased is analogized by the puzzle set in motion by the wondrous collection.

"Wonder" and "wander" are famously connected by ancient tradition. When Æneas, the wandering counterpart of Odysseus, wishes to enter Hades to discuss matters of importance with his dead father, he is stopped at the entry–way at Cumæ by the famous bronze doors left by the Cretan architect Dædalus. The bas-reliefs depict the story of the annual tribute of Athenian youths, put in combat with bulls, conflated with the famed Minotaur, hybrid offspring of Pasiphaë and a bull, the curse placed on Minos for a failure to sacrifice the required bulls to Poseidon. The story of how Dædalus himself had designed the false cow to satisfy Pasiphaë's irrational passion was also there, and the fall of Icarus after the architect had fled Crete with his son. The classicist W. F. Jackson-Knight (*Cumæan Gates*, 1936), found this to be story told by other, far–flung cultures. The Malekulans living in the Melanesian Pacific told of Sevi-Semsat, the ogre guarding the gates of their hell, who would show the recently deceased a map of the pathway he/she would have to trod before finding rest. Before the dead person could fully memorize the plan, however, the ogre would erase *half* of it, as if to say that the presumed 180° view of the 360° path was *in actuality* the full 360° itself: that representation was itself actually *presentation*, the full reality and not just a replica. This is the same logic as the story–in–the–story, the ædicula's AAA… logical sequencing. In this way architecture offers its own version of the dead person's temporary ignorance of the fact of being dead. The "interval between the two deaths" is movement without moving, a self–canceling and, hence, mathematically projective instance aimed to answer the ultimate question of self–intersection: "Who am I?" (γνῶθι σεαυτόν).

In almost all cases, idempotency issues intersect with the uncanny cross–inscription of life–in–death and death–in–life. This formula given by Ernst Jentsch was obscured in Freud's study of the uncanny, but it can be recovered by a close reading of Freud's later study of *Gradiva*, originally a novel written by Wilhelm Jensen (see Series X, "extra credit"). Note that this "answer" is only a set of new questions. The ideas behind collecting constitute an encyclopedia of idempotency, as "armchair traveling," also evident in the paintings of paintings shown in Series I, "The Private Collection."

Series 8

The theater with one actor. The idea of converting auditorium seats into compartments of a "cabinet of wonders" was most famously employed by Giulio Camillo, in his *L'idea del theatro* of

1550, who claimed that a solitary occupant of a small stage (an extremely literal interpretation of idempotency!) would have complete and universal recall, thanks to images placed in a precise row–and–column logic in what would normally be the theater's auditorium. This is an interesting variation on the idea that actors on a normal stage look out to an audience immobilized by the convention of being cast into the darkness and commanded to sit quietly during the stage performance. The actors normally see "dead people" and pretend not to engage their obvious views. In other words, the gazes that are the condition and basis for theater are, to the actor, non-existent. The actor must show that he/she does *not see* the audience by addressing this negated 180º space as simply a virtual extension of the fictional world that surrounds the play: a 360º. This creates the famous "fourth wall" of theater, counterpart to the fourth wall of cinema, maintained by the rule that the actor not look directly at the camera. Of course the rule is broken any time the actor wishes to address the audience directly, to acknowledge its and the camera's literal presence.

Camillo's logic was fused with Renaissance beliefs in the magic of memory and the need to reverse the polarity of the fourth wall, so that the theater's mnemonicist would see 180º as 360º — a "panorama" of learning, a way to "complete the cycles" suggested by known history by adding the secret learning divulged only to initiates through sequences of initiations (see Don Cameron Allen, *Mysteriously Meant: The Rediscovery of Pagan Symbolism and Allegorical Interpretation in the Renaissance*, 1970). The esoteric was the opposite of exoteric, public knowledge. This was not just a supplement; it was a contradictory "disproof" of what the public might know of something, in the same way that from the Tower of Babel's ground, the top appeared to be ruined, when in the (Sumerian) fact of the case, it was not just a temple but a conjunction between the human and the divine: a (180º) view converted into a (360º) panoramic whole, a figure on a ground to a ground moving across the observer to produce a *phantasmagoria*.

Although Camillo's theater was historically obscure, its idea was not. In the anatomical theater at Padova/Padua, the outlawed practice of public vivisection was contained within a building devoted to the forbidden practice and the esoteric knowledge it produced. this extended to the design of the table on which the cadaver was placed. The corpse was strapped securely (one could say idempotently?) to the board. On the obverse of the platform was a pig, also strapped securely, so that should the police arrive suddenly, the human corpse could be "flipped" to show the authorities that only animal anatomy was being performed. The key to the design of the 360º surround of auditorium seats is that their view was conditioned by this 180º + 180º flip design, an embodiment of the conjunction of esoteric and exoteric knowledge, the public and the private sides of wisdom.

Series 9

Going in to go out. The defensive tower has an obvious relationship to the landscape. While immobilizing all who would occupy it, it affords a wide view of the surrounding territory. A viewer in a tower is able to see things at a great distance, invisible to those on the ground. Practicality limits the extent of a tower to a narrow footprint, so the payoff is a directly measurable ratio of ground limit to optical extension. The eye is free to wander at an inverse ratio to the limits of the plan. One goes in and up to see out and around. The point identifies with the circle of an extensive, almost unlimited domain. Ideally, the highest tower would see everyone, but of course this is limited by the earth's sphericity. But, in projective geometry, because parallel lines actually converge on the horizon lying at infinity, this circle can be complete. The point equates with the line which, along with any other line parallel to it, is identical with another point on that horizon, as well as the antipodal point at "180°" opposite.

Loss of a part of the visual spectrum, the subtraction of an optical 180°, paradoxically results in the *addition* of 360° to the panorama that had been specified by representation. Just as the fourth wall of theater *shows* itself to an audience thanks to the 180° subtraction given over to the auditorium, it *gains back* an audience–world to overlap the stage–world, 360° + 360°. This seems incoherent. What is happening? The key can be found by realizing that, in the cut made by representation, a panorama is completed virtually. Just as a mirror cuts space into two parts, a "left–handed" reflection duplicating a "right–handed" original space, the flat presentation presents itself as a kind of window into space lying behind the picture plane. In realistic representation, the claim is that this behind–space is comparable to the space in front of the painting, and that subjects in the painting are looking out at spectators in the same way spectators are looking in.

But, this account is simplistic. The viewers are not seen by the would–be fictional subject in the space of painting or stage or film. Their "reality" subtracts the 180° that must be literally present, just as the auditorium must be literally present to meet the stage at the proscenium arch. For the fourth wall effect to be effect-*ive*, the virtuality of the stage must be 360°, abolishing the audience's presence, which is already self–abolished by the command to sit still and quiet, i. e. to imitate the dead.

In complement, the audience imagines the stage–world as a world, as a 360° virtual entity, even though it knows that the actors go backstage to dress and put on make-up. Great comedic use can be made of the conflict between the "realistic" and the "virtual" views of stage space. The edge of the 180° can be treated as both a denial the illusion or a confirmation of it. The only accurate way to account for the existence of dramatic space is to say that two virtualities, the audience's and the actors', *must fold over themselves* for any dramatic action to be conceived as such. Thanks to the split of space into 180° halves, 720° of overlap is allowed.

The defensive tower condenses this logic into a vertical algorithm. The literal ground–space of the town it defends is comparable to the stage. The virtual domain it surveils is an overlay. It

appropriates a horizon on behalf of the space at its base. It sees "beyond," just as an actor looks through and beyond the (invisible/dead) audience in front.

Series 10

Geomancy. Possibly, the earliest cultural realization of idempotency is also the most literal: the idea that a fixed figure on earth might measure a mobile field moving in relation to it in the sky produces truths of the greatest importance for human adjustment to the cosmos. Just as the defensive tower relayed information, much as a radio tower might relay signals to a ground station, to the city it protected, the immobile elements of observatories were used by cultures (Mayan/Aztec, Sumerian, Egyptian, Chinese, Nigerian, etc.) to create astronomy as a basis for astrology — a religious system accounting for the migration of the soul between states of life and death. This perhaps is the most "global" of expressions of the cross–inscription of Life with Death (A_D/D_A) described by Ernst Jentsch in his treatise on the uncanny.[2]

The defensive tower's efficiency was enhanced by geometric tweaking of the city at its base. The idea that laws and not just defensive measures were taken in and dispensed by the tower would make us think that the city's plan was akin to the condensers, capacitors, and relays of an electrical circuit. The comparison is not completely ridiculous. The distribution of streets, plazas, courtyards, and building functions was a legal "idea" put into material configurations. Just as law came from a source imagined to be centralized, the enforcement of law was imagined to be distributive. Efficiencies in the distribution plan not only aided the law, it was a manifestation of the law's *formal essence*.

Geomancy was a means of engaging the landscape in situations where order had to be imported as well as derived. The rule of "going back to the source" meant, for geomancers and agrimensors responsible for securing safe and healthy sites and then managing the influences of the location *in situ*, going back to cosmic determinations: the cardinal directions, the position of stars, and, more locally, the configuration of features of the horizon or framing landscape. The process was like a geometry exercise, but with added magic. The notion of forces carried by straight lines led many cultures in northern Europe to look for and then reinforce so–called "Ley line," connecting monuments, castles, cities, and important landscape features to maximize the force that they established collectively.

John Michelle's *View over Atlantis* (1969) brought some of these ancient practices into public view and supplemented archaeology with a mathematical analysis of various global coincidences. It would be easy to conclude on this evidence that cultures in the past

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[2] Ernst Jentsch, "Zur Psychologie des Unheimlichen." *Psychiatrisch-Neurologische Wochenschrift* 8, 22 (August 26, 1906): 195–98; and 8, 23 (September 1, 1906): 203–05. Cited in Sigmund Freud, Hugh Haughton, and David McLintock, *The Uncanny* (Brantford, ON: W. Ross MacDonald School Resource Services Library, 2013). Jentsch is also cited in the root document of this series, "Travel as Stillness–in–Motion," available at http://art3idea.psu.edu/locus/ersatz_travel.pdf.

communicated with each other to such a degree that location of important elements of their settlements was determined by networks of lines. Part of this is true. There were certainly *beliefs* about the existence and power of such networks, and in cases where intervention was possible, as in Stonehenge and other geomantic sites in Europe, Scotland, Ireland, and England, elaborate placement of monuments allowed for precise celestial measurements. None of course could rival the Mayan's construction of an extremely accurate calendar in the fifth century BCE. Celestial observations were made using profiles and other parts of buildings, such as staircases.

Because many of the details of geomancy and agrimensors can be found on the Internet, I leave the reader with this task. The issue at hand is, "How do traditions of geographical location relate to the matter of idempotency?" The most obvious answer, on the need for a fixed reference to gauge the movement of celestial features, is key but insufficient. It explains the how but not the why. What, in the figure–ground reversal common to the *dream* led ancient peoples to regard their choices and uses of specific locations as also dream–related? They had no scientific understanding of the neuroscience of dream paralysis. Neither did they have a "mind–body problem" that saw any need to define the human nervous system as a circuit extending beyond the body into the objective world; but because they anticipated precisely such a circuitry, they valued dreams as evidentiary and critical to day–to–day decision–making. The dream's access to a virtual reality *outside of the Euclidean virtual* cause them to deal experimentally and empirically with dreams, on an equal basis with other observations and interventions.

In short, ancient cultures instituted rich and complex "scientific systems" based on the idea of the 720° origami fold of a "projective geometry" on top of an (observable) Euclidean virtuality. In some cases, as in China, we find the metaphor of the fold present in almost literal forms, as in the system of divination known as the *I Ching*, where two tri-grams combine in both "inner" and "outer" ways to predict future events or interpret present states. In the Roman system of predictive signs — *monstrum, omen, ostentum, miraculum, prodigium*, etc. — accident and coincidence were essential ingredients for matching up sets of observable facts with the imports divined by ritual procedures. The individual case meant nothing without an interpretive overlay that related the part to the whole network of influences. Their causal system was not linear but a force–field of relations. Idempotency was the statement of, as the Chinese put it, "what doesn't change is change itself," a version of the more familiar French "*plus ça change ….*" This view of dynamics as, itself, permanent, is a radical statement of idempotentiality, one that is easily overlooked because of the elaborate practices and traditions of ancient geomancy and other predictive traditions. Here, more than anywhere, the dream is given equal status to waking experience, indicating indirectly that ancients had some idea of the utility of idempotentiality for the dream as well as for predictions made by wide–awake prophets.

Series 11

The Insel Hombroich. The Museum Insel Hombroich, Neuss, North Rhine-Westphalia, Germany, is both a park and a museum combining architecture, art and nature on over 62 acres of meadowland. The park includes the "Kirkeby-Feld" and the "Raketenstation", a disused NATO missile base (Wikipedia). Our instructor, Prof. Pedro Belo Ravara, has presented a complete overview and critical analysis of this park, its landscape, and its building designs.

Series X

"**Extra credit.**" Although there are no evaluation grades given for participation in this workbook, the idea of extra credit leaves open to the participant the idea of finding things out for him/herself. There will be only the minimal guidance of the images. The first opens the case of Freud's study of Wilhelm Jensen's novel *Gradiva*, first published in installments from June 1 to July 20, 1902 in the Viennese newspaper *Neue Freie Presse* It was inspired by a Roman bas-relief of the same name and became the basis for Sigmund Freud's famous 1907 study *Delusion and Dream in Jensen's Gradiva*.

The second image requires anyone in search of extracurricular knowledge to go to John Ruskin's works, particular *The Stones of Venice*, where the author distills a refined essence of architecture that is uniquely Venetian.

The third opportunity for extra study is a typical example of the shadow constructions made by the British artists, Tim Noble and Sue Webster. The idea is clear: what appears to be a pile of randomly accumulated trash is in fact carefully composed so that a focused light beam will project a clear profile on a wall in the background. With such clear references to "figure" and "ground," and with the idea of a "denial of service attack" (dream disturbance) clearly incorporated into the "dream" attributed to the trash itself. The reader is invited to speculate freely on how this basic idea can be extended to architecture or critical theory.