## It Looked Simple Enough: The Jordan Curve



It looks simple enough, but it's not. ${ }^{1}$ Take a piece of paper and draw a closed shape - a square, rectangle, oval, circle, whatever. Inside the figure, let's call that "inside." Outside, is outside. Simple enough until we have to define the spaces with more precision. The interior is bounded, the outside is not. Not? We have to consider this carefully. There are the edges of the paper we are using, which, like the thickness, texture, color, and warp of the paper, constitute its materiality. Without materiality, we can't draw. But, it's clear that in drawing we intend to draw in a different register. We "de-materialize" the paper to put forward the idea that the space we are drawing in is generic. Hence, it's "unbounded." Our two registers correspond to the two registers of the Cretan Liar, who tells us that all Cretans are liars. Even if he says all Cretans tell the truth, the situation is still problematic, because we have to consider the "I" of the Cretan talking as different from the "I" who is a player inside the assertion. This paradox is no small deal. It is the central feature of all speaking acts. Without it, we can't have any meaning that seems to be inside the frame created by speech, or the speaking/acting consciousness that has created the frame and thus is able to stand outside of it, to be our tour guide.

If we think we are safe with the mathematical mode that contrasts the inside with the outside by saying that the outside is unbounded, consider the debate between Leibniz and Newton about infinity. Leibniz argued that space, as space, was that which was unbounded. Newton countered that infinite space as a material substance extending "forever" would collapse on itself. As space became infinite, so would gravity. The answer to this debate was suggested by Pascal's definition of the mind of God, hardly a fair resolution to a scientific question, but the idea of an infinite sphere with circumference nowhere and center everywhere seemed to anticipate Einstein's idea of a closed, curved universe with no phenomenal limits but certainly not extending outward forever.

[^0]So, even if we consider the space of our drawing as generically unbounded, we have to accept then that it is not extending forever along the paper's north, south, east, and west - something akin to the world of paper suggested by Borges' story of the imaginary nation that smothered itself in 1:1 maps - but curved rather than flat. The "outside" must meet itself again, somewhere. This, too, seems acceptable until the space of the inside of the figure is a hole, which brings into focus the problem we introduced by drawing on paper instead of space. Our material need for paper required a fiction that turns out to be the key to an inner truth. The hole is both an inside and an outside. We can forbid this case by saying that a hole is an accident, like the story Guido Pietropoli tells of working on a drawing for the Italian architect Carlo Scarpa, accidentally letting some ash from his cigarette fall on his work, and then deciding to put a tree in that spot. Dayer, who tells this story in her dissertation, explains the miracle as a coincidence of two divinatory events. ${ }^{2}$ The tree was to the original design what the ash had been to the paper. The "fag," British slang for cigarette, is also a kind of tree, a fagus, or beech. Scarpa chose a fagus ruba, a red beech, to plant on the site, at the location indicated by the hole in the paper. Why red? Dayer doesn't go into this literally, but from independent conversations I would speculate that rubrics in the production of Medieval manuscripts had the same relation to the "main text" and also had the same "activating" role (instructions about how to conduct mass) to the main messages of the representation. A beech tree put at the point of an accidental interruption of the paper-as-abstract brings the material and the ideal together. It would be too much at this point to say why, but Bergson makes precisely the same argument about the image, which becomes his basis for melding idealism and materialism. Does the blue of the sky "belong" to the sky and not just our perception of the sky? We have to at least believe it does to keep the terror of solipsism at bay. The image is "less than our perception of things" and "more than the isolated, purely objectified object." This more-than and less-than can be reversed, and we have the <> that represent a frame as a whole turned into ><, a bow-tie that turns representational space inside out. The definition of an image, then, is "that which we can turn inside out without changing things. Now, instead of projective space, we have topology. The cigarette hole burned a red beech onto the site, an act of magic worthy of any shaman. Fagus, both a fag and a beech, commends us to thoughts of a tree whose bark is thin, so thin in fact that it attracts the pocket-knives of lovers wanting to immortalize their unions. For this reason, the ancient Greek phegos ( $\varphi \eta \gamma$ óc) led to the Germanic words for book (Proto-Germanic bokjon, source also of Old Norse bok, Dutch beuk, Flemish boek, Old High German buohha, German Buche, Middle Dutch boeke). There were no beech trees in Greece, so phegos came to indicate oaks, but this tree also related to writing, since it became the basis of global cults founded around lightning (which the oak tree was said to attract) and prophylactic powers against lightning (doors made of oak were said to ward off lightning). In other words, the medium is the message, and the materiality of space becomes the reason that a graphic line can both enclose space and make a hole; or how the process can be reversed, and the hole can, in violating the representation itself, borrow from space its curvature and self-completion. Now, this is writing!

Louis Kauffman: "Notationally, the Jordan curve theorem is a fact about the plane upon which we write. It is the fundamental underlying fact that makes the diagrammatics of knots and links correspond to their mathematics. This is a remarkable situation - a fundamental theorem of mathematics is the underpinning of a notation for that same mathematics." ${ }^{" 3}$ Fundamentally this says that drawing the world

[^1]and the world are the same thing, at least for mathematicians, whom we should take very seriously since, in saying "the medium is the message," we are moving from projective representation to topographical realities of the medium (the figure both contains a space on its inside and represents a figure that contains a space on its inside). The space outside, "suffering" from the agony of infinity, decides to meet itself in order to abolish the boundary that would contradict its being. It is the soldier running down the road who turns, to meet himself, his spectral shadow-self, delivered in the volleys of lead to close down the logic of the tree tops where, in sheer contingency, things get tangled. The very place and time for the Absolute to make itself felt and known.

This problem lies at the center of Henri Bergson's struggle to disentangle our experience of time from the indices of spatial ("static") sections. Bergson held that Zeno's paradoxes arose necessarily from the practice of associating time, as "dynamic and qualitative," with immobile intervals of space - the distances arrows would have to cover before reaching their targets.

> If a quantity can increase and diminish, if we perceive in it, so to speak, the less inside the more, is not such a quantity on this very account divisible, and thereby extended? Is it not then a contradiction to speak of an inextensive quantity? But yet common sense agrees with the philosophers in setting up a pure intensity as a magnitude, just as if it were something extended. And not only do we use the same word, but whether we think of a greater intensity or a greater extensity, we experience in both cases an analogous impression; the terms "greater" and "less" call up in both cases the same idea. If we now ask ourselves in what does this idea consist, our consciousness still offers us the image of a container and a contained. We picture to ourselves, for example, a greater intensity of effort as a greater length of thread rolled up, or as a spring which, in unwinding, will occupy a greater space. In the idea of intensity, and even in the word which expresses it, we shall find the image of a present contraction and consequently a future expansion, the image of something virtually extended, and, if we may say so, of a compressed space. [emphasis mine] ${ }^{4}$

Bergson appealed to our "natural attitude" - our commonsense view of things as they appear: "Everyone knows what it means to be less than or more than ...." But, what about the condition outside the Jordan curve, an infinite that must be topological rather than arithmetical. Counting begins with the curve to go "outward", increasing geometrically with each "ring" of space that is (arbitrarily) designated and counted off. If the space continues as a bad infinity, the > rule will hold. However, if we reach the same conclusion about this "infinite exterior" as Leibniz, Newton, and later Einstein, the $>$ will give way to a $<$. At what point does this happen? If we compare this externality to the Möbius band, where a "twist" accomplishes the subtraction of a side and an edge, then we cannot locate it. Paradoxically, it seems, the "twist" from > to < happens as soon as the journey from the line further away from the outside begins.

This is like the imaginary kingdom of the small dry planet whose ruler orders a territorial expansion. Each new wall requires more stones until the great circle position is reached. After this, each new wall will return stones, even as more territory is added. Those on the ground, who experience the territory as flat and arithmetically infinite are dumbfounded and cannot imagine what is happening. Those looking down on the planet from above, however, see the situation. For them, reality is related to the intuitive visual image of a spherical ball in space. But, for those on the ground, there is no simple explanation without some way to imagine this outer-space point of view. This is the situation of the mathematician, who must

[^2]demonstrate the "obvious truth" without access to the point of view that would make things obvious. The perverse difficulty of the Jordan Curve Theorem is that its mathematics takes place in the same space as the representation it attempts to explain. "Difficulty" in this situation is the clue. We do not have Wittgenstein's boldness to reject this issue as a paradox of language. We cannot "remain silent about that which we cannot speak." ${ }^{\circ}$ Here, I agree with Slavoj Žižek in marveling at Wittgenstein's premature abstention. If we can't say anything about it, why should we bother to intentionally abstain? For one thing, the stuff that language refuses to deal with happens to be the most interesting stuff. For another, adding to the pain of this privation a prohibition seems gratuitous. If we can't do something, what does it matter that we are also told we shouldn't do it, as if we could anyway? What does it point to?

## The Death Drive

Starting over is the death drive. Impossibility mandates starting over, if we have the energy to do so. Impasse is an end, the only thing left at this point is another, a new beginning. Thus, the death drive is the fundamental impulse within prohibition, the "gratuitous" DO NOT TRESPASS sign in front of territory we can't enter even if we wanted. The misleading word in the expression, "death drive," alerts us to this paradox, since the boundary between life and death seems clear enough. Trespass of the "region" of death is impossible; can't be done. Nonetheless, we are warned not to trespass and told stories about those who do. In fact, these stories constitute the largest body of shamanistic and mythological lore in ethnography. By the time Plato elaborated the consequences of the story of Er, the soldier who, thrown on a pile of corpses, is revived twelve days afterwards and in good enough condition to recount his experiences in Hades. From thence comes Plato's theory of anamnesis, which is quite durable apart from the theology of the afterworld, that all we know (of any value) comes from the unconscious, which when externalized is obliged to take the form of a journey (katabasis). Anamnesis is an account of the efficient cause of kenosis, how we "know without knowing" and, hence, the basis of psychoanalysis's project of recovering the subject from the Symbolic, where the ego has alienated the subject through a series of misrecognitions/disguises.

In addition to apocryphal tales of "near death experiences" - dreams/fantasies associated with short periods of clinical death - religions have elaborate narratives of the soul carried by momentum past the point of literal corporeal death. Some specify an eternal life, others a "second death" that is a point of reconciling the ledger book of good and bad deeds, a scene of judgment followed by eternal reward and release from the cycles of rebirth or punishment that in some cultures are like prison time required before the soul is recycled.

When the mathematicians struggling to articulate the Jordan Curve Theorem run into difficulty, it is akin to the katabasis, of being forbidden to go where it is impossible to go anyway. Let's consider the "impossibility" issue. It is set up by the distinction, originally drawn, between inside and outside. Outside is exiled from the inside. But, the materiality of the distinction is also involved. The curve does not simply appear, it is drawn. It begins at an origin point and continues until it completes itself, until it achieves closure. Drawing, continuing, and achieving are all temporal. Yet, the result is spatial in the sense that inside and outside exist simultaneously; that is the point of the distinction, to make a line between things that exist simultaneously. So what happens before the curve is completed? We have the situation of the imaginary planet. We must begin at an origin point and move outward, we must imagine a homogeneity of

[^3]space where distance can be covered in a consistent way. But, like on the planet, we reach a point where, instead of moving away from the origin, we are moving back toward the point where we started. Our "great circle point" occurs once we realize that the origin is also the end, and this point is a switch that inverts our sense of direction. It is a "curve inside a curve" that has already distinguished an inside (the rule by which travel is always "away from" an origin) and an outside (a generic closed curved space that will return every traveller to the place from which he departed). The curve is this out-and-back motion, which has passed through an inversion point/gate where the meaning of the journey is defined.

Lacan described a similar process inherent to speech. A sentence - speech's "unit" representing the completion of an idea - is in temporal terms an accumulation of parts that point to a future moment. By the time this point is reached, it will be clear what the sentence means. But, for this to happen, the end is the convergence of two lines of travel. The first line is the temporal line of "clock time" that it takes the sentence to be spoken, the "one thing after another" of the parts of the sentence leading from its beginning to its end. The second line is required by the moment of completion, where all previous element will be "re-known" with respect to this anticipated ending. It is retroactive. Žižek has described this motion with the example of the Witz joke form, where the "antithesis" fueling the punch line has been concealed within the "thesis" of audience assumptions. There is no "synthesis," in the sense that the relation of thesis to antithesis has been there "all along" and needed to be restored at the conclusion, the "punch line" which, technically speaking, is established negatively. In this sense every sentence is a case of aposiopesis, an empty or incomplete expression, brought about by anacoluthon, a sudden and unexpected turn coming at the end. The sentence transfers the job of completing the meaning to the Other, the listener, in this moment of negation/inverting. The "inverter gate" aspect of language is the gap of the circle where completion is realized to be a radically negative action.

This is the point where the spatiality of the Jordan Curve meets up with its material making: verum ipsum factum. The attempt to construct an enclosure, <>, has necessitated a negation, ><. Rule and violation are one and the same, which is precisely the basis by which Lacan fashions his theory of sexuation, where (for all who would call themselves men) subjugation to the phallic rule requires that there be one who is not subject to it, one (the singularity of this position persists even if numerically there are more than one) who "sees things from above or outside," i. e. the one who draws the circle. This is the one whose cigarette ash drops onto the paper, burning a hole that will be the occasion to plant a tree whose name will tell the tale. A distinction is simultaneously a hole. ${ }^{6}$ Because a curve is both a line/vector and an enclosure defining a binary, the issue of ideality and materiality will always be paradoxical: hence, what

[^4]appears as a simple figure will prove to be nearly impossible to explain, for the distinction will distinguish the distinguishers. The figure will figure the figurers. Reverse predication rules the day.

## Why High?

When Petrarch finds his revelation using the method of lexomancy: "People are moved to wonder by mountain peaks, by vast waves of the sea, by broad waterfalls on rivers, by the all-embracing extent of the ocean, by the revolutions of the stars. But in themselves they are uninterested." The irony of this contrast, is found in Petrarch's accidental selection of texts, St. Augustine's Confessions, 10.8.15, the whole section of which is:

Great is this power of memory, exceeding great, O my God - an inner chamber large and boundless! Who has plumbed the depths thereof? Yet it is a power of mine, and appertains unto my nature; nor do I myself grasp all that I am. Therefore is the mind too narrow to contain itself. And where should that be which it does not contain of itself? Is it outside and not in itself? How is it, then, that it does not grasp itself? A great admiration rises upon me; astonishment seizes me. And men go forth to wonder at the heights of mountains, the huge waves of the sea, the broad flow of the rivers, the extent of the ocean, and the courses of the stars, and omit to wonder at themselves; nor do they marvel that when I spoke of all these things, I was not looking on them with my eyes, and yet could not speak of them unless those mountains, and waves, and rivers, and stars which I saw, and that ocean which I believe in, I saw inwardly in my memory, and with the same vast spaces between as when I saw them abroad. But I did not by seeing appropriate them when I looked on them with my eyes; nor are the things themselves with me, but their images. And I knew by what corporeal sense each made impression on me. [Latin text available at < http://www.logicmuseum.com/wiki/ Authors/Augustine/confessions/L10\#10.8.15>]

Is it an accident, or another act of divination, that has Petrarch's lexomancy connect to our project of memory in relation to containment? Is the Latin for "narrow" above, ipsum angustus est, "strait" in the sense of narrow, limited, related to the regulation of the line that must proceed from its origin outward but, in doing so, returns to itself? Augustine's entire talk is about the relation of an outer wonder to an inner one. Petrarch is astonished that he finds himself, atop Mt. Ventoux, in precisely the same position. Divination formalizes the logic of reverse predication. It takes what is external and accidental as a sign of what is radically internal, i. e. possessed without conscious knowledge of or ability to recover that possession: kenosis. Divination in relation to memory is anamnesis, and anamnesis is analepsis, restoration. The diviner has, by giving himself over to contingency, found the Absolute in the form of a meaning that has been there at the origin point, the interior of the soul. The temporality of divination is simultaneously forward (awaiting the outcome) and backward (the retroactive logic of finding what has already and always been there).

That this divinatory moment comes at the point where Petrarch is on a high spot looking down is also key. From this point he can see the pattern of settlement and wild nature below. Contradictions appear simultaneously, thanks to a "side to side"(parataxis) that can be appreciated only from above. Contingency - as basic touching, as spatial simultaneity established by counting - is temporal in its combination of forward and backward time. Simultaneity - and, hence, space in general - is not "static" in the sense that time has been abolished but, rather, this dynamic of back-and-forth, "palindromic" time. The subject finds its object and the object its subject because both had been inside the other all along. The initial distinction, the first line drawn, drew itself drawing itself. Drawing was both inclusionary (identifying with its creations as products) and exclusionary (resisting being content but instead insisting on remaining an act).

In other essays I've considered the issue of sorites as a "collecting agency" that conserves content both when there is accumulation and dissipation/attrition. Furthermore, I've correlated this agency with the Production quadrant in Lacan's mathemes of discourse. There are consequently four kinds of sorites collection going on that relate to the four types of discourse, Master, Hysteric, University, and Analysis. The logic of the sorites directly relates to the dynamics of Hegelian dialectic. Antagonism builds with every addition to "positive content," to the point where a sudden reversal takes place. This point reveals that the antagonism had been there "all the time," and that the potential for a sudden shift existed from the beginning.

I would like to stage the relation between Production and Truth in Lacan's discourse mathemes as a relation of Truth's high and low position - as initially rejected and finally restored - with Production as an array viewed "as if from above," although altitude matters less than the orthogonality of the view. The right angle penetrates the view without interrupting its symmetrical orders/disorders. Both order and disorder are key to the role of symmetry. Disorder is, as it were, a delayed condition of order, a necessary use of temporality to show that order involved negation. The orthogonal view, which is the traditional angle taken by the audience of the stage or screen, belongs to the discourse mathemes as well. It is the essence of the question mathematicians of the Jordan Curve struggled to answer, because the view and the viewer had, as vectors, collapsed onto each other with the realization that the inside was a hole and that the hole brought into question the materiality of representation and the way each inside becomes an outside and vice versa.


It is the discourse of Hysteria that matters most, since it is the form discovery of symmetry takes in relation to the phallic rule. The phallic rule is, in short, that "all must obey the phallic rule as long as there is one who does not." Lacan writes this as $\forall \mathrm{x} \varphi \mathrm{x}$, all must obey as long as $\exists \mathrm{x} \sim \varphi \mathrm{x}$, there exists one who does not. This bears a spooky resemblance to one of the ways of stating the Jordan theorem: " $\varphi$ : $[0,1] \rightarrow \mathrm{R} 2$ such that $\varphi(0)=\varphi(1)$ and the restriction of $\varphi$ to $[0,1)$ is injective." An injective function is a one-to-one function that preserves distinctness by never mapping distinct elements of its domain to the same element of its codomain. In other words, every element of the function's codomain is the image of at most one element of its domain. A non-mathematician may "squint her or his eyes" at this to see a particular scene: the production of "Lullaby of Broadway" in the 1933 Busby Berkeley production of Gold Diggers. From their high terrace above the stepped dance floor, Polly Parker (Ruby Keeler) and Brad Roberts (Dick Powell) watch as synchronized uniform male and female dancers combine, separate, and recombine with precision movement executions and complex tap dancing. The theme of injection is a part of the plot: Polly is confused with Carol, the torch singer, and accused of being cheap and vulgar. The show refers to its own contradictory celebration of glamor in the middle of the Great Depression when the show-within-theshow is threatened by the sheriff serving warrants on the producer on behalf of creditors wanting to take possession of the props and costumes. Polly is pulled out of the crowd of dancers ("injection") by the wealthy Brad to watch the show below proceed in a semi-symmetry, i. e. formations with "holes" that are the critical dance motif of separation, penetration, and re-closure. Berkeley used this sequence often in his choreography of circular dancers whose costumes worked like flower petals to "lay bare" the sexuated mass so that the aerial view could enter into its detailed interior.

This is my "ansatz" experiment. The coincidental resemblance of the Jordan Curve Theorem's statement of injection as a function that preserves distinctness also preserves distinctiveness, the exception to the phallic rule, $\exists \mathrm{x} \sim \varphi \mathrm{x}$, "there exists one who does not." As long as there is $\exists \mathrm{x} \sim \varphi \mathrm{x}$, there is a point of view external to the frame, within which $\forall \mathrm{x} \varphi \mathrm{x}$, the phallic rule in the case of Gold Diggers is the strict choreography of alternating order/disorder, a "super-symmetry" that allows for delay and, hence, durée. Ultimately, this ersatz will earn an ansatz reward of showing how delay and durée are two sides of the same coin, but how delay more effectively dramatizes Bergson's desire to portray sympathy as a movement from disease at the potential abjection of the Other to a position of abject humility in identification with the Other. There is more to this than sympathy, I claim. There is the dynamic that fuels discourse, and specifically this can be shown with the matheme-models of Lacan's four discourses.

Sympathy is the realization of that an "inverter gate" has replaced the "check valve" function of the Symbolic. The Symbolic's concatenation of signifiers requires a transitive movement expressed in the form of causes to effects, past moments to present and future moments, flows from masters to servants - in other words, anything requiring successive enclosure of old states by new ones. Concentricity can be represented as a scattered array of elements that, though separated in space, retain their value in the series, as if people standing in line had "taken a number" allowing them to break rank and return later without losing their place. Concentricity, preserved symbolically to allow delay, is the whole idea of the Lacanian Symbolic. Delay is what Brad and Polly watch from their platform above the dance floor. Polly, a dancer, is injective, the "C" who is $\exists \mathrm{x} \sim \varphi \mathrm{x}$, literally (r)e-valuated by the rich Brad, his wealth symbolized by the single table on the high terrace.

Maybe the cinematic view is the "male gaze" after all, but not in the sense Laura Mulvey used it to vulgarize Hitchcock's motives in Rear Window. Brad and Polly look onto the dance floor in the same we look at Brad and Polly looking at the dance floor. This is the same way we, as an audience, watched as cosexuated viewers of the co-sexuated internal observers, Jeff and Lisa, from their studio apartment overlooking the urban courtyard of Rear Window. It was our view that was sexuated in a way that would identified with the co-sexuation of the courtyard's neighbors: Miss Torso, Miss Lonelyhearts, the Composer ... all find their delayed loves by the end of the film. Ironically, the newlyweds are to the point of a breakup; and we realize that all along that this has been a morality play whose cast is a series of metonymies (a torso, a heart, the couple without a child, a sculptor carving out a work she entitles "Hunger" ...) whose eventual reunions will be staged as metalepsis: their "missing other halves" will be found and returned. Those in line who have taken a number will come back and be served in correct order - a Busby Berkely design!

Delay bothers some because it is the injection of time into what seems to begin as a spatial design requiring a "planar" idea of symmetry: left and right, up and down - the classic "cardinal points" arranged as peripheral directions in relation to a central POV. But, what if the "four quarters" of cardinality were really the crossed decumanus and cardus of the center? What if the POV, "sexuated" by this bi-lateral division, "self-othered" so to speak, were four internal quarters? We would have to admit that, instead of symmetry in a visual sense, we have "chirality," a more durable form of bi-lateral symmetry, a kind of sexuation that goes beyond the binary of man/woman, male/female. This is what I claim Lacan does with his mathemes of sexuation. We can demonstrate the male position with Busby Berkeley's aereal choreographies. What about the ladies? Their matheme definition is based on the idea of the "not-all." Not
all of those who would call themselves women is subject to the phallic rule, $\sim \forall \mathrm{x} \varphi \mathrm{x}$, and there are no exceptions, $\sim \exists \mathrm{x} \sim \varphi \mathrm{x}$. This "not-all" principle allows us to enter into the spectacle of sexuation "at any point" - in effect, a point of view exists anywhere and everywhere because it is "built into" the system. Marx made the same claim about the Capitalist system. One could pick up the threat of the fabric of Capitalism anywhere without missing any of its features. This principle of conservation is important. It has to do with the people standing in line who "take a number" that allows them to break rank and return later, their order having been preserved symbolically. They possess their order, it does not have to be maintained spatially. This is key to what Bergson says about counting (ordination). Like counting sheep (Bergson's example in Time and Free Will), we have to reduce what we are counting. In Berkeley's terms, the dancers have to be the same height and build, wearing identical (though sexuated) costumes, executing precisely the same movements. Thanks to this reduction to uniformity, this loss of identity (= Symbolic, as it alienates its membership through misidentification) allows the line-standers to take a number (it is theirs) and leave and return. Truth, in Lacan's mathemes of discourse, is allowed to leave and return. Truth is the POV that may pick up the thread of ordination "anywhere" without losing any of its features.

Production may thus come to resemble what it is literally in the film production of Gold Diggers and Rear Window, in that delay (whose epitome is choreography) constitutes the main show. Delay preserves symmetry in the form of chirality - the metonymy of the part without its whole, the lonely heart without a boyfriend; the tessera token waiting to be joined with its other broken piece. Delay - this is my theoretical contribution to the science of the aereal view - can be demonstrated by the logic of the sorites, the accumulation that accumulates under circumstances of either gain (one grain more) or loss (one hair less). Because of Lewis Carroll's demonstration of sorites logic in his puzzles, where (usually) sixteen statements scatter fourteen pairs of predicating/predicated elements, with two exceptions (think of Polly and Brad), the "answer" to the puzzle (Brad will make Polly rich) is the union of these two exceptions, which turn out to be the zenith/nadir (rich/poor) of
 an orthogonal line running through the templum of the four internal corners, corners that have "internalized" (literally) the ordinality of the distant horizon. The cardinality of the horizon as a set of corners is four, but the ordinality of the horizon is a narrative, a perambulation, where those four are collected in order.

Choreography is about ordinality, the recovered symmetry is about cardinality. Cardinality is delayed in the process of watching the dance from above, with the "above principle" (the high POV) fractalized so that it can "pick up the thread anywhere" and still find the correct order. The verticality of the gaze is a principle inherent within the plane of representation, the dance floor. It's male in the sense that it by definition "requires an exception." But, it is also female in that passing freely within the mass of scattered metonymies requires a mi-dire form of language, a password that operates beneath the official transaction of communication as content. This is what Lacan held to be the secret operation going on within language that allowed it to work by establishing two levels. At the literal level of a speaker sending content to a listener, content requires a delay. The beginning of a
sentence implies an end where the meaning will be made clear. This forward temporality is reversed however, when, at the completion of the idea, the parts that have come before are "revised" and "restored" to a new order within the context of the last meaning. This makes the end of every sentence into a kind of anacoluthon, a flip or switch in sense. But, just as important, it makes the double register of discourse also a double register in time. Meaning moves forward, each new element eclipsing/containing the previous one, until the final point, when a sudden reversal "meets up" with this forward temporality, but from a reverse, retroactive direction. This is the "password" that authenticates the sentence-idea. This is the element added silently by the audience at the same time the speaker voices the "horizontal" meaning of the sequential elements. Silence is, essentially, the orthogonal, the vertical vector, the authenticating aerial POV. It is both inside and outside. It is injective. It is the Truth that is at first suppressed (the invisibility of the audience in the dark auditorium) and later re-discovered (the password unlocking the key to the ordinality of the dancers reduced to $1: 1$, the "dancing couple").

If Bergson makes any mistake critical to his whole system, it is his failure to recognize a principle of bidirectionality (or bi-temporality) in the process of sympathy. If we work backwards from humility/ abjection, we rediscover the Turing Test principle of machine intelligence. This is not the insight seemingly of interest only to AI theorists, but the principle of the curtain that has, since the story of Zeuxis and Parrhasius and the famous rule of Pythagorus, to deliver his lessons from behind a curtain, been synonymous with the revelation of truth. Parrhasius's joke is the easiest to understand, so I will use that to represent all related cases. In his contest with Zeuxis, who has painted a trompe-l'ouil scene so correctly that a bird has broken its neck trying to get at the painted grapes in the painted bowl, Parrhasius paints a curtain, which the judges take to be a real prop. Fooling human experts and not just birds prove the case, that human subjectivity demands two levels of truth, an in-box and out-box so to speak, and two forms of time to create an economy of circulation between them.

When these two levels are shown simultaneously, as when Parrhasius reveals to the judges that the curtain is his "entry" in the contest, the result is the joke, a bringing together of the two levels. This is the metalepsis of the Witz, where Mrs. Greenberg, attending her dying husband, asks what his wishes are for her to do, and he replies, "Marry Goldman." And, when she objects - "But, Goldman is your worst enemy" - his reply ("That's right") tells us all we needed to know about Mrs. Greenberg's continual misconception of marital happiness. We learn this retroactively in the joke the same way Mrs. Greenberg realizes it inside the frame of the joke. ${ }^{7}$ We become the judges who have realized that the curtain was painted. "We" constructed it through our demand for form, Parrhasius was simply the handyman who came in to get the job done. Parrhasius proves the reversibility that the Witz depends on, using a curtain as a frame that, as frame, provides the function of the reverse switch inviting in the forces of Nachträglichkeit. From the humility/abjection of sympathy, the last step in Bergson's ethical project, we go back to the realization of the original antagonism, the suppression/alienation of Truth in its first form that will prove

[^5]to be half of the Truth, the other half to be returned in a moment of swift realization at the end of the process. This is time travel in a philosophical sense, but our main knowledge of it comes from the ethnographical sources of myth, fiction, and ritual practices - i. e. the uncanny imagined experiences of time alteration.

The realization of an original suppression takes the form requiring us to theorize an "efficient cause" that has some means of preserving something through cancellation or negation. In other words, the first "moment" of the Symbolic, either on the level of language as collective or speech as a diverse totality of individual acts, follows the logic of Hegelian dialectic. The movement from thesis to antithesis involves a suppression of antithesis through the amazing contronymic function of Aufhebung, both "cancellation" and "preservation." The reason there is no synthesis in Hegel's dialectic is that the process of Aufhebung already and always has the antagonistic antithesis within it; the suppression of the antithesis is what moves the thesis in the first place. Just as the magician is able to make a rabbit appear out of a hat because the hat always had the rabbit there in the first place, antagonism is present from the start, but the catch is that it is antagonism as such that is there; antagonism only later finds its objectivity, its experienced material being, which "overwrites" the pure element of antagonism. The truth of the True is that it is an empty position. There is division before there is anything to divide, so to speak, although it is equally accurate to say that as soon as there is something there, it is there as divided.

Efficient cause, a movement of communicative content, requires the splitting into the modality of "content" and the "act" that is negated or suppressed. The Cretan Liar will from this point on speak of Cretans and their truth-telling capacity or as a Cretan, whom we believe or disbelieve alternately. True to the logic of jouissance that is like a ratchet gear, whether we believe or disbelieve, the Paradox increases. This is the Production of Truth, the storehouse that accumulates whether there is a loss or gain. And, we learn from Lacan's theory of discourses that there are four modalities that can shape this storehouse to the needs ("pathologies") of subjectivity. In the discourse of the Master, it is the surplus of answering to the demands of the master that creates desire in the servant, $/ a$, a desire that is independent of the Master. This accrues even when there is pain rather than pleasure in answering these demands. Pleasure comes in part from learning how to make things to serve up to the masters - becoming carpenters, cooks, masons, musicians, architects, etc. in order to provide for the masters' comfort. Pain relates however to the "orthogonal" issue of Truth in the first position, the original suppression that was the antagonism, the efficient cause of the Master-Servant system. Production in the modality of / a can return Truth its missing half, its obverse, but it must do this in the form of revolution, since in history the master has commanded respect not of other masters but of inferior servants who, by their very inferiority, are never able to provide what the master truly needs - the respect of other masters.

Possibly it was Alexandre Kojève's lectures on Hegel's Phenomenology that gave Lacan the idea of the fundamental logic of discourses, since Kojève's explanation of the irony of the Master-Servant parable in that work was particularly vivid. The masters require recognition, which can only be supplied by other masters in the form of battles to the death, the ultimate destructiveness of such a process being obvious. Stability comes only when masters collectively settle for the second-rate respect of those whom they control, those for whom demanded respect can never be true respect. Subjugation of the servant is simultaneous with the subjugation of this truth, so that the $/ \$$ in the matheme of the Master's discourse is (1) the servant as servant, "barred" by the demands of the master that reduce the servant to "only what the
master's will demands of them," and (2) the permanently negative/antagonistic aspect of the servant's respect. This negative is negated with the "return" that comes out of the jouissance of the servant's productions for the master. The / $a$ accumulates the pleasures and pains of providing respectful goods and services to the masters, it answers to the empty category of the True in the form of revolution that comes about politically when servants claim their civil rights.

Thus, in plays such as Beaumarche"s Nozze di Figaro, we see the "ethnographical" form of this irony of return, just as we see how jouissance accrues to Figaro whether things go well or badly. Mozart adequates the final return in the place of the count, who in pursuing the servant Susanna, proposes meeting her at night in the garden. Susanna conspires with the Countess, however, and they switch places so that the Count is put in the impossible-Real position of making love to his wife. When the veil is pulled away, the Count must make amends immediately, in a durée lasting sixteen measures of Mozart's most beautiful music -"Contessa, perdono!" - Più docile io sono, e dico di sì." Docility (Bergson's humility) arrives just in time, i. e. it is simultaneous with recognition of the original antagonism that had commanded Figaro to give his bride to the count. The servant gains the high ground - his and her own recognition - through the "revolution" of double negation. The first suppression is completed with a final humiliation. Nachträglichkeit, retroaction, has converted the play into a palindrome thanks to the "contronymic" powers of Aufhebung.

What is the verticality in this process of Truth returning "in the fourth place" to its original first place position? (When Lacan described the matheme's general design, he characterized truth as being both first and fourth, meaning that Production was an "orthogonal binary," converting the Other into the True thanks to its ability to be "formless" as an agent between demand of the Other and desire as a sorites collection function.) Lewis Carroll constructed his sorites puzzles in the following way. He took 28 "conditions" in pairs, both in predicat-ed and predicat-ing forms - and mixed them in a random series of statements, with predicating and predicated elements separated. Thus (a)a, (b)b, and (c)c could appear as (b)a, (c)b, and (a)c - just one possible sorting. In the midst of these new statements, two "halves" appeared, one as predicated, the other as predicating, but without its "other half" - (x)y. The (x) and y were "mixed in" to the general array of statements - for example, (x)d and (e)y - so that their discovery and reunion would constitute the "answer" to the puzzle, (x)y. Note that this answer is inherently a contronym. The position of being inside and outside the set of statements depends on the "unspoken" antagonistic couple, (y)x. But, if (y)x appeared in the same plane as (x)y, the two statements would "cancel out," just as all other elements reduce to (a)a form "on inspection."

When George Spencer-Brown demonstrated the logic of Carroll's sorites puzzles with his calculus notation, it seemed to be a simple matter of assigning a predicated or predicating status to each statement. Once the series of statements appeared as a string of predicat-ed - "(a)" form - or predicat-ing - "a" form - elements could be "cancelled out" to the point of revealing a "remainder," the (x)y that constituted the puzzle's answer. But, this is the fourth position returning to the first position. First there is the act of alienation by which ( x ) y is the result of suppressing $(\mathrm{y}) \mathrm{x}$, the "half that does not appear," the "dog that did not bark in the night." Second come the individual elements, a, b, c, d .... Third, comes the process of subordination, by which one element becomes a predicate in relation to another in statements ("predication relations"). Fourth, the process of reduction, revealing (x)y, comes simultaneously as the result of the suppression of $(\mathrm{y}) \mathrm{x}$, thanks to the absence of which, $(\mathrm{x}) \mathrm{y}$ can be found.

If the ( $y$ ) x is the nadir then ( x$) \mathrm{y}$ "rises out of" the "horizontality" of the statements as superior, thanks to the process of rejoining the halves that have been scattered by being joined in mixed predication relationships - (b)a, (c)b, (a)c. This is Aufhebung in action. Suppression has preserved, through negation, the quality of the puzzle within the statements. Truth has taken both a first and fourth place. The "humility/abjection" of suppression has been reversed to the point where the original antagonism, the contronymic quality of ( x$) \mathrm{y}$, becomes a revolutionary transformation, a kind of Witz or metalepsis.

Verticality is thus a relationship with horizontality as an elision: a forward motion requiring the absence of something. ${ }^{8}$ The mystery is solved by figuring out the meaning of the dog who did not bark in the night. The productivity of Production in discourse is that it works as a "treasure of signifiers" with either positive or negative values. This is the "(a)a" aspect, the "hysteria" by which either pain or pleasure constructs a symptom (Lacan: sinthome, to demonstrate the simultaneously public and private nature of the "pathological body," the mind as made manifest in bodily symptoms). This, strangely, is precisely the way Vico described the point where the reader of his New Science "goes vertical."
$\mathfrak{3 4 5}$ Thus the proper and consecutive proof here adduced will consist in comparing and reflecting whether our human mind, in the series of possibilities it is permitted to understand, and so far as it is permitted to do so, can conceive more or fewer or different causes than those from which issue the effects of this civil world. In doing this the reader will experience in his mortal body a divine pleasure as he contemplates in the divine ideas this world of nations in all the extent of its places, times and varieties. And he will find that he has in effect convinced the Epicureans that their chance cannot wander foolishly about and everywhere find a way out, and the Stoics that their eternal chain of causes, to which they will have it the world is chained, itself hangs upon the omnipotent, wise and beneficent will of the best and greatest God.


The phrase "more, fewer, or different causes" is the language of the Jordan Curve Theorem. Vico adds his favorite binary, Epicurian chance and Stoic determinism ("eternal chain of causes") which are for him the contronym that moves the vector of his science from horizontal to vertical. Opposite this nadir of failed philosophy is a zenith of "chancy fate" and "fated accident," the two ways of looking at contingency that has not just any

[^6]structure but the structure of the (Hegelian) Absolute. This is the meridian line of Vico's philosophical/ philological method: his attempt to show how, when humans are left entirely to their own devices, in whatever external climate or internal genetic disposition, they will evolve subjectivity that is not just identical but identically constructed, in an order that never varies. ${ }^{9}$ Vico's "contronym" is not a single word but, rather, a single idea that has two forms, a (non-Boolean) logical one that cannot be accurately or fully stated but only found in ethnological examples offered by diverse cultures existing at different times and places. Ethnography is the retroactive component of this subjectivity, the force that produces a "divine pleasure" that sweeps over the body of the reader as he con-templates the contingent circumstances of human-to-subjective development in all its variety. [I]l reggitore pruovera
 un divino piacere, in questo corpo mortale, di contemplare nelle divine idee questo mondo di nazioni per tutta la distesa deploro luoghi, tempi e varietà ... This is Vico doing divination at the quadrated center, the templum, of contingency ("contiguity") where there is a continuity dysfunction in the sense that counting produces not a normal sequence of numbers from one to infinity but a "winding number" that wraps around itself. This suggests a center that is infinite in that the winding creates a perpetual motion. When philology informs philosophy (= practice informing theory) it does so "hysterically" - appearing to depart and approach, exit and enter, negate and affirm. Note that I'm using the concept of winding number in an entirely illegitimate way that takes only the spirit of the mathematical idea. The justification is that the results are the same. The winding number creates a consistent number of turns in a single direction around a point ( $p$ in the figure above) even though it seems to wander. Drawing a line from $p$ to points along the loopy curve $C$ creates a consistent spiral of three turns, and there are only two versions, clockwise and a counterclockwise.

In Lacan's point about language, that langue moves parallel to parôle in dividing the speech act from the forward motion of meaning to the end of the sentence, retroaction comes at the end, producing a time reversal, a Nachträglichkeit that "corrects" what has gone before, but could not correct if it has not "already and always" done this correcting. It is the antithesis present in the thesis "from the beginning" that is the ethnography coming in from its wanderings to complete theory's reasoned version of things: the loops construct the spirals, the nazioni per tutta la distesa deploro luoghi, tempi e varietà of factum completes/ constructs the true, the verum. At this point, Vico becomes Lacan, two hundred years early. And, in a very Lacanian fashion, Vico cites rhetoric (Lacan: Discourse) as the basis for this "overtaking" of theory by ethnography. And, in an even more Lacanian fashion, Vico fingers jouissance, bodily pleasure as belonging both to ethnography and theory; for ethnography it allows things to accumulate whether they are enjoyable or painful, for theory it is the function of Production that, as a sorites logic, works under the

[^7]radar of consciousness to derive from the Other created by the Agency of any cultural action, a secret content.

If both Vico and Lacan agree that "rhetoric" allows for an account of language's double modality, its operation in a (suppressed) register of the act at the same time "content" advances to a not-yet-revealed end point, they also agree that this rhetoric takes canonical forms - it has an internal symmetry - that is based on the relations of the verticality of the "observer/theorist" to horizontality of "contingency/life." The observer-theorist, moreover, for both Vico and Lacan, is hysteric - one of the four canonical forms, singled out for a "new" kind of knowing - Vico's scienza nuova (borrowed from Dante's use of "new") and Lacan's revolutionary re-reading of Freud. Just as Marx advised that one can pick up the story of Capitalism at any point and not miss any of its features, picking up Vico or Lacan always amounts to a working method that begins with the part as part and finding, in a fractal sense, the whole. Because both Vico and Lacan were conscious of this part-to-whole relation and articulated it as a critical part of their method, they are unique among theorists in submitting their most intimate thoughts, in every aspect and detail, to the process of transformation they find to rule the conversion of humanity to subjectivity. Both realize that this makes them hysterics, in a practical and theoretical sense. Both submit to a "rule of jouissance," which in effect is a recognition of language's capacity, in its forward motion towards an as-yetunknown conclusion, to preserve and cancel or, more accurately, accumulate through negation.

This focuses on Production in the Lacanian mathemes of discourse and raises the issue of what Production becomes under the modalities of the master signifier (S1), knowledge (S2), jouissance pure and simple ( $a$ ), or the barred/divided subject (\$). The train of thought that brings us from considering the status of the cigarette hole burned into the drawing paper to the realization that only Vico and Lacan have understood that theory and practice are related within a "hysterical" logic of meaning now brings us to consider the symmetry (the vertical order's relation to the horizontal is one way we have formulated this) within hysteria that, under signs of S1, S2, $a$, and $\$$ (which work like astrological signs) allow us to find a logic within made things - an architecture - that retroactively reveals the truth of subjectivity. This realization frees the subject in an important sense, and is a part of an "emancipation" tactic that theory has always favored. But, instead of the usual conscription of political positions (identity politics, feminism, subaltern theory, anarchism, the Radical Left, etc.), emancipation means specifically the deployment of hysteria to find, within subjectivity's gaps, lacks, and surpluses, the presence ("always-already" there) of the autoerotic. This is not intended as a new theme to stack on top of an already teetering Tower of Babel. Rather, it is the anacoluthic completion of theory's "sentence" that will afford a retroactive reading of the register of the act. The autoerotic is to theory what it was to the child as subjectivity gradually assimilated polymorphous perversity into a forced binary of male and female. It is the sublimated presence of a not-all within this and other binaries - all forced choices - of the Symbolic. And, it will be theory as an emancipation from its own S2 cover-ups and ideological substitutions. Hysteria reveals the autoerotic within the promise of Wo Es war, soll Ich werden - the blank future that the "it," which gradually gave the human its enteric coating to convert it into a subject-proper, is going is actually going to be a short-circuit, a crossing of the wires of the two modes of subjectivity, i. e. a convergence of the future and the past where history and prophecy will no longer be distinguishable. What will happen has already happened. This "end times" emancipation state of theory will show that theory's only true position is as (1) suppressed, originally, and (2) restored, following the Christian model of resurrection, where bodies as bodies get new flesh - not just any flesh but Maurice Merleau-Ponty's uniquely appropriate "flesh of the world."

Vico and Lacan are singled out as theorists, but the list of those who have produced "practices" whose theoretical basis is as exposed as it can possibly be without converting the works into lessons is immense. Examples, from ancient history, shamanism, ritual practices through to the modernistic revelations of Joyce, Proust, Picasso, Roussel, etc. contrast with my dogmatic reduction of theorists to a list of two and my method to a discovery of autoeroticism through hysteria. In the concept of the winding number, the fixed single point is what allows permissive motion that, thanks to a jouissance geometric effect, results in a winding that is consistently clockwise or counterclockwise. Vico/Lacan, a theoretic dyad, a Castor-andPollux team, are the fixed point. Ethnography, literature, ritual practices, voodoo, art, music, dance, etc. etc. to say nothing yet of architecture, provide the wandering factum that reveals the verum.


In The Bishop's Wife (1947), James Gleason plays Sylvester, a taxi driver sympathetic to the risqué romance of Cary Grant and Loretta Young. Grant wishes to liberate Young from a desiccated marriage to David Niven, the Episcopal bishop engrossed with a building campaign. Because of its architectural element (architecture reduced to an object in the process of entropic ruin, in need of continual re-investment), I see this film as prophetic. The couple escape to an ice rink, where Grant and Young glide masterfully and elegantly in delicately crafted figures that pantomime their elegant attempts to master the art of extramarital love. The cab driver comes out, however, and demonstrates a different relation to sex. His dancing is a series of near-falls, requiring more skill than Grant and Young have needed to create the pretense of noble love. Sylvester is trash in comparison. The film's secret is that Grant is an angel sent to help with the campaign and other miracles appropriate to Christmastime. The angel wishes not just to help revise the standard "transitive" model of sympathy but ally it with the model of entropic architecture. This (generally) stupid movie helps me frame my argument about ethnography's factum relation to theory's verum, and Lacan's idea of the hysterical theorist emancipated by the autoerotic.

Really? The key is the cabby's role as a lipogram, a "hole" in the skating scene that goes from the nadir of Sylvester's stumbling performance to the contronymic "performance of stumbling" that shows how, in stumbling there is a profile that is the precise companion of the "ballistics of the vertical." This idea comes from a drawing of the Parthenon showing it in mid-explosion, when ammunition and gunpowder stored by the Turks was set off. In a careful reconstruction, Manolis Korres, the foremost architect-authority on the Parthenon, plotted the trajectory of each fragment lying on the field of the Acropolis. Based on its location, weight, and shape, he plotted the original position to reverse the entropy of the explosion to reconstruct the Parthenon's original composition. This is a remarkable methodology, not just for its ingenuity of running time's arrow in reverse to see, retroactively, what the original Parthenon was, but for its revelation of key critical terms: (1) the function of the hole (lipogram) in the fabric of the building's existence as utilitas and firmitas; (2) the vectorial role of the explosion, in converting each fragment into a ballistic munition with a specific, calculable trajectory; (3) the re-reading of the debris field in terms of the clinamen of parts separated from their contextual wholes - tesserce; and (4) the vertical elements of doemon and askesis, interior explosion and exterior "retreat" of the fragments. Those who have experienced

warfare will testify that explosions can be distinguished by the sound of the boom, an acousmatic quality that is surely so specific to the nature of the thing being exploded that we might also assign it the value of a venustas - that the beauty of a building is revealed precisely, more precisely, in destruction than in creation, in that what took long periods to create could be reversed within a single durée, in which temporality has the curious property of running in two directions at the same time.

In this compact set of interlocking critical functions/terms, we have the reverse of the bishop's idea of architectural preservation that constitute's The Bishop's Wife's problematic. Angel Dudley reverse predicates the model of entropic time, which forces the congregation to make greater and greater annual sacrifices to keep the building from falling apart. Dudley reveals that the restoration is about emancipation: the Real building is already there, already in fractalized form, any fragment of which will be sufficient, like any thread of Capitalism, to recover the fabric in toto. The temporality of this recovery doesn't matter either. It can be the "too early" of the construction phase or the "too late" of ruin. Although the choice seems to miss, like Zeno's arrow or racing Achilles, it is "right on time." This is the glory of jouissance: whether too early or too late, whether painful or pleasurable, whether it is an inside or an outside, value will accrue. The accumulation will allow the impossible recursive connection of first to last, extreme interior to extreme exterior. Verum ipsum factum.


[^0]:    ${ }^{1}$ While the reference phenomenon of the Jordan Curve Theorem - a region defined by a continuous boundary - sounds simplistic, mathematical proof of its basic properties is disproportionately difficult. Zbigniew Fiedorowicz, a mathematician at Ohio State University writes: "For a long time this result was considered so obvious that no one bothered to state the theorem, let alone prove it. The result was first stated as a theorem in Camille Jordan's famous textbook, "Cours d'Analyze de l'École Polytechnique" in 1887, and hence bears his name. Jordan found that proving this theorem is by no means easy, and in fact the proof he gave in his textbook is completely wrong." A "correct" mathematical description of a line drawn to enclose a space on a piece of paper is, to non-mathematicians, nearly unintelligible: "A Jordan arc in the plane is the image of an injective continuous map of a closed interval into the plane." Or, "a Jordan curve is the image of a continuous map $\varphi:[0,1] \rightarrow$ R2 such that $\varphi(0)=\varphi(1)$ and the restriction of $\varphi$ to $[0,1)$ is injective. The first two conditions say that C is a continuous loop, whereas the last condition stipulates that C has no self-intersection points." Are mathematicians simply trying to be difficult, or does their difficulty reflect an internal "imponderable mystery" lying within this simple drawing act and, by inference, at the interior of other simple actions involving representation, such as the Cretan Liar Paradox? See "Jordan Curve Theorem," Wikipedia, online text at [https://en.wikipedia.org/wiki/Jordan_curve_theorem](https://en.wikipedia.org/wiki/Jordan_curve_theorem).

[^1]:    ${ }^{2}$ Carolina Dayer, "Conjured Traces: Magic Realism in Carlo Scarpa's Brion Cemetery," Ph.D. dissertation, Virginia Tech. University, Washington-Alexandria Architectural Center (WAAC), 2015, 9-10.
    ${ }^{3}$ Louis Kauffman, Knots and Physics, Series on Knots and Everything, 53 (New Jersey: World Scientific, 1991), 257.

[^2]:    ${ }^{4}$ Henri Bergson, Time and Free Will: An Essay on the Immediate Data of Consciousness, trans. by F. L. Pogson (London: George Allen and Unwin, 1910), 3.

[^3]:    ${ }^{5}$ Ludwig Wittgenstein, Tractatus Logico-Philosophicus (Lanham: Start Publishing LLC, 2012). Online text: <http:// public.eblib.com/choice/publicfullrecord.aspx?p=1098004>.

[^4]:    ${ }^{6}$ This is the meaning behind George Spencer-Brown's claim that a line that divides a space perfectly is necessarily concave, and that the space distinguished works like a portal to a space "prior" to the space set aside as a site of demonstration. Pietropoli's fallen cigarette ash accomplishes the same end, "going past" the paper to establish the paper's (concealed) materiality. The space of demonstration must both be material and ideal, and is hence "already and always" an "image" in Bergson's terms. But, I shall show that this is not a point midway between ideal and material conceived as binary opposites, but rather the hinge point joining two orthogonal vectors allowing the ideal and material to penetrate each other in every operation, "fractalizing" the issues of binary opposition in each sub-divided instance that has presumed the dominance of one or the other. The fact that Spencer-Brown's Laws of Form includes an analysis of Lewis Carroll's sorites puzzles joins the problem of completion to that of the gradual accumulation (or attrition) of the sorites, the "one grain more" of the pile of sand or the "one hair less" of the balding man. Construction is the process of fictionalizing the space of demonstration while accommodating the antithesis structure that will lead to the anacoluthic end-negation, the gap identified with the death drive.

[^5]:    ${ }^{7}$ I have told this joke many times, using different "Jewish" names in honor of the origins of the Witz joke form. But, in this instance, I use gold, man, green, and berg in order to reconstruct a possible new sorting: the Goldberg Variations as a possible antonym of the ancient tradition of the Green Man, the scapegoat who, in ancient Nordic rituals, was honored in order to be sacrificed. This contronymic conversion of Mr. and Mrs. Goldman and Mr. Greenberg sets up an ersatz experiment: are the Goldman Variations also contronymic? Do they involve a metaleptic logic? Given Bach's mastery of fugue and counterpoint, this is not just a possibility, it is highly likely; but no one has looked at the Goldberg Variations in terms of palindromic reversals or retroaction. Or have they? Even if the ersatz conjecture fails, it will very likely reveal something useful about the logic of reversal and, eventually, the humor of the Witz.

[^6]:    ${ }^{8}$ I thank Alireza Moharar for suggesting this useful term. Elision in writing is the familiar contraction, for example "wasn't," that indicates the missing vowel, "o." "-What does the 'O’ stand for?" asks Eve Kendall in Hitchcock's North by Northwest. Walter O. Thornhill, who has just given her his business card, replies "Nothing." "Nothing is missing," is the motto of elision, and this no-thing, a No Thing, is what allows forward motion. Efficient cause is an orthogonal binary where, thanks to the occultation/suppression of one element, allows another element to move forward, creating two "registers" by which forwardmoving processes such as communication may continue to move forward. The occulted register is a register of accumulation, indicated in Lacan's mathemes of discourse by the horizontal bars, as in the case of the Hysteric's discourse, $\$ / a \rightarrow \mathrm{~S} 1 / \mathrm{S} 2$. This inasmuch says that, thanks to the suppression of jouissance (as a ratcheting function, converting either pleasure or pain to the same currency), S2 becomes a way of "knowing without knowing," a treasury of signifiers in relation to the hysteric's perception of lack in the Other, $\mathbf{S}(\mathbb{A})$. This is a new way of reading the mathemes, but it tallies with Lacan's insistence that communication is a palindromic construct where the forward motion of sentence/idea formation aims at a point where meaning will be reconstructed by retroactively adjusting the "hidden" meaning of all previous elements, which must have been there already/always for this particular meaning-achievement. The O that is elided ironically stands for nothing, showing that the words for "to be" derived from stehen are able "stand UP" thanks to their contronymic ability to "stand down." By standing up, one simultaneously disappears. Elision is about "standing for nothing," a perfect description of Thornhill's status as an advertising executive who uses "expedient truths" and is caught out in this elision when he stands up in the Plaza Hotel bar when the pageboy pages George Kaplan, the non-existent spy constructed by the CIA to mislead KGB pursuers in an expensive wild goose chase. Thornhill's standing up is simultaneously a "standing down" as he is abducted and, later, imprisoned and exiled. Verticality, his relation of an ( x )y to a suppressed ( y )x, "funds" the horizontal elision of the story, a process of "making the parts fit together" ... i. e. solving the puzzle without having all the pieces at hand, with only dogs that do not bark in the night.

[^7]:    ${ }^{9}$ The seemingly gratuitous insertion of a version of the Injection Function illustrating the rule that "the composition of two injective functions is injective" is meant to compare injection to the "polythetic method" used by archaeologists to establish correspondences between levels of artifacts where elements are missing. Injection shows how polythesis is not just a lax version of the $1: 1$ correspondence that is rarely found in excavations of sites (full sets of trait examples) but that, like Vico's exemplary cultures arrayed in his Table of Nations, injection rather than correspondence is the rule. This is the principle that allows that elements can be present in one set and absent in another, and that presence/absence does not impose any temporal or causal order. Thus, a trait can suddenly emerge without seeming to be the result of interacting previous elements or unpredictable external influence. Where the polythetic set presumes that evidence is lacking or present because of unpredictable preservation or erosion (i.e. external forces), injection accepts emergence as a central principle of how cultures make sudden unexpected advances "on their own," i. e. without influence (diffusion theory).

