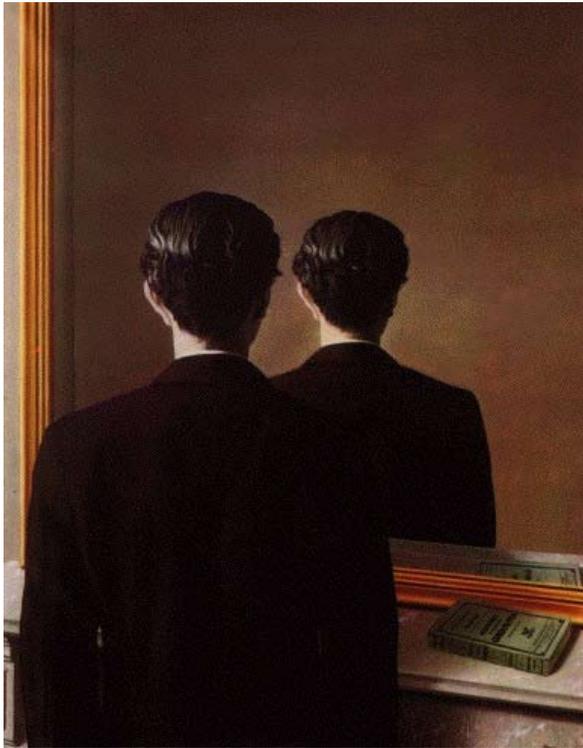


The Defect of the Fractal 'Line' (Pym, version 2)

Fractal structure is characterized by replication-across-scale and recursion. A pattern at one 'scale level' is inscribed at a 'lower' or 'higher' scale level so that the pattern in effect contains itself and is contained by itself. A line or plane separating the scale levels can, therefore, be considered as any that separates container-contained relationships, such as the proscenium arch that separates a dramatic enactment from the audience, or the temporal succession of moments, where the past can be considered to be *succeeded* by the present. Because content and custom can 'domesticate' the fractal effect by assigning conventional meanings to such spatial and temporal relationships, the line or plane separating conditions of container-contained or scale difference can be normalized. However, what could be called the 'absurdity principle' of fractals — the necessity that the container will become the contained and *vice versa* — can be disguised and reintroduced as a theme or other structural element. There is no limit on the direction or velocity of such conversions once the principle of recursion has its foot in the perceptual/conceptual door.



Virtually every René Magritte painting engages some aspect of the fractal line, interpreting it through the uncanny dysfunction of everyday objects such as mirrors, windows, and representational surfaces. Sometimes, puns will trigger fractal effects, as in the painting 'Ceci n'est pas une pipe'. This painting, 'Not to Be Reproduced', includes the Poe novel, *The Narrative of A. Gordon Pym*, to emphasize the problematic reversal of the 'normal' mirror function.

a cause, 'defectively' creates another line, external to the system of paired opposites. The theater proscenium, for example, generates a divide separating the audience from the world of normal life outside the theater, and another around objects on stage that are given special status, such as the off-stage voice or objects charged with special explanatory roles. As in Edward Albee's play, *Tiny Alice*, there can be a model of a house on a table in a room represented as being inside the house that is represented by the model.

Encadrement (multiple framing) creates material conditions that can be found developed *in situ* within all the arts and literature. The circumstances of these uses, in turn, show patterns and regularities that define, reflexively, the functions and critical significance of *encadrement*. Most notably, double framing is related to the deployment of metonymy within the work of art. Often the frame is the site of metonymy, just as often the agent. In general, the spaces between the two frames (frontal) or the spaces of rotation (orthogonal/circular) are sites peculiar to the Lacanian "partial object" — the "organ without a body," as Slavoj Žižek puts it. Most evident is the role of the voice, which is to language what this space is to representational visual space, a place of the "anonymous authority" of the work. Because scale is thrown into question as well as directionality (the relation between separation and alienation, the signature of the transfer of audience imagination through the device of the frame), the \diamond or $\langle \rangle$ (*poinçon*) sign is appropriate. As an "indeterminate in-between," the thin delay of the space between the frames cannot specify which of the spaces adjacent to it are larger or smaller, contained or container.

Self-contained containing can be written: $X = X / 1/x \dots$ (the line dividing two fractals, 'X', is also two lines, one that separates it from a smaller version of itself, $X > 1/x$, and one that separates it from a version that is larger, $X < X/1/x$, $X = x$). Note that this is a rough approximation of the form of the numerical Fibonacci series. It is the \emptyset that requires a numerical value to be the result of its own re-inscription into the formula of calculation.

The \emptyset as a gap. Continuity of spatial and temporal sequences is supported by the *imaginary* presence of motion and contiguity. This is not to assert that there is no such thing as motion and contiguity, but that human perception requires that these be re-established through imagination, rather than accepted in their 'natural' state. Thus, a temporal sequence that is continuous and indivisible in nature is segmented by perception into a series of moments, each of which retains a dynamic tension frozen in place, so to speak. Spatial continuity — the simultaneous tangency by which all objects and beings in space may be said to co-exist — is re-imagined in human perception as a disjointed system of lines, planes, and blocks that prevent and prohibit continuous tangency and co-existence. In effect, human perception subtracts dynamic cohesion and adds it back. The subtraction can be associated with a $-x$, a privation; the restoration of a symbolic glue is a kind of prohibition/permission element ($1/x$). Humans perceive the first, subtractive act as coming from nature, a presentation of the object to the subject; the formalization and restoration of a bridge covering the subtracted gap allows for human intervention, from subject to object so to speak. Thus, the effect of a mirror or echo, or the birth of twins — such phenomenon undermine the idea of a continuous series — are regarded as *signs* of nature (the signs of ancient divinatory systems (*miraculum*, *omen*, *ostentum*, *monstrum*, *prodigium*) fall into this category — while subjective responses to these signs, such as rituals of divination or foundation, are subjective interventions directed towards carefully framed objective conditions, surrounded by elaborate procedures and prohibitions.

The symmetry of the privational subtraction of continuity from spatial-temporal systems and the re-insertion of 'artificial' bridges covering the gaps left behind by subtraction reflects the fractal nature of this phenomenon.¹

This symmetry is fundamentally a response to the 'situation' of defective causality: a line drawn 'internally' to separate subject from object, one moment from the next, one space from the next, or even an effect from

¹ The *Zohar*, one of the mystical books of the Kabbala, notes that creation was, essentially, a contraction of God, who had originally filled space and time completely. 'Zim-zum' accounts not just for the amount of space and time that constitutes the constructed human world and separates it from heaven and hell (R1) but for the internal gaps, fractures, and lacunæ (R2) that give the lived world the quality of a broken crystal.

$\overline{a} | b | \overline{b} | c$

$\overline{a} | \cancel{b} | \cancel{b} | c$

$\overline{a} | c$

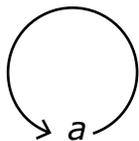
A classic syllogism ('If Socrates is a man and all men are mortal, then Socrates is mortal') can be expressed through a chain of symbols of the form, 'all As are B'. When a B is also an element contained by another element (C), then the 'enclosed' element cancels out the 'enclosing' one. The elements left over after the cancellation procedure represent the relationship implicitly contained by the statements.

$\overline{a} | b | \overline{b} | c | \overline{c} | d | \overline{d} | \dots$

The series could be extended indefinitely. And, although this series shows element in their order, element could be shuffled into novel pairings (which was what Lewis Carroll did) to create the effect of randomness. Cancelling pairs works just as quickly to reveal the final two elements, the 'tell' or concealed relationship that constitutes the Real lying within the symbolic order.



The Möbius band exemplifies the problematic point at which a 'pym' combines what seems to be a simple juncture of parts. This suture is both radically interior and exterior to the Möbius band. The 'line' at which the free ends are twisted and attached is hypothetical. In fact, the twist is distributed 'throughout' the band and the twist does not literally exist. Like the final pair, $\overline{a}c$, of the syllogism, it is the a-symbolic 'Real' that lies hidden within the system.



The gapped circle symbolizes the construction of an interior that is simultaneously a limit or outer bound. This gap typically is constituted as a flaw, missing object, or ungrammatical element. Its resistance to the 'correct order' of things returns the process to its origins, where the construction of a container or rational basis depended on the suppression or omission of some key element, the 'a'. The master suppresses the slave in order to be a master, but ungrammaticality is encountered when masters are multiple — an 'edge' of the system that returns to the paradoxical enjoyment of the servant, who is now able to trump the master (cf. the Roman festival of Saturnalia).

The 'defect' of the line separating any one 'static' instance of a fractal from its prior and posterior states allows it to be portable. Motility is both maximized and idealized. In his fantasy novel, *Micromegas* (1752), Voltaire (François Marie Arouet) coupled giantism with unlimited motility and speed, anticipating this point. As La Fontaine recounted in his Fables, cannibals were noted for their ability to disappear and re-appear, at places along the visible horizon — the limit of both the perceptual and conceptual grasp of the civilized explorers — which required an 'impossible' swift transport. Thus, the horizon as the complex limit of the 'œcumene', or known/civilized world, was a defective fractal separator.

The fractal line, the 'pym', the partial object, and the templum. It is possible and necessary to group and generalize the properties of a family of lines, divisions, operators, and other \emptyset -functional disruptors of space and time. The \emptyset -phenomenon (correct designation: the 'B-function'). If a circumference is (imagined to be) drawn around any 'partial object' (Lacan-speak for an object-cause of desire, one property of which is the creation of a problematic gap/rupture in space and time), that circumference is equivalent to that drawn around the space of the observer. This is to say that the inside boundary or frame is equivalent to the outermost boundary. This condition could be compared to what the Greeks called the *apeiron*, that which is without ('a-') a boundary ($\pi\epsilon\acute{\iota}\rho\alpha\pi$), but the comparison would suggest that the 'boundlessness' is not a physical unlimited-ness but, rather, the internal undecidability as to what is inside and what is outside, akin to Lacan's idea of the extimate (*extimité*). The Roman-Greek *templum* served the same function: inverting the external 'corners' of space to form an interior cross of two cosmic lines, the *cardus* and *decumanus*, relating the interior 'frame' of the altar to the outer frame, the horizon and/or cosmic bound of *Okeanos*. Altars were the place of sacrifice, where a victim was quadrated and examined in relation to celestial signs. Such divination procedures took place both 'outside' and 'between' time(s), and the space of the temple itself, as sacred, was separate from civic space, both inside and outside of it, in the same way that embassies are regarded as officially the 'soil' of their represented nation. The term 'pym' is taken from E. A. Poe's novel, *The Narrative of Arthur Gordon Pym, Esquire*. It is in literal terms the point in many of Poe's fictions that functions as a midpoint that 'folds' the text into two parts that create, in the mind of the perceptive reader, paired terms that, when noticed/remembered, construct new meanings in the process of the reading. A pym is the general term for the inversion of space-time that takes place in the classical *templum*.

Unexpected cousin: the cross-call of Spencer-Brown. In the non-Boolean logic of George Spencer-Brown, the case of 'sorites' takes an unusual twist. Spencer-Brown invented a non-arithmetic calculus using only one symbol, but this symbol had two functions: that of specifying a cross (a physical movement from one domain to another) and a call (the at-a-distance summons by means of a vocalized name). Curiously, the coupling of crossing and calling is the theme of Jean-Paul Sartre's famous restaurant scene, where a subject looking for Pierre finds that Pierre is not present. The seeker perceptually 'calls' the patrons of the restaurant to an imaginary screen and interrogates them visually. The call is to a boundary, but since Pierre is not there, each patron must be allowed to return to their seats at the restaurant's table. This is not an isolated case, but rather one of a number of central (and centralizing) protocols. Michel Foucault described the precautions taken in the town of Vincennes during the plague. Residents, quarantined inside their houses, were required each day to come to a prescribed window and report on conditions within. An agent would report the results to a central committee, who compared results and decided what actions to take. This, Foucault observes, is the logic of 'panopticism'. But, because Foucault notoriously reversed the direction of the (Lacanian) gaze — really from object to subject rather than subject to object — he confused the agent's observations with the exercise of the central committee's political power. It was, rather, the gaze of the object, materialized by the window of the 'uncanny' houses, that set up the dynamic 'idiotic symmetry' that bound the observer and the observed. It was this symmetry, and its self-sustaining powers of regulation, that powered the politics of panopticism, not the projection of the committee's will-to-dominate outward to imprisoned subjects.

The cross-and-call sign (Γ) involves two key Lacanian ideas: the notion of the extimate and that of the proper name, the 'name of the father'. Both are exemplified in the famous case of the Mirror Stage. The subject stands before a fractalizing divide, a mirror that 'does not mirror' or (paradoxically), mirrors the subject as a being that is 'more in the subject than the subject itself'. It also calls the subject into the mirror's domain, a call inviting the subject to be a member of a symbolic network, at the cost of the subject being confused for his/her image. This situation is mirrored by the logical exercise known as 'sorites' — a series of statements involving a set of equalities/facts that, when combined, reveal the identity of a missing element. This is the structure of the mystery story, the identification of a 'whodunit' based on clues. Lewis Carroll was interested in sorites and created a number of lists that could be solved with Boolean logic (laboriously) but which yield quickly to analysis using Spencer-Brown's calculus. The discovery of the sorites' 'answer' from amid the 'heap' of relationships/clues is akin to the R_2 'defect' leading to the R_1 'escape' in Poe's chiasmic narrative model. The clue was lying anamorphically between the pile of evidentiary sayings. It became the answer by providing, one half at a time, the part that would ultimately be reunited with its twin, R_2 with R_1 . The Real, it seems, comes in halves.