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A Note on the Long Film: The Grisly Roots of Hollis Frampton's *Magellan in Frobenius'* Idea of Cultural Morphology

Vorticism initiated Ezra Pound into the avant-garde and as he began so he remained—he was (in some qualified sense) a committed Vorticist all his life. Vorticists used the term “vortex” to characterize the work of art as a dynamic field in which the elements move or are momentarily in a dynamic tension by their intrinsic energy. For Frampton as for most thinking artists, the art object provides a model for understanding reality: the objects that compose reality are like a Vorticist work inasmuch as they are composed of energies held together in dynamic tension, “Prince Rupert’s Drops”—they are each a dynamic field through which energies move as they do through a flame or a waterfall. Thus,

The algebraic equation ‘ $ax + b = c$ ’ is our name for a stable pattern of energy through which an infinity of numerical tetrads may pass. A story is a stable pattern of energy through which an infinity of personages may pass, ourselves included (OCA 147 see end of paper for a list of abbreviations).

A mathematical formula can be thought of as an abstract pattern which can be instantiated with a number of objects: let a be the calories per ounce of a piece of uncooked rib-eye steak, b the number of calories in the garlic-oil which just minimally covers the bottom of a skillet (all of which are absorbed in the cooking), x be the number of ounces of rib-eye I shall cook tonight—then c represents the calories I will ingest eating that rib-eye steak. Or let a be the average number of bullets that Dr. Valery Fabrikant pumped into each of engineering professors he believed to be grifters who were taking advantage of the deceptions that universities’ tolerance of joint-authorship has permitted, b the number of bullets he discharged that did not strike any engineering professor, and x the number of professors he believed to have taken credit for research they did not do—in this case c is the number of bullets that Professor Fabrikant fired. Or again, let a represent the slope of a line, b represent the distance of the y -intercept from the x -axis, x represent the distance of any point along x -axis of a Cartesian grid, then c represents where the point falls along the y -axis. A mathematical entity is thus a perduring reality, through which can pass calories, bullets, points . . . and an infinitude of other entities. Its mathematical precision makes it (in Pound’s resonant phrase) a radiant node, from which and into which ideas can rush. It attracts associations such as I have made with the simple linear equation given above—it is therefore a system of energy, drawing in whatever comes near.

A mathematical equation is strictly timeless. The formal relations it maps out obtain for all time. The objects in the world instantiate its pattern and, though the particular instantiations come into and go out of being, the patterns are eternal. These formal patterns constitute the true reality: entities, person, events, beings will come into existence and pass away, but the pattern that relates together various beings, at whatever level in the hierarchy of integration and of whatever assorted types, will perdure in a realm beyond time. To apprehend these patterns is the essential character of knowledge. That proposition is venerable: no less a philosopher than Plato propounded it.

Pound used another term to signify pretty much the same as what he meant by the Vortex: the term was “*paideuma*.” The meaning of that term was recast by the German ethnologist Leo Frobenius (1873–1938), a cultural anthropologist whom Pound held in very high esteem. In his introduction to Burton Raffel’s *Pure Pagan: Seven Centuries of Greek Poems and Fragments* (2004), Guy Davenport defined its Greek meaning as “the content of a culture . . . what you know just by being a Greek, a Dogon, an Icelander. All the tacit assumptions of daily life

constitute *paideuma* . . . So poets compose for an audience that understands them.” Frobenius used the term “paideuma” to suggest that culture is a unified, organic whole—a whole in which each part influences every other. In 1921, he published *Paideuma: Umriss einer Kultur- und Seelenlehre* (Outline of a Theory of Culture and Spirit), an entire book devoted to the topic. From 1927 on Pound took an increasing interest in Frobenius and adapted Frobenius’ term in his highly charged writings on history and tradition. Stirred by the excitement Frobenius’ work engendered, Pound tried to refresh and improve his German

Having once opened Frobenius I was compelled to brush up my German . . . and I have thereafter pointed out the idiocy of a race that can’t publish an adequate translation or even adequate condensation of his works. Several races seem to qualify.

He expressed bitterness that Frobenius’ work had not been translated into English. “You can’t even now get an English translation of *Erlebte Erdteile*, or even of *Paideuma*,” he complained (GB, 142). So Pound initiated a campaign from Rapallo to interest a number of parties in translating *Erlebte Erdteile* and *Paideuma*. He continued this campaign into his years at St. Elizabeth’s, and one of the people he met there whom he attempted to interest in undertaking these translations was Hollis Frampton (who did have a go at the task, and translated at least some part of Frobenius’ multi-volume *Erlebte Erdteile*).

Pound stipulated how he would use “paideuma”: “Frobenius uses the term Paideuma for the tangle or complex of the inrooted ideas of any period. . . . I shall use Paideuma for the gristly roots of ideas that are in action” (GK 57-8). In *Impact*, Pound wrote that Frobenius’ “‘Paideuma’ means the mental formation, the inherited habits of thought, the conditionings, aptitudes of a given race or time.” Again in “For a New Paideuma,” he stress that Frobenius’ Paideuma is an active force: “The term Paideuma has been resurrected in our time because of a need. The term Zeitgeist or Time Spirit might be taken to include passive attitudes and aptitudes of an era. The term Paideuma as used in a dozen German volumes has been given the sense of the active element in the era, the complex of ideas which is in a given time germinal, reaching into the next epoch, but conditioning actively all the thought and action of its own time” (SP 254).

Frobenius embodied that Germanic spirit that, at the beginning of the twentieth century, contested the postivist ideals of science (which Frobenius identified with materialism and evolutionary theories). In the late nineteenth century, a historicist anthropological/ethnographic tradition had developed in Germany. Two names figure prominently here: Rudolf Virchow (1821–1902), in physical anthropology, and Adolf Bastian (1826–1905), in social-cultural anthropology. Virchow and Bastian were both resolute empiricists (at least insofar as the research methods and formulation of explanatory accounts are concerned) and opposed to sweeping accounts founded on the idea of evolution. Virchow was first a biologist, and a remark he made in a journal he founded, the *Archives for Pathologic Anatomy and Physiology and Clinical Medicine* encapsulates the principle that drove his work: “This is not the time for systems, but the time for detailed investigations.” Virchow’s empirical methods led him to adopt craniometry, and, after collecting findings that were not what the scientific racist theories on the “Aryan race” predicted, came to the conclusion, contrary to dogma, that the racist theories of so-called “Nordic mysticism” were quite mistaken.

Adolf Bastian’s empiricism was essentially the rejection of research methods founded in philosophical theories, the emphasis on keeping oneself open to what scrupulously observed details reveal (recall here Pound’s emphasis on luminous details), and the refusal to go beyond what can be established on the basis of these observations alone. Bastian proposed what is essentially a scientific model for the historical development of culture. Indeed, Bastian’s research project was to develop a science of human culture and consciousness based upon the

notion that the mental acts of all people everywhere arise from common physiological mechanisms: Bastian made this point by suggesting that every person inherits a complement of species-specific “elementary ideas” (*Elementargedanken*) and that, in consequence, all minds, regardless of race or culture, operate in the same way.

However, thinking takes on particular forms in different locations. Bastian explained this by saying that the contingencies of geographic location and vicissitudes of historical circumstance result in differentiated elaborations of the “elementary ideas”; he referred to the specific configurations that these elaborated *Elementargedanken* assume as *Volkergedanken*, or ideas of a folk (or a people). The elaboration of *Elementargedanken* into *Volkergedanken* follow certain law-like principles that Bastian referred to as the “genetic principle,” according to which societies, over the course of their history, trace the same developmental trajectory, from simple to increasingly complex ways of thinking and increasingly complex organizations of sociocultural institutions. Ethnographic data allows the study of the psychological laws of mental development as they reveal themselves in diverse regions and under differing conditions. Thus, even if the ethnologist proceeds by soliciting information for individual informants, the goal of ethnographic research, Bastian held, is not the study of the individual but the collective mind of particular group, its *Volkergedanken*.

Like Bastian, Frampton suggested that there are historical (or, at least, metahistorical) genetic principles governing history (or, at least, metahistory) that determine that the historical process begins with what is most fundamental and proceeds towards increasing complexity and, again like Bastian, he maintained that there are universal *Elementargedanken* and that these elementary ideas can be elaborated differently, resulting in different types of conceptual structures. Frampton resorts to mathematical analogies to suggest the character of the relation between elementary ideas and their different elaborations: his writings propose that the appropriate analogies for that relation are, first, the relation mathematical formulae (e.g., the formula “ $ax + b = c$ ”) have to different ways they can be interpreted (to the infinity of numerical tetrads modelled by that underlying formula) and, second (and more strictly), the relation, in a graded hierarchy, of a system of axioms to the lemmae and theorems derived from them. Bastian and the cultural ethnographers in his circle also suggested that, by analyzing cultural forms of a given era and place (and art works constitute a important part of these cultural forms), we can recover the elementary form of thinking that gave rise to them—and, consequently conducting a diachronic survey allows us to recover the laws of their development. Hollis Frampton discerned a similar order in the relation successive cognitive-aesthetic states have to one another. Frampton, according to his wont, argued that the series of cognitive-aesthetic states a quasi-mathematical form: the stages of intellectual and cultural development are analogous to increasing complex theorems derived from a set of axioms (we shall see, he also uses the example of a knight’s position on a chess board). In mathematics there are procedural rules for transforming the initial postulates into derived lemma and theorems following stipulated transformation principles (for generating new formulae, i.e., new strings of symbols generated from strings of symbols according to rules of transformation); in history (or at least cognitive-aesthetic metahistory) there are states of affairs and the transformation of a state of affairs into another state of affairs according to principles of a quasi-mathematical character. He presented the analogy in this way:

The metahistorian of film generates for himself the problem of deriving a complete tradition from nothing more than the most obvious material limits of the total film machine. It should be possible, he speculates, to pass from *The Flicker* through *Unsere Afrikareise*, or *Tom, Tom, the Piper’s Son*, or *La Région Centrale*, and beyond, in finite steps (each step a film), by exercising only one perfectly rational option at each move. The problem is analogous to that of the Knight’s

Tour in chess (OCA 138).

The analogy is both luminously precise and splendidly amusing. The Knight's Tour is a well-known mathematical recreation (that has become a staple of computer science courses relating discrete mathematics and graph theory to computer programming). In a knight's tour of a chessboard (more properly called a knight's path), a knight makes a sequence of moves that take it to each square on the board exactly once. If the final position of such a path is a knight's move away from the initial position of the knight, the path is called re-entrant or closed, and is therefore a Hamiltonian cycle.

Frampton continued: "Understood literally, [the problem of the Knight's Tour] is insoluble, hopelessly so." (OCA 138) We know, however, that the Knight's Tour itself is insoluble. We know in fact that on an 8×8 board, there are exactly 26,534,728,821,064, directed, closed tours; the number of undirected closed tours is half this number, since every tour can be traced in reverse. More to the point, an algorithm exists for completing the Knight's Tour: known as Warnsdorff's algorithm, after its discoverer, H. C. Warnsdorff, the algorithm was described as long ago as 1823.

So why would Frampton say that the problem is insoluble, when it is not? Let us look at what he says next. Frampton continued, "The paths open to the Knight fork often (to reconverge who know where). The board is a matrix of rows and columns beyond reckoning, whereon no chosen starting point may be defended with confidence" (OCA 138). So the insolubility to which Frampton referred was not the impossibility of developing an algorithm that would provide the solution to the class problem of Knight's Tour (that is, given an initial position for a knight, what series of moves allows the knight to visit each position on the chess-board once and once only), but rather the impossibility of determining what square the knight should occupy to begin the process: if the knight starts in position K4, then one tour follows, while, if starts at Q5, another tour is implicated. On an 8×8 board, there are 64 possible starting points. Who is to say which Knight's Tour really reflects the actual evolution of cinema (or of any particular historical process)?

Frampton added, "Rather, some such possibility presents itself insistently to my imagination, disguised as the germ of a plan for execution" (OCA 138). What, in fact, insisted on presenting itself to Frampton's imagination was the massive film cycle he called *Magellan*, a fitting title for a tour of all possible "circumnavigations" of the sphere of knowledge. In the mathematical problem the Knight's Tour represents, most any arbitrarily selected square can be taken as a starting point. So Frampton's remarks about needing to identify the correct starting point arises out of the demand that the selected tour model correctly the actual course of historical development: for this tour to be of any real heuristic value, he is required to identify a suitably elementary beginning for the historical process (beginning with what truly is an elementary condition) and the correct transformation rules (rules that allow only those moves—those historical transitions—that truly are possible), the particular tour must be composed exclusively of moves that represent a possible transition from one historical moment to another or, what is the same (for on this matter Frampton took a leaf from Hegel's *Phänomenologie des Geistes*), from one mode of consciousness to another that could actually be its successor.

Frampton continued stating that what he imagined executing was "a Tour of Tours, so to speak, of the infinite film, or of all knowledge, which amounts to the same thing." The mind boggles! An "infinite film!" "All knowledge!" The infinite film would embody all knowledge! As wonderful as this proposal is, it does call out for some interpretation. What notions would lead Frampton to propose an infinite film that embodies all knowledge?

Cultural Morphology: Identifying the Forms Knowledge Assumes

Over time German ethnology focused more sharply on cultural ethnography. Thus, Friedrich Ratzel's (1844–1900) idea of *Volkerkreise* (ethnic circles) led on to the notion of *Kulturkreise* (culture circles) theorized by Bernhard Ankermann (1859–1915) and Fritz Gräbner (1887–1934). Ratzel's had much in common with Bastien's methods, based on his ideas about *Volkergedenken*. Ratzel's *Anthropogeographie*, including his work on craft techniques, linked the shapes of utensils and the materials used in them to broader issues concerning the relation of society (human culture) and nature. So Ratzel's ideas took the form of an environmental determinism that had much more breadth, and took far more factors into account, than the political geography that was current then.

Frobenius took Ratzel's ideas and extended them still further; his distinctive idea of *Kulturkreis* (cultural circle) was the result. Frobenius first presented his own, extended idea of *Kulturkreis* in his 1898 work *Der Ursprung der afrikanischen Kulturen* (The origin of African civilizations). The novelty of Frobenius' treatment of the concept of the *Kulturkreis* was that he expanded it so it could serve as the key idea of an all-encompassing cultural morphology. He advocated investigating the individual elements of culture according to their role within the organic whole of which they are parts. This method, according to Frobenius, provides a way for understanding the complex, historical nature of cultures.

A split in German ethnography occurred in 1898, around the time when Frobenius, then 25, distanced himself from the historico-cultural school, criticizing its methods for being too mechanical. He quickly withdrew from the concept of the *Kulturkreis*, presenting instead the concept of *Paideuma* and launching the theory of *Kulturmorphologie*, which offered the organicist conception of cultural development, by propounding that cultures undergo organic change analogous to the development of individuals from childhood through youth and adolescence and into adulthood and old age.

Kulturmorphologie centred on two principle areas of study: religion and art. German ethnologists were convinced that examining only the central forms of spiritual life was unlikely to provide the means of understanding the basic shapes a culture assumes. Their reasons could be traced back to ideas first put forward by Johann Gottfried von Herder (1744–1803) in the 1770s. Herder argued that all the arts and sciences derive from a natural community of humans living together in local groupings; the arts and sciences, Herder maintained, are all products of the communal mind, and not exclusively of the minds of "great men," which, in any event have been nurtured by the community that enfolds the great man. The books the "great man" has read, lectures he has attended, apprenticeships he has served, the language he acquired in childhood (Herder was among the first to point out the intimate relation of thought to language), the education he received—in sum, everything necessary to develop his talents of genius—are products of the community. Therefore, the proper study of human society is not the "great man" but rather the community, the nation, the *ethnos*.

In the 1920s, Frobenius made his goal the grasping of the essence or soul, of culture, and the roots of culture, which he dubbed "*paideuma*." Every culture, argued Frobenius, possesses laws that determine the historical process through which it evolves independently of the individual human beings who participate in the culture. Under the influence of the Neo-Kantian philosophers, Frobenius used the term "*paideuma*" to refer to a Gestalt (in the sense Ernst Jünger used that word), a manner of creating meaning (*Sinnstiftung*) that was typical of certain economic structures. Frobenius and the Frankfurt cultural morphologists tried to reconstruct the world-view of hunters, early planters, megalith-builders or sacred kings. In a 1921 volume that caught the imagination of Ezra Pound, Frobenius described the two basic *paideia* operating on the planet: that defined by the cave mentality, and that defined by the wide open spaces mentality (*Hohlengefühl* and *Weitengefühl*). The former belonged to the Hamitic, and also Semitic people of the Orient; the latter to the Ethiopian and Germanic peoples.

As a reaction against the role the speculative, universalist strain in German ethnography accorded to reason, Frobenius' approach to *Kulturmorphie* relied heavily on intuition, as had the anthropological methods of Herder's followers. The empirical strain in German ethnology and anthropology emphasized culture's historically-specific features and dedicated itself to exploring concrete historical phenomena, employing tools (such as philology, archaeology, historical criticism, etc.) that might illuminate the uniqueness of particular historical societies. In an Aristotelian turn, they affirmed that the universal was to be discovered in the prolific variations of historical phenomena and their organic interconnection of all the elements that constitute the form of each. Their emphasis on concrete specifics of the particular resulted in an emphasis on the universal's links with lived reality. This inner core within lived reality was understood as a fundamentally irrational principle—so these anthropologists believed that intuition was required to grasp the structuring force that is immanent in each historical phenomenon and endows each historical phenomenon its uniqueness. Frobenius embraced this view. Each culture is a complete organic form, and each is unique, he argued. Accordingly, we cannot grasp the principles that govern its form through general causal laws. Borrowing from Johann Wolfgang von Goethe, Frobenius asserted that one apprehends the principles governing any cultural form through the exercise of "*exakte sinnliche Phantasie*" (exact sensory imagination).

By exercising *exakte sinnliche Phantasie* one could participate in the inner life of the object (culture) one studied. In this way, *exakte sinnlich Phantasie* overcame the limitation of approaches that were based on concepts. Goethe applied *exakte sinnliche Phantasie* to understanding the variety of forms which a living organism assumes: only the imagination (to be precise, only *exakte sinnliche Phantasie*) can grasp the single principle that gives rise to the variety of forms its leaves assume as a plant grows. But if it is the imagination alone (and specifically *exakte sinnliche Phantasie*) that can apprehend the unity behind the morphological variety of forms a leaf assumes in the course of its development, so too must it be the imagination, Frobenius thought, that grasps the principle behind the morphological variety that cultural expressions assume in the course of that culture's development. Furthermore, Goethe proposed that in apprehending the principle that unifies the morphological variety of the various expressions of some underlying phenomenon, the scientist grasped the *Urphänomenon*, the pure or primal phenomenon (akin to what Frobenius called "paideuma"). Frobenius' grasping a culture Paideume is analogous to Goethe's apprehending the *Urphänomenon*.

The emphasis on intuition resulted in this strain in German anthropology taking history to be irrational at its core: the motor that drives history, according to ethnographers of this persuasion, develops from spiritual motives whose nature is external to logic and to instrumental rationality. Consequently aesthetic understanding was important for representatives of this group: Historical research overtook philosophical construction as the means for discovering the irrational form-giving principle that shapes each particular historical phenomenon. We can see by its analogy to the aesthetic phenomenon that the morphological approach succeeded in overcoming the opposition between content and form, means and end, for, as aestheticians generally do, the cultural morphologists maintained that form (in their case, the form a culture assumes) makes visible a content they understood as a stylistic principle which is irreducible to anything other than itself. Only exacting, empirical historical study could reveal the working out of the universal in the particular.

According to Frobenius, the paideuma is prior to rational thought but is constitutive—it shapes a culture. The paideuma is a culture's rudiments (its "grisly roots"), but overlying this level was a world-historical trajectory with identifiable stages. Frobenius maintained that cultures, like biological organisms, have a life cycle. The first stage, *Ergriffenheit* (emotion), he considered is analogous to a culture's youthful stage; the second stage, *Ausdruck* (expression), he considered analogous to a culture's maturity; the third stage, *Anwendung* (utilization) he believed to be analogous to its old age. All cultures follow these development laws,

independently of the individual human beings who participate in the culture. This power behind these developmental laws is what he called “paideuma.”

Pound accepted the values that Frobenius’ accorded art, religion, and intuitive (non-rational) apprehension of the whole. In *A Visiting Card*, he writes.

In the beginning was the word [recall Frobenius’ emphasis on the mind’s original encounter with circumambient reality], and the word has been betrayed . . . We find two forces in history: one that divides and shatters, and kills, and one that contemplates the unity of the mystery.

‘The arrow hath not two points.’

There is the force that falsifies, the force that destroys every clearly delineated symbol, dragging man into a maze of abstract arguments, destroying not one but every religion (SP 276).

Or again, to the importance of the apprehension of the whole:

the aim of technique is that it establish the totality of the whole . . . The total subject IS the painting (GK 90).

Pound also explained what accounts for the loss of that sense of the whole.

When the usurer climbs into the saddle you have attention absorbed by the detail, colour, lighting, etc. to DETRIMENT of the total reason for the work’s coming to be (GK 90).

For Pound, then, usury results in a consciousness fixed on ledgers, details, calculation, and reason—and corrupts consciousness to the extent that it can no longer intuit the paideuma.

But the one thing you shd. not do is to suppose that when something is wrong with the arts, it is wrong with the arts ONLY.

When a given hormone defects, it will defect throughout the whole system.

Hence the yarn that Frobenius looked at two African pots and, observing their shapes and proportions, said: if you will go to a certain place and there digge, you will find traces of a civilizaion with such and such characteristics.

As was the case. In event proved (GK 60–1).

Such is the power of apprehending a culture’s grisly roots..

Pound found Frobenius’ conception of history attractive. Frobenius’ writing implied that history must bring the past into the future—so we must seek to restore the age of a pure expressivity, in which the humans would once again experience their continuity with the circumambient world and all its phenomena.

In an essay from ca. 1940–2, titled “*Convenit esse Deos*,” Pound argued that religion, thinking and language have an organic relation to each other. The sins of the West give evidence of the organicity of the relations amongst the three terms, to highlight the organic interrelations amongst which Frobenius had coined the term “paideuma.” European culture betrays nature exactly to the extent that its religions betray nature, and its language and way of thinking are, as a result abstract—it was the belief that European languages are abstract that led Pound to praise Fenollosa’s “The Chinese Written Character as a Medium for Poetry” and to develop poetic forms that rely on the juxtaposition of “luminous particulars.” The influence of Fenollosa and Frobenius converged in Pound’s poetics: Fenollossa had claimed that the Chinese

language is connected with a form of thinking which understands reality as immediate and concrete, while Frobenius had noted the same distinction in verb forms—in an essay from 1933, titled “Past History,” Pound asserted, “Frobenius notes the same distinction [as Fenollosa] between the tenses of the verb in the healthy stage of narrative production. His Africans talk about what the leopard and antelope *are doing* and *saying* NOW, not what they did or said in the time of Aesop. They call the Aesop, ‘school book exercise.’”

Frobenius’ influence on Pound was far-reaching. Guy Davenport, in “Pound and Frobenius,” asserted that it was from his studies in Frobenius that Pound learned to see “the corrosion of usury in architectural or painting style. . . .” (MM 41). Pound’s *Cantos* is an effort—a peculiar sort of effort, given its composition as a “circle of fragments” (Yeats’ term) that appear and reappear—but an effort, nonetheless, to tell the tale of the tribe of Europe and its offspring. It was fuelled by a “*Sagetrieb*,” as Pound called it, again drawing a term from Frobenius. And, he also adopted the empirical practices of *Kulturmorphologie*; thus, as Charles Bernstein points out (*The Tale of the Tribe*, 40), when Pound came to compose the “Malatesta Cantos” (Cantos 8–11), he availed himself of papal missives, ambassador’s reports, and Sigismund Maletesta’s correspondence.

But most important of all, Pound drew from Frobenius the idea that language helped determine the shape of culture—indeed of the homology between language and the *Kulturmorphologie*: language provides the form of a culture and the experience of culture is embedded in language. Frobenius, and Pound after him, was influenced by Leibniz’ idea that although ideas arise within experience, their principle, that which makes the ideas possible, is a mental capacity, for which ideas serve as signs—their main difference with Leibniz is that Frobenius and Pound maintained that what makes ideas possible is not the individual mind, or even Mind, but the state of the culture in which one lives. As Frampton did, Pound took its particular form of language to be a culture’s grisly roots—to be an active principle that decides what a culture can think. Language, as the bearer of ideas, generates all other forms of cultural expression—and a sick language produces cultural malaise. The *Cantos*, accordingly, can be understood as an effort at healing language.

“ . . . that makes order”

The ordering of both the objective world and history are both subsumed within a more basic activity which accounts for their analogous structure: the ordering a culturally determined grammar of expression imposes on all that we know. According to the version Frampton held of this vaguely Kantian conviction, this ordering proceeds by shaping the energy of experience according to certain rules, into more or less pre-established forms. Accordingly, the general types of experience will constitute a delimited set. He also seems to have conceived this shaping process as proceeding according to rules, rather as constructivist mathematicians understood the concepts of mathematics as providing procedures for constructing objects or a linguist understands grammar. Consequently, some basic forms of experience resemble others. We can use the analogy to constructivist mathematics to explain this. Consider that a mathematical object can be formed by the operations of the joining and the transposition of a number of its elements; however, we can join mathematical objects in different ways, and we can transpose its elements following a number of different rules. Nonetheless, all the objects formed by procedures of joining would be related, all the objects formed by transposing an object’s elements would be related; and all the elements formed by both joining and transposing the object’s elements would be related. Experiences, analogously, are formed through certain procedures, and these procedures have variants, resulting in some forms of experience being related to others.

Such considerations allow Frampton to propose a Knight’s Tour of possible forms of experience

and all possible cultural expressions (to be embodied in sequence of films in *Magellan*). Each move (each film in Magellan's calendric cycle) would carry us from one form of experience or cultural expression to another. Recall his comment: "The mode we call reading entails a correct extrapolation of the axiomatic substructure from the artist's immediately apprehensible tradition. Once the set of axioms has been isolated and disintricated, the artists may proceed to modify it in any of four ways: by substitution, constriction, augmentation, or by displacement." A set of axioms, together with a collection of elements, define the various transformations available—taking this as an analogy to historical progress, the axioms and the collection of elements defines the various moves that history can make, while the Knight's Tour defines, as a metahistory, describes the various possible ways to traverse the entire set of possibilities. That traversal will be the logical structure of the history of experience or, what is the same, of the history of film—as a logical (rather than chronological sequence) it would offer the metahistory of experience and of film.

The form of Frampton's film *Zorns Lemma*—and indeed the mathematical theorem known as Zorn's Lemma—anticipate this tour. In his "Notes on the Film: Title: Zorn's Lemma itself," Frampton addressed these remarks to an unidentified "you."

Zorn's own Lemma was and is *not*, as you suggest, "a theory for describing all the possible relations within a . . . set." That is probably the whole task of *mathematics* at large: to describe all the possible relations among the class (or set) of "all numbers."

Zorn's Lemma is, rather, *hierarchic*, in that it proposes a possible meaningful "tour" of all elements within a set with regard to only one operation—discernment of their "ordering," or the relative preponderance of their *shared qualities* (OCA 196).

Film's ontology mirrors the hierarchy of the forms of reality. The shadows projected on the cinema screen are no more real than those the prisoners in Plato's cave observe on the wall before them. Like those fleeting images on the cinema screen we take as real, the images that the Demiurge projects into time we likewise take as real—in reality, they are no more than a configuration that energies temporarily assume. Only the mathematician (and the film analyst) understands, however poorly, the eternal postulates from which derive those fleeting appearances.

The reason for Frampton's interest in film is clear: a film shot is like a fragment of experience and when we watch a film, we are confronted with a welter of experiences, and we try to render intelligible that with which we are confronted. Ideally, we do so without imposing any concept on that experience. Like Bastian, Frampton pointed out that by studying individual cases one can identify the forms that thinking can assume and the lawful connections to the developmental process that connects these different thought forms. Frampton understands the task that confronts anyone who wishes to understand a film, or any work or art, to be that of excavating its axiomatic substructure—the principles that determined the shape it assumed. Frampton's analogy for the critical enterprise, of recovering the axiomatic structure of artworks, can be understood as the Bastianish effort to identify the elementary ideas (*Elementargedanken*) at the core of different forms of thinking (*Volkergedanken*). Though Hollis Frampton goes some distance in disavowing Pound's influence, Hugh Kenner helped Frampton grasp the metaphysical implications of Pound's methods. He defined the ideogrammic method as a one that allows "juxtaposed objects [to] render one another intelligible without conceptual interposition," and proposed that purpose is to unleash a "process of compelling, out of otherwise mute particulars, by their electric juxtaposition, traces, intelligible patterns, of an intense, clear, luminous intellectual world." (PEP 89, 236) Had he thought about the medium,

Kenner, a student of Marshall McLuhan, would have understood the cinema as a form that operates not through discursive argument but by leaps and hurdles, and links seemingly separate loci into patterns—he would have thought that, because that is exactly his method in *The Pound Era*. That is how the mind operates: by substitution, constriction, augmentation, and displacement. The cinema operates by similar principles. The question Frampton poses is what does the existence of the set of cinematic forms a culture possesses reveal about the grammar that determine that culture's possible experiences. The structure of mathematical objects reveals how the mind operates, and the structure of many mathematics objects is best revealed through set theory. Likewise, the forms the avant-garde filmmaker has constructed likewise embodies a grammar that determines how the mind operates. It fell to Hollis Frampton to explore how the the film, mathematics (especially set theory) and their homologies serve to delineate the contours of consciousness.

List of Abbreviations for Works Cited.

GK Ezra Pound, *Guide to Kulchur*. New York: New Directions, 1970.

MM Lewis Leary, ed., *Motive and Method in the Cantos of Ezra Pound*. New York: Columbia University Press, 1954.

OCA Bruce Jenkins, ed., *On the Camera Arts and Consecutive Matters: The Writings of Hollis Frampton*. Cambridge, MA: MIT Press, 2009.

PEP Hugh Kenner, *The Poetry of Ezra Pound*. Forward by James Laughlin. (Lincoln: University of Nebraska Press, 1951, 1985).

SP Ezra Pound, *Selected Prose: 1909–1965*. Edited, with an introduction by William Cookson. London: Faber and Faber, 1973.

SR Ezra Pound, *The Spirit of Romance*. New York: New Directions, 1968.