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To Jennifer Thomas
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<tr>
<td>ANT</td>
<td>Actor-Network Theory</td>
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<tr>
<td>CIAM</td>
<td><em>Congrès International d'Architecture Moderne</em>: The International Congress for Modern Architecture, an international organization of modernist architects meeting annually (when possible) from 1928 until 1958</td>
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<tr>
<td>CORBU</td>
<td>Common shortened form of Le Corbusier, not intended as a diminutive. Writing a text on Le Corbusier presents the author with a need to navigate the architect’s many aliases. Born Charles-Édouard Jeanneret-Gris, in the 1920s the architect began writing and publishing articles under the pseudonym Le Corbusier, and continued to use this name for his professional work, reserving the name Jeanneret for his paintings. Later, a further avatar developed amongst his fans and disciples - <em>Pere Corbu</em>, a reference to both Alfred Jarry’s character, the iconoclast buffoon <em>Ubu Roi</em>, and identification of Le Corbusier as a father-figure for the international Modern Movement.</td>
</tr>
<tr>
<td>MoMA</td>
<td>The Museum of Modern Art, common abbreviation.</td>
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George Santayana’s famous adage, “those who cannot remember the past are condemned to repeat it” indicates a hinge between history and problem-solving, or the use of existing material and information about the past to create new solutions to contemporary problems. Cyber-history accesses the productive and inventive content of history, with the adaptation of historical materials to method-generating experiments using the conceptual tools of heuristics, the logic of invention. This dissertation articulates “cyber-history” through application of heuristics as an analytical tool in historical research, thus differing both from the use of heuristics as a set of tools for experimental method production, and from other forms of historical analysis, requiring the naming of this work as a differentiation from these existing systems.

The historical documentation of Post-modernism’s emergence in architecture becomes the site for an initial analysis using the concept of figural history developed out of Sigfried Giedion’s space-time figures, to reveal aspects of the transition from modernism to its antecedents that have been obscured by traditional rhetorical methods. The history of rhetoric is then examined to uncover the foundations and idiosyncrasies of academic research before presenting and ultimately applying heuristics.
in the analysis of Le Corbusier's urban oeuvre. Analysis is conducted on Le Corbusier's travel works: *Voyage d'Orient*, *Precisions*, and *When the Cathedrals were White*, culminating with an analytical framework for analyzing the *Poem of the Right Angle*.

This first application of cyber-historical analysis reveals that Le Corbusier systematically developed a modern method out of method experiments that became increasingly deliberate over the course of his life, a method we have called ecstasis. Ecstasis is mental movement between images while remaining physically in place, where the place frequently instigates and catalyzes the mental movement. Le Corbusier called these ecstatic events “radiant moments”, honed and gathered them into sets to form a radiant method for studying the Second Machine Age. In the *Poem of the Right Angle* Le Corbusier gathered material and themes that repeated across the ecstatic sets, called wide images, into a wide site, or a key to trigger ecstasis for acts of invention.
CHAPTER 1
INTRODUCTION TO CYBER-HISTORY

What is Cyber-History?

The title of this work may provoke several questions in the reader. The first one that we will address is, “what is cyber-history?”; skeptically followed by, ‘why would we need such a thing?’ The second part of the word cyber-history seems familiar and easy to grasp: history as research into and dissemination of information about the world for purposes of documentation, commemoration, and memory. History as memory is particularly important here, with the function of history as collective memory highlighting its use as a tool in learning, planning, and problem-solving, fueling George Santayana’s famous adage, “those who cannot remember the past are condemned to repeat it” (Santayana 1922, 284). History, as any research into events of the past and present, represents information for communication to an audience, usually in the form of a narrative. It is the aspect of historical research that engages contemporary creativity and problem-solving that forms the focus of the present work. To further reveal the definition of cyber-history, we will examine its components (the prefix cyber-, and history) as complex and elusive roots, less like objects and more like heterogeneous bundles, leading the discussion down the variegated path of their respective histories, and toward something else entirely. Later, we will discuss the necessity of this new sub-field and its conceits, applying what we learn as we go.

The prefix “cyber-” is familiar due to its recent popularity but uncanny because its widespread use is evocative and not based on any specific meaning. Here I use the root cyber in both its contemporary popular sense as well as its older meanings. Today, “cyber” evokes the digital, with cyberspace, cyber-art, and cyber-sex being digital,
computer-based analogues of their physical counterparts. This prefix comes from the ancient Greek words *kybernân*, meaning “to steer”, or *kybernet*, “stearsman/helmsman”, and provides the root for the word “government”. The root “*kyberne*” comes to its present form and usage through the work of scientist Norbert Wiener, who used it to form the neologism cybernetics, his application of mathematical modeling to feedback systems of communication, response, and control. This fertile ground of work spawned immense developments in automation, artificial intelligence, and computing technologies, and also influenced researchers in anthropology (Gregory Bateson), sociology (Norbert Wiener’s own *The Human Use of Human Beings: Cybernetics and Society*) and economics (W. E. Deming). So, a cyber-history is not merely a digital history, but that specific component of historical research that is driven to utilize information from the past and present for decision-making and guidance. Its conceptual tools articulate the affective connections of persons to their environment that allow for the processing of information into materials suitable for creative work and invention.

This instrumental and highly pragmatic facet of the uses of history has been active from the beginnings of ancient Greek historiography in the work of Herodotus, then Thucydides, working to document and ultimately understand the world-changing events of the Greco-Persian Wars and the Peloponnesian War of the 5th century BCE. While their research became influential examples for countless writers, it was also used as practical information for later travelers and strategic material for further military campaigns, and many scholars believe that this application was one of the original intentions in developing the methods of historiography. The precise and collectively accessible memory provided by written empirical history has always been utilized for the
production of strategy. It is the nature of this productive aspect of history that cyber-history examines.

This research contrasts with the usual concerns of historiography, namely the attainment of isometric relations between historically relevant information and its transmission, or objective history. Objective history attempts to secure the represented object of research as a fairly stable conceptual entity distinguishable from the discursive research methods used to model it. This contrast with objective history makes it prudent to name the practices sought herein, so as to isolate and thus protect the work of conventional historical research. Cyber-history is not meant to replace history, as it could not be useful without contrary and prevailing practices that seek the conceits of objectivity, transparency, and propriety. Consequently, establishing the practices and values of cyber-history does not necessitate the avoidance of existing precedents in favor of obscure or more exotic material. If we wish to supplement established practices, then the use of familiar and accepted sources is necessary while also shedding new light on obscure territories.

**Productive Histories: Tactical Histories**

The work of Michel de Certeau provides us with a guide toward a creative/inventive history of practices, found in his distinction between strategy and tactics (de Certeau, 1988). According to de Certeau’s representation of a classical military distinction, strategy is possible when the subject can be isolated from its environment and assume a proper place defined as its own. This proper place, or *propre*, serves the subject as a basis for conceiving relations with a distinct exterior, the objects of research (ibid, xix). A tactic is activity that cannot utilize a *propre*, where there
is no clear borderline to use in distinguishing an exterior other party, or when the activity must take place in the territory of the other (ibid).

In tactics, fragmentary and heterogeneous elements are continuously manipulated to assemble opportunities. Thus, tactics must rely on temporality to construct relative victories that cannot take place in a unified and stable space. Strategy, on the other hand, relies on the continued existence of a proper space with identifiable boundaries. Through this distinction, de Certeau presents us with an opportunity to reconsider the actions we perform in our field of study, indicating the possibility for a discourse that examines the multifarious production of ‘ways of operating’ (ibid). For our purposes, a tactical discourse is suited for studying the production of methods, and is far more appropriate for such a task than the object-based conceptual tools of history and criticism. To find examples on which to base a tactical inquiry of method, we can go back to the very beginnings of historiography: Herodotus’ *Histories*.

Herodotus’ *Histories*, roughly translated as ‘inquiries’ from the Greek word ἱστορία (Connor 1996), presented his investigation of the causes of the cataclysmic war between the Persians and the Greeks and possible explanations for the Greek victory in 490 BCE (Lateiner 1989, 7-9). Herodotus’ methods were revised by his successor Thucydides, who sought greater rigor in the presentation of truth through historical inquiry in his own *History of the Peloponnesian War*, isolating Herodotus and characterizing his writings as suspect (ibid, 211-14). The third member of the group is Xenophon, whose *Anabasis* offers an alternative, tactical practice present at the origins of historical research.
Herodotus traveled, questioned people of different Mediterranean cultures and gathered their stories together along with accounts of his experiences to produce a text that he called “a demonstration of his research” (ibid, 7). In this aspect, Herodotus’ ‘history’ is strategic, an examination of other people and their cultures in the context of events that must remain external to the investigator due to their location in an unseen past. The nature of many of Herodotus’ movements in gathering his material was also strategic, taking the established format of the periplous (Hartog 1988, 42-3). For the ancient Greeks, the periplous was a circuit around the Mediterranean, beginning and ending in the same place, generally a safe port or the traveler’s home. This is a kind of journey with a high degree of order and deliberation, and like any useful and identifiable typology, it is communicable and repeatable, and its format typifies its manner of dissemination. ‘It is concerned to identify and locate: to identify the various points (places, towns, or peoples) and locate them in relation to one another, linking them concretely by specifying how long it takes to travel between them, but also connecting them linguistically through the interplay, within the discourse, of everything by means of which place is indicated (the use of prepositions and prefixes, the order of words, and so on)’ (ibid, 342-3).

The periplous structure objectifies gathered information. Descriptions of Herodotus’ own experiences or stories related by other informants, each element is placed in a specific physical location, relative to other elements as well as a unified, Ionian geographic and cultural space. This objectifying tendency was common amongst Classical Greek historians, who privileged the solidity of the viewed object over the ephemeral quality of words, whether spoken or written (Hedrick 1996, 18). For early
prose writers interested in documenting established truths, objectification was conceptual tool that allowed the author to sidestep the distrust of the word. It is along this tangent of objectivity that later generations of Greek historians would take the development of their craft, following the example not of Herodotus, but the empirical rigor of Thucydides, who ‘generally avoids the history of the uncertainly known past, regarding all periods before his lifetime as incapable of reconstruction in any detail’ (Lateiner 1989, 17). Thucydides attempted to remove uncertainty from historical method, focusing on his own personal experiences as a general in the Peloponnesian War. Herodotus’ cultural history, which attempted uncover how and why the cultures of Greece and Persia came to war, was abandoned as a project for at least a century after Thucydides redefined the field of study as political and military history.

Figure 1-1. The periplous travel format
After the popularity of Thucydides’ *History of the Peloponnesian War* led to its widespread influence amongst historians in the 4th century BCE, historical accounts became annalistic, or focused on highly localized, singular events (ibid, 215). But the inclusion of the third member of our ancient Greek trio provides us with a gambit, a way out of this polarization between a scientific and wholly proper Thucydidean history or the wandering, digressive, and heteroclite Herodotean example. Xenophon’s *Anabasis*, written in the 4th century BCE, uses Thucydides’ format of the first hand account to textually represent the movements of his army. But Xenophon’s movements and their subsequent representation are exemplary for us in that they are almost entirely tactical.

Xenophon’s *Anabasis* tells the tale of how ‘The Ten Thousand’, a group of Greek mercenaries hired by Cyrus the Younger to help overthrow his brother and take the Persian throne, made it out of enemy territory after Cyrus’s defeat in battle. The title of the work ties the text to the precarious situation of the men themselves, *anabasis* meaning a movement inland away from the coast. Unlike the periplous format, which stays along or close to the coast of the Mediterranean, the *propre* cultural space of the Greeks, *anabasis* as movement away from the known territory of the sea implies a venture into the unknown. Anabasis is mysterious, tactical, and profoundly inventive.

**History as Anabasis**

**Using Xenophon’s *Anabasis* as a Guide**

I propose a tactical reading of history, whereby we read Herodotus’ *Histories* as an anabasis. This desire is constructive because, instead of the ordered and deliberate movements of the periplous, in the *Histories*, ‘digression is the general rule in the journey and also a rule of the discourse’ (Hartog 1988, 343-4). Herodotus’ research and
writing methods were heterogeneous to cast a net large enough to capture the peoples and cultures of the known world. This lends a similarly heterogeneous quality to the resulting text that has confused and angered readers ever since (Momigliano 1958). But this manner of opportunistic and experimental activity is necessary for the inventor who struggles to find a new path reaching into the unknown. We all perform anabasis, but this does not mean we are doomed to wander aimlessly.

Figure 1-2. The trajectory of Xenophon’s *Anabasis*

**“Thálatta! Thálatta!”**: History as Goal-Oriented Method Production

‘Thálatta! Thálatta!’, ‘The sea! The sea!’, is what the ten thousand Greek soldiers with Xenophon shouted when they finally caught sight of the goal of their wanderings, the Black Sea. The sight of this sea meant they were near the colonial Greek cities strung along its coast, and they were one step closer to being out of enemy Persian territory, and ultimately going home. It seems ironic that the majority of Xenophon’s
story of anabasis actually recounts movement toward the sea, or katabasis. But it is the tactical nature of the movements recounted that typifies the story: Xenophon documents the dynamic development of a ‘how to’, and in the process provides his readers with a manual for ‘how to move’ through enemy Persia effectively. Similarly, the value of Herodotus’ immense work is not in its documentation of ‘what happened’, but rather ‘how one finds it’. Herodotus, like Xenophon, is our guide through a territory so strange and harrowing that one must follow quite closely to reconstruct the journey (Purves 2010, 124, note 17). When Alexander the Great invaded Persia in the 4th century, Xenophon’s *Anabasis* was used as source material for military movements and ultimately for the writing of a new text documenting them: Arrian’s *Anabasis* (Rood 2004, 306). To follow only selectively, loosely picking and choosing material as one sees fit, as did Thucydides and Alexander, will produce a different path, and a new method.

The structure of the cyber-history research that will be posted here will follow a trajectory of anabasis, beginning with well-known, easily communicated material and moving progressively into stranger, more obscure territory, then hopefully returning again. This oscillation between careful recounting of materials from the past and productive, projective work of inference filling conceptual gaps to allow the resulting discourse to encompass disparate attempts at method at method generation corresponds to the active presence of both a research strategy (rendering the research material intelligible to an audience) and tactics (the hazarding of concepts with a contingent value that can only be determined through relative success in constructing adjacencies and connections of various materials and indicating new directions for
inclusion and discussion). As a field of research, this prospective cyber-history will deal with architecture, producing an architectural history of creative production. Architecture is suited to our experiment because of its current lack of any single, guiding methodology for its production. For nearly a century, to produce a compelling and relevant architectural work has meant also to produce the method used to conceive and create it. Our present experiment in cyber-history will serve in part to show how this present non-paradigmatic condition is a result of the efforts of the early modernists to come to terms with new technologies, new media, and the rapid industrialization of the world around them. As an area of study, architectural modernism’s course of development is so common as to serve researchers and readers with familiar topics and persons; it makes a fine sea from which to embark on new and more intrepid research initiatives. There would be few figures more appropriate for our study’s focus, and few persons whose work and legacy is more properly located in the canons of architectural modernism than Le Corbusier. He will be our Xenophon, our Odysseus; or perhaps more in-keeping with his own desires, Le Corbusier will serve as modernism’s Don Quixote, marking digressions with idiosyncratic movement through a world rendered both quotidian and extraordinary.

This first case of cyber-history will examine the relationship between the traditions of architecture extant and available to Le Corbusier at the turn of the twentieth century and how he understood them. We will examine the architect’s identification of contemporary problems and the condition of aporia encountered in their having no discernible solution through established practices, and the subsequent invention of Corbu’s own modernism as a new methodology for solving the catastrophic conditions
of an industrial human environment. Mirroring the structure of our cyber-history, the story of Le Corbusier’s invention of modernism is an anabasis that took him from debates centered on established traditions, through increasingly varied and obscure attempts at the representation of new ideas through heterogeneous means, ultimately leading to profoundly opaque yet evocative manners of communication. Our cyber-history, taking Herodotus for its precedent, will relate a tale of the experimental foundation of a new method for research, documenting the process through intelligible arrangement, and making it repeatable. The reader, like Thucydides or Alexander, will choose its use.
CHAPTER 2
LITERATURE REVIEW: PRUITT-IGOON THE BEACH

The Long Moment of Modernism’s Birth

In 1971, Reyner Banham wrote: “[t]he failure rate of town planning is so high throughout the world that one can only marvel that the profession has not long since given up trying; the history of the art of planning is a giant waste bin of sumptuously forgotten paper projects.” This quote comes from Banham’s book *Los Angeles: The Architecture of Four Ecologies*, wherein he sought to re-imagine the conceptual structure for understanding urbanity (Banham 1971). The 1970s and ’80s were times when thinking of urbanism as a field of study meant to invent a conceptual framework to model the object of study, and a new way to understand the city. Alternative conceptual frameworks from this time period abound: Rowe and Koetter’s *Collage City* (Rowe & Koetter 1983), Venturi and Scott Brown’s studies of signage and parking in Las Vegas (Venturi et al 1972) and Pop-culture in sprawling American suburbs (Scott Brown 1971), Banham’s ecologies, Richard Sennett’s class sociology (Sennet 1970), and linguistics (Gandolsonas 1973). All the new directions share modern urbanism as an initial point of departure, as earlier embodied in the propositions of CIAM and the Athens Charter in 1938. In 1972, one year after Banham’s prognostication of crisis in urbanism, the Pruitt-Igoe housing complex in St. Louis, Missouri, was demolished. This event will serve as our moment of departure.

The conversion of Pruitt-Igoe as a material demolition project into a narrated event that gained symbolic importance in architectural criticism in the 1970s ultimately created an avatar for the “death of modernism”, anchoring movement toward something else beyond the modern. A process of reification transcribed Pruitt-Igoe from the
external physical world of things, where the housing project was a complex of buildings, to the discursive realm of representation where the buildings become signifiers, and it was finally deposited with renewed ideological weight as components of idea formation and communication. This movement played out explicitly in the ‘70s and ‘80s in the works of Charles Jencks (Jencks 1981) and Colin Rowe (Rowe 1979), and was referenced indirectly in the writings of a generation of architects and critics, becoming a trope in the formation of post-modernism.

The long moment of post-modernism’s birth can be examined synchronically, with the transformation of Pruitt-Igoe’s demolition from material to ideological substance found as a common element in intellectual movements attempting to establish a coherent modern orthodoxy. The similarities in attempts at various architects’ differentiation from modernism, when presented in a synchronic format, appear as a convoluted and repetitive series, where positions are traceable only through vague and shifting contingencies of value and meaning. The architectural milieu in the 70s and 80s left textual traces of these contingent values in the form of figures, or repeating configurations of historical material. This repetitive format finds complicit support in the composition of and treatment of historical figures in Philip Glass’s opera Einstein on the Beach. This analogical inspiration likens the reader-historian of post-modernism’s formation to Glass’s listener, the major aesthetic and intellectual content being serial repetition that induces fevered pleasure in spite of furious nonsense. We can use Glass’s work as a crutch to gain assurance that such repetition can be constructive, evocative, and ultimately fruitful.
Einstein on the Beach: Working with Historical Figures:

Work began on Einstein on the Beach in the spring of 1974 in a series of exploratory meetings between Philip Glass and the avant-garde theater director Robert Wilson (Glass 1987, 28-9). Both men were interested in making works centered on historical figures; after considering Hitler, Charlie Chaplin, and Gandhi, they decided to focus their efforts on Einstein. The content of their theatrical Gesamtkunstwerk is a series of figures that the two men began forming by mutual agreement in these early meetings: the Train, the Trial, and the Field/Spaceship (ibid, 30). These nebulous figures were used to construct a portrait of Einstein that replaced the plot, narrative, and development of conventional theater (ibid, 32). Facts and chronology were included in the final product; “[c]onveying that kind of information, though, was certainly not the point of the work.” (ibid, 32)

Using the three figures to construct an expressive four-and-a-half hour event led to an absence of direct connotative meaning in Einstein that required the spectator to provide meaning from their own experiences through an affective relation with the material presented. Thus, a performance of Einstein does not provide the emotional roadmap that is the mode of expression for traditional narrative:

[A] classical or traditional play is a machine built in a specific way to make the emotional peak always happen in the places the author intended. Various productions, which include the visual elements of sets and costumes as well as acting styles of different schools, are designed to make the machine function precisely. This legacy of Western theater goes back to the Greeks: you can read about precisely this in Aristotle’s Poetics. (ibid, 36)

The demolition of Pruitt-Igoe and the evocation of the death of Modernism are affective figures, two of the repeating configurations of historical material, or historical
figures, used to structure discursive material for persuasion. Instead of repeating the strategy used by the authors cited herein and using figures for affective persuasion, this review will attempt to identify historical figures relevant to the development of architectural modernism and place them in a field condition open to the affective manipulations of the audience. The review becomes a sort of performance or recreation of the figures, as well as a catalogue of their existence and hypotheses about their construction and function.

**New questions for an ulterior Modernism**

Pruitt-Igoe, one of many slum-clearance and redevelopment projects supported by Harry Truman’s Housing Act of 1949, was lauded in the architectural press before its completion in the 1950s. But by the time of its demolition it had become an avatar of the death of modernism, a potent exemplar of the utopian projects mentioned by Banham that appear so “sumptuous” on paper but result in disaster when built. While the about-face of Pruitt-Igoe’s value amongst practitioners may seem to have happened with remarkable speed, some early foundations for the critical turn away from large-scale utilization of modernist urbanism were provided by early backlashes to slum-clearance and increased interest in the functioning of traditional urban neighborhoods, like Jane Jacobs’s *The Death and Life of Great American Cities* (Jacobs 1961), and Team X’s defection from modernism, leading to CIAM’s dissolution in 1959, both more than a decade before Pruitt-Igoe’s demolition, our point of departure.

The outcomes of this way-laying of modernism in urban planning have been varied. Alternative conceptual frameworks from this time period abound: Rowe and Koetter’s *Collage City* (Rowe & Koetter 1983), Venturi and Scott Brown’s studies of
signage and parking in Las Vegas and Pop-culture in sprawling American suburbs (Venturi, Scott Brown & Izenour 1972; Scott Brown 1971), Banham’s urban ecologies (Banham 1971), Richard Sennett’s use of class sociology for urban analysis (Sennett 1970), structuralism (Aldo van Eyck), linguistics (Gandolsonas 1973), etc. The proliferation of new conceptual frameworks for treating the city since the widespread disenchantment with modernism in the 1970s has conferred richness on the study of our built environment. The irony is that, despite this variety, most of the commonly examined problems of our built environment were problems for which the Modernists sought solutions in the early twentieth century, things like wasteful sprawl, pollution, high construction costs, and inefficient use of resources, all contributing to disparities in the quality of housing available to the public. Le Corbusier’s urban proposals, including linchpins in the canon of utopian modernist planning like the Plan Voisin or the Ville Radieuse, were meant to provide solutions for these continuing problems. However, because of the fall from popular grace of modernism in urban planning research, the inventive work of creating new conceptual frameworks for understanding the city is rarely used to turn an analytical eye toward modernist precedents from the early twentieth century. Such analysis can unveil diverse modern urban methodologies, which may be more useful than the grand narratives of modernism and its death. In the next section, we will pull an experimental analysis of the contemporary urban condition from CIAM’s first secretary-general, the historian Sigfried Giedion, and demonstrate that it is an applicable framework for articulating concepts of urban space in early modernism to make them applicable to planning problems today.
A Proposed Alternative: Giedion’s Space-Time Figures as Analytical Framework

Lecturing on modernism at Harvard University in 1938-39, Sigfried Giedion described historical conceptions of urban space and time using emblematic spatial arrangements (Giedion 1949). Medieval urban space-time was summed up by the leaning Asinelli and Garisenda towers in Bologna; Renaissance space-time found culmination in the nineteenth century through the perspectival spaces of Baron Georges-Eugène Haussmann’s boulevards cutting through Paris; and contemporary, modern developments in urban space-time could be previewed in Cubism and Rockefeller Center. Giedion used the space-time figures to uncover an imperative in contemporary urban planning to think at increasingly larger scales, a space-time necessitated by industrialization.

As an example of an alternative approach in architectural historiography to uncover a valid alterior narrative of modernism, Geidion’s space-time figures of the historical urban subject are here used to analyze Le Corbusier’s urbanisms. By looking at Le Corbusier’s publications on urban planning using the topical framework of Giedion’s figures, we find that a non-perspectival, synthetic and/or collaged space of representation was an operative component in his invention of a modern urbanism. This idiosyncratic manner of presenting urban space corresponds to Giedion’s utilization of Cubist collage techniques to communicate what were still new possibilities for thinking about large-scale developments, possibilities implied in the dynamic public spaces of Rockefeller Center and a new scale of space introduced to the city by the parkway. The spaces of industrial society, and the scale and complexity of new transportation networks are too vast to be communicated from a fixed point, or a single view obtained...
by looking along a primary axis conveniently provided by the architect or planner.

According to Giedion, the synthesis of heterogeneous and sometimes contradictory spatial experiences into the image of a larger system, be it a single Modernist building or the entire city, must take place in a synthetic frame constructed in the mind of each subject. An inventive agency is required to gain understanding of contemporary space-time.

The ingenious conceptual structure that Giedion used to communicate the new problems of the industrial city was also used by the modernists whose work he studied and presented to the world. In attempting to solve the problems of cities besieged by the rapid mechanization of means of production and transportation, the avant-gardes of the early twentieth century sought new methodologies when existing conceptual tools seemed to quickly become obsolete. Le Corbusier, as a prominent revolutionary artist and architect/urbanist, is a good example of the development of new space conceptions in art preceding and fueling developments in architecture and city planning. The dynamic frame of Cubist and Purist synthetic space became a key component of Le Corbusier's urban methods several years after his rise in prominence as an artist. This application of the synthetic space of avant-garde painting to urban analysis can be seen from Le Corbusier's early representations of urbanism, such as the *Plan Voisin* exhibited in 1924 as part of the *Pavillon de l'Esprit Nouveau* alongside a prototype housing unit. Later publications like *Précisions* (Le Corbusier 1930) and *When the Cathedrals were White* (Le Corbusier 1937) show the continued influence of synthetic space-time on urban projects throughout the architect’s career, culminating in the massive tome, the *Poem of the Right Angle* (Le Corbusier 1955). These works describe
a trajectory into increasingly obscure formats of communication. More importantly, the format Le Corbusier chose for these works indicates aspects of the invention of a modern urbanism radically different from the one presented in more famous works with very different, highly didactic formats. These didactic works include CIAM’s *Athens Charter* (CIAM 1938; Le Corbusier 1973), and the plans and perspectival renderings of innumerable city plans produced by Le Corbusier’s studio.

To begin a re-survey of Le Corbusier’s urbanisms with the aim of uncovering an obscure but fertile critical trajectory for modern urbanism, we will summarize Giedion’s three figural frames and discuss their implications for modeling urbanity as an object of knowledge. Then we will examine one of Le Corbusier’s early format-experiments, the *Pavillon de l’Esprit Nouveau*, to show how the application of Giedion’s figures can reveal new opportunities for understanding historical precedents, finding the thread of continuity for more obscure aspects of modern urbanism. Giedion’s historical figures reach back to Medieval Europe, lead us through the Renaissance and Enlightenment and into a projective and experimental present. Identifying Giedion’s space-time figures as a nascent historical analysis allows us to use the figure-concept to continue the experiment using material more specifically relevant to contemporary practice. This application of figural history will bring Le Corbusier into focus as an important figure whose work repeatedly appears in discussions of value and direction in architectural discourses of the late twentieth century.
Giedion’s Figural Space-Time Frames

First frame: the towers of Bologna

The Asinelli and Garisenda towers in Bologna date from the early twelfth century, and are two early examples in the city that would have nearly 100 towers, with construction and modification reaching a fevered pitch by the end of the fourteenth century (Jones 1997). In his lectures at Harvard in 1938-9, Sigfried Giedion invested these towers with an obscure significance, but he made it clear that being able to view the interrelations of the two towers in space, leaning toward one another at the intersection of five streets leading to gates in the city’s walls - a relationship easily comprehended from any number of stationary points - indicates a manner of understanding the city in the time and space of a historical subject.

The leaning towers of the two noble families of Asinelli and Garisenda in Bologna . . . can be embraced at a single glance, in a single view. There is no uncertainty in the observer concerning their relation to each other. (Giedion 1949, 641)

So, what does this figure tell us about Medieval Bologna’s space and time? It is indicative of what we might call a “clotting” of the space-time of the city. The many towers of Bologna date from the height of the Investiture Conflict that pitted groups of noblemen throughout the Holy Roman Empire against each other, siding either with the sovereign power of the Emperor or the Pope. In Northern Italy, local noblemen, merchants, or prominent families asserted their bids for local power amidst these chaotic alliances. The political, social and economic consolidation of Italian City-States into relatively independent, localized systems of governance was contemporary with the questions of sovereignty and right of rule and law implicated in the conflict. The particular form of urbanity that would eventually emerge as the northern Italian City-
State by the fourteenth century, legible at the macro scale of the city and its surrounding lands, was fraught with violent clashes between clans within individual cities (Martines 1979; Hyde 1973).

The internal rivalries raging in cities like Bologna in the twelfth and thirteenth centuries produced an extremely divided urban environment, where it was common for people to live their entire lives rarely setting foot outside a single neighborhood populated by familial relations. This divided or “clotted” urban social sphere was pervasive and prolonged enough to produce detectable variations in spoken language, such as different accents, in the different neighborhoods of Bologna. Dante mentions these differences in speech, sometimes tied to an urban space only a few hundred meters in diameter (Martines 1979).

The towers of Bologna were used as spatial tools tying a clan to a particular space in the city, aiding in the ability to protect and defend the surrounding buildings from rival factions. Objects were frequently thrown or dropped from the tops of the towers, easily injuring or killing pedestrians on the open streets below. This activity was so common as to result in specific laws punishing anyone who dropped objects from urban towers (ibid). The clan-space indicated by the towers was contingent on physical lines of gravitation and bodily occupation. The physical manifestation of a clan’s dependency on the tower as a spatial-gravitational tool is exemplified by the unusual practice of building bridges and flyovers connecting various buildings within the family neighborhood directly to the tower. The formative urban space of the City-State was dependent entirely on physical occupation. Visual or measurable distances were irrelevant in this localized and haptic space. Each local system or family clot obtained
global legibility through cohesion via physical proximity and a need for global validation at the scale of the City-State for protection against vying family systems. The city that produced the Asinelli and Garisenda towers had little use for the abstracted, homogeneous and infinite concept of space that would emerge during the Renaissance.

**Second frame: perspectival space of the Parisian boulevards**

For Giedion, the linear network of Haussmann’s Boulevards cutting through the dense fabric of the ancient city of Paris is a grafting of the abstract, homogeneous, and infinite space of Renaissance linear perspective onto the space-time of an existing urban environment (Giedion 1949). Thus, the nineteenth century Haussmannization of Paris is a late expression of Renaissance space-time, brought to bear by a series of rulers on the haptic, clotted space-time of medieval urban neighborhoods to produce a new hybrid urban condition.

When Haussmann was appointed to the position of Prefect of the Seine Department by Napoleon III in 1853, the work of making Medieval Paris correspond to the industrial age and the rule of the Empire had already begun. For Giedion, documenting the series of rulers who commissioned the changes of Paris in the nineteenth century was necessary to show the slow unfolding of power-relations indicated by each urban invention, stretching back at least to the developments of Louis XIV that introduced large-scale Baroque space to the city’s environs. Under the Second Empire, Napoleon III would immediately begin attempts to systematize the extension of Renaissance space through the existing city. These early attempts were initially plagued by embarrassing engineering and surveying failures, leading to Haussmann’s appointment as a qualified planner who would support the Emperor’s expensive plans.
The “Haussmannization” of Paris corresponds to the city’s industrialization performed through “perspectivization”. The development of the boulevards began as a process of extension and connection of urban elements. First came the 1854 extension of the Rue de Rivoli to stretch from the Tuileries to the tangled mass of streets and buildings in front of the Hôtel de Ville. This dense neighborhood, which had previously been the starting point of various Parisian revolts, was replaced with the open space of the Place du Châtelet (ibid). In 1858, the wide, arrow-straight Boulevard Sébastopol was extended to connect the Île de la Cité to the Gare de l'Est, linking the new administrative center in the middle of the city to a new railroad station on its north-eastern edge by a tree-lined space, bounded in the distance only by perspectival convergence. The Rue de Rivoli and the Boulevard Sébastopol, connecting to the Boulevard Saint-Michel on the south side of the Seine, intersect in the center of the city to form “la grande croisée”, effectively establishing a large-scale, linear and homogeneous access-space within the haptic, medieval city fabric of Paris.

Like the medieval, clotted space-time figured by the Asinelli and Garisenda towers, the space-time of the Boulevard requires only a static frame of reference for comprehension of the city. An individual placed anywhere within the monumental Boulevard-spaces of Paris can view a linear, occupiable space extended through the city, bounded by the optical convergence created by the individual viewer as an entity occupying the space. That this perspectival figure is created only by literally carving or cutting through the densely clotted space of medieval Parisian neighborhoods makes it enough of a referent to encode various power-relations: the individual viewer need only
occupy the boulevard-space. Movement along the perspectival network will only confirm the relations of the urban system as visible from a single point.

**Third frame: the virtual frame of Cubism**

The new scale of development necessitated by industrialization and mechanization of the city renders the static frames of medieval clotted urban space and the Renaissance perspectival space insufficient for contemporary urban comprehension:

The use of a new and larger scale in town planning which would coincide with the scale already being used in the parkway system is an imperative necessity for the salvation of the city. . . . It is closely connected with the space-time conception of our period. (ibid, 633)

The examples that Giedion used to illustrate the change in the relationship between the perceiving subject and the large scale of the industrialized urban environment are the Parkway and Rockefeller Center. Meant to be occupied only from within a moving automobile, and facilitating rapid movement through the city, the Parkway as a spatial system cannot be comprehended from any single point, and offers little apprehension of the surrounding environment to which it provides a means of access. Understanding how to navigate a city using the networks created to facilitate mechanized transportation—whether automobile, train or plane—requires movement and memory, calling for the individual to organize, categorize, and prioritize sensory information. No one image or static spatial figure can be guaranteed to sum up the industrialized urban environment, a dynamic, synthetic frame of reference is necessary.

Artists were the first to find ways to cope with the alienation of their rapidly industrializing environment. The Cubists found some measure of expressive solace by breaking the single picture plane to depict spatio-temporal simultaneity. Soon, architects
like Le Corbusier, who participated in the development of the dynamic/synthetic frame in the realm of painting, were able to apply transparency and spatio-temporal simultaneity to the built environment. Giedion found that large-scale developments like Rockefeller Center seem to utilize a dynamic frame in their approach to ordering the space of the city. Rockefeller Center’s pinwheel configuration offers varied and sometimes contradictory spatial arrangements and hierarchies to the occupant, creating an urban space that is consistent with the space-time of industrial society:

[N]othing of the essential character of an organism like Rockefeller Center is revealed in a view restricted to its central axis. It possesses symmetries which are senseless in reference to the aesthetic significance of the whole. It requires comprehension in space and time more closely analogous to what has been achieved in modern scientific research and in modern painting. (ibid, 642)

Le Corbusier’s Framing Experiments

Early experiments: the *Pavillon Parti*

Le Corbusier’s *Pavillon de l’Esprit Nouveau* of 1924-5, like Rockefeller Center, was an experiment in synthetic space-time. Le Corbusier’s deployment of the contents for this exhibit at the Paris *Exposition Internationale des Arts Décoratifs et Industriels Modernes* shows a self-conscious use of space in the format of the presentation. The exhibit’s *parti* was composed of two distinct sections, a circular, drum-like space containing a presentation of *The Contemporary City for Three Million Inhabitants* and the *Plan Voisin* for the center of Paris, and a cubic volume comprising a single prototype dwelling for the context of the larger contemporary city (Benton, Louis, and Phaidon 2008). Moving back and forth between these two spaces required the occupant to construct a synthetic frame to contain memories of the exhibition materials within a single, comprehensible conceptual structure. This synthetic frame would hold a trans-
scalar vision of modernism as a methodology for creating the individual dwellings, the buildings that contain them, and the city that would form their larger context.

Only focusing on the model and drawings of the Plan Voisin in the drum-volume of the Pavillon obscures the movement implied in the parti, and thus hides the creative synthesis of spatial comprehension that such an exhibit includes. The frame that encompasses the presented modernity must be held in the mind of a moving viewer. This formula of ocular sensation combined with movement in space was mentioned numerous times by Le Corbusier in his writings, and is an integral component of the famous promenade architecturale (Jencks 2000). Le Corbusier utilized the promenade architecturale to dramatic effect in the Maison La Roche Jeanneret of 1925, the same year as the Pavillon. Is it much of a stretch to see this spatial organizer in the contemporaneous exhibit, to see spatial movement as an means of organizing information that provided a context for discrete materials in various scales and formats?

Le Corbusier himself did not fuse the spatial format of the Pavillon with its contents, as evidenced by his representations of the exhibit in later publications. In the Œuvre Complète (Le Corbusier & Jeanneret 1984, 108-121), there is a dramatic difference in the presentation of the two sides of the Pavillon. The housing prototype is a full-scale mock-up, an example of architecture presented as architecture. The spaces are the primary content; format and content are fused. On the other side of the Pavillon, in the drum, the Plan Voisin for Paris and the Contemporary City for Three Million Inhabitants are presented as drawings and models arrayed in a spatial container. The contents are the representations of these urban plans, while the presentation format is the drum-space of the physical exhibit. In the the Œuvre Complète de 1910-1929, first
published in 1929, the exhibit format of the *Pavillon* is indicated by a plan and a few pictures inside the urban drum-space. The spatial format was important enough to imply, but separate from the contents of the exhibit.

That this separation of format and content could have any historical importance is indicated by later representations of Le Corbusier’s urban exhibits. In *Des Canon, Des Munitions? Merci! Des Logis... S.V.P.* (Le Corbusier & Jeanneret 1937), the catalogue from *L’Exposition Internationale “Art et Technique” de Paris* in 1937, Le Corbusier’s graphic layouts never allow the reader to separate the material presented in the exhibit from the physical deployment experienced by the moving occupant. This catalogue has the character of an exhaustive index that can be used by the reader to reconstruct most of the *Pavillon des Temps Nouveaux*. Navigating the book requires the observer to place texts, models, and murals in spatial relations mentally in order to make any sense of the presentation.

The profound contrast between the presentation of the *Pavillon* of 1925 in the *Œuvre Complète* and *Des Canons* allows us to identify of the *Pavillon des Temps Nouveaux* of 1937 as a key to Le Corbusier’s figural experiments in urban space-time. By the late 1930s, Corbu avoided didactic presentation of his urbanisms, opting for a format of paintings and collaged photos and texts that is atmospheric and evocative, rather than clear and denotative formats. The difference in these publications, a fusing of format and content, is the result of a series of figural space-time experiments found in Le Corbusier’s publications, showing a steady progression from 1922’s presentation of the *Salon d’Automne* to *Des Canons* in 1937 and beyond.
Movement organization in Le Corbusier’s later published works

In *Précisions*, Le Corbusier documented the contents of his 1929 South American lecture tour. To introduce and provide a context for the material in the lectures, Corbu utilized the format of the travel journal to present the aberrant cultural musings of “The American Prologue”, where his first airplane flight became a topic generator to create adjacencies between disparate thoughts and observations (Le Corbusier 1930). He deemed the combination of flight and observation sufficient to organize the information in this short text. Several years later, Corbu used the dynamic frame induced by combining eyes that see and movement through space as an organizer of urban information obtained during his 1935 North American lecture tour, published as *When the Cathedrals Were White* (Le Corbusier 1937). The content of this book is decidedly urban, but nowhere to be found is the single, totalizing point of view of the urban plan, the static frame seen in the perspectives and plans so frequently culled from the *Œuvre Complète* (Le Corbusier & Jeanneret 1991). When Le Corbusier wrote *Urbanisme* in 1924, he used Manhattan as an example of progressive urbanism, praised for its bold intensity, derided for its chaos (Le Corbusier 1924). But, after finally visiting Manhattan nearly a decade later, Corbu presented his thoughts of American cities in *Cathedrals* by foregoing didactic explication and analysis altogether. Instead, he presented American cities through the subjective events of a travel diary. Here, the format of the “American Prologue” is used for the entire work; crossing the George Washington Bridge, seeing Louis Armstrong play in a jazz club, encountering the statue of George Washington deep in the financial district, train rides through the suburbs-
these experiences and the affective relations they gather become an urban analytical framework.

*When the Cathedrals Were White* is certainly unusual, but it can be considered as a companion publication linked with the *Athens Charter* (CIAM 1938) and *La Ville Radieuse* (Le Corbusier 1935) to form a set describing an urbanism that encompasses a great variety of material. Certainly, a great deal of conceptual work is required of the reader to construct a framework dynamic enough to cover the variations and contradictions contained in such a set, and the synthetic frame constructed would be as much a product of the individual receiver as the original publications. But this individual, subjective agency is not fundamentally different from the requirements demanded of the viewer by the complex spaces of Le Corbusier's paintings, and the material considered is only as diverse as his architecture. Constructing a single frame that could delineate a continuous imperative of architectural invention was important for scholars of Le Corbusier whose work centered on producing discursive systems to guide interpretation and evaluation of the architect’s works (Jencks 2000; Tzonis 2001; Curtis 1986). Linking later, expressive projects like the chapel at Ronchamp and the *Unité d’Habitation* at Marseilles with the early modern villas of the 1920s can obtain an image of Le Corbusier as an architect that is useful for applying historical precedents to the complex problems of contemporary architectural practice. Constructing the synthetic frame that can include the idiosyncrasies of *Précisions*, *Cathedrals*, the *Pavillon*, as well as the iconic renderings of the *Ville Radieuse*, the *Plan Voisin*, and the obtuse tenets of the *Athens Charter*, could yield useful material for urban problem solving without
necessarily being apologist or revisionist by ignoring the obvious problems and contradictions of these works.

The dynamic frame as an experimental format in Le Corbusier’s work culminates in his *Poem of the Right Angle* (Le Corbusier 1955). Here, the viewer is painfully aware that the simple diagram of the work, the rectilinear *iconostase*, is didactic but does not immediately reveal all of the content’s secrets. The structure and interrelation of elements in the poem were multifarious and evocative, yet Le Corbusier had no qualms in representing the general structure in a simple, gridded format. The motifs in the paintings indexed by each cell of the *iconostase* are ordered or linked by axis, adjacency, boustrophedon (serpentine movement), and three dimensional spiraling. This late work can offer interpreters a clue to envisioning grids and zones with a dynamic frame, for here rectilinear repetition is a foil or breading ground for variety and complexity, and not an attempt to reduce or eliminate heterogeneous conditions. The *Poem* remains as one of the final emissions sent by Le Corbusier as a traveler along the path leading from scientific rationality and abstraction into the strange territory of modernism weathered by world wars and molded into an affective tool for the industrialized subject to navigate his world. Instead of receiving the *Poem* as a piece that does not fit with other parts of Corbu’s oeuvre, the interpreter can use it as a key, synthesized to connect with various aspects of his multifarious career, providing a conceptual synthesis of diverse works as understood by their creator. It is the frame proposed by Le Corbusier himself through which to view his work.
Figure Analysis: Le Corbusier’s Experimental Figure Proliferation

Giedion’s three space-time figures indicate an attempt to found a new kind of historical analysis that establishes meaningful relationships with architectural modernism and an urbanism for industrialized society. Giedion’s own later development of the figures into analytical categories— the “three space conceptions in architecture”: architecture as space-radiating volumes; architecture as interior space; architecture as both volume and interior space (Giedion 1971), lost the evocative power of the original space-time figures as a theoretical organizer. Unlike his project to outline architecture’s three space conceptions, Giedion’s original three figures from the 1930s do not appear to be a complete inventory of space-time conditions. New figures can be conceived and added to the list to increase the inventory of existing or possible urban space-time configurations. Le Corbusier’s series of works utilizing the dynamic frame of a prescient subject engaged in physical movement can be seen as attempts to develop new space-time figures for understanding contemporary urban conditions. While Giedion hazarded the Parkway figure to describe the new scale of the industrialized city, Le Corbusier continued to produce new experimental figures, consistently enriching his spatial conceptions as the continued march of the twentieth century brought new conditions into confrontation with the existing stock of concepts used to understand them.

Analyzing Le Corbusier’s urbanisms using the concept of the space-time figure provides a research framework as dynamic as the inventive efforts of these modernist proposals. The Pavillon de l’Esprit Nouveau might be said to have a space-time figure of trans-scalar synthesis, with a nesting of solutions at various scales. This trans-scalar figure is similar to the relation of figures in Le Corbusier’s contemporary Purist paintings,
a multiple and sometimes contradictory space formed synthetically by the observer to encompass the material presented. The “American Prologue” of 1929-30 presents the figure of air-travel, an urban space-time that Corbu finds terrifying and fascinating. We should not confuse this figure with that of the bird’s-eye-view or the celestial view, which has been a prevalent guide for formal urban developments around the world for millennia. The prologue’s figure is not hypothetical but physical, the moving view-point of a human eye positioned amongst the clouds. The tumult of rapidly changing natural conditions and a sense of the overwhelming scale and power of the natural world made the formal concerns of city planners seem futile, the tiny cities below dwarfed by the immensity of the Amazon. Corbu was overwhelmed by a geological and vegetal space-time during this first flight. Instead of reinforcing the static vision of a god positioned outside of earthly space and time, air-flight was an experience that led Corbu to muse over revolution, war, and radical change (Le Corbusier 1930), a fully historical time and material space, inevitably subjected to change.

Just as the flight-figure of the “American Prologue” supports alternative conceptual material to that ordered by the figure of the idealized bird’s-eye-view, analyzing the Athens Charter drafted by CIAM in 1933 using the framework of proliferating, experimental space-time figures yields surprising results. Perhaps the simplest figure to posit for the Charter is one of swathe-zoning, where a fully abstracted and homogenized logical space is allowed to assert a rigorous system with little influence from the perceiving subject. Time is a component of the swathe-figure only as a modulator of scale. Proximities and adjacencies of zones are regulated by the 24-hour day and the speed of inhabitants’ necessary movements as they go about their day.
Thus, trans-scalar adaptability is implicated in the swathe-figure, recalling the diverse propositions of the *Pavillon de l’Esprit Nouveau*. Including time in the *Charter’s* figure references a cognizance of users’ needs that is lacking in many urban plans that were developed using the concept of swathe zoning.

*When the Cathedrals Were White* presents an urban space-time of affective events that Corbu had previously called “radiant moments” (Le Corbusier 1935; 1964, 129). *Cathedrals* is structured around a series of these radiant moments, fully subjective and embedded in the immediacy of urban experience and cognition. The unusual radiant-moment figure used to present the contemporary built environment of North America explains the frustrating lack of exposition or even what might be considered sound argumentation in this publication. That this publication is not a total mistake on the part of the author, but is rather a component of a series of experiments in urban representation and comprehension is supported by the appearance of the *Poem of the Right Angle* in 1955. An inspiring and captivating work in its physical size and the syncretic nature of its contents, the *Poem* could be understood as a compendium of sorts, an index of space-time figuration, as understood late in the life of its creator.

**Giedion and Benjamin: Competing Figures of History**

It might be the novelty of Giedion’s figures that makes them compelling as a framework for organizing historical analyses. But the brief account of urban space-time figures presented here is an inquiry into the invention of Le Corbusier’s urbanisms. With Giedion’s figures, as well as with Le Corbusier’s writings, we are caught between history and invention. These figural accounts are a nascent history, as was Herodotus’ *Inquiries* which, although unusual at the time, would become a foundation for historical
conventions (Walter 1992, 18). Traditional historical analysis blends subject and object, diachronic and synchronic analyses, word and image, idea and experience, with an apparatus of conceptual tools that has become habitual to the point of perceived transparency, appearing to be logical. The novelty of the figural history that Giedion proposed in the 1930s should not obfuscate its utility in conveying some of the difficult and forgotten stories in the development of an industrialized society that continues to change and challenge the urban subject.

To get a better image of this proposed historical framework, we can compare it to Walter Benjamin’s own figural presentation of the Angel of History, pulled from Paul Klee’s *Angelus Novus* (Benjamin 1985, 257-8). Benjamin’s angel owes its fame in part to its uncanny ability to encompass his other theses on the philosophy of history. The angel of history is a figure for historical materialism, at a very general level of signification:

> This is how one pictures the angel of history. His face is turned toward the past. Where we perceive a chain of events, he sees one single catastrophe which keeps piling wreckage upon wreckage and hurls it in front of his feet. The angel would like to stay, awaken the dead, and make whole what has been smashed. But a storm is blowing from Paradise; it has got caught in his wings with such violence that the angel can no longer close them. This storm irresistible propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress. (ibid)

This bleak figure, filled with a fatalistic anguish, may characterize the anxieties of a materialist conception of history, the present, and the future, where the possibilities of the present moment must carry the imprint, the tremendous weight of eons of struggle that precede it. This mixture of vigilance and anxiety are not the only option for figuring the agency of the present subject. The gulf separating Giedion’s projective figure of
modern space-time from the 1930s before the war, and Benjamin’s figure of a modern present filled with the wreckage of contingency, first written in 1940 during the war, is understandably immense. The difference between the figure of the Parkway and the Angel of History is not only in the objective shift from the urban environment to history.

Figures, angels, avatars and icons are both guides and symptoms; they hold meaning in the present to point toward possible futures or pasts. As devices that order temporality, space-time figures are \textit{foci imaginarii}, indicating possible trajectories as movement toward a horizon: “[I]ike all horizons, they move continuously in time and thus lend the walking the supportive illusion of destination, pointer and purpose” (Bauman 1991, 10). This treatment of the horizon comes from Zygmunt Bauman’s \textit{Modernity and Ambivalence}, a work that attempts to bridge a perceived gap between the binary logic employed in the foundations of rational modern consciousness and the ambivalence and complexity of modern existence. The horizon owes its captivating power to its status as an imaginary goal that can never be reached, changing in details despite remaining a horizon and a possibility. A rich link between clarity necessitated by empiricism and the difficult variety of the external world can be found in Le Corbusier’s proliferation of ordering devices that play with the dichotomy of order vs. chaos by placing progression within the process of order-making. For Le Corbusier, each figure was a site for work to unfold, and temporality was profoundly linked to place. This is a profoundly architectural understanding of history and the relation of subject and object. To better understand the difference between Benjamin’s historical materialism, Bauman’s call for a reconciliation of rationality and ambivalence, and Le Corbusier’s architectural, site-contingent history, we should place Corbu’s conception of history
within a figural ordering-device symmetrical with Benjamin’s fashioning of the Angel of History and parallel with Bauman’s wayward gaze toward the horizon of the future. Le Corbusier described such a figure in a lecture in 1929:

I am in Brittany; this line is the limit between the ocean and the sky; a vast horizontal plan extending towards me. Suddenly I stopped. Between my eyes and the horizon a sensational event has occurred: a vertical rock, in granite, is there, upright, like a menhir: its vertical makes a right angle with the horizon. Crystallisation fixation of the site [sic]. This is a place to stop, because here is a complete symphony, magnificent relationships, nobility. The vertical gives the meaning of the horizontal. One is alive because of the other. (Le Corbusier 1991, 75)

Here, the guiding power that the right angle had for Le Corbusier is exposed in an affective, place and sense-based figure. For the architect, the horizon of time and the wreckage of history are of little importance until an affective moment emerges out of the interaction of subject and environment. The recognition of moment and place changes the role of the horizon or ultimate goal into one component of a contingent site for invention. Benjamin's Angel of History witnesses everything and does nothing. Le Corbusier’s inventor/architect sees some things and is pressed into action. Perhaps he is visited by the Angel in the form of the figure.

**Modeling the Contemporary Context: Pruitt-Igoe as Historical Figure**

When architecture critics latched onto the failure of Pruitt-Igoe to deliver a revolution in social housing in the 1970s, vested the project with significance, and put it in a summary, didactic format, they were creating a historical figure to bridge between precedents and possible future trajectories. This figure was concisely articulated by Charles Jencks:

Modern Architecture died in St Louis, Missouri on July 15, 1972 at 3:32 p.m. (or thereabouts) when the infamous Pruitt-Igoe scheme, or rather several of
its slab blocks, were given the final coup de grâce by dynamite. (Jencks 1981, 9)

The fact that there is an active ideology of the single, static frame with profound influence on how architects conceive the history and unfolding development of their field can be illustrated in this figuration of the Pruitt-Igoe demolition: a single event in a particular space that somehow can act as a guiding concept, even though the demolition was a series of several different events on a variety of sites at different times. With the addition of this fourth figure to Giedion’s set of three historic space-time figures, we can adapt the discussion of a synthetic frame for comprehending urban space-time to the contemporary practice of architecture and urbanism.

The Pruitt-Igoe figure sums up an entire stretch of architectural history with a void, an empty site within which nothing has been placed. Immediately after declaring the ruins left by the demolition to be a “great architectural symbol,” Jencks recommends that the rubble should remain on the site, “preserved as a warning” (ibid). Jencks was astute enough in forming his case for “The Death of Modernism” to reveal his conscious deployment of the Pruitt-Igoe figure as a didactic tool charged only with the obscurity of polemic pleasure, having little to do with substantive or logical discussion:

Rather than a deep extended attack on modern architecture, showing how its ills relate very closely to the prevailing philosophies of the modern age, I will attempt a caricature, a polemic. . . . to cut through the large generalities with a certain abandon and enjoyment, overlooking all the exception and subtleties of the argument. Caricature is of course not the whole truth. Daumier’s drawings didn’t really show what nineteenth-century poverty was about, but rather gave a highly selective view of some truths. Let us then romp through the desolation of modern architecture, and the destruction of our cities . . . bemused by the sad but instructive mistakes of a former architectural civilisation [sic]. After all, since it is fairly dead, we might as well enjoy picking over the corpse. (Jencks 1981, 10)
Jencks admits that the only way to kill Modernism is to oversimplify it, to reduce it to figures for the sake of clarity. Caricatures are used to fight caricatures; figures are fought with figures in the irrational shadow-boxing ring that is the crucible of value formation. Le Corbusier’s choices in graphic representation for the content of the *Pavillon de L’Esprit Nouveau* exhibit shows that this polemical characterization of the city is not a new rhetorical strategy for inciting a reconfiguration of architectural thinking, where the viewer is a receiver of messages conveyed by seductive drawings and models, with the architect/planner playing the role of the agent of technocratic power. But again, the spatial format of the Pavillon tells a different, more nuanced and contradictory story than the individual graphic materials presented, where the spatial ensemble charged the viewer with an agency of navigation and recognition. The *Pavillon de l’Esprit Nouveau* places the viewer in a role similar to that of Michel de Certeau’s productive consumer of media, a role that combines the passivity of consumption with the dangerous and unpredictable energy of creative, inventive production (de Certeau 2002).

If the demolition of Pruitt-Igoe killed the abstract presentation of Le Corbusier’s modernism, it left another tradition with many of the same precedents unscathed. Linking the failures of Pruitt-Igoe to a larger failure of modernism parallels the causal linkage of architectural and social form that was one of modernism’s most frequently criticized assumptions. The massive failures of Pruitt-Igoe in St. Louis and other iconic post-war public housing projects like Cabrini Green in Chicago and Schuylkill Falls in Philadelphia, can just as easily be linked to a complex web of issues: bureaucratic incompetence, contractor profiteering, political feuds, and spiraling construction costs
(Euchner & McGovern 2003), as they can to “purist language”, “rational ‘streets in the air’”, and “separation of pedestrian and vehicular traffic” or various “rational substitutes for traditional patterns” (Jencks 1981, 9, 10). Le Corbusier’s built works, paintings, and publications indicate the use of a synthetic framework that mixes scales, media, and discursive formats to induce a rethinking of architecture, urbanity, and the human condition in general. That this content has been rendered obscure by the expectations fostered by minds conditioned to the static conceptual frame is of little concern if we want to find what survives in the void in architectural discourse indexed by the trope of Pruitt-Igoe’s demolition.

Moving Beyond the Modern: Jencks and the Unités

In Jencks’s version of the contemporary architectural milieu, Le Corbusier’s later works, especially the Unités and the Chapelle Notre-Dame-du-Haut de Ronchamp, fill the void left open within the Pruitt-Igoe figure. Jencks uses these works to bridge the ideological gap produced in architectural discourse by Pruitt-Igoe’s spectacular failure to solve the problems of the urban working classes. Jencks fills in the Pruitt-Igoe figure by identifying the fully logical, static and totalized ideality of Pruitt-Igoe as an urban proposal, a condition he identifies as a univalent form, and by contrasting it with a condition of ambivalence (Jencks 1981). His definition of a Post-Modern building is one that:

speaks on at least two levels at once: to other architects and a concerned minority who care about specifically architectural meanings, and to the public at large, or the local inhabitants, who care about other issues concerned with comfort, traditional building and a way of life. (ibid, 6)
This contrasts with modernist space which, “[b]esides being isotropic, it can be characterised [sic] as abstract, limited by boundaries or edges, and rational or logically inferable from part to whole, or whole to part” (ibid, 118).

Jencks’s definition of Post-modernism in architecture has a tantalizing anachronistic quality. Highly abstract, early modernist works like Le Corbusier’s Villa La Roche exhibit several Post-Modern themes, like backlighting, punched-out screen spaces and implied extension created by overlapping planes (ibid). Particularly pertinent to the discussion of space-time figures pursued here, Jencks specifies that “[i]f Le Corbusier’s space is the equivalent of a Cubist collage, then Post-Modern space is as dense and rich as a Schwitters Merz” (ibid). It seems that the problem of positioning an architecture of the present in relation to modernism has more to do with language and conceptual methodology than with any aspect of architectural precedents. What Jencks identifies as a double-coded ambivalence at the root of post-modernism does not lead to an adequate differentiation between modern and post-modern architecture. So, what Jencks calls double-coded ambivalence, I have defined as dynamic framing. This dynamic framing was a constituent component of modernism, as indicated by Giedion’s desire for this synthetic frame to attain an understanding of industrial space-time.

Jencks’s basis of ambivalence in architectural Post-modernism on the language of the Unités and Ronchamp would lead him to analysis of Le Corbusier’s career as a series of six successive revolutions. Jencks analyzes Corbu’s career as a series of “revolutions” precisely to highlight this heroic modernist as transitional figure who “strode across categories, often ushering them in” (Jencks 2000, 10). Le Corbusier has a strange way of both epitomizing and defying architectural concepts and categories,
his work always uncanny in its symptomatic expression of the most prominent courses emerging and ending the dynamic milieu of practice. Just as Corbu’s projects in the 1920s served Giedion in the construction of new theories of structure and development of historical periods in art and architecture applicable to the emergence of modernism, a generation later, Corbu’s work served Jencks as inspiration to embark on a career in architecture and to theorize the structure and development of an emergent post-modern condition (ibid, 9). Evaluating Le Corbusier’s oeuvre was fundamental for establishing a contemporary position for architectural practice for Jencks in the 1980s. Given the still expanding list of scholarly works devoted to Le Corbusier each year (the present text included), we may suppose that his position as a touchstone for contemporary value formation in architecture continues today.

**Postmodernism and the Paper Tiger of Modernism: Establishing the Orthodoxy**

**The short-term effects of circulation of the Pruitt-Igoe Figure: 5th figure- Whites vs. Grays**

In the U.S., the language of architectural modernism was largely bleached of the socialist and utopian goals that fueled its development by the European avant-garde. Colin Rowe’s introduction to *Five Architects*, the 1972 publication that documented the work of the New York architects represented in Arthur Drexler’s 1969 *CASE* exhibit at the MoMA, confirms that the conceits of the architects therein existed in a formal realm held separate from prevailing ideologies and theories (Rowe 1975, 4). The New York Five expressed a new-found freedom to pillage the formal language of modernism, Le Corbusier in particular. This opportunity was gained only after the collective conclusion of modernism’s death and subsequent cultural irrelevance.
If the Pruitt-Igoe figure was meant to sum-up the entirety of man’s relationship to modernism and modernism’s relation to the present, then response to this figuration is likely to beget another new figure. Using the terminology thus far deployed, Pruitt-Igoe as the death of Modernism became a trope grounding a new genre of discourse in architecture: the battle of the Whites vs. the Grays. Robert Stern concisely described this figure and its role in the foundation of a post-modern architectural position in the 1970s:

[C]e débat [la querelle des “Whites” et des “Grays”], commence à l’Ecole d’Architecture de Californie à Los Angeles en mai 1974, est devenu un dialogue permanent entre deux groupes d’architectes qui tentent de définir et de clarifier à travers leurs réalisations et leurs recherches théoriques, la direction que pourrait prendre l’Architecture alors que le Mouvement Moderne prend fin. (Stern 1976)

[This debate [the quarrel between the “Whites” and the “Grays”] begun at the Californian School of Architecture in Los Angeles in May 1974, has become a permanent dialogue between two groups of architects who try to define and clarify, through their projects and their theoretical research, the direction which Architecture could take since the Modern Movement has ended.]

For Stern, modernism in architecture was indeed dead in 1976, and contemporary practitioners had the same relationship with modernism as they would have with the Beaux Arts academicism of the nineteenth century: a set of values and methods from a moment in history not supported by continued cultural practice (ibid). To believe in the terms of a White vs. Gray debate, one would also need to believe wholeheartedly in our fourth figure—the void of architectural practice as played out in the ritualized destruction of Pruitt-Igoe.

Within the White/Gray Figure, modernism is no longer valid cultural material. To establish a Post-modernism was an attempt “pour sortir de l’impasse moderne
“to escape from the impasse of orthodox modernism currently lacking any significance”). In Stern’s understanding, the “Whites” were content with continuing to explore amongst the materials of orthodox modernism while deliberately taking advantage of the lack of cultural relevance of those materials. The work of the “Grays” was distinguished from that of the “Whites” by certain strategies: the use of ornament for the sole sake of decoration; formal manipulation indicating explicit historical references; use of orthodox modernist strategies as well as an eclectic selection of pre-modern strategies; stress on voluntarily deformed, non-platonic geometries; use of rich colors and materials to create an architecture of perception and image, specifically contrasted to brutalism and its stress on the material expression of technology; stress on intermediary spaces and poché; configuration of spaces via lighting and view, rather than use; use of images to convey ideas in buildings (ibid). This list of eight “Gray” strategies can easily be read as a laundry-list of grievances with orthodox modernism as received by Stern, who sums up the common point of contrast at the heart of a “Gray” Post-modernism:

A la racine de la position des ‘Grays’, on trouve le rejet de l’architecture anti-symbolique, anti-historique, hermétique et hautement abstraite de l’orthodoxie moderne. Les ‘Grays’ acceptant la diversité, ils préfèrent les formes hybrides aux formes pures, ils encouragent la diversification et la simultanéité des lectures pour magnifier le contenu expressif. (ibid)

[At the root of the position of the ‘Grays’ one finds the rejection of the anti-symbolic, anti-historic, hermetic and highly abstract architecture of the modern orthodoxy. The ‘Grays’ accept diversity, they prefer hybrid forms over pure forms, and they encourage the diversification and simultaneity of language to enlarge expressive content.]
hybridity, and simultaneity, citing the dynamic strain of Le Corbusier’s urbanisms analyzed earlier as a case in point.

Several years after Stern’s establishment of White vs. Gray as the terms for the contemporary debate on the direction for architectural practice, the inaugural editorial of the Harvard Architectural Review, “Beyond the Modern Movement” (1980), continued to add to the reified weight of Stern’s figure. If orthodox modernism had long since become “disconnected from recollections and memories grown stale and unhelpful (ibid, 5), a figure that posited a new position only in contrast to a perceived modernist orthodoxy certainly still had palpable relevance. The Harvard editorial identified five areas of concern, “each in contradistinction to Modernism”, each featuring a vision of modernism that can only be described as symptomatic. The five contrasts were: emphasis on relevance of history vs. Modernism’s severance of ties with its forebears; cultural allusionism that uses existing systems of expressive forms vs. Modernism’s use of mills and factories to shock audiences into revolutionary endeavors; a gradual erosion of utopia to work with “what is” rather than “what should be”, contrasted with Modernism’s blatant utopianism; utilization of the traditional city as a starting-point for theorizing about the city vs. Modernism’s “image of the new city”; and the rejection of formal restrictions, contrasted with Modernism’s rejection of traditional formal languages (ibid, 5-7). Again, each of these “contradistinctions” is symptomatic of highly reductive decisions based on a static value system, precisely because we can cite Le Corbusier’s modern urbanisms as “contradistinctions” to this vision of “Modernism”. The post-modern position in architecture is based in large part on a modernism in architecture that never existed, requiring a streak of inventive revision in the latter half of the
twentieth century that is remarkably similar to the inventions birthed by the avant-gardes and modernists in the 1910s, ‘20s, and ‘30s.

The static frame and the aporia of Le Corbusier’s legacy

As discussed earlier, Jencks’s definition of Post-modernism in architecture can be applied to many orthodox modernist works like Villa La Roche, and Le Corbusier is a figure who bridges between the categories of “modern” and “post-modern”. Jencks is not alone in having trouble placing Le Corbusier and his works as either a victim or survivor of the death of orthodox modernism. In 1979, Colin Rowe painted an extended metaphorical picture of the modernism’s death in a lecture at the Royal Institute in London:

We may ascribe her death (Modern architecture is surely a she) to the ingenuousness of her temperament. Displaying an extraordinary addiction to towers and completely unconstructed spaces, when young she possessed a high and romantically honorable idea of life and her excess of sensibility could only lead to later chagrin. Like one of Jane Austen’s more extreme heroines—though she was simultaneously morally reserved, passionate, and artless—it was her juvenile notion that, once she was perfectly wedded to society, this so much desired husband would, by the influence of her example, become redeemed or errors. . . [E]xcessive sensibility abused by inadequate experience, motivated by a quasi-religious sentiment not well understood and complicated by the presence of physics envy, Zeitgeist worship, object fixation, and stradaphobia must be considered the greatest factors contributing to the demise. (Rowe 1979, 167-8)

Perhaps because of its indirect, metaphorical delivery, Rowe’s autopsy and death certificate for modernism is more nuanced and empathetic than that of Jencks, but no less decisive: modernism must be killed off (at least temporarily) as an active influence on contemporary social practices in order to gain a necessary critical distance. Rowe and Koetter would go on to blaze a new direction for architectural and urban thought that shares many components with our own dynamic frame analysis: the
“collage city” (Rowe & Koetter 1983). As part of their development of the “collage city”, Rowe and Koetter deploy the analytical dichotomy of “fox vs. hedgehog”: “The fox knows many things but the hedgehog knows one big thing” (ibid). According to their analysis, Aristotle and Joyce are foxes, Plato and Proust are hedgehogs, as are the vast majority of modern architects (Mies, Gropius, Fuller, etc) (ibid, 92). The beauty of this dichotomy is that, in use, its categories are inclusive and fuzzy: it is likely that an individual will fall on both sides in some aspect. So, Le Corbusier is found to be a fox in hedgehog disguise (ibid, 102). They go on to say that because architecture is always involved in value judgments, it can never be resolved in terms of any empirical theory of facts (ibid, 105). “Collage City” is articulated using a democratic politics to support decision-making: “why not allow a theory of contending powers (all of them visible) as likely to establish a more ideally comprehensive city of the mind than any which has, as yet, been invented” (ibid, 106). Rather than attempting to find a basis for decisions in logic, Rowe and Koetter place architectural and urban thinking in the realm of politics and the art of rhetoric. The analytical conclusion of a discursive collage-reasoning will not yield hedgehog or fox, white or gray, modern or post-modern, but always both-and, depending on an infinite variety of specificities and different points of view.

This politics of the city proposed by Rowe and Koetter is particularly well-suited for understanding Le Corbusier’s work. The “fox in hedgehog disguise” avatar corresponds to Corbu’s use of rhetoric and the tools persuasion in his lectures and publications, while couching the discussions in terms that are apparently logical. Tim Benton conducted a detailed analysis of Le Corbusier’s use of logic in his lectures (Benton 2009) and had to specify that the tools of reason being used in a lecture to an
audience, or similarly in writing a book targeted at a large and diverse audience, are not strictly speaking logic at all, but rhetoric. Contemporary popular usage has long since lost the features of the original distinction, but when codified by Aristotle, logical rules are employed by philosophers to seek absolute truths, and are not understood by the general public, while rhetorical rules are for uses of persuasion and argument where logical rules cannot be applied due to a lack of knowledge or the presence of differing values amongst interlocutors (ibid). So, even if Le Corbusier frequently called his urban plans and the propositions supporting them "logical", they could not possibly be so and still be useful for disseminating his ideas to a broad public. We might speak instead of Corbu’s utilization of a politics of figures to question and develop methodologies for urbanism.

The definitions sought for an “orthodox Modernism” by those who wished to move away from it in the later half of the twentieth century never seem to clearly delineate modernism in practice. The modernism of the Whites and Grays alike, Banham, Rowe and Koetter, Stern, and Team X, is a rhetorical modernism, constructed to support movement in a new direction. The set of works analyzed here is hardly exhaustive, but a search for clearer picture of modernism, one that more often than not corresponds to the instances provided by individual built works by people falling under the category of “modernist”, is exhausting and fruitless, a discursive trail marked in sand and desiring stronger stuff. The tracks of reification read like footprints, indexes of directions taken by past searchers. We should no more ignore these previous marks than we should harbor any illusions about their nature once they’re left behind. The subjected sands remain, crossed in many directions by these trails; sometimes the trails
overlap and bundle, packing the material into something harder. The workings of the
tide and storms, an unmaking and redistributing in larger movements of time, need not
make this scene futile, it merely shifts the focus from a following of paths in the sand to
the beach as a system, where people, crabs, and gulls walk. Rowe and Koetter’s desire
for a politics of architecture and urbanism is an attempt at such a shift, but one that fails
to reach far enough to take us to an image of modernism in practice and the
effervescent activity of those trying to propagate or destroy it.

This difficulty in pinpointing exemplars does not seem to exist regarding Beaux-
Arts architecture, a “dead” cultural material that was likened to the condition of
modernism after the 1960s. The Beaux-Arts described a fairly comprehensive method
for designing public buildings. The products were frequently lack-luster, but rarely total
failures, leading to a track record of conservative mediocrity. The modernists of the late
nineteenth and early twentieth centuries attacked the Beaux-Arts because it offered little
guidance to architects grappling with new industrial materials, techniques, and
conditions. If Beaux-Arts academicism was a method for producing appropriate and
legible buildings for the public, the modernists were led to their critical stance because
of widely perceived changes in the public sphere due to the emergence of an industrial
society. A new method would need to be developed for making the built environment
appropriate for that new society. The difficulty in pinning individual projects to a
modernism that produced them—moving from specific instances to a general condition
descriving them—comes from the fact that the invention of a new method is usually a
shot-in-the-dark, because it is not understood as method invention by the inventors or
those who follow them.
Reworking Precedents, or Modernism as an Incomplete Method

The lack of correspondence between the chosen avatar of modernism (here we call it Pruitt-Igoe) and the discursive record of modernism (CIAM and the *Athens Charter*) is mirrored in the marked divergence of Le Corbusier’s later built works from the apparent fundamental principles of design he previously put forth. This divergence sent Corbu’s admirers into a fury at the sight of Ronchamp, and indicates radical problems in the propagation of modernism as a method for making the built environment. To qualify the discrepancy (a condition that implies a lack of correspondence between instances purported to be similar) we can compare Pruitt-Igoe with large-scale working class housing development projects designed by Le Corbusier at around the same time: the *Unités*.

Pruitt-Igoe was used by supporters and detractors as a synecdoche for modern urbanism. If this rhetorical figure is valid, then the *Unités*, which Corbu presented as modern urban projects, should exhibit methods of production similar to American social housing projects like Pruitt-Igoe for there to be an analogical equivalence in the evaluation. Of course, there are undeniable differences between slum-clearance projects and the *Unités*. On the one hand, the *Unités*, while working-class, did not need to address the amelioration of difficulties for those in impoverished communities; they were proposals to rebuild housing for the general public that was destroyed during WWII. Pruitt-Igoe, on the other hand, was developed to replace extremely impoverished slum housing. Both projects attempted to effect an improvement in standards of living, but with the *Unités* Le Corbusier was focused on improving housing for the average worker, driven by a belief that average housing conditions in Europe before WWII were
in fact impoverished; post-war slum clearance initiatives were dealing with decidedly more abject housing conditions of undeniably impoverished urban citizens. This is a significant difference, but hardly one that could be cited to completely explain the effected differences in design. Both sets of projects were meant to provide affordable housing with increased amenities in comparison to existing options, and both were new building prototypes encompassing novel formal vocabularies, industrialized and standardized materials and construction techniques, and a critical divergence from traditional urban forms, and increased efficiency through clearly conceived programmatic functions.

It is necessary here to specify that Pruitt-Igoe as designed by Yamasaki is also decidedly different from the housing that was built. Yamasaki’s design featured a considerable amount of diversity in housing types and individual language, offered greater engagement of the individual dwellings and their inhabitants with exterior space, and did not have the famous elevators that only stop on every third floor. The final built form of Pruitt-Igoe was achieved through successive budget cuts and construction problems, and similar issues plagued most of the urban renewal developments of the 1950s and ‘60s.

The method that produced the *Unités* bears little resemblance to the methods used to produce modern housing schemes in the U.S., or contemporary schemes in France such as the *banlieue* developments surroundings cities like Paris. If we want to avoid the disasters indicated by Pruitt-Igoe and the *banlieues* through changes in practice, then we should take a close look at the methods used to produce these projects, for only that will indicate the proper changes in practical methodology.
necessary to avoid similar problems today and in the future. Proponents of modernism were apparently dreadful at conceiving and disseminating a rigorous, reproducible method. However, that anyone else has had any greater success in this regard (the Beaux-Arts in the nineteenth century, the scientific method today) is due to nothing but contingency and chance.

Where Does This Leave Us? Casting Sand: Pruitt-Igoe on the Beach

Le Corbusier’s proliferation of space-time figures created a system that was a guide for decision-making in complex creative processes, where the success of an analytical figure is evidenced through its repeated use in new situations. The repeated figures appear as part of an experimental set also peppered with new figures, all waiting for application and evaluation. For Corbu, these figures were conditional and temporary generalities, contingent on constantly changing subject/object relations. Each individual figure can reach from specific instances to generality only by cobbling together recognizably heterogeneous materials. Existing materials are continuously re-used in new figure systems, remaining in existence while changing in value and meaning. This is a form of objectification without reification; the object remains contingent on the working of a subject engaged in intellection through continuous predication.

To return to the beach, thinking at the level of the coast-line as a complex system instead of grasping to identify, classify, and map the paths indexed within it at a smaller scale, Le Corbusier’s proliferating cognitive figures identify a way of working with the multiple temporalities. The dynamic relations of sand, wind, water, and animals that coalesce to form the vague and vibrating idea of beach can be likened to the relation of images, and reified concepts, and value-formation in discourse. Le Corbusier’s
fascination with capturing the divergent temporalities of general mental figures and specific physical moments was played out through personal experimentation with the coast. In addition to the historical figure of the right angle found on a beach in Brittany mentioned previously, Corbu was fascinated with a method for producing sculptures by casting plaster in molded sand at the beach (Benton, Cohen, & Phaidon 2008, 404). He was introduced to this method by Constantine Nivola, with whose family he frequently stayed while working in New York on the plans for the United Nations Headquarters. Using the beach sand to produce something permanent between the erasure brought by the tides is a powerful manifestation of the contingent right angle of will power and invention. Here, on the coast of Long Island, history is brought into contact with the beach as a dynamic system, and objects are produced imbued with both planning and memory. The sand and the beach are left behind, cast to the nebulous system of the coast, while the sculpture remains with its owner sitting in a garden, relegated to a different system.

We will pause here one last time to return to Pruitt-Igoe and our flirtation with the coast before beginning our anabasis in earnest. Architects’ ability to confirm the “death of Modernism” in the 1970s relied only on the firmness of orthodoxy, a firmness and weight obtained through rhetorical figures. But what if we base our values on something fuzzy and amorphous while affectively potent, something that bears a more immediate resemblance to the dynamic milieu of practice? Le Corbusier sought increasingly multivalent figures over the course of his career as an architect, painter, and writer. The naïve system that he created to guide his creative endeavors and explain them to others can also serve as a guide for the present when similar problems need to be
addressed. Whether or not the sculpture standing next to Le Corbusier in Figure 2-1 was ever given a name is of little importance in the context of this serial history of the death of architectural modernism, but in this context, a meaningful name has emerged. Le Corbusier is standing next to his sculpture, “The Demolition of Pruitt-Igoe”. The object, standing vertical like the rock off the coast of Brittany, is no less solid for having been built on sand. On the contrary, this sculpture gains its only lasting form through the mutability of the system of its creation. This is a lesson in soft reification.
Figure 2-2. Le Corbusier standing next to “The Demolition of Pruitt-Igoe” (Benton, Cohen, & Phaidon 2008, 404)
CHAPTER 3
RESEARCH FRAMEWORK: HEURETICS AND CYBER-HISTORY AS AN ANALYTICAL TOOL

The Effects of the Didactic Static Frame In Rhetoric

The Visualization of Thought

The previous chapter (Literature Review: Pruitt-Igoe on the Beach) analyzed the emergence of post-modernism defined through contemporary sources that sought to form a contrast with orthodox modernism, constructed from simplified rhetorical figures of modernist practice. This simplified modernism became a recurring trope of widespread disillusionment in architecture and urbanism in the 1960s, ‘70s and ‘80s, prompting designers to search for alternative epistemologies of the city when established methods of investigation and design produced undesired results. A ritual killing of modernism was effected through rhetorical tools used to construct arguments for new research methods.

To offer a more constructive relationship with architecture’s Modernist past, we proposed an alternative narrative by finding a dynamic conceptual structure in Le Corbusier’s urbanisms. Corbu’s dynamic structure of inquiry indicates a research method that works through continuous movement and proliferation of figures. This research method was tentatively proposed by Sigfried Giedion in his own search for conceptual tools appropriate for modeling the industrialized space-time of the twentieth century city. For Giedion, the static frame of Medieval and Renaissance space-time cognition would need to be replaced by a dynamic or synthetic frame similar to that found in Cubist painting at the turn of the twentieth century. Le Corbusier’s urbanisms exhibit this dynamic conceptual framing, a feature of his working methods that placed
the resulting architectural productions at odds with modernism as widely accepted and practiced by architects around the world in the latter half of the twentieth century. Thus, low-income housing projects like Pruitt-Igoe are an example of a modernism, and Le Corbusier’s publications and large-scale projects like the *Unités* are an example of a separate modernism, more heterogeneous than the orthodox caricature of the International Style propagated in the 1970s and ‘80s, a more versatile and fecund methodology for producing the city of the Second Machine Age.

The recreation of Pruitt-Igoe and Le Corbusier on the beach in the Literature Review was deliberately uninhibited, allowing the review of discourse to inspire possible conceptual fields within which writers and concepts are set at play through adjacencies created through the repetition of historical figures. Now we must examine the results of that inventive aggregation of sources and ideas. The most common recurring themes in the review were the juxtaposition of static vs. dynamic frames for conceiving space and time, and the rhetorical manipulations of architects in the 1970s and ‘80s attempting to construct an orthodox modernism as a value-laden figure. The connection between argument, value-formation, and a conceptual space-time considered as static and homogenous is not unique to the architectural discourse at the site of Post-modernism’s birth, but is an example of trends in discourse that stretch back centuries, blurring distinctions between logic, reason, and feeling with over-simplified parameters for explanation, argument, and thought in general.

Research in the history of rhetoric presents a causal linkage between the static cognitive frame in discourse and concepts reified with the perceived weight of objects, full of inertia and requiring considerable work to change. Examining this link between
static space-time frames and processes of reification will show the idiosyncrasies of traditional discourse and open an opportunity to posit a different framework for research. We would like this new research framework to be based on tactics to give rigor to acts of invention, and it must focus on the analysis of methods of production instead of the interpretation of discrete products. To gain a clearer picture of our point of departure, we will discuss the historical development of strategies codified in traditional, object-based rhetorical methods, in order to better understand the needs that our alternative research framework will fulfill. Following our desire for productive tactical maneuvers, we will not provide a summary outline to guide our actions but will rather begin with a discussion of the outline as a strategic tool governing object-based discourse within a proper homogeneous spatial context.

The outline is a graphic tool for discursive organization. In a typical outline, discussion points are grouped hierarchically under topics and subtopics. When taken together, the topics and their itemized contents comprise a rough summary of a discussion, and can be used to plan the structure and order of a composition. This graphic outline deploys language-based concepts within the space of the page to produce an ordered relationship of containers (topics) and their contents. This kind of graphic manipulation of discursive material became a popular pedagogical tool in the late fifteenth century, shortly after the emergence of the printing press (Ong 2004, 79-83). This kind of diagramming is so commonplace in school curricula today that we think very little of the implications that it has in the formation of concepts and our assumptions about logic and space.
In the universities of fifteenth century Europe, the diagram and the outline were key components in the spread of the ideas of the Scholastics attempting to simplify the logical system inherited from Aristotle, inducing over the course of the middle ages what Walter J. Ong has called “the progressive visualization of thought” (ibid, 67). This slow epistemological revolution led to the downplaying of the unknowns in discussion and argumentation, and the pervasion of analogies equating processes of intellection with processes and substances in the physical world. This reification of thought saw the increased popularity of representing all manner of logical and rhetorical maneuvers as geometrical relationships within the confines of the static space of the page, easily reproducible by engraved plates and the printing press. These simplifications of mental work were the result of curricular contingencies in early European universities, and the course of their spread to cover all of education and rigorous thought takes us up to a breaking point at the turn of the twentieth century, when the intellectual avant-garde began experiments in dynamism with little concern for currency within established institutions. The story of how modernism became lapidated by value-formation as the twentieth century drew to a close is thus tied to the desires of the Scholastics hundreds of years before, who sought to make thought and communication into a fully spatialized and quantifiable reification system.

**Setting the Stage for the Neo-Scholastics: the *Summulae Logicales* of Petrus Hispanus**

In medieval Europe, the curriculum that would lead students from the start of their studies as children, through early university arts courses and perhaps on to professional education in law or medicine, established grammar and rhetoric of Latin and Greek as elementary subjects. This grammar instruction was followed by the study
of logic by students who were still barely teenagers. The culmination of study with a 
terminal Master of Arts or Doctor of Philosophy degree was attained by young men 
aged eighteen to twenty, who would then be considered ready to teach students 
seeking those same degrees (ibid, 62). There was little room for subtlety or ambiguity in 
this fast-paced curriculum; what instructors needed were manuals that rendered the 
complexities of logic and rhetoric as concisely as possible, clear and ready for reception 
in the minds of young children (ibid). One such manual was Peter of Spain’s highly 
influential *Summulae Logicales* of the thirteenth century.

Peter’s *Summulae Logicales* attempted to present straightforward treatments of 
works on method, logic, and rhetoric that formed the foundation of rigorous study in 
discourse and thought, namely the works of Aristotle and his subsequent translators 
and commentators. The first simplification of the *Summulae Logicales* is the equation of 
method and logic, effected in its famous opening definition of dialectic: “Dialectic is the 
art of arts and the science of sciences, possessing the way to the principles of all 
curriculum subjects” (ibid, 56). Dialectic, or the dialectical method, is a way of working 
through uncertainties and disagreements between parties with dialogue and argument. 
Peter’s text does not define logic separately from dialectic, and the *Summulae Logicales* 
was presented by instructors in the arts curriculum as the “door to all logic” (ibid, 56-7). 
The *Summulae* blurs the traditional distinction between conceptual tools that were 
developed for treating situations where scientific certainty is the goal (logic), and the 
tools of dialectic, which were developed by Aristotle for situations that would remain 
mired in uncertainty and probability, where the ultimate goal was persuasion (ibid, 60-1). 
So, the notion that reasoned argument would proceed by logic to use discursive tools
toward the ultimate attainment of any certain truth is a conflation of two distinct fields of reasoning to attain some degree of didactic clarity in a manual written for teenagers, with the result that "logic" would increasingly dominate general discussions of thought, communication, and creative activity in the fifteenth and sixteenth centuries.

The simplifications effected by Peter’s *Summulae* and other contemporary teaching manuals on logic came after a series of upheavals and transformations in how the liberal arts were conceived and taught in Medieval Europe. Medieval scholar Richard McKeon summed up the slow obfuscation in the Middle Ages of Aristotle’s distinction between logic, dialectic, poetic, sophistic, and rhetoric by identifying changes in predominant texts, grouped into four general periods. First, until the tenth century, elements of logic were learned from the logical treatises of pseudo-Augustine, whose *Categoriae Decem* was a Latin summary of Aristotle’s *Categories*, and sections on dialectic in handbooks by Martianus Capella, Cassiodorus, and Isidore of Seville. Rhetoric was concerned with moral and political questions of civil philosophy, and was learned from texts by Cicero, Hermagoras of Temnos, Sulpitius Victor, and other authors of works on oration (McKeon 1942, 7-8, 13-14). A second major period in the conception of logic and rhetoric is identifiable after the influential late tenth century curriculum written by Gerbert d’Aurillac, Pope Sylvester II, when he was teaching in Reims and Paris. Gerbert’s curriculum presents Dialectic through those sections of Aristotle’s *Organon* that had been translated into Latin at that time by Boethius: *Categories* and *On Interpretation*, an introduction to *Categories* by Porphyry, and several original works by Boethius (ibid, 8; 15-16). Boethius considered dialectic and rhetoric to be parts of logic, and thus it was in Gerbert’s curriculum. In this period from
the tenth to the twelfth century, rhetoric saw several of its components as developed by Aristotle—commonplaces, definition, and proof—moved to the purview of dialectic—and its traditional civil subject matter largely shifted to the realm of theology (ibid, 14). This slow stripping of rhetoric's proper material and uses and their assignment to other areas of intellection would continue in the following centuries until, by the time of the Renaissance, only some vague and superficial notion of style would remain under its control.

In the twelfth century, study of rhetoric, dialectic, and logic was enriched by the translation of the remaining four books of Aristotle's *Organon* into Latin. These texts, *Prior Analytics, Posterior Analytics, Topics*, and *Sophistical Refutations*, would become known as the “New Logic” in McKeon's third period, and those parts of the arts curriculum popular before this twelfth century influx, *Categories, On Interpretation*, Porphyry’s *Isagoge*, Boethius, and Cicero, were now called the “Old Logic” (ibid, 16; Paetow 1927, 20). The increase in influence of the New Logic led to a distinction between scientific demonstrative proof and probable proof dealing with uncertainties, with rhetoric and dialectic were placed within the latter. The dissemination of the full *Organon*, with its subtle and complex differentiations, would lead to the manualists’ attempts to simplify this material for use in the arts curriculum, with the most prominent examples being Lambert of Auxerre’s *Logica*, William of Sherwood’s *Introductiones in Logicam* and *Syncategoremata*, and the most popular of all, the *Summulae* of Petrus Hispanus (McKeon 1942, 8).

The *Summulae Logicales*, with its reduction of all discursive methods to a conflation of logic and dialectic, left the Medieval arts student with a limited set of
conceptual tools with which to treat the entirety of discourse. This situation made the student into a *bricoleur*, intuitively using a set stock of materials and manners of relation for purposes other than those for which they were created. Each application of the tools is improvised, and while the products may adequately fit the circumstances at hand, the techniques will always lack precision. The irony here is that the authors of popular manuals on logic in the thirteenth century were attempting to simplify and above all clarify the many approaches to reason that Aristotle’s *Organon* rendered exhaustively, but in a complicated and confusing manner. In sketching a simplified intellectual system, the *Summulae* removed obscurity from the teaching material, placing it instead in the mind of the student left to cobble methods together from heterogeneous impulses and materials in an attempt to construct meaning. This is student as tribesman, constructing a cosmogony, a map of the vast unknown time and space of the universe using bits and pieces of the world as personally known to the individual, simple things that are familiar and thus always at hand. The student as *bricoleur*:

> The ‘bricoleur is adept at performing a large number of diverse tasks; but unlike the engineer, he does not subordinate each of them to the availability of raw materials and tools conceived and procured for the purpose of the project. His universe of instruments is closed and the rules of his game are always to make do with ‘whatever is at hand,’ that is to say with a set of tools and materials which is always finite and is also heterogeneous because what it contains bears no relation to the current project, or indeed to any particular project, but is the contingent result of all the occasions there have been to renew or enrich the stock or to maintain it with the remains of previous constructions or destructions. (Lévi-Strauss 1966, 17)

This quote from Claude Lévi-Strauss’s *The Savage Mind* contrasts the *bricoleur* with the engineer, but earlier in the same text, this handyman-of-sorts is also contrasted with the craftsman and the work of *bricolage* is imbued with a dubious character. *Bricolage* is derived by Lévi-Strauss from the French verb *bricoleur*, used in ball games like billiards
or in hunting to describe a rebounding, or straying movement. “And in our own time the ‘bricoleur’ is still someone who works with his hands and uses devious means compared to those of a craftsman” (ibid, 16).

The Organon was compiled by Aristotle’s commentators to gather and organize his works on logic and thus provide a full catalogue of logical methods and techniques for treating any material, a kind of map for the intellectual technician. This document can be seen as the earliest attempt in Western culture to avoid intellectual bricolage. Its components are On Interpretation, which handles the combination of subjects and predicates to form propositions, and the Categories, which deals with these terms individually (Grote 1883, 57). These two works deal with declared truth. Next come works that present Aristotle’s theory of the syllogism: the Prior Analytics, and the Posterior Analytics, which treat demonstration and demonstrative science; the Topics on the art of Dialectic, covering debate and argument of probabilities outside the purview of absolute truth, and Sophistical Refutations on fallacies (ibid, 141-2). Aristotle’s Rhetoric, a treatise on the art of persuasion in three books, stands separate from the Organon, his works on logic, wherein we find discussion of dialectic. Separate from the Organon is Aristotle’s Poetics on drama and poetry.

Poetry, persuasion, argument, and science each had a specific logic governing their appropriate, or proper construction in the Corpus Aristotelicum. The multivalent drift of generations of scholars that took inventive liberties with this corpus, making changes and charting their own courses through the field of staggering variety that is human thought, has had the effect of clumping materials and actions of the mind under the heading of logic at the expense of other forms of reason that we use everyday, like
rhetoric. Starting with a dazzling if flawed array of mental work codified by Aristotle, we have ended up with an overextension of logic through the allure of absolute truth at the expense of the relative but concrete indications constantly provided by our feelings. The sections of the *Corpus Aristotelicum* that treat logic have been made to eclipse their context of relativity and affective persuasion through accretive historical synecdoche; what was once a constitutive piece now stands for the whole.

History provides us with a convenient filter to sort the various tendencies of authors treating logic in the Middle Ages through the popularity of a single manual on logic; Peter of Spain's *Summulae Logicales* was so popular by the early fourteenth century that his particular treatment of logic had become synonymous with the tradition of logic in its entirety, and first year students studying logic in bachelor of arts programs were called “Summulistae” (Ong 2004, 58). While it was written as an introductory textbook on notions associated with Aristotle’s logic, some of the most influential material Peter’s manual was decidedly new, including a section featuring the first definitive formulation of supposition theory, a branch of logic that would dominate its field until the Renaissance (ibid, 57). The *Summulae* covers the basic content of Porphyry’s *Isagoge*, Aristotle’s *Organon*, and related works and commentaries like Boethius’ *De topicis differentiis*. Peter then added treatises on medieval logic that together would be called the *Little Logicals (Parva logica*) (ibid, 56-7). This non-Aristotelian, medieval content of the *Summulae* was its most popular component in the universities of the fourteenth century (ibid, 58). Thus, Peter’s logic, considered the “door to all logic” by Arts faculties, was very much a medieval system, wherein “dialectic” is indiscernible from “logic”, and the key to the popular *Parva logica* is its section on
supposition, the cornerstone of a logical system that would later cover material similar to that of quantification in modern mathematical logic (ibid, 57), all under the aegis of introducing the important, necessary principles of Aristotle’s *Organon*.

Another important difference between Peter’s *Summulae* and the Aristotelian tradition cited as its source is the amount of attention given to the notion of topics while neglecting discussion of demonstration, placing the work in closer relation to the probable logics, like rhetoric, than to science and the logics of certainty (ibid, 60). Aristotle treats dialectic in his *Topics*, a work that explores the rules and goals for argument with information culled from popularly accepted opinions. Aristotle also treats topics in his *Posterior Analytics*: topics as they pertain not to probabilities, but to scientific certainty. Peter’s manual was in part an attempt to simplify this complex use of topics for both scientific demonstration and dialectic in Aristotle’s theory of the syllogism as found in the *New Logic* (*Prior Analytics, Posterior Analytics, Topics*, and *Sophistical Refutations*).

Aristotle’s development of the syllogism was a key moment in the intellectual history of the Western world. The theory of the syllogism is clearly recorded in the *Prior Analytics*: “A deduction [syllogismos] is discourse in which certain things being stated, something other than what is stated follows of necessity from their being so. I mean by the last phrase that it follows because of them, and by this, that no further term is required from without in order to make the consequence necessary” (Aristotle 1984, *Prior Analytics I, 24b19-24b 22* [In-text citations to this source refer to Bekker Numbers listed in the source, rather than page numbers.]). Aristotle’s exploration of deductive reasoning was an attempt to improve on the cognitive theories of his immediate
predecessors, Socrates and Plato. In the *Meno*, Plato gives account of Socrates’ “theory of recollection”, whereby man’s soul has accrued knowledge of everything there is to know over the course of its previous lives. Thus, man cannot learn, he only comes to recollect material that his soul knows but in his present life he has forgotten (Plato 1985, 63-81). This recollection is the purpose of Socratic dialogue: through inquiry, the student will remember the forgotten knowledge he is seeking, or will realize his ignorance by recognizing the lack of certainty in what is knowable about the given material.

To explain learning and creativity, Aristotle chose to elaborate the syllogism as a practical theory of inference, applicable to all forms of cognition and intellection. The painstaking catalogue of logical permutations that the *Organon* documents would continue to be a touchstone for intellectual rigor until the modern era, even as the field of logic would follow various tacks that had little relation to Aristotle’s theories. Furthermore, although ancient Greece had many rhetoricians skilled in the use of language, there was hardly any systematic study of language as such before Aristotle’s *Organon* and the theory of the syllogism (Grote 1883, 153).

Syllogism is deductive reasoning, or deductive inference, and Aristotle explains its components and the conditions in which it is valid in the *Prior Analytics*. A valid syllogism contains three terms: two premises and a conclusion; the minor premise shares a term with the subject of the conclusion, the major premise shares a term with the predicate of the conclusion. The basic components are: propositions [*protasis*], statements affirming or denying something of something; while a term is “that into which the proposition is resolved, i.e. both the predicate and that of which it is predicated, 'is'
or 'is not' being added" (Aristotle 1984, *Prior Analytics I*, 24a10-24b18). Syllogism can be used for two distinct purposes: demonstration or scientific teaching (outlined in the *Posterior Analytics*), and dialectic or argumentative debate (outlined in the *Topics*) (Grote 1883, 265).

Dialectical syllogism and demonstrative syllogism share formal conditions and the axioms of deductive reasoning (which included the axiom of deductive reasoning, and axiom of the excluded middle) but differ in their subject matter. Demonstrative syllogism only applies to a small number of sciences wherein primary, undemonstrable but certain truths provide the basis for all subsequent deductive inferences; dialectical syllogism applies to all matters, its premises need not be certain and are borrowed from any authoritative source (ibid, 265-6). This distinction between the demonstration of science with its purpose of teaching or learning, and dialectic with the purpose of persuasion, represents another step beyond the dialogic methods of Plato and Socrates, where persuasion and instruction were conflated (ibid, 266), and marks the point where medieval treatments of logic and dialectic would take a step backward.

Aristotle distinguishes dialectic and demonstration through the establishment of certainty. The sciences proceed through demonstration of certain propositions to certain conclusions. This certainty is ultimately based in *principia*, primary, undemonstrable truths that every demonstration presupposes (ibid, 265). These *principia* are obtained by inductive inference, inference from particulars to a general condition. There is an ultimate adjacency of uncertainties (argument or debate) and absolute truth in the theory of the syllogism: dialectic is used as a test to scrutinize possible *principia* to see if objections can be met with sufficient reply (ibid, 273). Compared to Plato's universals—
known by the mind from pre-existence and recalled through dialectic—Aristotle’s 
principia resemble Kuhnian paradigms (Kuhn 1962), those aspects of a science that are 
not currently debated, the contents of which must be taken as essential and true as a 
precondition for any valid demonstration. Opinion, argument, and persuasion are 
ultimately intertwined with truth through their role in the formation of principia (Aristotle 

When Peter of Spain attempted to simplify Aristotle’s theory of syllogism, he 
confused the necessary coexistence of opinion and certainty. In the *Corpus 
Aristotelicum*, demonstrative sciences based on certainties are carved out of the vast 
common land of dialectic, and between these forms of intellection lays the intermediate 
area occupied by subjects that each have their own proper level of exactitude (Aristotle 
logicales* inverts this intellectual landscape, where debate and persuasion are exercises 
or excursions that take place within a larger context of truth. Not only did Peter’s 
supreme dialectic support the slow decay of argument and rhetoric into unnecessary 
flourishes of style or outright dissimulation in medieval Arts courses, it also led to 
problems explaining how learning and invention can take place at all, precisely the 
problem that Aristotle sought to solve with the syllogism.

**Meno’s Paradox, the Syllogism, and the Problem of Discovery**

Aristotle’s theory of the syllogism offers an improvement over Plato’s theory of 
recollection in its attempts to explain how discovery or invention of new material takes 
place. In the *Meno*, Socrates seems to use the theory of recollection to deny the 
possibility of discovery as invention during discussion of Meno’s paradox. While
engaged in discussion of virtue and how to properly proceed via inquiry to better understand it, Meno puts the challenge thusly: “how will you inquire, Socrates, into something when you don’t know at all what it is? . . . Or even if you really stumble upon it, how will you know that this is the thing you didn’t know before?” (Scott 2006, 76; quoting Meno, 80d5-8) This challenge implies that inquiry into what you do not already know is impossible. Socrates responds by restating the challenge in more general terms, his series of propositions and conclusion can be represented as: 1 - If you know the object already, you cannot genuinely inquire into it; 2 - If you do not know the object you cannot inquire into it because you do not know into what you will inquire; 3 - (implicit) Either you know something completely or you do not know it at all; 4 - Therefore, you cannot inquire into any object (Scott 2006, 78; from Meno, 80e1-5). This version of the dilemma challenges the possibility of all inquiry, and the theory of recollection is proposed as the solution, offering the possibility that a person be apparently ignorant of something that their immortal soul already knows. Both versions of the dilemma can be disarmed by allowing for partial knowledge of the object of inquiry (Scott 2006, 79-80).

Careful analysis reveals that Plato might not have proposed the theory of recollection in the Meno out of concern for the possibility of inquiry, but rather as a component in a larger discussion centered on the problem of discovery and how to properly guide inquiry. This reading of Meno’s paradox places importance on the facts that the theory of recollection is insufficient to resolve the dilemma and Socrates and Meno’s earlier discussion of the distinction between knowledge, requiring that one has reasoned through the explanation, and true opinion/belief presents material that
adequately solves the problem (ibid, 19, 82). Socrates and Meno are attempting to attain knowledge of the true nature of virtue, and their beliefs offers a starting point for discussion, without the necessity of complete knowledge of the object being discussed. They may have true beliefs about virtue from the beginning, and through discussion they might gather other true beliefs, and they do offer multiple definitions of virtue as the dialogue progresses. But, if this is the nature of their inquiry, “they will always be trapped within a circle of belief”, and complete knowledge will lie outside their grasp (ibid, 84). In the *Meno*, both the theory of recollection and the path of dialogue offer an incomplete rendering of successful inquiry.

Aristotle’s theory of the syllogism places inquiry’s “circle of belief” in a context including varying degrees of certainty, kinds of reasoning, and the uses of persuasion to resolve the problem of discovery. In Aristotle’s works we find a distinction between two kinds of cognition: absolute knowledge, and partial, incomplete or qualified knowledge (Grote 1883, 212). Only the latter can be learned, and this is done through the formal inferences of the syllogism. However, hiding deep in Aristotle’s theory of cognition, the problem of discovery survives. The earliest evidence of its existence is in the first Western philosophical text, the poetic fragments of Parmenides, where it is claimed that what-is cannot be derived from what-is-not, and the only guide for method is toward what-is, establishing a static immutability to all being. The problem appears again in the form of the Platonic absolute, addressed by the theory of recollection in the *Meno*, and Aristotle begins his *Posterior Analytics* with the claim that, “[a]ll teaching and all intellectual learning come about from already existing knowledge” (Aristotle 1984, 71a1).
In the nineteenth century, John Stuart Mill identified the part of Aristotle’s syllogism that perpetuates the problem of discovery: in every syllogism, there is a *petitio principii* (Grote 1883, 213; Mill 1865, v.1, 205). Mill uses two examples, first: All men are mortal; Socrates is a man; therefore, Socrates is mortal (ibid). He stresses that the proposition, Socrates is mortal, is presupposed in the assumption that all men are mortal, “we cannot be assured of the mortality of all men, unless we are already certain of the mortality of every individual man” (ibid). He adds to this syllogism the example of belief in the mortality of a contemporary, living man; he believed the Duke of Wellington to be mortal, but did not know this from direct observation (ibid, 206-7). Mill tweaks Aristotle’s theory by focusing not on the syllogism, but rather on varieties of inference: “the proposition that the Duke of Wellington is mortal, is evidently an inference; it is got as a conclusion from something else” (ibid, 207-8). The general truth of the mortality of all men is an aggregate of particular truths, some observed directly, some noted; and indeed the inference of a general condition is effected by a gathering of notes (ibid, 208-10). To arrive at the application of this general truth, we proceed downhill again by deciphering our notes. What we end up with in Mill’s system of inference is not a vicious circle of belief so much as a folded landscape of inferences, up from particulars to generalities, down again, from generalities to particulars, from particulars to other particulars, and so on. Mill presents a beautiful example that dovetails with our larger inquiry into tactical discourse, an example we can call “the general”:

An old warrior, on a rapid glance at the outlines of the ground, is able at once to give the necessary orders for a skillful arrangement of his troops; though if he has received little theoretical instruction, and has seldom been called upon to answer to other people for his conduct, he may never have had in his mind a single general theorem respecting the relation between
ground and array. But his experience of encampments, in circumstances more or less similar, has left a number of vivid, unexpressed, ungeneralized analogies in his mind, the most appropriate of which, instantly suggesting itself, determines him to a judicious arrangement. (ibid, 211)

Mill’s general allows us to link the history of dialectic to the movements of Xenophon, as we search for historical inquiry that adequately models the condition of discovery as the navigation of an inferential landscape.

**Changes in Media Technology; Changes in Discourse: Ramus’ Graphic Outline and Printing Technology**

Within the topic of the “heroic Modern”, birthed at the opening of the twentieth century, can be found attempts to solve problems still plaguing urban planners today, a century later. These shared problems include the search for solutions to relieving humanity of the waste of suburbia; the single-family home on individually owned postage-stamps of land accessed by private automobiles necessitated by extreme travel distances between swathes of functional zones. Le Corbusier’s published works continue to offer frustratingly simple principles with an undeniable logical tenacity. He described the plan of the *City for Three Million Inhabitants* using a set of principles that underscores his urbanism’s continued relevance to contemporary urban problems:

The basic principles we must follow are these: 1. We must de-congest the centres [sic] of our cities. 2. We must augment their density. 3. We must increase the means for getting about. 4. We must increase parks and open spaces. (Le Corbusier 1924; 1947, 178)

With tenets like these, emphasizing increased densities, decreased congestion, and increases access to nurturing natural spaces, there must be some use for Corbu’s works, some way to extract the valuable materials from those that have proven to be too problematic for continued application.
One can’t help but feel that there is another history of modernism being lost or obscured, distorted somewhere near the margins of the single-frame figure of Pruitt-Igoe. What is lost in the rubble left by the demolition of modernism might include the history of simultaneity sought by Giedion, and the modernism and urbanism sought by Le Corbusier, concepts that indicate a way of thinking with the synthetic/dynamic frame. This way of thinking virtually about and representing the urban can be an accompaniment to the abstracted, totalizing view so familiar from documents like the Charter of Athens and the perspective renderings and macro-scale plans of Le Corbusier’s cities that have always provoked strong reactions.

Giedion developed the concept of subjective space-time frames in response to the massive scale and systemic complexity engendered by a mechanized society. His use of Cubism and Modernist architecture as exemplars of a space-time frame appropriate for the industrialized world reinforce the imperatives put forth by the avant-garde to break with established concepts of self and society confronted with new technologies of production. Giedion’s synthetic frame produced by the subject moving through time and space corresponds to the position of the audience provoked by the Cubists, Modernists, Futurists, Suprematists, etc, to produce a new categorical narrative of aesthetics capable of maintaining the validity of history amidst dramatic upheavals instigated by the revolutionary avant-gardes. Giedion’s is a new kind of historical analysis that responds to the challenges posed by a changing society fuelled by new technologies, and his historical frames are an example of changes in media technology precipitating changes in discourse. The correspondence of changes in technology and changes in communication is so common throughout history that it seems inevitable;
when a popular media apparatus changes in a way that facilitates aspects of communication different from the facilities of traditional or existing media, the nagging existence of these new possibilities will eventually be explored, and these trajectories are catalyzed by crisis.

To illustrate Giedion’s new form of historical analysis as adjacent to the technological changes of industrialization, we will examine historical changes in media technology and subsequent effects on communication. One such change in communication is evidenced at the beginnings of the historical record in ancient Greece, when orality was transformed into literacy through slow expansion of the uses to which writing technology was applied (Havelock 1986, 1-3). This expansion was made possible in part by the precise symbolic economy of the Greek alphabet. With its isolation of linguistic sounds arranged in simple tables easily learned by children, the Greek alphabet was an improvement over the written systems of Sanskrit, Hebrew, and Cuneiform by making the rich and expressive detail found in oral poets like Hesiod attainable in writing (ibid, 9).

With the written word memory could be externalized in text, and mnemonic devices of narrative and rhythm which had been a mainstay of oral communication in ancient Greece, where theatre and epic poetry were charged with the task of preserving traditions and communicating them to the youth, were not necessary with the physical preservation of content offered by writing (ibid, 8, 15, 29). Once freed from the requirements of memorization, new courses could be followed for discourse and, through the works of writers like Hesiod, Plato, and Aristotle, prose was adapted to articulate increasingly abstract ideas separated from the agents or persons who perform
them in a narrative (ibid, 101). An early example of an articulation formed from the new possibilities offered by writing was that of justice, “dike”, treated as a subject of discourse by Hesiod (ibid). While “dike”/justice is found in the extant oral discourse and transcription-based texts the 7th century BCE, it appears for the first time as a topic of discussion in its own right in Hesiod’s *Works and Days* around 700 BCE. Hesiod gathered together the disparate oral fragments that mentioned justice into a single text to gain a sense of commonality in what justice does across its instances in existing discourse (ibid, 101-2). Perhaps because he was still reliant on narrative sources, Hesiod still did not make the jump to grasp what justice is, and the notion of being as a topic had still not been articulated; he merely recounts what he can know about what justice does to the characters in each narrative instance, or how their circumstances make justice apparent (ibid, 102). The topic was thus furnished by new manipulations of discourse made possible through an exploration of writing technology, a course that over the following centuries would slowly build the conceptual apparatus of Western philosophy, including logic and science.

Another major change in discourse is marked by the spread of print technology in the fifteenth and sixteenth centuries, and it is here, through the work of Peter Ramus, that we return to our examination of the graphic outline and its emergence from a context of technological change. Just as with Peter of Spain and his simplifying influence on logic and dialectic, we can use Ramus as a historical filter, this time for the spatialization of logic and method. “Virtually alone among important movements in the history of philosophy, Ramism had a distinctive appearance” (Johns 2004, vi). Peter Ramus made use of wood-cut printing to replicate discursive graphic diagrams to serve
as precise visual supplements to his texts on dialectic mechanically produced on
printing presses with moveable type:

[Ramism] takes the form of elaborate tables of ‘dichotomies’ laid out across
the page. Typically, these start at the left-hand side with the subject in
question. This is then distinguished into two branches (for example, logic is
composed of ‘invention’ and judgment’). Each of these branches is then
further subdivided. And so on across the page, producing an elaborate tree
structure that proliferates from left to right into ever-finer distinctions. One
arrives finally at the far side of the page with a number of discrete
conceptual atoms that, it seems, constitute the fundamental elements of the
subject with which one started. Such a chart apparently maps out an entire
subject, presenting it to the eye as a coherent whole with its parts clearly
and distinctly arrayed in space. From such a map, the structure of
arguments, and perhaps even the structure of reality itself, can be called
readily to mind. It is a simple device, its advantages and drawbacks
nowadays self-evident. But in its day it was proclaimed as revolutionary.
(ibid)

Ramus’ tabulated outlines make use of the page as a static space, within which
can be contained an array of discursive objects: topics, concepts, and examples, each
nesting within the space described by a more general discourse-object. The
development of writing primed this powerful relationship between language and space
by effecting a transformation of speech sounds into marks on a page, and by the
sixteenth century Ramus would insist that these spatial markings were the fundamental
elements of language, valuing the written object over the fleeting spoken word sounds
or phones (Ong 2004, 308, citing Ramus Dialecticae institutiones (1543), fol. 37). While
a great deal of research remains to be done to clarify the relationship between notions
of spatial dialectic and contemporaneous developments of moveable type printing, a
case can be made that the development and rapid spread of moveable type was the
result of “a profound reorientation within the human spirit which made it possible to think
of all the possessions of the mind. . . in terms more committed to space than those of
earlier times” (Ong 2004, 308). As documentation of discourse became less dependent on oratory and more focused on the production and circulation of manuscripts, Medieval culture began to associate knowledge with visually apprehended space (ibid). The spatialization of human knowledge would continue its reorganization of discourse, logic, and method in Northern European humanism and the Renaissance, leading to a more abstract and geometrized world and cosmos (ibid, 309).

The static frame of the printed page is adjacent to the object-logic developed in the pamphlets used in medieval arts courses, and their mutually supporting relationship would be undermined by further technological progress in the nineteenth and twentieth centuries. In Giedion’s analysis, the shift from Haussmann’s boulevards to the urban forms of the railroad and parkway would necessitate a shift in spatial perception, away from perspective projection ordering space by simulating the view from a single position, to a simultaneous, synthetic space that challenges the value of the static viewpoint and reclaims the subject as a dynamic agent of spatial ordering. Giedion’s space-time frame analysis indicates the need for a mode of discourse native to modernity, a discourse that eschews the teleological precision of the Enlightenment subject, who partakes in the geometrical order of the universe, for a contemporary subject beset by production and the need to continuously construct order: the subject as crucible. This inventive modern production of history has trouble finding a seat, a proper place, in the institutions of academic discourse. The pedagogical traditions of European universities are organized predominantly by a monologue from teacher to student, rather than the dialectic that is consistently claimed as a methodological cornerstone (ibid, 309), or the collective multilogue indicated by Giedion’s virtual framing.
The history of modernism that ends with the demolition of Pruitt-Igoe is a story of autocratic monologue, issuing from the heroes of modernism as the source, whose culpability for the mistakes of their minions can only be supported alongside an object-based model of discourse where content is seen as material ordered in a static space. This history does not examine the production of Pruitt-Igoe as a design project, but rather as an instance of ideological dissemination; agency is transferred to the Hero as source and cause. The value of Pruitt-Igoe’s demolition is strategic, an ideological value. What is left out of this economy is the tactical production and destruction of a site in St. Louis, a story of design, implementation, and slow decay, delineating a specific and ultimately harmful method.

**Third Meanings and the Writing of Figural History**

An attempt to write history with Giedion’s virtual frame would grant agency to the author to construct an object of intellection using both external environmental data and personal content. This personal aspect of intellection is the point of view unique to the viewer that provides the motivation to construct a contextual frame in the absence of a relevant intellectual context provided through academic discourse. This personal material has no lack of rigor, but its rules have been left relatively unarticulated by the proper purview of institutional, learned discourse. The “I” must necessarily emerge as a key component of the dynamic frame.

Roland Barthes found an index of the internal aspects of discourse, the affective “I”, in the portraits of Giuseppe Arcimboldo. Barthes called this trace of the affective viewing agent a “third meaning”. Arcimboldo’s portrait heads are constructed of configurations of sundry objects: fruits, vegetables, fish, flowers, etc. The “first
meaning”, or the first level of sense in these portraits, is supplied by the sundry objects as nameable things: cat, apple, wheat, etc. Their “second meaning” is their configuration, enabling the heterogeneous object to also be nameable as a head. The “third meaning” is a naming that is external to the painting, supplied by the viewer’s cultural codes, partially indicated by Arcimboldo in the title of each portrait: Summer, Winter, or The Librarian (Ulmer 2004, 119; Barthes 1980, 54-5). The “third meaning” makes the painting legible as “Summer” because the viewer identifies the objects of the first meaning with the concept “Summer”. This third meaning operates via a general, metonymic culture which has as its content associations of ideas (Ulmer 2004, 119; Barthes 1980, 54-5). To list the senses of the image in another way, in his analysis of Sergei Eisenstein’s film Ivan the Terrible, Barthes discusses the informational and symbolic levels of meaning, but also a third meaning that is discontinuous with and indifferent to the story (Ulmer 2004, 121; Barthes 1977, 56).

The connection of Pruitt-Igoe’s demolition with the “death of Modernism” occurs as a third meaning. This connection was not present on the physical site of the housing object, just as it was not present during the dynamic, temporal event of planning and effecting the physical destruction/transformation of the object through its demolition. Pruitt-Igoe and the death of modernism only concur in the minds of those who wrote their adjacency, and in the minds of anyone to whom that adjacency is legible. The historical figure of the demolition of Pruitt-Igoe exists as a complex knot of associations in the predilections of architects and historians in the 1970s and ‘80s. Any historical figure is constructed by writing with objects. Figural history, history that makes a point, fashions the historian as a semiologue, “draw[ing] on the encyclopedia of a society the
same way a poet makes use of a dictionary”, whose encyclopedia is comprised of objects separated from their original context and recreated as part of a new discourse through catachresis (Ulmer 2004, 120, 123). One reason for the obtuse nature of the birth of post-modernism out of a modernist orthodoxy constructed as a paper tiger is that the meaning of the Pruitt-Igoe figure is not sent as a logical part of discourse, but is nonetheless received through its legibility to the listener/reader. The figure will always remain external to the object under discussion, no matter how logical and self-sufficient the modes of disciplined discourse will make its contents appear.

When Giedion put forth his history of space-time frames, he was gathering together third meanings to construct a new kind of historical concept in the same way that Hesiod attempted to construct a new kind of idea by gathering together instances of justice. The space-time figure as organizer of historical narrative allows for historical discourse to respond to changes in the perception of architectural space and time induced by new technologies of the industrialized city, just as Cubism and other artistic methods that challenge the representational function of art were a response to the mechanical reproduction of space and time made possible by the film camera (Benjamin 1969). Tellingly, Barthes wrote, “even more than the text, the film will always be figurative . . . even when it represents nothing” (Barthes 1975, 56), referencing the allegorical mode of filmic representation, which constructs narratives out of the configuration of concrete images (Ulmer 2004, 120; Owens 1984, 230). The historian of figures invests concepts with an allegorical or emblematic value distinct from the certainties constructed through disciplined discourse, while these certainties and opinions provide the reserve from which the historian/agent invents third meanings
(Ulmer 2004, 123-4). Figural history is thus simultaneously learned and quotidian, both intelligible by the author and audience as an articulated object of knowledge, and lived by both parties (Ibid, 125) as subjective agents in the construction of order; it is the tactical deployment of an intellectual strategy.

**From Hermeneutics to Heuretics**

Sigfried Giedion’s space-time figures allow the historian to write with third meanings, latching on to the affective allegorical discourse theorized by Barthes and unlocked by the invention of the film camera. Just as Hesiod used possibilities to augment human memory offered by the technology of writing to construct the first topic, avant-garde artists of the late nineteenth and early twentieth centuries experimented with artistic methods in a cultural milieu featuring a variety of new technologies, each of which offered new opportunities to augment human agency or reevaluate existing methodologies. Furthermore, each methodological experiment offers opportunities to create a new genre. A quick role-call of avant-garde media technology experiments leads us to the methods of Bertolt Brecht in theatre, Dziga Vertov in film, and Walter Gropius in architecture.

Bertolt Brecht’s Epic Theatre was formulated to effect *Umfunktionierung*, or the functional transformation of forms and instruments of production through active critique of the means of media production that engages the collective agency of the audience (Benjamin [1934]; [1939]). Epic Theatre was a method that dovetailed with Brecht’s notion of the “ideal radio” and the possibility of radio technology used as a two-way receiver/transmitter system, wherein each media consumer can also be a producer
(Brecht [1932]). In this way, the spread of radio technology inspired Brecht to regain theatre as a cultural practice instigating collective agency.

In the early 1920s, Dziga Vertov’s proposed _Cine-Eye_ as a new form of vision made possible through use of the movie camera and corresponding film editing techniques. _Cine-Eye_ was used as a method to produce _kinopravda_: a new format of news narration that uncovered a new form of truth not visible with the naked eye (Vertov [1922]; [1925]). Thus, in Vertov’s work, the new technology of the film camera was used as an intellectual prosthesis to gain access to a realm of epistemology previously obscured by the limitations of intellection and traditional media technologies.

Examples of technological development prompting methodological experimentation are found in architecture as well. The Bauhaus, formed by joining the Grand-Ducal Saxon Academy of Art with the Grand-Ducal Saxon School of Arts and Crafts with a new architecture department, resulting in a pedagogical approach that spanned from traditional to new materials and techniques to form a notion of building as a craft embedded in the traditional workshop, making possible the dissemination of a fecund architectural modernism (Gropius [1919]). The list of recent technological developments precipitating method experiments will always be incomplete due to the intensity of methodological experimentation in the early decades of the twentieth century. The avant-garde experiments mentioned here are not unusual; every time a new method emerges it is preceded by experimental testing and development, leading to idiosyncrasies in trajectories of progress that are the evidence of partial methodological failures that are not recognized as such.
In the seventeenth century, the theologian Richard Burthogge wrote, “Ratiocination Speculative, is either Euretick or Hermeneutick, Inventive or Interpretive” (Burthogge [1678], 48, quoted in Ulmer 2004, 33). Here we can begin to see that the fits and starts of method speculation, rather than being merely a symptom of the human condition, are intertwined with the changes in rhetoric and logic effected by pedagogical pamphlets of Medieval universities. It is only since the mid-sixteenth century that invention and method began to be excised from rhetoric. The method of invention was, in classical rhetoric, seen analogically as a visit to the places (topoi) of the topics to look for a statement (Ong 2004, 289). The sixteenth century scholastic reforms linked method with doctrina/teaching and theory within a structure of logic that was formal and spatial. The space of this logic was highly abstract: it was conceived as being analogous to the space of geometry, creating the possibility of topics that can become arguments transformed into scientific instruments.

This discursive space is the abstract space of the diagram. It is visual and comfortably quantifiable (ibid, 290). Invention and dispositio/arrangement, displaced from rhetoric to a logic that is profoundly visual, become conceived by analogy with visually perceived spatial patterns and diagrammatic spatial arrangements (ibid, 289). The neat placement of discursive content in a geometrically stable space, a diagramable space, makes discursive movement a matter of hermeneutics, the logic of interpretation. Consistent with the removal of invention from the systems of logical discourse, the study of discourse interpretation (especially that of written discourse) has gathered a great deal of research under the heading hermeneutics, with sources and examples spanning from antiquity to the present, while its contrapuntal neologism,
euretics (the logic of invention) has been forgotten and has yet to generate a field of its own to guide speculation.

“Euretics” takes its name from the Greek word “eureka”, meaning “I’ve found it!” This exclamation was made famous through being shouted by Archimedes during his naked run through the streets of Syracuse after having discovered the means to calculate density using volume while sitting in his bath. Today, euretics is being explored by Greg Ulmer to develop a rhetoric for digital media. The film camera incited a wave of method invention in the early 20th century, and today digital media that includes the capability for working with text, image, sound, and movement simultaneously and rapidly through a common base of binary code, makes for a fecund invention apparatus. Just as the technology of writing enhanced humanity’s memory, granting freedom to develop increasingly abstract systems of reason, and the film camera enhanced our access to third meanings, digital media is a powerful prosthesis of human intellection. But unlike the written word, little has yet been done to establish a system of rules tuned to the rigors necessitated by new media. Ulmer’s heuretics is meant to be the speculative production of such rules: a digital rhetoric.

Barthes’ Seven Days of Rhetoric

Heuretics, the logic of invention, is intended to work as a supplement to hermeneutics, the logic of interpretation. Invention is one of the five traditional components of rhetoric (the others being arrangement, style, delivery, and memory). The role granted to invention has continuously shifted in relation to the other components of rhetoric, so to understand the importance of rhetorical invention, its decay, and how our current project should seek to rejuvenate it, we should track the
interplay of these five components by following the complexities of their historical development, a journey that Roland Barthes structured as a sequence of seven days (Barthes 1988, 16). Barthes’ seven day journey of rhetoric is particularly relevant here because his attempt to narrate this history was motivated by his desire to better understand the contemporary task of developing a new semiotics of writing starting from a thorough understanding of the classical practice of literary language (ibid, 11).

According to Barthes’ narrative, rhetoric was born in 485 BCE, when the aristocracy of Syracuse was forced out of the city by a popular insurrection and went to Gelo, the ruler of neighboring Gela, for help. Gelo reinstated the local aristocrats and maintained control of Syracuse by effecting large population movements between cities under his reign to shift demographics. This led to disputes over property rights, and a new kind of litigation was created wherein a party to the dispute needed to convince a large peoples’ jury of their claim to property through eloquent oratory. Corax is credited with formatting this new litigious genre by proposing a proper order of the elements of the oratory, or dispositio (ibid, 16). Day two of the journey of rhetoric began with the Technai of Gorgias, an instruction manual in rhetoric recounting figures and style, or elocutio (ibid). Day three is Plato’s response to Gorgias with dialectic, identifying the logography of the sophists (a system of rules and techniques that could be applied to any discourse whether true or false) as bad discourse, distinct from psychagogy, the formation of souls by speech through attaining truth (ibid, 18-9).

Barthes’ fourth day of rhetoric is a long one. It begins with Aristotle’s separate articulation of rhetoric, a techne of discourse for ordering ideas in the realm of probability, and poetics as a techne for ordering discursive images (ibid, 19-22). Also in
day four are the Latin rhetoricians Cicero, whose *Rhetorica* featured digests of Aristotelian rhetoric and topics, and extensive treatment of oratory, and Quintilian, whose *De institutione oratoria* treats the pedagogy of the rhetor (ibid, 22-5). Day four closes with the decay of Aristotle’s distinction of rhetoric and poetics with rhetoric placed in a transcendent position as both a theory of writing and a thesaurus of literary forms (ibid, 27). Barthes uses five points of transition to close day four: first, Ovid and Horace (*Ars Poetica*) postulated a close relation between poetry and oratory; Dionysius of Halicarnassus (*De compositione verborum*) abandoned the enthymeme for the movement of sentences, a notion of style based on word order and rhythm rather than logic; Plutarch (*Moralia*), who conflated aesthetics and morals in the teaching of poetry; Peri Hypsous’ *On the Sublime*, which presented a transcendental rhetoric as style itself; and Tacitus (*The Dialogue of the Orators*), who politicized eloquence after Domitian silenced the Forum, and eloquence was seen as decadent and came to signify literature (ibid).

Day Five encompasses the neo-rhetoric that prevailed in the Greco-Roman world in the second to fourth centuries. This period witnessed the rise of the *declamatio* in pedagogy, a regulated form of improvisation on a theme that saw reduced focus on *dispositio* and a decorative notion of language (ibid, 28-9). Without *dispositio*, language became fragmented, the most important element being *descriptio*, the description of places/persons (ibid, 29). The sixth day features the ascendance of agonistic instruction with a focus on disputation firmly in place by the eighth century (ibid, 30). Ironically, in this era where schools depended on success through rivalries, and successfully defeating his master in debate could grant a student the opportunity to form a new
school, individual agency in written discourse was curtailed. To produce new text, ancient texts were used or managed: a scriptor copied them, the compilator added material from other extant sources, the commentator augments the text to make it intelligible, and the auctor presented ideas from other authorities. In this system, the writer is only a transmitter or combiner of ancient texts (ibid, 30-1). Day six also features Cassiodorus and his development of the Septennium, separating the Trivium of the secrets of speech: grammatica, dialectica, rhetorica, from the Quadrivium of the secrets of nature: musica, arithmetica, geometria, astronomia (ibid, 32). At various times, different parts of the Trivium were allowed to dominate the others: from the fifth to seventh centuries it was rhetoric, from the eighth to tenth centuries it was grammar, and from the eleventh to fifteenth centuries logic was dominant. In the universities of Paris of the twelfth century, disputatio reigned supreme, and logica absorbed grammatica, a move supported by Cicero’s Topics and the struggles to simplify Aristotle’s New Logic and make it adjacent to existing intellectual traditions (ibid, 38-9).

Barthes journey ends with a dramatic flourish when, on the seventh day, rhetoric dies (ibid, 42). Like the history of a complex and heterogeneous modernism wrought in the 1970s and ‘80s by architects attempting to establish a firm ground for new directions in practice, Barthes’ history of rhetoric, with its variegated content gathered into deceptively simple day-figures, ends with a figure of the death of the object as a motivation for subsequent experiments. Rhetoric’s death knell was sounded in 1550 by the translation and commentary of Aristotle’s Poetics into Latin, and in the 1630s when the Poetics was used to support the French Classicist notion of verisimilitude as the proper code of literary creation and a high value placed on evidence (facts, ideas,
sentiments), seen as self-sufficient and using language as a mediating instrument (ibid, 42-3). The coup-de-grace was provided by the Ratio Studiorum, a study plan written in 1586 that established the model of Jesuit education; by 1739, there were 669 Jesuit schools using this model (ibid, 44; Dietz Moss & Wallace 2003, 118). In an ironic historical twist, rhetoric lost its links with substance precisely through Renaissance reforms that placed rhetoric in a dominant position, eliminating logic from the curriculum and distancing students from disputation (ibid, 25-6). However, Barthes seems to lose the trail sometime after sundown on the seventh day, and the death of rhetoric remains obscure. He finds evidence of rhetorical treatises as late as that of M. J. Vuillaume in 1938, and observes that classes on rhetoric had only recently disappeared at the time of his writing its journey in 1970 (Barthes 1988, 46). Our interest in following rhetoric on its journey also wanes at nightfall, and instead of trying to shore-up Barthes’ figural death, we can fight the ambiguities of this figure with an actual death—that of Peter Ramus during the St. Barthalomew’s Day Massacre in 1572, when he was dismembered and his work to respond to critics of his version of dialectic would cease, leaving the continued spread and influence not of his logic, but of his method.

Ramus and the Conflation of Dialectic, Method, and Reason

Is the death of rhetoric linked to an absence in the realm of method? Put another way, is Barthes’ search for a new rhetoric tied up with the need for a reexamination of the relationship between rhetoric and method? It is here that Ramus becomes our guide. In 1543 Peter Ramus wrote Aristotelicae animadversiones (Remarks on Aristotle), wherein he criticized Aristotle’s Organon and called those who follow it “bad” philosophers or dialecticians, and contrasted them with “good” dialecticians who follow
nature (Ong 2004, 173). Ramus made the case that Aristotle’s logic should be scrapped in favor of one clear dialectic to rule all of discourse, an idea first put forth in his *Dialecticae partitiones* (*The Structure of Dialectic*) (ibid, 175). His art of dialectic had two parts: invention and judgment (ibid, 182). Invention, for Ramus, was finding middle terms to link the subject and predicate of a question, and all speech was considered to be made up of questions or their resolution, and these middle terms were stored in topics or places (ibid). This very simple explanation of invention does not explain how the answers it provides become discourse rather than a series of disconnected statements (ibid, 183). The classical way to bridge the gap between discrete statements and composed discourse was provided by the division of discourse into invention and judgment (ibid). Invention involved a visual notion of knowledge, wherein one uncovers material by finding and looking at arguments (ibid). Judgment traditionally implied an aural metaphor in the voice of the judge pronouncing the sentence, and would later be replaced by the more visual act of disposition or arrangement (ibid, 184). In fact, Ramus treats the syllogism as an arrangement of terms, wherein “‘one argument is attached firmly and fixedly to a question so that the question itself is thereby recognized as true or false” (Ramus *Dialecticae institutiones* [1543], fol. 20; quoted in Ong 2004, 185), a visual system that will eventually allow him to fit syllogisms to his preferred dichotomized brackets (ibid, 185).

Ramus rendered discourse as finding and arranging relevant material from topics stored in the mind or in texts, downplaying the production of new material. This finding and arranging was performed to answer questions put forth in either explicit or implicit debate, beginning from a problem or point of aporia, analyzing the viewpoints of the
opponent and working toward their refutation. This process of debate was considered a “real” dialectic, the method encountered in medieval universities, with which students would interact in daily exercise (ibid, 61-2). This dialectical debate involved a certain degree of bad faith in the assumption that the argument involved two relatively balanced probabilities, either of which equally probable, rendering the dialectical method used in the debate as a honed system of reason capable of elucidating truths that might otherwise remain hidden. In practice however, one side of this dialectical debate was usually greatly favored and the other discredited from the outset; the process of debate therefore revealed little new truth. How is one to proceed, and by what method, if the aporia remains after repeated debate? What if the problem or aporia continues to exist, despite several sustained attempts to construct a solution through making a better argument or a more efficient explanation, or attempts to construction a better, more encompassing theory? One would need recourse to another method to resolve the problem.

While the issue of continued aporia and the need for a method beyond dialectical debate might seem easily resolved by merely trying something slightly different with discourse, it is complicated by the totalizing trajectory created by Peter of Spain and Peter Ramus’ logical dialectic. When Peter of Spain’s *Summulae logicales* was put into use as the principal pamphlet on dialectic in European schools, its opening definition tangled the threads of possible inquiry for centuries. To repeat, the famous definition of dialectic reads: “Dialectic is the art of arts and the science of sciences, possessing the way to the principles of all curriculum subjects”. Peter’s definition of dialectic was the final stitch binding discourse to interpretation and invention to arrangement, yielding an
inadequate account of creative processes at work in the production of discourse. However much Peter’s totalizing definition of dialectic obscured the practical processes of invention, the enigma of creative intellection had been longstanding. Aristotle’s treatise on discourse, the *Topics*, features seven books to treat the *loci* or places where discursive materials are stored, and only part of the eighth book to deal with *taxis* or *dispositio*, what is done with the contents of the *loci* to produce discourse (ibid, 114). Later, in the first century BCE, Cicero failed to write on *dispositio* after he too distinguished it from the topics. Rudolph Agricola writing on dialectical invention in the fifteenth century further simplified the process of invention by reducing the myriad categories to simple *loci* or places understood as orderly diagrammatic receptacles, and also failed to write about *dispositio* (ibid, 114, 119-21). This simplified *inventio* in Agricola’s *De inventione dialectica* would inspire nearly every subsequent attempt to deviate from Aristotle’s *Organon* in the early sixteenth century (ibid, 124). The tradition of discourse as the proper use of categories was related to a three part dialectic built around simple terms, propositions, and argumentation (ibid, 115). By Ramus’ day, dialectic had been pared down to two nebulous parts, *inventio* and *dispositio*, one of which had always been neglected. He saw amongst his primary goals the need provide this missing second part, a way of arranging the products of invention, the things found through *in-venio*/εύρίσκω: visually coming-upon something (ibid, 114-16). In this long series of maneuvers, logic was made practical, and had itself become a kind of rhetoric, an observation supported by the fact that formal logic had practically ceased to exist as an autonomous field of study in the sixteenth century.
Slowly, all of discourse was being amalgamated into a unified dialectic that was simple and easy to teach. Method would not escape this expansion of logical dialectic once Melanchthon introduced method into one of his popular dialectical manuals with a definition that is dangerously close to that of dialectic: ““Method is an acquired habit establishing a way by means of reason”” (ibid, 158-9). More importantly, Melanchthon also equates dialectic with teaching when in his Erotemata dialectices he wrote: “‘Dialectic,’ we are told, ‘is the art or way of teaching correctly, in order, and lucidly’” (ibid, 159). Ramus would later take this equation further in writing that dialectic “is teaching (doctrina) by the very fact that it is an art (ars), but it is further the art or teaching of teaching. In this view, all wisdom itself (sapientia) is nothing if it is not dialectic, which teaches (docet) the various causes” (ibid, 161). Thus, the dialectic outlined for the classroom by Ramus is understood to be knowledge itself, encompassing all rigorous and/or logical reason and expression. Dialectic propagated in this way leaves little room for alternatives or for the opportunity of another discourse to re-examine continued aporiae.

Towards a Rhetoric of Invention: The CATTt Generator

Ramus’ dialectic is strictly hermeneutic: it treats the interpretation of, or the finding of meaning in, extant materials through selective rearrangement of their parts to construct a new discursive document. This method uses extant works to produce new theories, concepts, and arguments closely aligned to and achieving value from their precedents. If there is a new problem that will require a new way of working to find an adequate solution, we need to invent this new way; we need to invent a new method. Heuretics, the logic of invention, will need to provide us with a way to invent new
methods to supplement the tools of hermeneutics. The relevant question that guides heuretics is not the same as that which guides hermeneutics and criticism: “What might be the meaning of an existing work?”; the question guiding heuretics is: “Based on a given theory, how might another text be composed?” (Ulmer 1994, 4-5)

Hermeneutic logic must come after the heuretic moment of invention, for its goal is to see what has been made, and it treats the making process itself as something other, as coming from some other logic or discourse (Ulmer 2004, 33). To better understand the process of method invention upon which his heuretics is based, Gregory Ulmer examined the Western tradition of the treatise on method, from Plato’s *Phaedrus*, through Descartes and up to Breton and the avant-gardes, to find common operations or elements; this collection forms what Ulmer calls the CATTt Generator (Ulmer 2004, 292). The components of the CATTt Generator are:

- **Contrast** - a discourse, field or method known and a desired divergence from it. The inventor must begin by moving away from an undesirable example whose features provide an inventory of components made valuable through determining their exterior. (Ulmer 1994, 8)

- **Analogy** - a discourse or method from some other field that offers a model for a successful way of working. (ibid)

- **Theory** - a rigorously developed methodology from the creator’s working discipline used primarily to offer weight and substance to the new creation. “[T]he theorist generates a new theory based on the authority of another theory whose argument is accepted as a literal rather than a figurative analogy. The new theory will include in one register a literal repetition of a prior theory” (ibid, 9).

- **Target** - the intended audience. The inventor must have an intended area of application that the new method will address, frequently identifiable in terms of the needs of an institution that desired the new method. (ibid)

- **tale/tail** - a final presentation format. The tale/tail is there to remind the inventor “that the invention, the new method, must itself be represented in some form or genre.” (ibid)
André Breton’s 1924 *Surrealist Manifesto* serves Ulmer as a relay: an example of how to appropriate a theory for the design of a method. The manifesto format—understood as a combination of narrative and argumentative essay formats—is taken as belonging to the tradition of the discourse on method (ibid, 4-8). Ulmer’s proposal is to invent an electronic writing in the same way that Breton invented surrealism or Plato invented dialectics. To quickly illustrate how to identify the CATTt components in a treatise on method, Ulmer identifies Breton’s components as: contrast—realist/naturalist literature; analogy—dreaming, scientific experimentation; theory—Freud; target—family and entertainment institutions contacted via changes in artistic practice; tale/tail—manifesto (ibid, 10-15).

Using the CATTt Generator for analysis in this way underscores the fact that it is a simulation of the conditions of invention and not the conditions themselves (ibid, 5-7). The conditions of invention, or what actually happens in the human brain to produce some new socio-cultural material, are as yet unknown. The five CATTt components act as a simulator of the inventive act, mapping invention onto an experimental structure. The CATTt Generator allows an invention rooted in a particular historical and cultural moment, such as surrealism or modernism, to be simulated in a new method experiment (ibid, 5-6).

**The Wide Image and the Popcycle**

While the CATTt Generator can be used to simulate the conditions of invention for a particular method, heuretics as the logic of invention can also push beyond the limits of the specific milieu at the site of invention to focus on the inventor as a key agent in the inventive process. Simulating the inventor’s agency provides the specific
premises for the invention, “the setting that has gone without saying but that has provided the logic of all [the] work,” or the grounding presuppositions that gauge the value of the method experiment (ibid, 49). These premises can be understood as the inventor’s predilections, made apparent through identifiable repetition of elements.

In his article, “Darwin’s ‘Tree of Nature’ and Other Images of Wide Scope,” Howard Gruber presents a detailed examination of Darwin’s use of repeating images in *On the Origin of Species* using the notebooks from the preceding journey aboard the *H. M. S. Beagle* and subsequent drafts, articles and essays (Gruber 1978). An “Image of Wide Scope” is, according to Gruber, “[a]n image . . . [that] functions as a schema capable of assimilating to itself a wide range of perceptions, actions, ideas. This width depends in part on the metaphoric structure peculiar to the given image, in part on the intensity of the emotion which has been invested in it, that is, its value to the person” (ibid, 135). Five such images appear in Darwin’s notes used in the development of the theory of the evolution of species via natural selection: an irregularly branching tree; the tangled bank; wedging to interrupt a receiving surface; human warfare; and artificial selection” (ibid, 132). Gruber goes on to hypothesize that a scientist may have a set of several operative “Wide Images” utilized to guide research imperatives and problem-solving endeavors throughout the course of their career, although the number is somewhat limited because the ordering capabilities of such images would be contingent upon easy recall, enumeration, and emotional investment on the part of the individual scientist/problem-solver (ibid, 138).

Gruber believes that there is nothing unusual about the appearance of these Images of Wide Scope in Darwin’s scientific notes. To supplement this specific case
study of a single scientist’s workings with Wide Images, we can find even more potent examples in the work of another famous revolutionary theorizer in science: Albert Einstein. Science historian Gerald Holton searched through notes and biographical material on Einstein and other contemporary scientists working in the fields of study involved in the minting of Relativity Theory (Holton 1973). Holton asks what it was that made it possible for a young Einstein, as opposed to others far more immersed and versed in their fields of inquiry, to put mathematical, electrical and physical problems, theories, and experimental evidence together in such a way to successfully solve extremely difficult problems afflicting many areas of advanced research. In Holton’s findings, the “Images of Wide Scope” later identified by Gruber appear as “themata” playing a dominant role in the initiation and acceptance of certain individual scientific insights (ibid, 11). Einstein’s operative themata running up to the publication of his first article on the Special Theory of Relativity in 1905 (ibid, 362) included a paradoxical image emerging as the outcome of a thought experiment that first appeared in a flash of epiphany during his studies at the Kanton Schule of Aarau in 1895-6. This famous thought experiment consists of the “image” of riding on a beam of light, and the implications that the hypothesized sensory data encountered would mean against different theories of electromagnetism. Einstein postulated that the beam of light would appear as a spatially oscillating electromagnetic field at rest if the viewer were traveling at the same velocity as the beam (ibid, 358). For Holton, this thought experiment is only one instance of Einstein’s commitment of the concept of the field, or “thema of the continuum” (ibid, 275). The presence of a sensitivity to the thema of the continuum/field proves to be part of a larger meta-thema in Einstein’s work and life, a paradoxical
pairing of conceptual polarities, but more on this later. This recognition of the *thema* of
the continuum/field in science is not dissimilar to Darwin’s Wide Image of the “tree of
nature”: an image that guides a thinker’s understanding of discrete, multiple, and
frequently contrary data points and observations. Neither nature’s “tree” nor the
“continuum” actually exists in the exterior world, and they can never be directly viewable
in the data studied. They both stand in metaphorical relationship to investigative
processes and findings.

The case of Einstein’s thought-experiment image of riding a beam of light can
offer us even more in the elucidation of Wide Images than Gruber’s investigation of
Darwin’s development of the theory of evolution precisely because there is biographical
evidence that this beam ride was induced by an even earlier image from Einstein’s
childhood: a memory of such wide scope that it could be considered the paragon
example of a Wide Image. When Albert was four or five years old, he received the gift of
a magnetic pocket compass. At the time, he was fascinated by the observation that no
matter which way he turned, the little needle in the compass always pointed in the same
direction. There was then no scientific explanation for why the needle in a magnetic
compass always pointed north. Einstein never forgot that compass or the fascination it
induced, and later in his life he tackled the multi-disciplinary task of explaining it. In his
own autobiography written when he was 67, he recounts the story and its image again,
after propagating it anecdotally to friends and biographers several times throughout his
life. He wrote: “I can still remember—or at least I believe I can remember—that this
experience made a deep and lasting impression on me. Something deeply hidden had
to be behind things” (ibid, 359). This monstrous pearl of a Wide Image gripped Einstein
from such a young age that it predates his entrance into most any manner of formal instruction in matters of the world. One can easily interpret Einstein’s illustrious and influential career as a search for the key to this one little lock.

**From the Image of Wide Scope to the composition of a mystery**

Einstein’s compass became a guiding, recurrent image that influenced him in pursuing the fore-front of contemporary physics and mathematics. That light might be related to electromagnetism, and electromagnetism was related to the hidden force guiding the compass’s needle-point toward north was enough to feed Einstein’s curiosity, for the seed of fascination had been sewn in his childhood, in his attraction to a phenomenon that at the time of his entering the *Polytechnicum* in Zurich had not been completely worked out. It is apparent from the early age that Albert’s fascination with the compass began that Images of Wide Scope are not confined to discipline or profession-oriented problem solving and inventive reasoning.

The recognition of systemic image content in the work of Darwin and Einstein uncovers an opportunity to explore a conceptual structure that links and explains the workings of Wide Images at the scale of an individual’s entire life: from early childhood, through grammar school, secondary education and throughout a chosen career discipline. While hermeneutics works remarkably well in describing or prescribing how to construct new theories out of existing data using a logical/dialectical method, heuretics is a logic that described how one might construct new methods out of existing theories. Gregory Ulmer has developed heuretics as a supplement for hermeneutics to provide a rigorous framework with which to utilize digital media for practical applications, specifically in dealing with existing aporiae. Just as the classical essay was a genre only
possible in written media, digital media indicates opportunities for new genres, waiting for a Montaigne or Descartes to experiment and set its precedents. Ulmer has been developing such a genre, called “mystery,” as part of heuretics applied to new media pedagogy.

Wide Images, the repeating images found in the memories of a mystery creator, can be used to construct communicative forms when given a proper structure that conveys their meaning. The production of a mystery using Images of Wide Scope would yield an answer to the wonderfully poetic question that Gruber uses to close his examination of Darwin’s “tree of nature”:

But perhaps we have merely not yet lived in a world where thinking men and women really stop to listen to each other or to take long and loving looks at each others’ images. Is this impossible? (Gruber 1978)

Using heuretics, such communication is possible. Exploring the logic of invention means taking consideration of, or long and loving looks at, the contents of one’s affective images to determine their use in the production of value and direction for an individual’s inquiries.

**Constructing a mystery using the popcycle**

A mystery is a collection of elements gathered to represent the creator’s comprehension of a discourse (Ulmer 2004, 106). Mystery is constructed through systemic examination of memories, searching for elements that repeat at moments of change or uncertainty, and during breakthroughs. In his research on Einstein’s life, Holton found that the compass repeatedly appeared in the scientist’s explanations of his motivation for certain lines of inquiry (Holton 1973), and this repetition is the evidence of the width of this image across the inventor’s discourses. Here discourses are defined as
all language or meaning-producing activities, monitored by administrative entities (Ulmer 2003, 24-25).

The elements of the mystery are images that attain “width” through their recurrence across different dominant discourses of life such as family, community, literacy, entertainment, church, street, and career. These discourses are an interrelated set of institutions which together define our identity, a set known as the “popcycle” (ibid). The repetition of Wide Images—highly affective, striking images or memories from one’s life—indicates the repetition of learning in the multiple discourses of the popcycle at different times in an individual’s life: the family discourse begins at home as an infant; community (history) begins at the age of four or five in elementary education, which is simultaneous with the formal entrance into literacy; street discourse begins sometime in adolescence, when an individual develops a social circle of friends and activities separate from their family or household practices; and career or professional discourse begins with secondary education at early adulthood (ibid). When an individual engages the task of learning the idiosyncrasies of a new discourse they will take pertinent information from the previous iterations of successful learning they have already completed. Einstein’s compass continued to re-emerge as he entered his career discourse in beginning his formal studies of physics because it had a profound affect on him as a child, motivating his fascination with the natural world as he was learning his family discourse (ibid, 27).

Identifying Wide Images in someone’s work and biographical material yields clues about how that individual learns new material and solves the problems related to working with the unknown toward a future goal. (It is important to realize that the
individual studied could very easily be oneself, and Ulmer’s pedagogical development of the mystery genre focuses the effort of image identification on the composer.) The general project of searching for Images of Wide Scope to produce a mystery begins with the composition of a set of Wide Images that are particularly operative in the studied individual’s cognitive processes: Wide Images found to repeat in investigations of how the individual enters into relation with each discourse of the popcycle. This Wide Image set is known as the “widesite” (ibid, 19). This set or site is itself the playground of the imagination, full of favorite props for inventive activities.

The widesite of images that repeat across discourses forms a field condition, a space or premises (Ulmer 1994, 48). The construction of a widesite, or the mapping of premises, simulates the subject’s predilections. Usually the premises are the widesite of the prospective inventor, simulated as an aid in creating methods to solve problems by helping to identify areas of interest and the adoption of previous successful practices: your widesite will help you to identify problems and practices to which you should apply your efforts. But, the same tools used to map one’s own widesite can also be used analytically to simulate someone else’s widesite; biographical information here becomes creative/inventive material explaining how someone worked to create something. Through this symmetry of conceptual tools across problem-solving and historical analysis, Ulmer’s heuretics serves as a suitable foundation for cyber-history.
CHAPTER 4
LE CORBUSIER’S WALK: THE DYNAMIC FRAME AS A TALE OF SPACE AND MOVEMENT

Movement as an Experimental Format

We will apply the research framework sketched in chapters one and two by using the CATTt Generator as a tool for historical analysis. This project will produce a historical narrative that will be an example of the genre we have named cyber-history. Cyber-history articulates aspects of historical research that are intended to be applied to solving a contemporary problem. Figural History was proposed as a scaffold to initiate research and to identify a problem and relevant fields of inquiry, indicated by repeated appearance of the death of Modernism as an allegory for the condition of urbanism in the later decades of the 20th century. Pruitt-Igoe’s demolition became an emblem of the ritual killing of Modernism in theoretical discourse, and was used as an example of a contemporary figure placed at the end of a series of historical figures proposed by Sigfried Giedion. At the point of initial inquiry, Giedion and the demolition of Pruitt-Igoe bookend the modern movement, one attempting to understand an international and expanding initiative to adapt design values to a world changed by mechanized industry, and the other seeking to establish new directives for design after modernism’s failures to solve the problems of society. At the level of analysis, Giedion’s figures and the rhetorically declared “death of Modernism” are experiments that produce or refine methodologies for producing urban conditions.

Figural historical analysis served to reveal a problem: the lack of correspondence between architectural discourse and practice, stemming from underdeveloped and neglected conceptual structures to model method production and application. The
present cyber-history project will analyze historical material to produce a new narrative that addresses this problem. Thus, our analysis needs material, which will serve as an object, relevant to both the illustration of underdeveloped method discourse and its alleviation through narration of architectural application. modernism is the relevant example of a method-object; its development and application have been obscured by ill-equipped discourse. Le Corbusier’s works will serve as a more specific object: a vehicle for recreating modernism as a method for producing urbanism, precisely because of the architect’s fervent insistence that his principles of modern design were intended to alleviate the ills of society in the machine age.

Because we are using the CATTt Generator analytically to simulate how an existing method was created and better understand its possible operative components, the tale/tail component, usually a finishing touch in method production, is well-suited as a beginning point, since the final format of a work should be discernible to an interested audience. If we want to analyze something, we have some idea of what it is.

Giedion found that the scale of industrial infrastructure was so large that it undermined a traditional static frame of space-time perception, which had typified the individual’s interaction with the urban environment. Le Corbusier’s design for the Pavillon de l’Esprit Nouveau shared its format with Giedion’s examples that necessitated the viewer/occupant to have dynamic perceptual frames to perceive spatial order. The dynamic frame requires the individual subject’s agency of movement and memory to provide a sense of regulated structure that is subverted at the smaller scale of a unique ocular point of view. As an early experiment in dynamic framing, the Pavillon de l’Esprit Nouveau shows an attempt to integrate space and movement into the
dissemination of meaning. Indicated in Giedion’s dynamic frame and the figural analysis used to produce it is the importance of movement in modernism’s production of meaning. Movement is part of the format of modernism. As a method, modernism depends on a particular kind of movement and may need to induce this programmed manner of moving in order to be legible to its audience.

A survey of Le Corbusier’s publications evidences three works that are overtly structured by travel: *Journey to the East, Precisions*, and *When the Cathedrals were White*. It is a tracking of the author’s physical movement through space in these works that allows for the presence of other varieties of textual material. This process/movement found in Le Corbusier’s publications is profoundly physical. It is a manner of relating to geographical space and historical material tempered by travel through places, or *topoi*. This travel-structure utilized by Le Corbusier throughout his career is of interest because it offers insight into experiments employed by the artist-author-architect in the invention of his particular version of modernism. This is its tale/tail.

Any “ism” is a method. The suffix “–ism” forms an action noun from a verb. The resulting noun describes the state of doing or performing the verb. What is fundamental to modernism, or a way of practicing the modern, is a method; a method is the way a theory moves. Modernism implies a method; and if Le Corbusier’s manner of interacting with space and place was operative in the construction of his version of modernism, then it would benefit us to examine Le Corbusier’s movements with a rhetoric of method. By the time Le Corbusier visited the Americas, he had begun to develop such a rhetoric, a way of discussing and presenting his modernism with techniques that
maintain the inventive capacity necessary to gain access to the Second Machine Age. His rhetoric and his inventive practices were indelibly linked to physical movement through space, and a witnessing made possible by “eyes that see”. This project will attempt to document these inventive techniques by visiting sites that proved important in their conception and development within Corbu’s career and completed the catalogue of inventive movements performed by the architect himself.

**Manners of Movement: Ecstasis and the Radiant Moments**

The hypothesis of this investigation is that Le Corbusier’s idiosyncratic manner of interacting with his environment:

- was inspired by his early interactions with the environment of the Swiss Jura;
- was concretized/identified in the Charterhouse at the *Val d’Ema*;
- was given its dry-run in Mount Athos during the *Voyage d’Orient*;
- was later developed into a heuretic strategy for inventing methods out of theoretical material.

Hypothetically, Corbu’s particular way of moving is the format, or the input, for the tail/tale component of the CATTt Generator used in the methodological experiments we will examine. Our initial investigation of Corbu’s use of movement to format information in the *Pavillon de l’Esprit Nouveau* identified a series of works in which movement was an operative formatting component. As a set spanning the architect’s career, Le Corbusier’s travel works indicate persistent re-application of movement as a tale/tail input, or systematic method generation. Put in terms of heuretic analysis, Le Corbusier’s publications show evidence of prolonged method experimentation, replacing CATTt components that did not offer the desired output and repeating or tweaking inputs that were successful. This CATTt input experimentation helps to explain the increasingly
unusual character of each of these works and their contrast with less experimental publications like the Œuvre Complète, Urbanisme, Ville Radieuse, and Vers une architecture. In fact, CATTt analysis of Corbu’s travel works will also undermine the familiarity of his more well-known publications that are important constituents in the canon of the modern movement. Books like Vers une architecture and Ville Radieuse will become clearer to interpretation as they become strange, or rendered in a new and startling manner, through the application of new analytical tools of cyber-history.

The techniques of seeing/moving utilized by Le Corbusier have been named in this project following Corbu himself, and there are two that will be the focus of this investigation. Ecstasis is a movement in place characterized by an intense feeling of “ecstasy,” or movement outside of oneself. The term “ecstasy” comes to us from the ancient Greek term ekstasis, and this original form of the word is chosen for use in describing Le Corbusier’s technique of sight-seeing and movement because of the presence of the root “stasis”: ecstasis as ecstatic movement implies the paradoxical nature of moving while remaining in place.

The technique of ecstasis was first utilized systematically by Jeanneret during the Voyage d’Orient. Writing in his later years, Le Corbusier attested to having moments of epiphany in his early years that remained palpable in his memory throughout his life. In these moments, the architect’s surrounding environment would become part of an intellectual maneuver that turned the existing world of one’s surroundings into an index of something that is not manifest in that particular time and place. This epiphany involves the construction of a virtual frame in the subject’s mind, enrolling sensory information, memory, and ideology. Present experience creates epiphany by providing
the missing piece that creates resonance within the subject. In heuretic terms, epiphany is the present addition of information that creates a cascade of adjacencies across the different discourses of an individual's popcycle. Thus, epiphany indicates close proximity to a wide image, which is an element that repeats across an individual's discourses to create an opportunity for linking the discourses at a common point. If this linking of discourses in the assemblage of a Wide Image occurs rapidly, it is experienced as a catastrophic epiphany. The Voyage d'Orient, as a journal, focuses on recording events that stand out as having significance above the background course of days; any epiphanic events will have particular significance and will be recorded so as to be referenced later with a high degree of detail and a surer definition than memory alone might afford. In Charles-Édouard Jeanneret's hands, the sketchbook became a tool for calibrating an intellectual guide, a catalogue of affective material that may be useful in identifying Wide Images and mapping his popcycle. For Le Corbusier, the sketchbook/journal was a guide for invention, a prosthetic used to guide method experiments. For the young Jeanneret of the Voyage d'Orient, the travel sketchbook/journal was a guide to develop ecstasis, a way of interacting with one's environment to deliberately produce epiphany from the course of daily life.

Le Corbusier would eventually develop the technique of ecstasis utilized during the Voyage d'Orient further, calibrating its particular manner of “seeing” to yield epiphanies that were relevant to specific method research. The “Second Machine Age”, which Corbu had conceived as a full contemporary expression of industrialization, was used as a goal common to a set of method experiments. The desired output from the CATTt Generator experiments in this set would be a method to produce the Second
Machine Age out of the materials available from history and existing in the first, current machine age. The *Voyage d’Orient* marks the beginning of this set of experiments that use programmed ecstasis as a format to produce ways of interacting with one’s surroundings. Put another way, Le Corbusier’s travel works document the production of a manner of moving. For the *Voyage*, Jeanneret’s manner of moving was programmed to produce personal knowledge in the tradition of the *Grand Tour*; he was seeking education through travel as a rite of passage. Thus, ecstasis was initially used to produce a method of self-pedagogy. The problem to which this method was applied was the aporia of style and technique in architecture and corresponding questions of the proper education of the architect. Charles-Édouard was forced into contact with these problems upon entering the professional discourse of his popcycle when he entered the “*Course Supérieur d’art et décoration*” on art and decoration for architects at *l’École d’Art* under Charles L’Eplattenier in 1905 (Weber 2008, 33-4; Jencks 2000, 28-9). At that time, L’Eplattenier and his students were trying to establish a regional style for architecture in Jura, Switzerland. After traveling to Berlin to work for Peter Behrens in 1910-11 (Gresleri 2002, 9-12; Weber 2008, 74-80), Jeanneret fled East seeking answers and guidance at the beginning of his professional life. Later, when Jeanneret moved away from his hometown of La Chaux-de-Fonds, turning his back on the Jura’s provincial concerns and tastes to practice amongst the avant-gardes in Paris, a new goal would provide a detailed program for the movement format of his method experiments.

With the tying of a goal (the Second Machine Age) to ecstasis, Le Corbusier’s second technique of moving/seeing emerges, characterized by catastrophic states.
induced by liminal phenomena that Le Corbusier calls “radiant moments”. The identification of these moments and their linkage to the goal of a newly invented Second Machine Age will lead to the development of a new rhetoric later in Le Corbusier’s career. The presence of an experimental rhetoric is evident in its raw and nascent form, found in the travel publications *Precisions* and *When the Cathedrals were White*.

**Theoria: Travel as Paraphor**

Using movement for the tail/tale component of a CATT't Generator experiment to re-imagine some of Le Corbusier’s publications leads this discussion of movement and intellection to tread on the territory of the obvious. As put by Georges Van Den Abbee in the introduction to his book on the subject, *Travel as Metaphor*, the relationship between thinking, writing, and travel is a well-worn topic:

> Despite its association with the interesting or the innovative, the motif of the voyage counts among the most manifestly banal in Western letters. From Homer and Virgil, through Dante and Cervantes, Defoe and Goethe, Melville and Conrad, Proust and Céline, Nabokov and Butor, and on up through the most ‘postmodern’ writers, one can scarcely mention a piece of literature in which the theme of the voyage does not play some role. (Van Den Abbee 1992, xiii)

Humans move; they travel. Van Den Abbee’s observation reads like a warning against mounting inquiry into the commonplace, and this is his intention. He continues:

> the question that needs to be raised is whether the commonplace quality of the metaphor of travel does not at some point constitute a limit to the freedom of critical thought. . . .

What if the critique of a system were itself encoded as an institutionalized part of the system? . . . Should one conclude pessimistically, then, that critical thought can never escape its entrapment by that which it supposedly criticizes? The hypothesis this study . . . attempts to support is that the critical gesture is always entrapped in some ways and liberated or liberating in others. (ibid, xiv)
The cyber-history proposed here is not merely a deployment of new terms and conceptual structures to discuss history in a different way; it is a supplement to established methods of writing history. The commonplaces of history, its tropes, tacit values and traditions, should be carefully noted as we attempt to identify gaps between established practices. Travel and its formative effects on authors and their work is not one of these gaps. What is not so commonly discussed, however, is travel as a format for conveying information: travel appearing in discourse not as a metaphor but as both source and goal of discourse, or travel and discourse carried one alongside the other as a context for intellection. This is travel as *paraphor*. This neologism underscores the ambiguities in the relationship between travel and thought. The suffix *para-* attached to Greek verbs, meaning “alongside”, “beyond”, or “past” (*para-* (n.d.)); + *-phor* from Greek *phoros*, from *pherein*, “to bear” (*phore. (n.d.)). Travel as a paraphor for thought leaves the position of bearer uncertain while noting their mutual presence in a common context. In a paraphoric relationship, changes in the specifications of one party will induce changes in other related parties at a high enough level of abstraction to make causality and direction irrelevant. Thus recognizing a paraphoric relationship between members allows inquiry to continue despite uncertainties or circularities in causality, or the “entrapment” of discourse described by Van Den Abbeele above. Entrapment is replaced by the possibility for mutual development, a symmetrical relationship between travel and discourse that is present in the founding cultural practices of both terms by the Ancient Greeks.

There is an ancient connection between history, sightseeing and the guided tour dating to the 5th century BCE, when history and method emerge from a textual
adaptation of an older cultural tradition of travel programmed as sightseeing. *Theoria* originally implied a kind of active observation, combining perception with asking questions and listening to local stories and myths (Walter 1992, 18). Solon is credited as being the first theorist in western history for accounts of his travels outside of Athens; he is specifically mentioned by Plato in the *Timaeus* as being his source for the story of Atlantis, brought back from a visit to the priests of Egypt (Ulmer 1994, 120).

*Theoria*, with a root identified as “thea”, meaning “view”, shares its etymology with the English word “theater” and is included in a Greek family of words sharing this root: “*theamata*”, “things that are viewed”; “*theorein*”, “to contemplate/behold” (Walter 1992, 218 n. 19). *Theoria* as an active perception was taught within the Orphic cults, offering a highly affective mental state in which the spectator becomes more immediately linked to the Gods, and it is believed that Pythagoras initiated the movement of concepts of *theoria* away from emotion and toward passionless contemplation in a search for rational truth (Walter 1992). The earliest known complete work of prose in the western literary tradition is the *Inquiries* of Herodotus, dating from 430 BCE (“inquiries” here being a literal translation for the ancient Greek word that would normally be rendered today as “histories”) (Ibid). The places visited by the sightseeing theorist were *topoi*, and this act of visitation and witnessing is the analogical root of the modern notion of *topics* of thought and writing.

With invention (*inventio*: the arrangement of discourse), theory, and method all placed within an abstract visual space roughly analogous to the space of the page as typified by print technology, the connection of human thought and physical existence is severely mediated. Human movements must undergo a variety of contortions and
manipulations in order to register within the abstract space of discursive meaning.
Movement and experience thus cannot be inventive material until they are confined to
the diagram: a spatial arrangement held either within the mind or on the page. Invention
is subjected to the method described by this didactic diagramming and the fundamental
link between physical movement and representation of thought is obscured by
mediation.

Le Corbusier's Professional Discourse and the Approach to Val d'Ema

Le Corbusier’s movements were fundamentally didactic, and his early trips were
a part of the long tradition of the architectural student’s tour. His earliest sally-forth, a
two month trip through Italy that he began at the age of 19, is a typical example of this
tradition, except perhaps in its fervor and intensity, especially in regard to his affective
capacity for relation to the architecture and art he encountered. We know that an
immense event in Le Corbusier’s creative life awaited him early in this Italian tour: his
visit to the Carthusian Monastery Cartosa del Galluzzo in Val d'Ema, outside Florence.
References to this place and his experiences there would continue to populate his
publications and influence his work until his death.

Continuing our examination of travel as paraphor, travel as carrying-with,
Charles-Édouard Jeanneret carried the discourses of his popcycle with him as liminal
baggage that helped to program his movement and guide his relations with the places
he encountered. In turn, this programmed travel, as an instance of theoria, formatted
the information he gathered. In paraphoric movement, discourse is a hinge between the
traveling subject and travel as subject in a relation of symmetrical formation.
Charles-Édouard left La Chaux September 1, 1906, carrying in his baggage (both mentally and physically) John Ruskin’s *Mornings in Florence* and Hippolyte Taine’s *Voyage en Italie* with a plan to meet school friend Leon Perrin in that city (Weber 2008, 40; Petit 1970, 28; Baker 1996, 67). Ruskin’s travel guide to Florence was part of Édouard’s professional discourse, the book having been recommended to him by L’Eplattenier (Jencks 2000, 38), and Paul Turner’s research into Le Corbusier’s sources indicates that Taine’s *Voyage* influenced the architect in three ways: it provided a distinction between the beauty of synergy and sublime beauty; it proclaimed the emotional component of architecture, and it used vernacular architecture extensively in description of urban environments. Taine’s distinction between beauty resulting from synergy of different elements of context and environment (easily analyzed) and sublime beauty with the origins of its effects beyond analysis (Turner 1977, 40), is a distinction reflected in the differentiation between analytical, heavily annotated drawings and more general impressionistic drawings made by Jeanneret during this trip (Baker 1996, 67-8). Taine also stressed that architecture is an emotional art that should arouse strong feelings in the beholder, a point of view that was made immediate for Jeanneret because it was endorsed by his mentor L’Eplattenier (Turner 1977, 42). Taine’s writing style also presented Jeanneret with a key component of a research framework that would typify his own works throughout his life: Taine describes the urban environment in great detail, with special focus on local culture and vernacular architecture (Ibid). This technique was not utilized to any great extent during Jeanneret’s first trip, but was prevalent in his documentation of his second, larger and more ambitious *Voyage d’Orient* four years later.
Édouard boarded a train that took him to Milan, where the cathedral overwhelmed him, as did the liveliness of the commercial square in front of the building (Weber 2008, 40-1). He then passed through Genoa to Pisa, where again he was held rapt by the city’s cathedral. In Nicholas Fox Weber’s words: “[t]he heightened sensitivity with which the young traveler felt color and saw design details drove him to a frenzy of excitement. . . . Architecture induced unparalleled ecstasy” (ibid, 43). Jeanneret went on to Florence, where he met his friend Perrin and they pooled their meager resources to rent a room in a pensione to serve as a home-base for their forays around the city (ibid). He wrote copious notes to L’Eplattenier about his fondness of the Palazzo Vecchio, Santa Croce, and Orsanmichele (ibid, 44). In a letter to his teacher, we see an early emergence of Édouard’s search for a dynamic frame with which to analyze and understand architecture, indicated through frustration at his inability to study the Palazzo Vecchio adequately to understand the abstract power that it had over him, over and above the fine churches he had encountered. This lack of an adequate analytical framework nagged him to the point of asking his teacher if he should not rather be drawing the city’s palaces instead of its churches (ibid, 44-5).

During this trip, Jeanneret was testing and elaborating his professional discourse, which had initially been guided by L’Eplattenier and Ruskin, through critique and judgment based on the power and quality of his personal affect. The most momentous event by far came September 13, 1907, when Édouard followed the walking guide detailed by Ruskin to a Carthusian monastery on a hill outside the city, the Charterhouse of the Val d’Ema (ibid, 46-7; 775 n. 31). This building would induce resonance across the discourses of Jeanneret’s popcycle, having powerful concurrent
significance in his professional discourse as an architect, but also his family, entertainment, and community discourses. The particular blend of privacy and collectivity offered by the cloistered life of the charterhouse became a heuristic for the future of architecture in Le Corbusier’s inventive desire. The psychological efficiency of the cloister would become a model for modernity: “I have seen, in the musical landscape of Tuscany, a modern city crowning the hill. . . . This ‘modern city’ dates from the fifteenth century. The radiant vision of it is always with me” (ibid, 47-48; Le Corbusier 1930, 91-2). At this point, the young Jeanneret began to step out of his position as a regionalist architect searching for a new architecture for the Swiss Jura and began a movement toward what he would later call the “Second Machine Age”. It is at Ema in 1907 that Charles-Édouard Jeanneret first becomes definitively ecstatic.

Ecstasis and Discourse Concurrence: Le Corbusier at the Cartosa del Galluzzo in Val d’Ema

The Charterhouse at Val d’Ema was to Le Corbusier what the compass was to Einstein: a Wide Image that held highly charged and fully conscious significance as a guide for problem identification and decision-making. Late in his life, Le Corbusier said of his first encounter with the Val d’Ema monastery:

‘J’ai 19 ans. Je prends pour la première fois contact avec l’Italie. En pleine Toscane, la Chartreuse d’Ema couronnant une colline laisse voir les créneaux formés par chacune des cellules de moines à pic sur un immense mur de château-fort. Entre chaque créneau est un jardin profond, complètement dérobé à toute vue extérieure et privé également de toute vue au dehors. Le créneau ouvre sur les horizons toscans l’infini du paysage, le tête-à-tête avec soi-même. Derrière est la cellule elle-même, reliée par un cloître aux autres cellules, au réfectoire et à l’église plantée au centre. Une sensation extraordinaire m’envahit. Je mesure qu’une aspiration humaine authentique est comblée: le silence, la solitude; mais aussi, le commerce (le contact quotidien) avec les mortels; et encore l’accession aux effusions vers l’insaisissable.’ (Petit 1970, 28)
[I’m 19 years old. I make contact with Italy for the first time. In the middle of Tuscany, the Charterhouse at Ema crowning a hill lets me see the crenels formed by each of the monks’ cells much like the peaks in the wall of a castle. Between each crenel is a deep garden, completely deprived of any exterior view and also of any view from without. The crenel opens on the horizons of the infinite Tuscan landscape, the inner conversation with oneself. Behind is the cell itself, links by a cloister to other cells, to the refectory and the church placed at the center. An extraordinary sensation overtakes me. I grasp that an authentic human aspiration is filled: silence, solitude, but also, company (quotidian contact) with mortals; and still attainment of outpourings toward the ineffable.]

At the time of his visit, Jeanneret wrote to L’Eplattenier, “‘This is the solution of the unique type of workers’ habitation, or rather of the earthly paradise’” (Weber 2008, 47).

Charles-Édouard Jeanneret found in the Chartreuse a potent object that produced a cascade of adjacencies across the discourses of his popcycle. The idea to visit the monastery was taken from Ruskin, an instance of Jeanneret’s budding professional discourse. But the young designer immediately realizes that the lessons he can learn from the Chartreuse can be applied to multiple aspects of human life; the building’s legibility across different discourses indicates adjacencies of peoples’ social, economic, and emotional existence and architecture as the deployment of program and space that organizes our lives. Indeed, this building struck a chord deep in the soul of Le Corbusier, one that would only cease to resonate with his death (even then, its echoes follow us in the form of extensive ink spilled recounting and analyzing its significance to the history of modernism).

The Chartreuse as an instance of Jeanneret’s professional discourse is obvious, as Ruskin’s travel guide to the region was recommended by the young architect’s mentor, L’Eplattenier, but the building’s adjacencies in other discourses of the popcycle will need further explanation. The family discourse begins at birth and is developed at
home as one enters orality through learning to speak (Ulmer 2003, 25). Its contents form an individual’s ethnicity, gender, and other features of identity based on the values of and interactions with one’s parents, and it takes the form of anecdotes, jokes, proverbs, etc embedded in conversation (ibid). The discourse of the community begins when one enters school and formally enters literacy. Its contents are the concepts of nationality and history, as well as fundamental scientific methods, as administered by the local political community, and it takes the form and style of the textbook (ibid). The entertainment discourse starts at birth, when the individual begins learning mythologies, anxieties, dreams, and the emotional economy of social values conveyed through any legible media, in the form of all manner of narrative genres (ibid). Each discourse has its own native logic appropriate to its content and forms: the logic of the family discourse is “common sense”, truth established through self-evidence; community discourse works with a general logic of scientific method and nationality, and cultural literacy “aimed at providing a common body of references or symbolic capital”; the entertainment discourse is built upon “mytho-logic” and “dream-work”, “based on the same associative operations of condensation and displacement of terms used in aesthetic practice”, where validity and truth are determined by fashion (ibid).

Le Corbusier, writing in 1930, begins to explain the course of adjacency through his discourses supplied by the Chartreuse, determining the width of the image:

The conditions of life are falsified by outmoded conceptions, we attribute false surfaces to our homes; we raise rents by two times or by five. To this cost we add that of servants and the frightful cares they cause. In our home do we have a baker to make out bread and a pastry cook to make our cakes? . . . We haven’t thought, we aren’t adapted; we have remained in the academic thoughts and the customs of the preindustrial age.
Here we arrive at the heart of the question of public services. It is one their precise organization that both modern planning and the modern dwelling must be founded. . . .

[The dwelling, the office, the workshop, the factory (architectural events that can be generalized under the simple heading of lighted floor space) will use new forms of standardization, of industrialization, of efficiency. Not only shall we reduce building volumes infinitely, and economize for each household and each business enormous general expenses, but by these methods we shall reduce the cost of construction by half. And by this method, in city planning, we shall solve the problems of circulation. . . . In architecture, we shall give cities immense and majestic perspectives covered by the most beautiful and useful vegetation. . . .

Ah, but what will the Chambers of Commerce think?

The dwelling at human scale is the basis of this evolution.

Let me show you by what ways, through twenty years of attentive curiosity, certitudes have come to us.

The beginning of these studies, for me, goes back to my visit to the Carthusian monastery of Ema near Florence, in 1907. In the musical landscape of Tuscany I saw a modern city crowning a hill. The noblest silhouette in the landscape, an uninterrupted crown of monks’ cells, each cell has a view on the plain, and opens on a lower level on an entirely closed garden. I thought I had never seen such a happy interpretation of a dwelling. The back of each cell opens by a door and a wicket on a circular street. This street is covered by an arcade: the cloister. Through this way the monastery services operate—prayer, visits, food, funerals.

This ‘modern city’ dates from the fifteenth century.

Its radiant vision has always stayed with me. (Le Corbusier 1991, 90-1)

In this long quote we find evidence of the Chartreuse’s work on each of Le Corbusier’s basic popcycle discourses. The architect’s professional discourse is activated through the multitude of architectural material and inspiration supplied by the building. Evidence that the family discourse is enrolled is found in the mentioning of household organization and the presence or absence of servants in the home, each of which have a profound impact on the functioning and daily life of the family at home, organizing the
content and format of many conversations that will take place there. The community discourse is contacted through the implications that the programmatic organization of the Charterhouse has in the organizing the urban environment at a larger scale, as well as the city's traditional development and economy through mention of construction costs, profits, and the Chambers of Commerce, and also allusions to science and logic as a tool to reorganize the city and the home. The architect's entertainment discourse appears through the traditional aesthetic values attached to architecture, the inculcation through our environment of the values of the pre-industrial age.

**The Return to Val d’Ema**

Jeanneret's experience at the *Chartreuse* was so formative that he wanted to investigate the place and its effects on him more extensively, requiring another more deliberate visit as a key component of his *Voyage d’Orient* in 1911. In the set of six *carnets* that document this journey, the sixth and final notebook, covering the period from October 26 and his arrival in Florence to his return home to La-Chaux-de-Fonds, is the most obscure and "enigmatic" (Gresleri 2002a, 11). In fact, the first-hand documentation from Jeanneret’s return to the Val d'Ema seems anti-climactic given the continued importance, the width that the *Chartreuse* would continue to have for the architect for the remaining decades of his career. Several sketches accompanied by a handful of description notes are all that is dedicated to the return to the Val d’Ema. The reasons for this, or the search for possible reasons and their successful explication, will be a first test of our heuretic analysis of Le Corbusier’s modernism, as they are symptoms of the architect’s *inventio*, the inner crucible of inventive materials that the CATTt Generator serves to simulate. A successful simulation of Le Corbusier’s *inventio*
necessitates a reasonable explanation for his treatment of the images and elements that he identified as being important in his creative work.

The most obvious reason for the anti-climactic nature of the return to the Chartreuse is that Jeanneret was at the end of a momentous tour during which he had been overwhelmed by iconic sites in Istanbul, Greece, Mount Athos, and Rome. Florence was one of his final stops before returning to his home in the Swiss countryside, and feelings of depression, desolation, and death took over his mind in these final days. This explanation of post-climax fatigue and depression does not fully explain Jeanneret’s activities at the end of 1911, because one finds considerable intensity and rigor in his analysis and documentation of the Cathedral of Pisa (Le Corbusier 2002). Pisa becomes the final blip of intensity that caps off Jeanneret’s journey east. Before slinking home to the obscurity of the provinces, Jeanneret wrote:

I hear the death-knell of my youth. Within a month or less it will be over. Ended. Another man, another life, clear horizons, and a road between walls. . . . Of course I’m often sad about it: gray fits of melancholy mingle with the joys of my return. I leap from dark to light and back again, and there’s no doubt something harsh and tragic remains. (Letter to L’Eplattenier from Rome: 10/15/11; quoted in Weber 2008, 97-8)

Despite his depression, the characteristic intensity in Édouard’s interactions with architecture remained, but it was no longer directed toward Ema. A reason for this change in focus rests in the specific programming of Le Corbusier’s travels and his development of ecstasis. As we shall see, Charles-Édouard Jeanneret’s first major ecstatic experience occurred at the chartreuse, and his later Voyage d’Orient was largely a re-application of that experience into a predetermined travel program. The charterhouse was initially a single ecstatic event on a single site, or locus. The Voyage d’Orient was planned as a series of hypothetical ecstatic loci, topics arranged in a
pedagogical discourse of movement. The charterhouse would never cease to be important, but as a single locus in a larger sequence of ecstatic sites, its significance was greatly reduced or rather eclipsed by new and far more intense loci. The local change in value concerning the chartreuse can be explained if Jeanneret’s itineraries are construed as part of a larger series of inventive experiments where the format, or tail/tale of the CATTt Generator, is movement.

**Method vs. Wandering: The Fragments of Parmenides**

To understand the “ecstatic” structure of Jeanneret’s experience at the charterhouse, we must quickly examine the origins of ecstasis and its relationship with the methodical character of the tour-movements of theoria. The initial analogical link between physical travel and method was effected by a text consisting of poetic fragments attributed to Parmenides, dating from some time in the 5th century BCE. These fragments contain the birth of method as the manner of man’s coming to knowledge imagined as a journey or quest. This conception is performed using predication of a certain sort—what Parmenides-scholar Alexander P. D. Mourelatos calls “speculative” predication. In the fragments, Parmenides describes a narrative related by a youth of a journey he had taken to a strange place entirely other. In that place, the youth was greeted by a goddess who told him of two routes that man may take: one a quest through what exists as truth, the other mere wandering through what does not exist. The goddess beseeches the youth to remember what she has said of these two routes, and to bring the account of them back to humanity.

It is suggested that the two routes described by Parmenides are analogical treatments of explanation and interpretation evoked through precise predication.
Parmenides’ use of predication structures the two routes: one (positive) is a quest for what is, the other for what-is-not (negative). The goddess is not ambivalent regarding this pair. The negative route is rejected as being ineffectual (Mourelatos 1970, 75).

Unlike the positive route indicated in “F is _”, that takes us toward the essence or reality of the thing questioned (what really is F), a journey to “what is really not-F” cannot get started or be completed because of a lack of criteria for recognizing the goal (ibid, 75-6).

The negative route of what-is-not is wandering; it heads toward everywhere and nowhere (ibid, 78). Parmenides will challenge us with the implications of the predicated route toward what-is; he must posit that what-is is ungenerable: it excludes all coming-to-be and all manner of process (ibid, 97). Parmenides’ what-is (the goal of all knowledge) is non-changing, non-temporal and indivisible: it is impervious to any notion of process. In-keeping with the characteristics already postulated, the what-is is also immobile, and a journey toward it will be tempered by this absolute stasis:

And how could that-which-is be later on? And how could it possibly get to be? For if it got to be, then it is not; and no more so if it intends ever to be. In this manner has generation been stifled and the unheard-of perishing. (ibid, 102; quoting Parmenides, Fragment 8, 26-31)

Nor is it divisible, since it is all like [or “equal”]. Nor is it here somewhat more, which might prevent it from cohering, or somewhat less; but all of it is full of what-is. For this reason it is cohesive, for what-is consorts with what-is.” (Mourelatos 1970, 111; quoting Parmenides, Fragment 8, 22-25 (Tarán 1963, 163f))

And on the immobility of the what-is:

And so, immobile within the bounds of great fetters, it is without start or pause, since coming-to-be and perishing have strayed far and wide, and it was true fidelity that drove them off. And the same and remaining in the same, it lies by itself and in this manner remains there fast; for mighty Constraint holds it in the fetters of a bond which restrains it all around. (Mourelatos 1970, 15; Parmenides, Fragment 8, 26-31)
The reason for the shackled immobility of the what-is comes from an ancient notion of movement preserved for us in Homer's use of the verb κινεῖν: “to push, rouse, stir”; in the middle sense, “to set out, sally, emerge” (Mourelatos 1970, 118). All of these uses of the verb κινεῖν/“to move” are conceived in reference to an original position and without any vestige of a stable background. This movement is absolute motion (ibid). Kinein is thus in logical contrast to the concept of journeying, which relies on the existence of a destination: the οδός of μεθοδος, or "method," is a journey that takes a traveller to a proper place. The sally-forth or emergence of kinein does the opposite: the mover leaves his proper place. This absolute motion is ecstasy: “standing out of oneself”; thus it is “non-identity” (ibid). The what-is must be “non-ecstasy”, non-movement, ακίνητον/akineton (ibid, 119).

If the what-is is immobile, indivisible, non-temporal and unchanging, then in its “fullness” it is complete. Method, conceived by Parmenides as a meta+hođos/ođos, or a set of journeys containing all valid paths, is a way of moving toward an established and proper goal: reality, the what-is. This set of possible journeys or quests has idiosyncrasies, or a specific manner of programming. Firstly, ođos is an objective one-way movement toward a specified goal; it can be subjected to its contrasting condition of movement, a movement that is regressive and wandering: the traveler can thus be led astray. Thus, the trip must have some sort of guide (in Parmenides’ account, this guide is divine, a god that gives “measures” of the journey) to assure that the journey remains valid in continuing toward its specified goal. The bounds of the journey’s goal are such that it is not beyond the possibility to send tidings home: by being proper, the movement remains communicable (ibid, 17-20). The ancient Greek practice of θεωρία is
an instance of method; traveling and witnessing loci, and rendering the experiences intelligible through communicating them to others at home.

The οδός of Parmenides’ journey toward what-is is a movement through the intelligible. A rhetoric that navigates material using a method deals with products of reasoning processes: products that are the finished results of *inventio*. As explained above, Parmenides’ what-is admits of no process at all: a topical-logic of rhetoric is not a journey toward the what-is, it is not the οδός of Odysseus that characteristically ends with a return to home and family. In argumentative writing within the tradition of rhetoric, the writer and reader deal with products of topical searching or invention, while the process of writing must deal directly with the *topoi* in their fullness of possibility (Ulmer 1994, 38). In the name of communicability and intelligibility, the *topoi* will be molded, culled and manipulated to offer something more precisely applicable. But the visit to each topic offers possibility: a straying, wandering movement is always logically present in the possibility of the *topoi*. Each place is locally ecstatic in relation to the larger trajectory of the journey.

In Parmenides’ concept of method, we encounter both the dichotomy of the periplous vs. anabasis, and Meno’s Paradox, or the problem of how new knowledge is acquired and research conducted if its goals are unknown. Parmenides uses divine guidance to circumvent the problem of knowledge acquisition and to assure against the dangerous wanderings of anabasis. Plato postulated the theory of recollection: the soul living eternally in the unchanging what-is of universal being that guides the mortal human to discovery through flashes of recollection; and Aristotle in turn developed the theory of the syllogism to guide discovery through inference, internalizing the guide in a
logical system. Our discussion of the popcycle indicates another manner of guidance, this time internalized in the individual, and including flashes of recognition, logic and other conceptual structures learned in school or professional training, or any other forms of logic native to different aspects of the individual’s life. The popcycle acts as a guide toward the what-is through the construction of Wide Images that occur as correspondences across the discourses into which individual’s are interpellated:

‘Interpellation,’ nicknamed ‘hailing’ or ‘appellation,’ refers to the social and psychological processes by which our identity is constructed. A career-day exposition, with representatives or various companies and professions manning information booths and perhaps conducting job interviews exemplifies hailing in practice. One is hailed or called by these booths, and the selection is limited, as are the openings within the selection. The theory of ‘ideology’ (which is to my domain what ‘evolution’ is to the life sciences) classifies our identity into such categories as race, ethnicity, religion, class, gender, sexuality, nationality. We enter into or learn the beliefs and behaviors named by these terms in an interrelated set of institutions. (Ulmer 2003, 24-5)

Here, Ulmer identifies that heuretics circumvents Meno’s Paradox through the theory of ideology as an internalized system of discourses that come with various tools and ways of working and are useful but also constrictive through selectivity and the possibility of exclusion.

An ecstatic moment, or the rapid cascade of adjacencies across popcycle discourses, is the nascent emergence of a Wide Image. Through carefully following the connected points in the various internal discourses brought together through the ecstatic event, the individual can begin to evaluate the width of the affective image and its usefulness as a guide toward method construction. Ecstatic moment analysis indicates directions for inquiry, uncovering possible inputs for subsequent CATTt Generator experiments. Le Corbusier would use the ecstatic site of the charterhouse at
the Val d’Ema to construct an itinerary for further inquiry into architectural and cultural material relevant to contemporary design issues. This new itinerary, the *Voyage d’Orient*, was Corbu’s first attempt to construct a method of research where movement was the format and where travel as paraphor renders a new conceptual tool in the form of ecstasy.

Martin Heidegger also used the notion of ecstasis to alleviate Meno’s paradox and the problem of hermeneutic inquiry through a schema of ecstasis that grounds the thinking subject in place through fore-thought and repetitions that provide an ontological structure for Wide Images. He recognized the problem as a *circulus vitiosus* (a vicious circle):

> Any interpretation which is to contribute to understanding, must already have understood what is to be interpreted. . . if interpretation must in any case already operate in that which is understood, and if it must draw its nature from this, how is it to bring any scientific results to maturity without moving in a circle, especially is, moreover, the understanding which is presupposed still operates within our common information about man and the world? (Heidegger 1962, 193)

Heidegger claims that this circle of knowledge is not something to be avoided, but rather is necessary for the possibility of fundamental knowledge. The kind of resolute being-here that allows the individual to come into contact with others and the things of the world in a meaningful way springs from a temporal unity of past, present, and future in modes of timeliness. Heidegger identifies the three modes as ecstases as a standing out from oneself in: anticipating (future), retrieving (past: that in the face of which one’s being-here is thrown in ecstasis and to which it has been abandoned; this ecstasis being the schema of what has been), and the moment (the present, made by one’s being-here through the ecstasis of intention, the in-order-to) (Dahlstrom 2005, 161;
The concepts of the wide image, widesite, the popcycle, and paraphor give Heidegger’s structure of timeliness a practical vocabulary while maintaining the ecstatic structure of intentionality.

**Jeanneret’s Voyage d’Orient and Ecstasis**

The *Voyage d’Orient* in 1910-11 was Le Corbusier’s first attempt at programmed ecstatic movement. Lacunae of wandering had previously been opened during his first international tour, and in fact these lapses began to typify his movements and occupations, his process of movement and learning from 1907-1911, the period between his first tour of Italy and the *Voyage*. After touring Italy, in November 1907, Jeanneret and Perrin went to Vienna to find work in an architecture office (Weber 2008, 51-3). Unemployment and depression was all they met, and Jeanneret decided that to continue his education in architecture, the language barrier in Germany was too much of an obstacle (ibid, 57). They moved on to Paris in March of 1908, where Perrin found work with Hector Guimard, and Jeanneret with the Perret brothers (ibid, 58-9).

Jeanneret worked for Auguste and Gustave Perret until November 1909, learning the techniques of reinforced concrete construction, and then abruptly moved back to La Chaux-de-Fonds, where he spent a few months living through the winter in a barn (ibid, 69-71). In the thaw of spring, Édouard went again to Germany to study reinforced concrete in Munich, where he failed to find work, until he was awarded a grant from *L’Ecole d’Art* of La Chaux-de-Fonds to produce a report on the state of applied arts in German schools, research that would eventually be published by Jeanneret as *Etude sur le movement d’art decorative an Allemagne* in 1912 (Gresleri 2002a, 8, 21 n.1;
Later in 1910 Jeanneret went to Berlin to find work in the office of Peter Behrens (Weber 2008, 74).

Was this travel, which frequently led to frustration and disillusion, an example of wandering, or was this movement productive and directed toward some goal? Jeanneret was searching for an architectural modernism, a way of making architecture in and for the contemporary industrial world. The problem he faced was that his goal could not be entirely objective precisely because it did not yet exist as more than a possibility: it was only a possible projected object. The possibility of a return was threatened and its necessity questioned, as Jeanneret’s goal was no longer objective and was replaced with a field of possibility. In this position of invention, thinking, writing and speaking are rendered as acts of extrapolation reaching into the void to create the goal to be attained (Ulmer 1994, 47-8). In the spring of 1911, Jeanneret’s depression with life in Berlin and the doldrums of work at Behrens’ office broke, this lacuna of research replaced by an intense desire for movement:

My spring will soon be coming into its own. Summer will be here all too soon. After four years of absence, they’re calling for me at home. Now I feel ready to open myself to everything. The period of deliberate concentration is past! Open the floodgates! Let everything rush out, let everything live within! (Letter to William Ritter, March 1, 1911, Berlin; quoted in Weber 2008, 79-80)

Jeanneret would embark on the *Voyage d’Orient* with his friend from Munich, Auguste Klipstein. The two men had no set itinerary, only a vibrating paraphoric trajectory following the Danube through the Balkans to Istanbul, then on to the canons of architecture in Greece and Italy. This anabasis was a first attempt at ecstatic movement; an itinerary programmed through a series of ecstatic events.
A strange attraction emerged within the youths’ movements. After their stay in Istanbul, they were strongly compelled to travel to the Holy Republic of Mount Athos, a desire that made their trajectory unusual in that this attraction was not common amongst anyone they knew (Weber 2008, 86). However, their compulsion was consistent with the characteristic structure of their ecstatic movement: Mount Athos is the ecstatic analogue of the monastery at Val d’Ema. During the Voyage, the paraphoric travel itinerary is influenced by the ever-evolving contents of Jeanneret’s popcycle; that internal baggage that determines the guidance of movement and to which the movements in turn will add valuable discourse material. The powerful ecstatic event experienced by Jeanneret at the Charterhouse in Val d’Ema was spread wide across the domain of the Macedonian peninsulas of the holy republic, with more than twenty monasteries scattered amongst its rugged cliffs. The first experiment in ecstatic movement must have been carried out in such a land.

The holy landscape of Mount Athos is a network dating back to the eleventh century (Weber 2008, 86-7). The ecstatic character of this network rendered it all but inaccessible to Jeanneret. The Holy Republic did not have a Swiss embassy and thus it was an impossible domain. To access it, Jeanneret would have to step outside his identity and the contingencies of his own personal history. In a play of legal ecstasy, Jeanneret called upon the French government and enlisted aid from his former Parisian employers the Perret brothers as well as his former teacher L’Eplattenier. The displacement was a success and Jeanneret obtained the needed documents from the French embassy.
Jeanneret and Ecstatic Movement in Mount Athos

Jeanneret and Klipstein were encamped on the prow of a ship as they approached Mount Athos, undergoing a self-imposed inner purification corresponding to the physical quarantine they endured on an island outpost for four days before being allowed to enter the holy landscape (ibid, 87). Before they reached Athos, Jeanneret conceived a precursor to the figure of history Le Corbusier found on the beach in Normandy, although before it was embedded in a specific site, writing: “Our practical and effective actions are weak and uncertain because we have been petrified, like Lot’s wife, for having looked too long behind us” (Le Corbusier 1987, 173). The travelers were headed to a point beyond the noise of contemporary striving, beyond the “wreckage of history” that Benjamin’s angel of history is forced to continually witness, a point quite literally beyond the horizon. The boat ride sets the stage for the logical maneuvers necessary to establish an ecstatic space, movement beyond the Bauman’s horizon as the perceived goal of local activity (Bauman 1991). Indeed, in Jeanneret’s words the movement to Athos, towards the horizon, is toward and perhaps beyond the absolute: “I think that the flatness of the horizon, particularly at noon when it imposes its uniformity on everything about it, provides for each one of us a measure of the most humanly possible perception of the absolute” (Le Corbusier 1987, 174). Unlike the later movement that could harness ecstatic moments that emerge spontaneously from his surroundings like the apparition on the beach (Le Corbusier 1991, 75), Jeanneret’s experimental movement in 1911 required displacement from quotidian reality which, like Parmenides’ youth, would take the traveler to an other place to gain distance from the logic that governs our movements and gain analytical distance.
And suddenly, Mount Athos appeared (Le Corbusier 1987, 174-5), a rupture in the affective system of the absolute horizon that suddenly introduces vertical expansion into the collapsed space of the infinite line of sea and sky, and by so doing also introduces space, light, and color:

My vocation . . . has given me, perhaps, a too general understanding of the vertical and the horizontal, and of the sense of length, depth and height as well. . . . To go even further, I imagine color in bands of yellows, reds, blues, violets, and greens, with sharp boundaries but otherwise like a rainbow of lines going from the vertical to the horizontal without the bisecting slope. Let rhythm alone arrange this pure graphic expression! (ibid, 176)

Moving so close to the borders of lived reality, immediately Jeanneret’s mind finds proximity with death:

Yes, to go there requires physical courage not to doze off in the slow narcosis of so-called prayer but to embark, rather, upon the immense vocation of a trappist—the silence, the almost superhuman struggle within oneself, to be able to embrace death with an ancient smile! (ibid, 173)

Our example journeys from Ancient Greek culture—Parmenides’ youth; Herodotus; Xenophon—are all instances of theoria: movements are recorded and the information thus rendered is communicable. Jeanneret’s dwelling on the proximity of death while in Athos parallels Ancient Greek theoria, where to move to a realm beyond the communicable would take a person even beyond death, as communion with the dead was for the ancient Greeks still a localized possibility. The journey of Odysseus never took him beyond the realm of tidings or communicability, even during his visit to Hades, and Jeanneret communed with the imminence of death in silent movement.

Over eighteen days in Athos, Jeanneret learned to loathe the life of the monks and that holy landscape precisely because of the exclusions brought about by its rigid
control and organization of life. He learned the importance of the feminine and the child, as well as war and disorder as key components of lived reality:

I’ve had enough of all the sweetness of that nature . . . all of it eternally, daily, parading before an immutable sea, bringing and carrying away the ecstatic and venal pilgrims! Not a single woman is to be seen; thus everything is missing here in the East where, if only for the sight of her, woman is the primordial ingredient. Nor does one see battles, skirmishes, or wars erupting but only attacks of cunning language. . . .

One sees no children! Never would I have thought myself capable of this remark! And what is more, to be affected by it! [ibid, 206]

In all, the experiment in ecstatic movement brought enrichment to Jeanneret’s youthful ideals through critique and examination of assumptions made earlier at the Val d’Ema. Life was not reducible entirely to the orchestrated simplicity of the skete, and even the young Jeanneret who was so enamored with the idea of measured isolation in the cloister was forced to recognize that monastic life could not yield the material on which he fed his creativity. From thenceforth, Le Corbusier would choose to construct his own ecstatic networks from his lived environment instead of attempting to find them extant in a place like Mount Athos.

The Development of the Radiant Moments

Le Corbusier’s interactions with his environment would never cease to be intensely affective, and the ecstasy experienced at Val d’Ema, a stepping outside of the self and toward the environment through the mediator of sensation, became a practice by the time the architect first traveled to North America in 1935. This mental practice of training one’s affective relations is a keystone for the production of theory, just as the Orphic cults of ancient Greece utilized a mental state of ecstasy that they linked with theoria: the physical process of witnessing and sight-seeing that makes theory internal
through honing techniques of attaining and maintaining this specific mental state (Walter 1992, 218). Over time, Corbu honed his ecstatic techniques in an attempt to develop theories of what a modern architecture would have to be, a process of experimentation in ecstasis that began at Val d’Ema in 1906 and was a primary motivation for his trip to Mount Athos in 1911.

Unpacking the analogical relationship of theory and sightseeing, then loading it back onto the physical and spatial movements that motivate the analogy, the affect of sensation excited as the body comes in contact with *topoi* becomes information useful in the production of theories. This is a body-rhetoric exhibited in Le Corbusier’s travel journals, and it can be differentiated from methodical representation by the imminence of wandering in its structure: ecstasis, as ecstatic movement of the mind from physical place to mentally adjacent places, images and concepts, is a movement out of the proper and toward an undefined possibility; it is a movement without a goal yet taking place within *topoi*. What begins to be evident in the travel journals Le Corbusier’s wrote after his sojourn in Mount Athos, namely *Precisions* and *When the Cathedrals were White*, is a change in this ecstatic structure that will effect a corresponding change in Le Corbusier’s terminology describing its operative affective phenomena. What are described as “ecstatic moments” within a larger structure of affective wandering in 1911 will be replaced by more directed and ambitious radiant moments by 1938, distinguished from the earlier experiments in ecstasis by the presence of an increasingly specific goal: the Second Machine Age.

Inventive movement must include pieces of both the what-is and what-is-not in the attainment of a goal that is not yet. Parmenidean method, as a guided movement...
toward what-is, must be left behind in searching for this meta-movement precisely because what is sought is a new method, a new meta-\textit{hodos} or “path of paths” that describes effective movement toward what-is-not-yet. Plato’s theory of recollection skirts this epistemological dilemma by replacing invention with remembrance, invalidating the possibility of a future being emerging from non-being in the present. Aristotle’s theory of the syllogism explores the possibility of invention through inference, a way of finding both what-is and what-is-not-yet by cobbling together bits of what-is through the guise of what-is-known. Ecstasis is rooted firmly in inference.
CHAPTER 5
DEVELOPMENT OF A RADIANT METHOD

The *Voyage d’Orient* contained experiences that were the focus of our heuretic study of movement as a format in Jeanneret’s early method-experiments, Le Corbusier’s other, later travel-publications, *Precisions* and *When the Cathedrals were White*, offer us a vision of the methodology that would eventually develop out of the ecstatic experiment of Mount Athos. The findings of the ecstasis-experiment were used by Corbu to develop a systematic technique of spatial movement that could encompass the characteristics of the methodical ὀδὸς and the wanderings implied by invention. This hybrid movement was actually a method minted specifically for creating the spaces appropriate for his Second Machine Age.

Le Corbusier’s radiant method was achieved in stages roughly correspondent to the publication of his three travel works. The first stage is evidenced by the Mount Athos experiment and the general ecstatic structure of the *Voyage d’Orient* already discussed. The second stage in the development of the radiant method corresponds to the publication of *Précisions* and the topical immediacy of the “American Prologue”, written during his lecture tour of South America in 1929, and the culminating moment of development is indexed by the publication of *When the Cathedrals were White*, written during his North American lecture tour in 1935. These two latter works differ from the *Voyage* in that the program Corbu’s movements was provided to him as a series of lectures scheduled in different cities in North and South America. The lecture tour provided structure for the movement format of these texts, a scaffold within which ecstatic moments could be encountered and documented. The earlier movement experiment of the *Voyage d’Orient* saw Jeanneret attempt to program his itinerary by
identifying paraphoric or hypothetical ecstatic sites, like Istanbul, the Acropolis, Mount Athos, and the chartreuse at Val d’Ema, a method that met frequent failures to induce intense ecstatic moments.

The coming of this sea change was evident in Jeanneret’s relatively quick tiring of the monastic landscape of Mount Athos and the lack of new ecstatic information provided by his second trip to the chartreuse in 1911. The rigid choreography of ecstasy in the *Voyage* was not necessary in order to encounter and study the adjacencies produced by ecstasis, as unexpected ecstatic moments are frequent and were often more intense that the variety Jeanneret attempted to orchestrate. Careful interplay between guided movement and inference is necessary to prepare the subject for ecstasis, a relationship played out through the combination of anabasis and periplous in ancient Greek historical research. In our Greek precedents, the structured movement of periplous girds the events of anabasis, rendering them useful and communicable. As discussed in the introduction, Herodotus’ periplous was speckled by wanderings, or anabatic inquiries, to the extent that these movements and digressions away from the guided periplous can be seen to typify the inquiries in general (Hartog 1988, 343-4). Similarly, Xenophon’s *Anabasis* dedicates the majority of its narrative to a movement of katabasis, or back to the sea; the fact that Xenophon altered the terminology to name the narrative indicates that for his work anabasis was not merely a specific kind of programmed movement, but rather a manner of movement separate from the apparent spatial program. Xenophon’s anabasis is a set of conditions of movement, with spatial relation to the sea being only one condition within the set; the katabatic movement of the Ten Thousand was still a movement into and through the unknown. The conditions
of anabasis are thus applicable to the majority of both Herodotus’ and Xenophon’s narratives, while also regarding the presence of guided or methodical movements like the periplois.

Precisions and Paraphor: Ecstasis Revisited

Precisions: The South American Lecture Tour

Le Corbusier embarked from the Gare d-Orsay on September 13, 1929 for his first transoceanic travel. By this time a seasoned traveler, the 41-year-old architect recorded his experiences more confidently than he had during the Voyage d-Orient. Again, a feature distinguishing this trip to the New World from his previous tour of Europe was a planned itinerary that was exterior to any ambitions or expectations for ecstasis. This itinerary of lectures was just as important as ecstatic moments to Le Corbusier at this point in his career, as he desired to make the most of the possibilities that the New World held for his now famous modernism. Le Corbusier needed to establish contacts with this vast world of the Americas if his dream of the Second Machine Age would become a reality, and the lecture tour designed to offer expression and propagation of Corbu’s modernism operated as a powerfully immediate analogical method: the architect-inventor must visit the pertinent topoi-places to find active, pertinent statements and enunciations. These statements/enunciations are fragments of experience that emerge out of contact the physical places and their contents, or through the subjects and objects that will form through the process of this contact. Again we encounter travel as paraphor, this time through an analogical immediacy enacted by Le Corbusier in his compulsive drawing and writing, a practice of visually and textually manifested subjection.
In the format of the travel journal, Corbu’s movements through space are accompanied by a process of subjection, a process of continuous predication that fueled his earlier travels through Europe. Together, movement and subjection become information. The young Jeanneret’s development of ecstasis would have continued effects on Le Corbusier’s manner of movement—the format of his methodological experiments working toward the production of modernism. Movement as a format for method production is particularly evident in the publication of this journey to South America, a bit more honed and legible due to the architect’s busy schedule. The combined factors of the experience of age with the confidence or self-awareness it brings, and a sequence of lecture times and locations led to the intensity and profusion of Le Corbusier’s ecstatic experiences during his three-month lecture tour, and their legibility. In *Precisions*, Le Corbusier’s movements exhibit paraphoric symmetry of subjection in part through the separation of operative professional discourse material from other popcycle discourses through the strictures of the lecture tour, subjecting him to the desires and spatial locations of his receptive audience in South America, while he subjected that audience to his desires through the propagation of his modern method in his lectures. This separation of professional discourse movement programming allowed Corbu to perform multiple but related method experiments by effecting a separation of method propagation, in lecture format, from method development in the format of ecstasis. The slightly more well-formed results of previous method-experiments toward the development of modernism were presented in Corbu’s lectures, while a new method experiment was underway during his free-time in transit from point to point on the tour. The publication of Precisions records this dual format, wherein Le Corbusier attempted
to replicate each lecture event through text transcription and drawing, while the new ecstatic material is rendered separately as “The American Prologue”; we will thus analyze these contents as separate experiments.

**Lecture experiments**

Le Corbusier gave ten lectures in Buenos Aires from October 3—19: four for the Faculty of Pure, Applied and Natural Sciences at the Universidad de Buenos Aires; five for the Friends of the Arts; one for the Friends of the City, at the Jockey Club (Le Corbusier 1991, 20; Benton 2009, 136-40). The architect then made a two day divergent trip by plane to Paraguay, and the intensity of his experience flying over the South American landscape induced the content of “The American Prologue” (Weber 2008, 298-9). He spent time in Montevideo, giving two lectures there as well, traveling back to Buenos Aires before moving on to Sao Paulo several days later, where another lecture ensued. He left South America via Rio de Janeiro on December 10, returning to the port of Bordeaux on the 20th (Benton 2009, 134; Weber 2008, 304-314). *Precisions* recreates the series of ten lectures on architecture, urbanism, and design given during his first stay in Buenos Aires, and also features journalistic re-visitations of the materials covered in his lectures given in Sao Paulo and Rio de Janeiro, additions that were written on board the *Lutétia* during his long trip home (Le Corbusier 1991, 20; Benton 2009, 134).

Tim Benton’s book, *The Rhetoric of Modernism: Le Corbusier as a Lecturer* delves with great detail into the contents of Le Corbusier’s lectures on architecture and urbanism and their origins (ibid, passim). This research is a valuable tool for articulating the professional discourse in the architect’s popcycle as part of our cyber-history. The
South American lectures provide a rare insight into Corbu’s professional discourse because the nature of his audience in Buenos Aires brought a bit of constraint to the content and presentation style. A note from his mother gave a telling warning, describing for us the situation in which Corbu found himself:

My dear boy, we think of you all the time, we envision you telling a lot of things in French to these Spanish Argentines who perhaps will not understand much of what you say. Be simple and do most of it on the blackboard. (Weber 2008, 30, quoting letter from Le Corbusier’s mother, Oct 15, 1929, Vevey)

Keep it simple, or run the risk of failing to communicate. In other words, Le Corbusier was placed precisely in the position of the Modern theorist in Buenos Aires, the traveler who had been charged to recount things seen elsewhere, and to thereby offer qualification through bearing and communicating the act of witnessing. This aspect of theory was presaged in Ancient Greek culture by the theoros at religious festivals, who witnessed object and events as transformed or made sacred, a witnessing of divine truths through the veil of reality, made possible by the context of ritual (Nightingale 2004, 4). “In many cases, the theoros was sent by his city as an official ambassador: this ‘civic’ theoros journeyed to an oracular center or festival, viewed the events and spectacles there, and returned home with an official eyewitness report (ibid, 3-4”). Indeed, Le Corbusier would have been very comfortable with the characterization of the theorist as both philosopher and prophet, a communicator of visions of deeper truth, a characterization of his professional life that early in his life he assigned an avatar: “The Great Condor”. This image of a bird perched on an isolated mountain peak and gazing toward the distant horizon was fueled in part by the influence that Nietzsche’s Zarathustra had on Jeanneret since early in his education, and may indeed have been
an early incarnation of his chosen avatar as a full-fledged professional architect: the corbeau or “crow” (Jencks 2008, 40-54).

The shift from theorists propagating divine truths to philosophical truths was effected by the initial analogy of Greece’s philosophers in the 4th century BCE, made to give weight and civic importance to their activities as an important component of civic and political life (Nightingale 2004, passim). Le Corbusier as theoros in Buenos Aires is also another example of travel as paraphor, given that he was called to that distant location to bear witness to truths developed elsewhere, and would in turn bring new experiences home to Paris with him as well as construct a new theoros amongst his South American audience. Le Corbusier would himself later articulate the importance of these lectures in the development of his theory, saying “[a]ll my theory—my introspection and my retrospection on the phenomenon of Architecture and Urbanism—comes from these improvised and drawn lectures” (Benton 2009, 135; quoting and extract from the soundtrack of L’Aventure Le Corbusier, Fondation Le Corbusier, 1951).

**Isolating the Theory component of Corbu’s CATTt**

Le Corbusier playing the role of theoros in Buenos Aires allows us to move from the tail/tale component of his method experiments in the development of modernism to another component of his CATTt Generator: [T]heory attained through a precision in another component, the [T]arget; or audience, and the scene of the lecture as paraphoric theoros event also articulates specific materials in the professional discourse of Corbu’s popcycle. In preparing for these lectures, Le Corbusier was very deliberate in his concerns over how the materials he presented would be received by their Target, and differentiated between his expected professional audience at the Universidad de
Buenos Aires and the more general public expected at the Asociación de los Amigos de la Ciudad and the Amigos del Arte (Le Corbusier 1930, 215; Benton 2009, 137-40). Further, in his first lecture presented at the University, “Architecture in everything, urbanism in everything”, he specifies that his target audience is the architectural students, and not the professors (ibid, 174). This allows Corbu to immediately launch into an attack of the Academy and its focus on historical style. Much of this lecture then mimics the first lecture given to the general public of the Amigos del Arte five days earlier, “To free oneself entirely from academic thinking” (ibid, 136, compare 142-151, 174-177; Le Corbusier 1991, 23-34. 67-83).

As would be expected from the recognized specificity of the [T]arget audience, this similar theme is handled in a different way for the two lectures. The primary difference is found in the examples used to support the theme. When talking to the Amigos del Arte, Le Corbusier introduced the lecture by speaking at length about his experiences walking in Buenos Aires since his arrival, providing a series of examples that shared a common ground with the audience’s experiences interacting with the host city, and appealing to them through showing his consideration of the history of the place, its development in the nineteenth century and the contemporary pressures of rapid growth and industrialization on the urban environment, as well as expressing his awe of the natural landscapes of Argentina (Le Corbusier 1991, 23-8). The examples remain adapted to his general public in attendance when developing his concepts of global interpenetration (here presented through immigration and intermixing of populations from the Old World across the Atlantic, the spread of the railroad and telegraph) and the “destruction of regional cultures” (presented through popular cinema).
Even when presenting his distaste with the Academy, the [C]ontrast component of his CATTt Generator used in both lectures, he qualifies definition of that institution in a general way:\[1\]: through the idiosyncrasies of academic language, the Academy is a method that conceptually removes the first-person, the individual as an agent, from relevant discourse:

What is academism? Definition of the academician: one who does not judge by himself, who accepts results without verifying their causes, who believes in absolute truths, who does not involve his own self in every question. (Le Corbusier 1991, 32)

Le Corbusier’s plea for an individualized discourse that involves experimentation “with the violent joys of how and why” (ibid,33) presaged Sigfried Giedion’s call for a dynamic analytical space-time frame to analyze the industrialized city, a technique of ordering spatial information that recognizes the perceiving subject as an agent in the continual production of meaning from the environment.

Le Corbusier’s first lecture at the Universidad de Buenos Aires, directed to the architecture students in the audience, covered the same general theme as the lecture given to the Amigos del Arte five days prior: the crisis of the industrialized city, the destructive myopic training of engineers, and the futility of the academies in any attempt to solve the looming crises. This time, however, Corbu felt free to use material both more specific to architectural history and techniques, as well as far more detailed in personal significance, as he examined the formation and activities of the individual as an agent for urban and architectural problem-solving. It is during this lecture that Le Corbusier described his own event-based historical space-time frame, calling it “the point of all dimensions”:
I should like to lead you to feel something sublime by which mankind, at its best moments, has shown its mastery; I call it the point of all dimensions. Here it is:

I am in Brittany; this line is the limit between the ocean and the sky; a vast horizontal plan extending towards me. I appreciate the voluptuousness of this masterly restfulness. Here are a few rocks to the right. The sinuousness of the sandy beaches like a very soft undulation on the horizontal plane delights me. I was walking. Suddenly I stopped. Between my eyes and the horizon a sensational event has occurred: a vertical rock, in granite, is there, upright, like a menhir: its vertical makes a right angle with the horizon. Crystallisation [sic] fixation of the site. This is a place to stop, because here is a complete symphony, magnificent relationships, nobility. The vertical gives the meaning of the horizontal. One is alive because of the other. Such are the powers of synthesis.

I wonder. Why am I so disturbed? Why has this emotion produced itself in my life in other circumstances and in other forms?

I evoke the Parthenon, its sublime entablature of such overwhelming power. I think, in contrast, in comparison, of those works full of sensitivity but as if aborted, unachieved: the Butter Tower of Rouen, the flamboyant Gothic vaults where so much ‘unused’ genius was spent without achieving the brilliance of the brass trumpets of the Parthenon on the Acropolis.

So I draw with just two lines this point of all dimensions and I say, having in my mind compared numbers of human works, I say: ‘Here it is, this suffices.’

What poverty, what misery, what sublime limits! Everything is included in this, the key to architectural poems. Extent, height. And it is sufficient.

Have I made myself understood?

Extent, height! Here I am on the way to search for greater architectural truths. I perceive that the project we are designing is neither alone nor isolated; that the air around it constitutes other surfaces, other grounds, other ceilings, that the harmony that stops me dead in Brittany exists, can exist, everywhere, in everything. How far we are from ‘styles’ and from pretty drawings on paper! (ibid, 75-7)

In this passage, Corbu peppers his presentation of his dynamic frame, “the point of all dimensions”, with citations from architectural history, subtly enrolling the architecture students in his audience into his project of producing a new architectural method.
through propagating a particular way of moving through and seeing space-time. It is
also through introducing “the point of all dimensions” that Le Corbusier articulates his
ideas clearly in the role of the theoros: this complex and highly abstract notion of the
ordering of geometry and spatial perception into a formal ontology is presented through
an anecdotal experience of physical movement and sensory perception. Through the
intellectual perception of the natural menhir on the beach in Normandy, Le Corbusier
turns sightseeing into ideological validation.

"The American Prologue" as cyber-history

Précisions is dedicated in large part to reconstructing Le Corbusier’s ten semi-
improvised lectures given in South America. Before beginning this lecture-presentation
in the book, he allowed himself a contextual “American” prologue in which he set out the
thoughts and observations of his trip across the vast continent of South America. Many
of the experiences that the architect had while on tour also emerged in the lecture
materials, becoming topics visited in the construction of his oratory. He visited these
topoi again in the prologue and related some of the things found there to his audience
with an immediacy of style which was to become very familiar to his readers over the
years to come: every paragraph appears as a confluence of ideas drawn from topoi that
do not seems to have any adjacency outside the discursive construction. The
arrangement of topical adjacencies facilitates judgment, which in the scholastic tradition
was seen as akin to invention in rhetoric, and both were imminent to dispositio, or the
arrangement of the statements pulled from the topics to form a discourse.

If the lectures incorporated some of Le Corbusier’s experiences in South America
as topics in the service of finding statements capable of expressing his modernism, then
the “American Prologue”, focused as it is on merely relating the thoughts that emerged during the journey or tour itself, has no other goal of judgment, nothing to support, defend or deny other than the topical movement itself. Structurally, the “American Prologue” is a composition of topical immediacy. Corbu let the topoi—the experiences, fragments, comparisons, etc.—play in the possible; many things/statements could be pulled from this topical field in the act of judgment in the process of making sense.

As mentioned in the Literature Review (Pruitt-Igoe on the Beach), “The American Prologue” presents a new space-time figure for organizing discursive material, the figure of air-travel. This figure features a moving, airborne point of view, inspiring the topics of revolution, war, and catastrophic change as nodes of adjacency linking Le Corbusier’s experiences with the contents of his popcycle discourses. With the figure of air-travel, this prologue presents a method experiment in the same series as Corbu’s other movement format experiments, and separate from the lecture materials published as the body of Precisions, where the format was the lecture itself. The most important difference between the prologue and the lectures is their divergence in [T]arget audience. The lectures have an actual, physical audience of attendees, and a replicated and slightly modified audience in the book, published for a Parisian audience (Benton 2009, passim), and the prologue, the tour of Italy in 1906, and the Voyage d’Orient in 1911, where the audience or [T]arget is Le Corbusier himself.

“The American Prologue” represents an important step beyond Corbu’s previous movement experiments and toward developments in later works in that movement no longer appears in the CATTt Generator in the tale/tail [format] slot, but rather is introduced in the [T]heory component through the historical figure of air-travel. Le
Corbusier is here performing an analysis of his movement, or writing a history, largely for his own personal use (he is his primary audience). Plugged in to the tale/tail [format] slot is “prologue”—“The American Prologue” is in fact a prologue of sorts in Precisions, so its text is the output from the CATTt Generator. Jeanneret’s early architecture tours (1906 and 1911) were themselves the output from experiments in the generation of pedagogical methods. The format for those experiments was the tour or voyage, the output from the CATTt Generator was architectural inquiry through a particular manner of movement.

In “The American Prologue”, the plane flights over South America during Le Corbusier’s lecture tour were used as an opportunity for theory generation, as the architect was subjected to the trajectory of the airplane as a mere passenger with little agency in selecting what was visible during the movement. In writing the prologue, Le Corbusier used a dynamic space-time frame attained through passenger air travel to order his sensations into topics for further analysis and discussion. Here we recognize collusion progressively seeping into our cyber-history as our subject, Le Corbusier, is slowly being revealed through our analysis to have been conducting his own examples of cyber-history.

The historical figure of the aerial view: rain cloud ecstasis

Two examples of the aerial view used as an analytical framework in Le Corbusier’s “American Prologue” are his inspired description of rain cloud formation as markedly “syndicalist” and the formulation of “The Law of the Meander”, a theory of human progress and creativity that he would continue to use in lectures and publications until his death. The discussion of rain clouds serves as an example of the
opaque and seemingly freewheeling imagery that would characterize writings like *When the Cathedrals were White*, and can be explained as an instance of ecstasis.

Recounting his flight from Buenos Aires to Paraguay, Le Corbusier wrote:

> Now it is ten o'clock: blue everywhere, above and below, except in front of us. We are in a line of clouds, a heavy lines, facing us, all around us. This line of clouds is not completely opaque; looking down through it is a marvelous sight: the plain of Uruguay is an immense panther skin, green and yellow from its lit-up pastures spotted by an infinite number of circles of seemingly black shadows. How black and think the shadows of clouds are on the earth and on cities. These innumerable circles are all the same size. The dew has begun a new metamorphosis and a magic has taken over, militarized it, formed it into squadrons. This putting in order is striking. Here is therefore a clear expression of a uniform repartition (dew), then a first state of grouping: equality, concentration around a center, creation of different centers, an original form of government made up of administrative units. (Le Corbusier 1991, 5-6)

This ecstatic event, like the famous visions Jeanneret experienced during his first stay at the charterhouse in the Val d’Ema, can be explained as a sudden recognition of adjacencies across popcycle discourses. As shown earlier, the charterhouse became a Wide Image through the long cascade of adjacencies linking previously disparate material in multiple discourses. Here amongst the clouds, the “cascade” and its adjacencies are limited to a vague echo linking his professional discourse to corresponding material in his family discourse.

To better understand how the syndicalism driving Le Corbusier's ecstatic event over South America is linked to the architect's family discourse, we will examine the site of his family experiences and the work that typified his home conditions in his early years. Le Corbusier's father was a watchmaker, and his hometown of La Chaux-de-Fonds was one of the largest centers for watch and clock making in the world. Charles Jencks cites the staggering statistic that, even in the 1970s, the town's annual watch
exports accounted for nearly half of the world’s total watch production (Jencks 2000, 24). The town and the organization of its economy were admired by Rousseau, Marx, Lenin, and anarchists like Kropotkin and Bakunin (Jencks 2000, 25). Watch production proceeded through a collection of separate crafts, like the dial enameling to which Le Corbusier’s father dedicated his life, and case engraving, in which Le Corbusier began training as an adolescent (ibid; Petit 1970, 24-7). In La Chaux-de-Fonds, there was a “division of labour into self-sufficient home workshops – in effect the mutual aid and free cooperation of workers’ syndicates which anarchists have always seen as the final, liberated state of man in society” (Jencks 1973, 17-8). Even the urban space of La Chaux was organized along the rigors of its local industry. After a fire in 1794, the city was reconstructed using a tidy gridded plan (Jencks 2000, 19).

In 1928, Georges Valois, the founder of the Faisceau des Combattants et Producteurs, renounced fascism and formed the Parti Republicain Syndicaliste, seeking a bipartite government of an assembly elected by syndicates and vocational associations alongside an executive body of technicians (McLeod 1985, 99-102). These neo-syndicalists never had a clear doctrine, but were pointedly hostile toward capitalism, were in favor of economic attacks involving organized strikes rather than political action, and supported a vague conception of society with a decentralized power structure, where local economic units would be directed by the producers themselves (Stearns 1971, 9). The structure of La Chaux-de-Fonds formed the backdrop for Le Corbusier’s early family life, influencing his ideological development as an architect and urban planner, and reappearing suddenly in a rain cloud over Paraguay in 1929. In March 1930, Le Corbusier began contributing to Grand Route, a neo-syndicalist review
associated with the *Parti Republicain Syndicaliste*, writing an article with Pierre Jeanneret and later published his "Corollaire Bresilien" from *Precisions* in the review (McLeod 1985, 106; 173 n.36).

**Historical figure of the aerial view: “The Law of the Meander”**

Going a step beyond the figural adjacencies of the rain cloud ecstasis, Le Corbusier also used the figure of the aerial view for purposes of theory generation during his South American flights. “The American Prologue” features the first appearance of The Law or “Theorem” of the Meander, a theory of human progress made by analogy with the slow formation of rivers in the landscape. In his writing, Le Corbusier narrates the process of theory formation in his description of the Meander:

> From the plane I saw sights that one may call cosmic. What an invitation to meditation, what a reminder of the fundamental truths of our earth! From Buenos Aires we flew over the delta of the Parana, one of the major rivers of the world; this delta swarms with canals, it is cultivated intensely. . . . From the plane, this delta reminds me on a bigger scale of French or Italian Renaissance engravings in books on the art of gardens. Then, finally, the Paraguay River, which is at its end here, at the confluence with the Parana that continues indefinitely to the north. (Le Corbusier 1991, 4)

Then, Corbu uses this aerial vision of the landscape and its extremely large scale of space and time to support an analogy with human creativity:

> The course of these rivers, in these endless flat plains, demonstrates peacefully the inevitable consequences of the laws of physics; it is the law of the steepest gradient, and then, if everything becomes really flat, the affecting theorem of the meander. I say theorem, because the meander resulting from erosion is a phenomenon of cyclical development absolutely similar to creative thinking, to human invention. Following the outlines of a meander from above, I understood the difficulties met in human affairs, the dead ends in which they get stuck and the apparently miraculous solutions that suddenly resolve apparently inextricable situations. For my personal use, I have baptized this phenomenon the law of the meander, and in the course of my lectures. At Sao Paulo and at Rio, I used this miraculous symbol to introduce my propositions for reforms in city planning or
In this theorem, the development of common river forms is used analogically to describe the discontinuous movement from aporia (“the dead ends in which they get stuck”) and the creativity and inventive agency of the human mind to find a way around such conditions of deadlock (“the apparently miraculous solutions that suddenly resolve apparently inextricable situations”). “The Law of the Meander”, a result of Corbu’s own cyber-historical analysis using a historical figure featuring a dynamic analytical frame (the figure of the aerial view), is the result of a rhetoric of invention at work in “The American Prologue”.

**The Birth of the Radiant Category**

The hybrid structure of *Precisions*, featuring both the lecture format and “The American Prologue” text-formatted tale of aerial movement, allows the book to play a transitional role in Le Corbusier’s travel works, between the *Voyage*, which was an experiment in creative movement, and *When the Cathedral were White* which, as we will see in the next chapter, is formatted to propagate Le Corbusier’s experimental movements. “The American Prologue” was pulled from Le Corbusier’s experiences during his lecture tour and made to serve as a prologue for the lecture material in the publication and, as a transitional document, serves as a prologue to the writing of *When the Cathedrals were White* as well.

Pedagogical intentions in the *Precisions* method experiments appear intermittently, being more apparent in “Architecture in everything, urbanism in everything”, the lecture supposedly targeted toward the architecture students in the audience of the Universidad of Buenos Aires. This lecture features a great deal of
personal anecdotes from Le Corbusier’s life and travels, and features his use of the dynamic analytical frame for pedagogical purposes: “The Point of All Dimensions”. When Le Corbusier returned to the Americas several years later for another lecture tour, his recount of his travels featured a more complete integration of the analysis of ecstatic moments and a pedagogy of movement, where the movement rhetoric of “The American Prologue” is fused with material presented in his lectures. In this way, “The American Prologue” served Corbu unwittingly as a precursor for experimental methods of analysis and presentation that would later be birthed in America and serve as a further point of departure for later works like the Poem of the Right Angle.

Nearly a year after returning home from South America, and after the publication of Precisions, a cluster of opportunities prompted Le Corbusier to continue developing his dynamic frame for analyzing the industrialized urban environment and to revisit and refine his movement methods. His sketches of Italy and Greece from the Voyage d’Orient were to be published in a new edition of Paul Valéry’s Eupalinos, and the Voyage itself was also going to be published (Weber 2008, 327). He was also invited to do a lecture tour in North America, and his Plan Voisin had been commissioned to be shown at two expositions in London (ibid). With his attentions focused on his travels and urban plans, Le Corbusier conceived an important category that he would continue to use frequently, the “radiant city”: “I am quite tempted to call these studies “the radiant city,” for in such a site everything would be joy, activity, health and peace.’ (ibid, 328; quoting a letter from Le Corbusier to his mother, Oct. 29, 1930)” The edition of Eupalinos and publication of Voyage d’Orient failed to materialize, and the tour of North America would be delayed for years, but the “radiant city” was born.
When the Cathedrals were White: Heuretics Applied

Le Corbusier finally returned to the Americas when, in October 1935, the Museum of Modern Art in New York organized an exhibition of his work (Weber 2008, 361). After opening the exhibit, Corbu embarked on a North American lecture tour, and with most of the dates booked at universities around the US, the architect could focus his attentions on pedagogical guidance of the students sure to be in attendance. The locations of the final itinerary sequence were: Hartford Connecticut, New York City (Columbia), Middletown Connecticut (Wesleyan), New Haven (Yale), Poughkeepsie New York (Vassar), Cambridge (Harvard and MIT), Philadelphia, Brunswick Maine (Bowdoin), Princeton (three lectures), Baltimore, New York (Columbia), Bloomfield Hills Michigan (Cranbrook), Kalamazoo Institute of Arts, University of Chicago, Madison (University of Wisconsin), Chicago (Illinois Society of Architects and AIA Chicago) (Bacon 2001, 314). Unlike *Precisions*, where the topical adjacencies of the “American Prologue” occupied a small space in comparison with the presentation of lecture materials during the South American tour, *When the Cathedrals were White* presents very little of the content from the lectures, inverting the proportions of *Precisions* and focusing on the arrangement of topical material gleaned from environmental interaction.

Reading the multifarious entries that comprise *Cathedrals* as the result of heuretic production, and searching the urban and social content for the generative components of Le Corbusier’s urbanisms, a consistent structure for the work begins to emerge: the text can be read as a presentation of ecstatic moments that affect Corbu in a personal manner and offer him some bit of guidance by creating popcycle adjacencies. These events that Corbu called “Radiant Moments” form his relationship
with the yet to come Second Machine Age. The “radiant moments” are Le Corbusier’s way of understanding the unknown space so fervently sought through his modernisms: the space of the *Radiant City*. It is not surprising then that Le Corbusier identifies and explains the nature of these affective events in the clearest and most complete exposition of his modern urbanisms, the publication presenting the material covered during his North American lectures and the MoMA exhibit, titled *The Radiant City*:

“When man is torn from his state of inertia, thrust into new undertakings, swept up in a wave of initiative, bound to the prow of some new development that is hurrying forward like an avalanche, ever faster, ever vaster (consequences engendering consequences—the snowball effect), then he rises to sublimity. He finds himself in the position to . . . . He becomes capable of fulfilling these new responsibilities. He has become foresighted, a demiurge; he succeeds, he triumphs. What dazzling and radiant moments [emphasis added], what treasurable instants those are, however fleeting, when the lightning flashes out before us, our certain guide! And when that vision is followed by a full awareness of its meaning, then a new stage has been reached. (Le Corbusier 1964, 129)

*When the Cathedrals were White* as an Opportunity for Rigorous CATTt Generator Analysis

Le Corbusier’s *When the Cathedrals were White*, as a highly subjective account of the author’s experiences during his lecture tour of the U.S., features many elements that pose a problem for those who wish unravel the significance of the architect’s experiences and their formative influence on his work. While offering a glimpse of how Le Corbusier utilized occurrences and events from his surrounding milieu—analyzing and transforming them into valuable information for the creation of subsequent works—*Cathedrals* confounds the hermeneutic project of attaching meaning and value to the author’s account. Corbu’s text takes on many formats in the publication, frequently appearing as a journal narrative riddled with nebulous personal psychology, stereotypes and historical inaccuracies. These unusual characteristics indicate the usefulness of
analysis which is not based on hermeneutics (the logic of meaning/value) but rather utilizes a logic capable of working with the creative process of invention: heuristics.

_Cathedrals_ is frequently relegated to the marginal role in studies of Corbu’s publications as an aberrant document, which seems to pose more problems than offering any coherent understanding of the architect’s creative processes. A heuretic analysis based on the logic of invention can explain the presence of personal idiosyncrasies in the work and provide a rigorous structure that can be placed at the liminal zone between experience and creative production. _Cathedrals_, as a component of the set comprising Le Corbusier’s movement formatted publications, presents an opportunity for a more complete CATTt Generator Analysis than we attempted with the earlier experiments in method generation by virtue of its combination of inscrutability to methods of casual reading and interpretation and the appearance in the text of concepts, categories, and analytical frameworks evidenced in the architect’s previous travel works, the _Voyage d’Orient and Precisions_.

Given the generative aspects of Corbu’s textual oeuvre, their expressed attempt to aid in bringing about a new collection of conditions known as the “Second Machine Age”, hermeneutic critique does not seem to offer a sufficient framework for evaluation. Hermeneutic logic must come after the heuretic moment of invention, for its goal is to see what has been made, and it treats the making process itself as something other, as coming from some other logic or discourse (Ulmer 2004, 33). _When the Cathedrals were White_ is a text that is particularly well-suited for heuretic analysis because its contents are positioned between the format of an argumentative essay (Le Corbusier’s publications usually feature an argumentative component serving a function of
validation) and a personal narrative/anecdotal structure. While this anecdotal format is a common appearance in Corbu’s published oeuvre, the pervasive use of personal narrative in *Cathedrals*, because of its focus on urbanism, places the work in a unique position to offer posterity a documentation of the processes of invention for Le Corbusier’s urbanisms. The appearance of argument and anecdote in *Cathedrals* also makes the work reveal its likeness to the text-format, which serves as Ulmer’s vehicle for explicating and enacting heuretic analysis: the avant-garde manifesto. André Breton’s 1924 *Surrealist Manifesto* serves Ulmer as a relay, or an example of how to appropriate a theory for the design of a method. Understood as a combination of narrative and argumentative essay formats, the manifesto is taken as belonging to the tradition of the discourse on method (Ulmer 1994, 4-8). *When the Cathedrals were White* can similarly be placed within this tradition, especially as a component of Corbu’s published works considered in their entirety as a collection that seems to work in successive steps toward the development of a new discourse on method for the production of a new architecture, a new urbanism, and a new contemporary society. *Cathedrals*, as a component of Le Corbusier’s discourse of modernism, documents the generative moments in the production of a method which could, in Corbu’s mind, bring about the Second Machine Age.

**The Cathedrals CATTtastrophe**

As covered in the Research Framework, Ulmer’s examination of the treatise on method in Western writing, from Plato’s *Phaedrus*, through Descartes and up to Breton and the avant-gardes, reveals a common collection of operations or elements. This collection forms what Ulmer calls the CATTt Generator (Ulmer 1991, 8; 1994, 8). Again,
the components of the CATTt are: Contrast - a discourse, field or method known and a desired divergence from it; Analogy - a discourse or method from some other field that offers a model for a successful way of working; Theory - a rigorously developed methodology from the creator's working discipline used primarily to offer weight and substance to the new creation; Target - the intended audience; tale - a final presentation format (Ulmer 1994, 8-12). Ulmer’s proposal is to invent an electronic writing in the same way that Breton invented surrealism and Plato invented dialectics. To quickly illustrate how to identify the CATTt components in a treatise on method, Ulmer identifies Breton’s components as: Contrast - realist/naturalist literature; Analogy - dreaming, scientific experimentation; Theory - Freud; Target - family and entertainment institutions contacted via changes in artistic practice; tale - manifesto (ibid, 10-15). A heuretic analysis of Le Corbusier’s work would attempt in part to yield the generative components of the CATTt utilized to create his method for reaching the Second Machine Age. *When the Cathedrals were White* offers up Corbu’s process of finding bits of his milieu which can be plugged into the CATTt as his manner of producing a method.

The Radiant Moments recounted in *When the Cathedrals were White* feature a specific application of the CATTt, which Le Corbusier uses to guide the development of his method. Contrast is an instigator for tension and movement; Corbu uses the contrast function quite explicitly in his construction of the “atmospheres” which open the text (Le Corbusier 1964, Part 1). The atmospheres contrast various aspects of life in France and the United States, the nature or lack of advertising at sporting events for example (ibid, Part 1, Part 2: “The decadence of the spirit,” “Money”). These little ruminations seem to
attempt a positioning and tuning of the reader into a domain which includes the contrasting bits of information, moving the reader into a position which replicates Corbu’s own point of view. This conception of the function that the Contrast component provides indicates a spatialization of the CATTt Generator’s processes: a topology best illustrated by the “cusp catastrophe”.

Catastrophe Theory, developed by Rene Thom, is a qualitative mathematics that seeks stable and continuous topological surfaces upon which discontinuous phenomena can be mapped. The cusp is the simplest of the catastrophes, and is frequently utilized to aid in describing discontinuous transformations and changes in all manner of systems, like energy fluctuations exhibited in the phase changes of H$_2$O molecules. The catastrophe surface is a description of a system’s minimal potential. It maps the system’s tendency to move toward a local minimum state. The cusp forms when a system exhibits two possible local minima in an area of possible states. The “jump” that occurs in the domain of the cusp fold is the sudden switch of the system’s minimum condition from one local minimum to the other, producing a discontinuous change in the system’s tendency toward a certain set of conditions (Woodcock & Davis 1978, 33).

Le Corbusier’s “radiant moments” are examples of a complex phenomenon describable by the cusp surface. What catastrophe theory offers to the understanding of Corbu’s creative processes is a spatial description of heuretic activity, the functions of the CATTt components become fine-tuned to describe the production of a modern method in architecture and urbanism. Contrast determines the characteristics of each domain of the catastrophe surface—an existing set of conditions governed by one
attractor (point e in Figure 5-1), which we could say represents the present—and the
domain of a second attractor which governs a different set of relationships between
conditions common across all domains of the surface (point c in Figure 5-1). The
inventor/creator can only gain knowledge about the domain of c with information
obtained from the present conditions: the domain of e. Momentary glimpses of c’s
domain can be obtained by certain chance changes in present conditions, but the
behavior of the system seems to revert quickly back to the present (e). These glimpses
are the “radiant moments” experienced by the individual situated properly within the
catastrophe topology. The other components of the CATTt serve to develop a better
understanding of the system’s overall characteristics and knowledge of how to move
definitively from point e and the present attractor conditions to point c and stabilize the
system’s behavior to remain in the domain of the second attractor. Analogy describes
the movement from point e to point c as being similar to a trajectory studied from
another field; theory attests to the existence and possible stability of the second domain
(c); the target configures the behavior surface to include pertinent information; and the
tale gives the system a communicative form. The catastrophe movement of Corbu’s
“radiant moments” will gain specificity when illustrated by key examples from When the
Cathedrals were White.

The Fairy CATTtastrophe

The most striking of the radiant moments recounted in Cathedrals is particularly
appropriate for consideration here, sharing the name of the theory utilized in the
analytical process: Le Corbusier’s “Fairy Catastrophe”:

A hundred times I have thought: New York is a catastrophe, and fifty times:
it is a beautiful catastrophe. . . .
The night was dark, the air dry and cold. The whole city was lighted up. If you had not seen it, you cannot know or imagine what it is like. You must have had it sweep over you. . . . The sky is decked out. It is a Milky Way come down to earth; you are in it. Each window, each person, is a light in the sky. At the same time a perspective is established by the arrangement of the thousand lights of each skyscraper; it forms itself more in your mind than in the darkness perforated by illimitable fires. The stars are part of it also—the real stars—but sparkling quietly in the distance. Splendor, scintillation, promise, proof, act of faith, etc. Feeling comes into play; the action of the heart is released; crescendo, allegro, fortissimo. We are charged with feeling, we are intoxicated; legs strengthened, chest expanded, eager for action, we are filled with a great confidence. . . .

Everything is possible. Let the human be written into this by conscious intention, let joy be brought into the city by means of wisely conceived urban machinery and by generous thinking. . . .

For me the fairy catastrophe is the lever of hope. (Le Corbusier 1964a, 90)

In a flash Le Corbusier’s external environment and his personal, interior affects resonate together and produce a powerful figure indicating possibility. Some miniscule aspect of the Second Machine Age—the contemporary space of the Radiant City—is seen, experienced or perhaps produced in the duration of this affective event.

The experiment in catastrophic movement: Filling in the CATTt

To illustrate how heuretic analysis brings the “radiant moment” to the foreground in a reading of Cathedrals, we shall break apart the “Fairy Catastrophe” into its constituent CATTt components to show the dense crystallization of processes evident in these short bursts of experience. The contrast is made up of those aspects of the city that induce an experience of cacophony, frustration, or anger, whether these feelings are produced from his experiences in Manhattan, Paris, or the suburbs. His analogy is the Manhattan (or any city) that is present simultaneously with the contrasting chaos: the “beautiful catastrophe”. Le Corbusier keeps circling around this paradoxical condition found in his milieu, examining it from as many different positions as he
encounters it, precisely because of the closeness of the contrast to be distanced and
the analogy to be developed. Corbu will continuously attempt to render these two
catastrophes in such a way as to further distinguish them. He describes this frustrating
proximity of these two important guides and the process of parsing them out:

Hate or love: nothing more, nothing less. Daily debate. Better, debate
through every minute in the midst of the stupefying city. Hours of despair in
the violence of the city, (New York or Chicago); hours of enthusiasm,
confidence, optimism, in the fairy splendor of the city. (Le Corbusier 1964a,
40)

The theory employed is a nearly latent deployment of Taylorist principles: the belief that
increased efficiency of production has the capability of solving many of humanity’s
problems, (McLeod 1985), manifested as a belief in the ultimate and intrinsic value of
efficiency:

It is modern society experimenting on a grand scale with the machinery
which will someday enable it to create the ‘radiant city,’ when everything will
be well calculated, justly valued, exactly measured out. An enormous
amount of time will be saved every day. Make an effort to picture the
‘business activity’ in Paris or elsewhere: hurried pedestrians, taxis
immobilized at every corner, buses full of people anxious to go somewhere
quickly, subways. Business activities are so dispersed and scattered about
the city that many people lose a large share of their time in a sterile struggle
with distance. Every day! What loss of energy, what waste! (ibid, 67-8)

The tale is the textual narrative recounting the experience of the radiant moments, and
the target is the reader, a component that Le Corbusier manipulated to great effect in
the pedagogical example presented in the next section.

The radiant moments are remarkable for their elegance. To have so many
operative components deployed almost instantaneously in the mind of the active subject
is an exhibition of inventive energy of a drastically different sort than the didactic,
discursive activities so useful in hermeneutics. The urgency with which the radiant
moments are presented in Cathedrals is an effect of Le Corbusier’s close contact with a systemic logic that creates a tuning device through the superposition of experience and thought.

**Radiant pedagogy**

What becomes most essential for Le Corbusier in the writing of *Cathedrals* is the careful documentation of each “radiant moment” for future replication, a repetition which must go beyond Le Corbusier himself and include other sympathetic individuals. This representation, or recreation, begins to elucidate Corbu’s motivation for formatting his works in such an idiosyncratic manner. The second radiant moment to be discussed features an additional explanation of Le Corbusier’s application of his creative-generative process in the form of a radiant pedagogy in which the target audience becomes affectively tuned to recreate the catastrophe surface and replicate the evocative phenomena experienced by Corbu and possibly to create such radiant phenomena themselves. This second radiant example is Corbu’s experience of entering Manhattan by crossing the Washington Bridge:

> The George Washington Bridge over the Hudson is the most beautiful bridge in the world. . . . It is blessed. It is the only seat of grace in the disordered city. It is painted an aluminum color and, between water and sky, you see nothing but the bent cord supported by two steel towers. When your car moves up the ramp the two towers rise so high that it brings you happiness; their structure is so pure, so resolute, so regular that here, finally, steel architecture seems to laugh. . . . The rose-colored towers of New York appear, a vision whose harshness is mitigated by distance. (Le Corbusier 1964a, 73)

The recounting of this radiant experience becomes exemplary through the author’s inclusion of a representation of the heuretic replication process. Not only does Corbu document his own affective experience, he postulates the existence of a previous
affective experience which acted to produce his own radiant moment through the production of the exterior object of the bridge:

Little by little the spirit of modern times makes itself felt: these men said, ‘Stop! no stone or decoration here. The two towers and the mathematical play of the cables make a splendid unity. It is one. That is the new beauty.’ (bid, 75-6)

The designers have a moment of epiphany during the process of the bridge’s production, an epiphany which features a glimpse of the Second Machine Age; they make the bridge correspond to their vision. Subsequently, Le Corbusier is affected by being similarly attuned to the reception of this radiant information and recreates the designers’ epiphany as a radiant moment. The experience becomes pedagogical when Corbu in turn attempts to pass the experience to a different target, and the radiant moment can act as a tool for the affective tuning of the audience while simultaneously serving as the affective content:

In my lecture at Columbia University I began with the evocation of the bridge and thanked the unknown man who had saved it and had given to New York that place of grace and joy. (emphasis in original) (bid, 76)

Corbu states the need for affective pedagogy to take the form of such an evocation:

Through personal experience I know that it is necessary to have seen; I do not care for literary evocations. Drawing cannot give you the inexpressible sensation of a work thus suspended between water and sky. Neither can photography. The reader of these lines, then, will not be able to appreciate as I do, in the fervor of his heart, the miracle which happened at the right moment, when a sensitive and sober-minded man cried: ‘Stop!’ (bid)

Thus a typical argumentative, expositive or anecdotal text-format could not be enough to properly carry the weight of understanding needed to produce the trajectory leading to the Second Machine Age; only a fundamentally heuretic, inventive and productive
output that could affectively tune the target audience would be sufficient for Le Corbusier’s treatise on method.

**How Do We Corbu?**

*When the Cathedrals were White* is an experimental, affective manifesto for the production of a modern urbanism. Le Corbusier’s productive method must get us from here, the present with its constellation of contingencies, to a place that is contemporary yet not-here that, due to its absence, can only be known indirectly; this place is the Second Machine Age. We can achieve a catastrophic contact with this radiant space by being sympathetic to its conditions, by having Le Corbusier’s often discusses “eyes which see”. But to attain a stable position within the domain of the Second Machine Age we must come to an understanding of the larger system which produces such catastrophic events. *Cathedrals*, as a collection of radiant moments documented in text, is a step toward the rigorous development of a methodology which can utilize these catastrophic events in the production of a trajectory leading to the new domain of the contemporary.

Le Corbusier recounts his own affective experiences perhaps to better understand the emergence of this discontinuous movement which makes the surrounding milieu become uncanny and reveal the possible; he also seems to wish that we, the readers, might become affectively activated and recreate the proliferation of the uncanny. From this heuretic understanding of the text, the presence of the problematic historical inaccuracy to which the book owes its title becomes better understood. “When the cathedrals were white” is an evocation repeated numerous times throughout the text, a phrase which alludes to the cultural milieu which produced the gothic cathedrals
of Europe. Corbu paints a rosy picture of the culture of the Middle Ages, one that is certainly not in accord with the hermeneutic traditions which establish the characteristics of fact and truth in textual history:

When the cathedrals were white, participation was unanimous, in everything. There were no pontificating coteries; the people, the country went ahead. The theater was in the cathedrals, set up on improvised stages in the middle of the nave they told off the priests and the powerful: the people were grown up and masters of themselves, in the white church—inside and out. . . . As yet there was no Academy to govern everything. People were direct and raw, frank. (bid, 5)

Taken within a heuretic context, this extremely questionable account of life in the Middle Ages becomes an interesting positioning device which serves to calibrate the affective apparatus of both the author and reader to properly receive productive contrasts and analogies upon which the text relies. The simple binary contrast of black/white becomes a mnemonic that begins to sift features of the past and present into categories of here and there, stifling vs. liberated, decay and putrefaction vs. vibrant, living processes. The hypothesized time of the white cathedrals becomes the time and space of the Radiant City and the Second Machine Age through identifying an affinity of production.

**Solving Problems with Cathedrals**

In *Cathedrals*, Le Corbusier utilizes a heuretic history of the Middle Ages that turns the cathedrals from objects into actions and the endeavor of their study becomes profoundly productive. The heuretic analysis of *When the Cathedrals were White* attempted here similarly attempts to uncover a Le Corbusier who is as much a verb as an object of reverential study. The fundamental question of analysis thus changes from “What did Corbu do?” to “How do we Corbu?”
If we follow the implications of the question “How do we Corbu?”, our research will be lead to the productive agency which is such a vital component of urbanism’s concerns. Le Corbusier sought a new method for working with the world’s urban conditions, a method that could solve ever-emerging problems. We continue to seek solutions to the problems plaguing our contemporary cities. We conduct research into the nature of the built environment in order to hone our methods for defining and working with the urban object. While the legacy of Le Corbusier’s urban plans, particularly their intensive utilization of automobile-governed scaling and large block zoning, is received as problematic in relation to contemporary issues confronting the cities of today (sprawl, pollution due to intensive energy consumption, etc), a heuretic understanding of his work reveals that his methods for dealing with catastrophic developments in the built environment may be useful to us today. The discrepancies which emerge when we examine the usefulness of the Radiant City in stemming the escalation of contemporary urban problems can become revealed as rather superficial divergences which do not necessarily affect the validity of a productive urban-planning methodology. Through heuretic analysis, the automobile becomes one component of Le Corbusier’s CATTt generator, a component which can be replaced with something that is sympathetic to our affective capacities. With the automobile replaced by a bicycle or pedestrian, the CATTt process can be run again, and a new output obtained from the generator; in this way, a method can be re-calibrated to maintain its efficacy. One would expect that the visual form of the plan obtained would have a vastly different character and scale by running Le Corbusier’s CATTt with such a substitution.
This text serves as an example of how heuretic analysis can produce critical experiments that hold the potential to revitalize the validity embodied in our discourse’s reserve of precedents. Focusing this experiment on Le Corbusier’s urban oeuvre enacts a revision process that can productively re-imagine the traditions of architectural and urban intellectual thought in the twentieth century starting with a primary and iconic example. *When the Cathedrals were White* becomes a manifesto for contemporary urban methodologies, and *The Radiant City* becomes an experimental application of Le Corbusier’s inventive logic. Much work remains to be done in this unfolding of a new contextual realignment of the tradition of modernism in urban-planning. The CATTt indicates a new lever of hope, inspired and fueled by the affective power of Le Corbusier’s fairy catastrophe.
Figure 5-3. Continuous and discontinuous changes shown as paths on the cusp catastrophe graph
CHAPTER 6
SYNCRÉSIS AND CONDUCTIVE INFERENCE IN LE CORBUSIER’S OEUVRE: THE
POEM OF THE RIGHT ANGLE AS WIDESITE

Conductive Inference and Image Interaction

Ecstasy is a systematic method of stepping outside one’s proper self through subjective interaction with the surrounding environment via the mediator of sensation. Le Corbusier’s *Poem of the Right Angle* is an instance of ecstatic representation or, put another way, a representation of ecstasy through the instance of Le Corbusier. Ecstasy is fueled by the idea of moving while remaining in place, implying both a compression of what is extended and an indefinite extension of the embodied subject. As an indefinite embodiment, ecstasy is a questioning of extension and materiality using the senses to make inferences about the body’s surroundings conductively. Examining the relationships Le Corbusier constructs in the *Poem* shows that conduction implies a superposition of elements into a dense space that evidences relationships and movement without recourse to spatial extension.

Conductive logic supplements three other movements of inference: deduction—where the truth of a conclusion follows from the truth of the premises; induction—where inference provides a reasoned movement from specific facts to a general conclusion, very useful in the construction of theory; abduction—where unrelated facts are thought to be somehow related, a hunch prior to induction or deduction. Abduction, deduction and induction describe movements of inference between things and ideas, while conduction recognizes a movement directly between things (Ulmer 1994, 127). These things related by conduction must already be in the mind to be recognized and for the movement to occur.
Conductive reasoning is radically different from other modes of inference in that the movement it describes, from thing to thing, is precisely the relationship obtained. Even abductive inference, a “hunch” that disparate facts are related, implies that the actual relationship is hidden and is only indicated through the abduction. Inductive inference performs a similar temporary scaffolding, this time between scales; the relationship between specific facts and a general conclusion is posited, even if the actual relationship is as of yet unknown. In conductive inference, the movement obtained by correspondence is the relationship described. This is the manner in which images are brought into relation: “conduction puts into logic the aesthetic operations of images (word and picture). [It] is the inference proper to images” (Ulmer 2003, 10).

The movement between images or things in conductive inference is concrete; if the inference has occurred, the link is real and does not need a supplemental abstraction, as it would in the logical truths established by deduction, or the possible truths indicated in abduction and induction. With the concrete nature of conductive inference, movement of the mind from image to image indicates an extension that is more immediate than that of physical, embodied movement, which by contrast must be inferred by first positing the truth of spatial extension. In ecstasis, the mind places preference on the conductive relays that are presently occurring between mental images, placing lesser importance on inferences about physical embodied location in relation to an abstract exterior extension.
Syncresis in Le Corbusier’s Oeuvre

Syncresis in *Vers Une Architecture*

The CATTt Generator is a heuristic device that takes identified common resources from the careers of innovators across the spectrum of arts and sciences and configures them as an intertextual matrix that syncretizes the resources into an emergent poetics. The major or most likely components of Le Corbusier’s CATTt can be identified in his publications, forming a set that provided the primary raw materials operative in his inventive activities. Most of these materials have already been sought out by Le Corbusier scholars and architectural historians looking for Corbu’s precedents. Where this literature has had most trouble is in describing how precedents known to be important to Le Corbusier were used as inventive material in the construction of something new. Identifying some of the material components and describing their syncretic union into poetic images can help to find how Corbu’s inventive processes unfolded.

The result of the CATTt generation is a new poetics, a way of working/making, or a method. So, Le Corbusier’s CATTt would simulate his construction of a new method. To find the appropriate components, we should identify a method to analyze. Corbu is most frequently identified with his modernism, as he was a major proponent and disseminator of a way of making modernity. A large part of Le Corbusier’s legacy is his urbanism, a way of making the modern city. Both were extremely influential in twentieth century architecture, although Corbu’s urbanism is widely considered unsuccessful due to problems that urban development practices influenced by his publications have encountered in the decades since his death.
It is best to view Le Corbusier’s modernism as trans-scalar and not as a method for producing isolated architectural objects. His abstract villas of the 1920s brought fame and served as examples of Corbusian modernism. Even though Le Corbusier found greater success in completing isolated, object-projects, the method that was his modernism was not confined to the scale of a single private lot, but rather covered the whole of society. That being said, for clarity’s sake, the publication analyzed here, *Vers une architecture* (Le Corbusier 1986), can be broken into different scales of application and explanation. The author never allows the scales of architecture and urbanism to separate completely, but they are distinct enough to be identifiable and have slightly different precedent component materials.

**Contrast component**

Beginning with a component that will demonstrate some of the necessary complexities of deriving CATTt components by analysis, Le Corbusier’s contrast in *Vers is Beaux-Arts* academic architecture. It is easiest for us, as it was for Corbu, to point to the “academy” as a source of contrast instead of saying specifically what about it was found to be so egregious. The title “academy” is a heteroclite image encompassing a vast array of method, mannerism and values, some of which might be individually useful and incorporated into the new poetics sought. But, the image of the Beaux-Arts and the kind of architecture it generally produced was an adequate contrast, having more polemical power than the more specific methodological contrast used: what we might call academic conservative historical stylistics. We would need to debate and discuss exactly what to call this source of contrast and what is subsumed beneath its title, but it
was enough for Le Corbusier to point a discursive finger at the *Ecole des Beaux-Arts* projects and say “No—not that”.

Corbu does call the image by name and he gives a succinct description of some of its primary attributes:

In a great public institution, the Ecole des Beaux-Arts, the principles of good planning have been studies, and then as time has gone by, dogmas have been established, and recipes and tricks. A method of teaching useful enough at the beginning has become a dangerous practice. To represent the inner meaning certain hallowed external signs and aspect have been fixed. The plan, which is really a cluster of ideas and of the intention essential to this cluster of ideas, has become a piece of paper on which black marks for the walls and lines for axes play at a sort of mosaic on a decorative panel making graphic representations of star-patterns, creating an optical illusion The most beautiful star becomes the Grand Prix de Rome. (Le Corbusier 1986, 179-80)

Certainly, this is an oversimplification of the pedagogy in practice at the Ecole, but the characterization, the “Beaux-Arts image”, is invoked as a definitive point of contrast for an effective architectural design methodology. This contrast would later become the focus of an entire book, *Croisade ou le Crepuscule des Académies* (Le Corbusier 1933).

**Analogy component**

The analogy most operative in this early manifesto went on to attain an iconic status representing the paradigm of architectural modernism for many of its supporters and most vehement critics: “The Machine”. What became known as “the machine aesthetic” was as methodological as visual, although its critics preferred to focus on the purely aesthetic content of the machine analogy. In the machine analogy or relay, the design methods employed by contemporary engineers in the production of modern
technological marvel and infrastructural elements were found to inform the manner that architecture and furnishing, even cities, should be designed.

Famous examples of machinic methodological examples from Vers include ocean-liners, automobiles, agricultural silos, bridges and airplanes. In the early years of the twentieth century, the idea that these increasingly quotidian features of urban life had an image or aesthetic at all was somewhat inventive, as they were designed by the dictates of function, with appearance mattering far less than it generally would in architecture or the trends dictating interior fit and finish and furnishings. These mechanisms also had yet to spawn a native culture specific to their way of working on or in the world, a task that the Italian Futurists took to hand around the same time Le Corbusier was formulating his modernism.

It was precisely the methodological precision and idiosyncrasy of modern, engineered constructions that Le Corbusier sought to use as a relay for architecture: traditionally valued forms, configurations and construction techniques used in architectural designs were rarely the object of methodological critique in the same way that that were in industrial design applications. A great deal could be learned in turning construction into an industry and viewing the house as a machine for living and a candidate for mass-production techniques.

**Theory component**

The theory that informs Vers and grants it a discourse specificity or acceptability is a more difficult component to pinpoint because the name of this component might lead our analysis astray. What is meant by “theory” as a component of the CATTt generator involves a terminological repetition brought about from conceptual isotropy:
In each case the theorist generates a new theory based on the authority of another theorist whose argument is accepted as a literal rather than a figurative analogy. The new theory will include on one register a literal repetition of a prior theory, modified, of course, by its interacting with the other elements of the CATTt. (Ulmer 1994, 9)

So, what kind of theory applies for application of the CATTt to Le Corbusier modernism?

In Ulmer’s terms, the theorist is searching for an already accepted theory for the production of a new theory. So, for Le Corbusier and our analysis of Vers, we can replace the word “theory” with “architecture” and “theorist” with “architect”. Now, instead of looking for a theory per se, we are looking for an accepted architectural precedent used to lend believability to this new architecture toward which Corbu is taking us. It is easy to find, but like the entries for the Contrast and Analogy components, the Theory is best understood as a heterogeneous image constructed of a variety of precedents. The simplest component is found in the work of the Perret Brothers, for whom Le Corbusier served as an apprentice in Paris. The Perrets’ practice does not appear explicitly in Vers however, so while historian studying Le Corbusier’s education invariably discuss his time at the Perret studio and the close mentor-apprentice relationship he had with Auguste Perret, Corbu does not seek architectural acceptance through reference to the Perret’s design precedents that use reinforced concrete in non-industrial building projects as a proof of the wide architectural applicability of modern construction techniques presented in Vers.

Le Corbusier decided to make his technique of persuasion complicated, possibly sacrificing a sense of architectural imminence for the method described in Vers. He leaves design applications of modern techniques and materials to engineers, showing iconic examples like Eiffel’s Pont de Garabit and the Fiat factory in Turin (Le Corbusier
1986, 9; 287), as well as many anonymous factories, hangars and grain elevators. In an egotistical move, the brunt of the contemporary architectural precedents is pulled from Le Corbusier’s own work. This was characteristic of Corbu’s inventive practices, as he was always presented as his own best example and assumed that his works would provide didactic guidance, dispel doubts and answer any questions succinctly and completely if the receiver was paying attention. Thus, the most clearly identifiable abstract architectural proposition (or theory) Le Corbusier presents in *Vers* is the *Maison Dom-Ino*, appearing as a marginal diagram on pages 230 and 234 to supplement his own design drawings offered as applications of the concept.

Another component of Le Corbusier’s theory is his use of classical proportions as a guide to derive proper and pleasing forms in architecture. Here his best examples are not contemporary or industrial, but accepted historical precedents from Classical Greece, Gothic and Renaissance buildings. The Acropolis and some of its monumental constructions, especially the Parthenon, receive a great deal of attention, and regulating lines describing the “golden section” are traced over the facades of Notre Dame and the Petite Trianon in Versailles (Le Corbusier 1986, 77; 79). Le Corbusier’s own designs serve to lend gravity here as well, with regulating lines shown to govern the production of “modern” building forms without recourse to “style” (Le Corbusier 1986, 80-83).

**Target and tale/tail component**

The target or audience of *Vers*, as with most of Le Corbusier’s publications, lacked a sense of appropriate scale that might lend a certain kind of precision to his concept of discourse, but it certainly was clear: the whole of humanity and all of posterity were the focus of his persuasions. While Corbu’s desire to reach and influence
all of humanity should be taken seriously as a component of his Target-image; for Vers, architects are the focus group. This is evidenced particularly by the section titled “Three Reminders to Architects”. This book is not just about architecture, it is for architects.

The Target audience dovetails with the tale of Vers because its format is a manifesto, a public declaration of intentions, opinions and objectives. More specifically, Vers could be considered a projective manifesto aimed not only at enlarging the group of practitioners ascribing to its tenets, but geared toward constructing such a group. The contents of Vers had previously been published as articles in the journal L’Esprit Nouveau, edited by Le Corbusier. The contributors and list of subscribers to L’Esprit were already more or less aligned with the manifesto’s directives, or at least familiar with its tenets. Corbu compiled these articles as a single expression in 1923 to gain a larger audience and find greater effect in the field of architectural practice. If a new architectural method was the goal, dissemination and propagation of that method to practitioners was essential.

**URBAN-ISM: CATTt Generator for a Modern Urban Method in Vers Une Architecture**

Urbanism is a subset of Le Corbusier’s modernism. The contemporary industrial society that produces its buildings using the modern method will approach the organization and planning of its cities issuing the same method. Scale does bring important changes to the operative components for conceiving this method however, and some of the differences in the urban CATTt are telling and make the argument for the modern method’s application at different scales more acceptable to the reader. Le Corbusier was sensitive to these conceptual differences and carried them through to the final presentation of Vers.
The target and tale will be the same because we are still examining Vers. But Le Corbusier offers a clear theoretical precedent while discussing the deployment of modernism’s principles at the town-scale: Tony Garnier's *Cité Industrielle* (ibid, 53-55). He is critical of many aspects of Garnier’s scheme, finding that Garnier does not entertain possibilities that modernism could bring for the reorganization of society and property for example (ibid, 53). But the deployment of order in the *Cité* is consistent, open green spaces are abundant and traffic organization has been considered. Of course, Le Corbusier’s own urban schemes serve as examples in greater abundance than Garnier’s, but the precedent has been identified as distinct from the Theory components used to model modernism at smaller scales.

One paragraph serves as a hinge between the scale of buildings and the theory of "classical proportions: machine aesthetic", the theory *Cité Industrielle* added at the larger scale of the town, and the contrast operative at the urban scale:

In the present state . . . the most noble quarters of our towns are inevitably the manufacturing ones where the bases of grandeur and style—namely geometry—results from the problem itself. The plan has been a weak feature, and is still so to-day. True, an admirable order reigns in the interior of markets and workshops, has dictated the structure of machines and governs their movements, and conditions each gesture . . . but dirt infects their surroundings, and incoherence ran riot when the rule and square dictated the placing of the buildings, spreading them about in a crazy, costly and dangerous way. (ibid, 54)

The contrast is the contemporary industrial city. On a following page, an illustration and its caption makes the Contrast literal, becoming a means of describing the character of the new city.
A CITY OF TOWERS

This section shows on the left how dust, smells and noise stifle our towns of today. The towers, on the other hand [on the right], are far removed from all this and set in clean air amidst trees and grass. (ibid, 56)

The contrast is not only formal, it is also methodological. Remember, the “hinge” paragraph above contrasts the thought-out planning of industrial sectors of the city with the un-planned, haphazard development typically seen in city centers. The method of contemporary urban problem-solving was comparable to triage at best: in the modern urbanism, problems of the city, its form and functions are derived from deliberate planning.

The House-Machine as Syncretic Object

We now have some ideas of the individually identifiable precedent components of the CATTt that generated the modernism in Vers, but the components must be combined in order to produce something new. The best way to describe the transformation that occurs in the union of the components is syncretism, and the result is an emergent poetics. Thus, if we are not reading Vers strictly analytically, we should see its contents as syncretic hybrids of the CATTt components, and this is exactly what we find. Some of the most lasting and confounding images from Vers are heteroclite, with multiple components involved in their genesis and affective capacity to evoke a response.

The House-Machine:

A house is a machine for living in. (ibid, 95)

If we eliminate from our heart and minds all dead concepts in regard to the houses and look at the question from a critical and objective point of view, we shall arrive at the ‘House-Machine,’ the mass-production house, healthy
(and morally so too) and beautiful in the same way that the working tools and instruments which accompany our existence are beautiful. (ibid, 227)

The House-Machine is a source of confusion because it is both and neither: both elements have been changed in their union. The precedent machine is used analogically to take advantage of the critique of form with function and efficiency in industrial design. This method-image is itself augmented in the relay, as it is seen also to be the pursuit of an aesthetic: the hidden yet seductive beauty of the machine. The reason for unifying house and machine is also to transform the house-image, seen as inefficient and archaic. The machine relay is plugged in specifically to these aspects of the house-image deemed problematic for contemporary use.

The unpredictability of such a union has a great deal to do with the conductive capacities of the resulting image. In this case, House-Machine, an efficiently designed and constructed house ready for mass-production, had a flat roof: in the critical machine-relay, pitched roofs were seen as a waste of material and were unsightly when replicated in number, while a flat surface solved these issues and also provided occupiable space above the noise of the street in the open air and sunlight. The result is that not only does House-Machine evoke an ocean-liner (one of its precedent images, the controlled maintenance of which is recorded in Le Corbusier’s extensive use of exterior and interior views of ocean liners to describe the character of his modern construction), but also a Kasbah, an association that the Nazis were more than willing to point out after finding the famous modern Weissenhofsiedling housing development in Stuttgart—featuring buildings by many great modern architects including Le Corbusier—decidedly “un-German”. The flat roof and taut white wall surfaces had never led to xenophobic cultural associations when seen on an ocean-liner, but the House-
Machine included culturally significant materials very different from those of sea-going vessels.

One must remember that a culture native to modernity was still a hypothesis in the early twentieth century, something being sought as an outcome of the poetics being synthesized simultaneously by modernists, futurists and constructivists around the world. When combined with the associations of “home”, the machine and home suddenly became linked to other cultures, and the receiver-viewers became sensitive to the nomadic aspects of ocean-liners, airplanes and cars, allowing for a syncretic Bedouin culture to emerge within the native condition of industrial modernity.

The emergent nature of the modernism that Le Corbusier produced through combining his precedents is supported by the subsequent interest and attention he gave to all manner of cultural materials. While nomadic tent encampments of “primitive man” are discussed at length in Vers (ibid, 69-72), the more permanent urban forms of desert cultures are not mentioned. It seems that the cultural reactions to modernism inspired Corbu to seek and represent cultural precedents, which appear in increasing number and variety in later publications. Urbanisme (Le Corbusier 1929) makes an allusion to the syncretic cultural material of modernity in showing a Bedouin “Nomads’ Camp” (Le Corbusier 1947, 44). Great strides are made a few years later in the representation of cultural precedents as a component of the House-Machine when, in La Ville Radieuse (Le Corbusier 1933), Le Corbusier features a drawing of The Kaaba in Mecca that highlights the forms of the surrounding buildings in the distance, and a discussion of the Casbah with diagrams and description of the traditional occupation of the roof-plane in support of his Plan for the City of Algiers (Le Corbusier 1964, 226-35). The Algerian
project, and his visits to North Africa led to an immediate interest in Arab urban forms, and entire spreads showing the similarities between aspects of Corbusian modernism and the architecture of the Casbah, both in its Algerian instance and the more general form of the walled citadel town and old city centers in north Africa. By *Maniere De Penser L’Urbanisme* (Le Corbusier 1946), the presentation of this cultural material has attained the level of an abstraction, for what was previously linked directly to the explication of an Algerian project has here become a component of modernism’s “Application and Plans” (Le Corbusier 1971, 122-3): Le Corbusier writes, “The city planning of the Arabs is excellent. (ibid, 122)” The Kasbah has moved from the status of accident of poetic synthesis to be embraced as a key component of the poetics of modernism.

Another famous syncretic image from *Vers* is the Temple-Machine. In the section “Eyes That Do Not See”, the chapter “Automobiles” is about both automobiles and classical Greek temples. The visual conduction between images of ocean-liners, modern houses and Arab architecture that the Nazis wasted no time in finding is attempted in the representations of this chapter, even though the conductive image relationship is not the slightest bit visual. Le Corbusier, in famous spreads on pages 134 and 135, simultaneously shows pictures of automobiles and the Parthenon and temple at Paestum, with construction dates for each and a text about the continual struggle to establish paradigmatic standards.

What the Temple-Machine indicates is that the components obtained through CATTt analysis find their poetic potential only in their experimental union, and reminds us what was repeatedly found during the analysis: that even the isolated components of
the CATTt are heteroclite image-assemblages. Temple-Machine demonstrates that syncretism is at work in the construction of a single component of the CATTt: the analogy that Le Corbusier seeks to use as a relay for his own method is in fact the Standard-Temple-Machine. He indicates that we should not make a modern architecture in the way the Greeks made temples, or the way Delage makes a car, but in the way human beings make the standard, guiding forms of temples and cars. The only way he could come to see this relay was through the haphazard union obtained via conductive relations between images, a relation that he attempts to re-present in Vers.

**Syncresis, Conductive Inference, and Method Invention**

**Method and Syncresis**

Method, the “meta-path” toward what-is, a spatial metaphor of human cognition described by Parmenides, places a similar preference on conductive, non-spatial movement. The paradox inherent in a stationary movement is a characteristic of Parmenidean philosophy, where all that-is is stationary, unchanging and eternal. This is an ontology that confounds the being of movement, and therefore the metaphor of method. Conductive movement however is a movement indicated through affective correspondence of different things, a concrete yet non-spatial movement between things that are. Extension, as a concept, begins to appear as the problem component of the metaphor of method.

If movement toward what-is is a movement through extended space from what-is-not, it is implied that something must move through the extension. This something would not be what-is, at least not yet, for it moves from and toward, and changes in its relation to what-is and what-is-not. Also, if it is not-yet what-is, it changes temporally,
and thus is not entirely eternal. All of these problems are brought to the metaphor of
method by the assumption of extension in the relationship of elements. Looking at the
*Poem of the Right Angle* as an instance of ecstasis can actually uncover Le Corbusier’s
illustration and solution (illustration and problem-solving are one and the same in the
*Poem*) to the problem of extension through the notion of flesh as physical embodiment.

Dedicated an entire level on the *Iconostase* of the *Poem*, *Flesh* is revealed
through Le Corbusier’s images as a complex syncretic union of many elements in the
Corbusian cosmos. This heterogeneous construction is not unique to the level of *Flesh*,
for all seven levels of the Iconostase, its individual images and the ensemble in its
entirety construct such assemblages. Focusing only on *Flesh* (level C) means that the
cast of characters brought into image-based union include the bull, Le Corbusier’s pet
dog *Pinceau*, the female body, menstruation, water (in all of its phases) and the
mythical figure Capricorn. Because syncretic assemblage is operative at all scales of
the Iconostase, clear differentiation of its components is difficult, because aspects of
each image or character repeat in different configurations and unions at many points in
the structure, implicating the whole in each part. To look at the Flesh assemblage
separately from the rest of the structure, we must attempt to begin by searching for
something unique to this domain of the *Poem*, an element that is brought into relation
with the whole only here in the Flesh, that can serve as a guide to the weave as a loose
bit of yarn beckons us to “analyze” a sweater. This guide to Flesh is Pinceau,
specifically named in C.1 of the iconostase. This unique appearance enables us to ask
a very precise question of the *Poem*: What is it that Corbu’s dog tells him, and us, about
*Flesh*?
The Poem of the Right Angle: Conduction, Syncresis, and the Flesh Assemblage

With the grafting of horns to the image of the dog ready for the hunt, the mythical bull is invoked, and it is one lightning shot from bull to the Beast: the devil is conjured by the animal with the horns. Later, the syncretic union effected in the text is called out: “The elements of a vision came together.” Included with Pinceau-bull-Devil-hunt/war are some deadwood and a pebble found in the Pyrenees and the oxen laboring in a field outside Le Corbusier’s window. What a telling vision this is: a conductive chain of beastly work and violence. The dog, his pet, is a relay to the beast of burden and the eternal beast, and the activities of the hunt and war. Their union is potent and lightning-fast. The syncretic representation of object and beings in rapid succession is revealed as a process of image construction:

By dint of being drawn and redrawn/ the oxen—the pebble and the root/ became bull. (Le Corbusier 1955, C.1)

Oxen, pebble and wood formations are linked in the mind through some strange correspondence that is eventually revealed and/or constructed by the hand: they are literally made into an image.

Pinceau is used as an indicator of Flesh, the unconscious self, built of blood and copulation and directed by genes or radical intuitions and instincts. The conscious mind that moves and guides the hand to retrace these seemingly unrelated objects knows nothing of their relationship. The relation has already been recognized by the eye, just as Pinceau has recognized the hunt in the peace of his surroundings through the workings of the teeth and nostrils eye. The relationship is in the correspondence of the images as perceived, and the hand will even “absent-mindedly” find this correspondence.
So after eight years/ was fixed the memory of “Pinceau”/ as he was called, my dog. He had become wicked/ without knowing it and I had/ to kill him. (ibid)

The text-image is culminating locally as memory, name and loss of self. The memory of his pet is fixed or completed by constructing the syncretic union of elements obtained by conductive relation. The correspondence of the image of dog to the incessant tracing of images by the hand is allowed to become temporally unstuck by moving to the name, Pinceau or “brush”, the tool of tracing and image construction. For Le Corbusier, the image of Pinceau the conductive beast is completed in death: apparently a consequence of losing his instinctual animation through infection with rabies.

Construction of the image we can call “The Memory of Pinceau” is a point of entrance into a larger system of related images that form the Iconostase level of Flesh, describing the embodiment of the elements of the universe. “The Memory of Pinceau” shows the link between flesh and consciousness, or rather the necessary interruption of the link between the conscious mind that constructs relations of sensory data and the body that produces that data. This interruption is precisely what reveals the realm of Flesh: the unconscious body. The correspondence of drawn images through repetition allowed Le Corbusier to find the conductive route between affective, and in this case obsessive, images.

Pinceau does not stand alone as a conductive portal toward Flesh, the bodily world. C.2 introduces an extremely important character in the Poem as an aspect of Flesh: woman.

Woman always somewhere/ at the crossroads is meaningful to us/ that love is a game of destiny/ of numbers and of luck (ibid, C.2)
It is comforting to think of the unconscious body in extension to assure ourselves that it exists. Le Corbusier moves from the unconscious, inert self, the body as mere extension, and even the body beyond any conscious awareness or control, to the subconscious self found in the images of dreams.

They are the innumerable who sleep but others know to open the eye. Because the profound refuge is in the great cavern of sleep that other side of life in the night. As the night is living rich in the warehouses the collections the library the museums of sleep! Woman passes. Oh I was sleeping excuse me! (ibid)

In other levels of the Iconostase, elements are described by their movements. In Milieu, A.2, water descends to the sea, clouds rise, fall, group and regroup and rain falls. This Milieu is a world known through currents marked by movements. In Flesh, it is woman who moves: but in dreams. Woman moves through images while Le Corbusier sleeps. “Passe la femme, oh je dormais excusez-moi!” Something special is being described here. Woman is at the crossroads, and it is she—the object of the thinker’s desire—who performs the linking movements of conduction between images.

Depicted in C.3, in the center of Flesh and immediately above the center position of the Iconostase [Fusion: D.3], is one of the most intense images of the Poem: a nude woman, superposed with an eroded seashell, reclines and menstruates beneath a geometric bauble. We are in the dense and evocative middle of the flesh; the female body and the cycle of its fertility made visible as flow, with a deposited trace of body in the form of geometrical calcium accretion, thrown and in turn deposited by the currents of the sea. The seashell was a life-long fetish object for Le Corbusier, an image with untold conductive potential, appearing incessantly in his publications and explanations.
of his work. Here he describes the pleasure of touching, the phenomenon of touch, via the seashell:

Hand kneads hand caresses/ hand glides. The hand and the/ shell love one another. (ibid, C.3)

This fetish image is revealed as having an erotic component: the shell and the sexual gendered female body are equated by conduction.

The image of tender caress abuts an explanation of the syncretic constructions of the Poem: the constructions of consciousness, heteroclite poetic images as they must be represented by the hand that wields the tools for drawing and painting. There is a separation between these poetic constructs and what is sought through Flesh:

In these things here understood/ intervenes an absolute sublime/ accomplishment it is the accord/ of time the penetration of/ forms the proportion—the inexplicable/ in the end precludes/ the control/ of reason/ carried beyond/ daily/ realities/ admitted/ to the heart/ of an illumination/ God/ incarnated/ in/ the illusion/ the perception/ of truth/ maybe. But he/ must/ be on/ earth and/ present/ to/ attend/ his own/ wedding/ to be/ at home/ in the sack of his skin/ to do his affairs himself/ and say thank you to the Creator. (ibid)

First, God appears in the affections that lift images out of the quotidian, He appears in their relations, an illumination of the truth of the poetic images. Well and good, but the conductive assemblage, while real and true, as described earlier in conductive inference’s concreteness in contrast to the other forms of inference, does not lead us to the flesh, it is elsewhere. The realm of the flesh is where man’s wedding and his affairs must be conducted: in the sack of his skin. Images engender images; flesh engenders flesh.
Conduction toward transformation

All of the conductive relationships documented in the Iconostase have a larger motive, the documentation of something else that is only possible through the markings of conductive inferences. Through his examination of *Flesh*, Le Corbusier brings us closer to unraveling the riddle: the paradox of Parmenides’ methodical movement without change toward what-is.

As seen in “The Memory of Pinceau” image, a single moment of observation or interaction with his pet unleashes concrete movement amongst images via conduction. Eventually, the syncretic image of Pinceau-bull-root-pebble is added to fertile-woman-shell in the center of the level, emerging as flying-bull-woman, or Capricorn, on the right side of the Iconostase at C.5. Capricorn is a frequent symbol occurring in many of Le Corbusier’s later paintings and informing content on the enameled doors of Ronchamp and the Assembly Building in Chandigarh.

The conductive net strewn by this ancient mythical creature was useful in organizing other Poetic Images in Corbu’s work. To briefly trace some of the operative contours of this net, we note the primitive triadic year frequently used in alchemy features Capricorn as a figure binding the seasons of Fall and Winter (Moore 1980, 129 n. 37), and the corresponding astrological sign begins with the Winter Solstice, while the sun’s lowest and most southerly path is referred to as the Tropic of Capricorn. This information charges south, fall/winter, the geographical area marked by the Tropic of Capricorn and the winter solstice with imagery and linkages to several different strains of ancient mythology. Today, representations of the constellation [*Capricornus*] image it as a sea-goat, referencing its placement in the heavens amongst other water signs,
although Le Corbusier prefers a bird-goat that is also associated with water. The single horn of this figure associates it with the *cornucopia*, the horn of plenty, linked to numerous deities in ancient Greek mythological symbologies. Attributes of male and female are both incorporated in Le Corbusier’s use of Capricorn here, as a balance of horns on either side of the Iconostase: the bull on the left (Le Corbusier 1955, C.1) and the female woman-bird-horned-goat on the right (C.5). From left to right, between the horns, a transformation of content occurs that leads to a new image visible at the scale of the entire level of Flesh.

**Poeme: conduction and complex structures**

Paired with the text of C.5, the image of Flesh is seen to take flight from out of the water; voices in song rise out of a vessel on the sea and there is a reference to transformation:

> The galley sails/ voices sing on board/ As all becomes strange/ transports high/ and reflects on/ the plan of happiness. (ibid, C.5)

The voices here are collective, not unlike the conductive routes between images in Flesh taken as a group. It is the group of syncretic poetic images that produces an uncanny strangeness. The local instance of Capricorn, this Capricorn that is woman-bird-fish-goat, has emerged from the other relations delineated in Flesh. This figure is a strange hybrid child of the bull-Pinceau and fertile-woman-shell.

Capricorn is associated with both the tale of Persephone, who spends one third of the year with Hades and is brought back in the Spring (Moore 1980, 118 n. 17), and the tale of Pasiphaë, the moon goddess and earth-mother who mated with the White Bull sent out to sea, to Crete, for sacrifice, producing the Minotaur: symbol of cyclical and eternal rebirth of Spring (Moore 1980, 118). Both inform the Fertile-Earth-mother
who mates with sacrificial Bull-Beast—remember that Le Corbusier’s Memory of Pinceau image is capped by necessary slaughter—to produce the man-bull of Spring. This Capricorn image is the Total Flesh of the Living World (Splawn 1990, 67), a meta-image formed through considerable efforts to chart a course across disparate images. This effect of birth or invention is the extent of the conductive movement of images.

The image-topics of the Poem are visited by a method that has no definite space; in fact, these topics are constructed from superpositioned images occupying a single space. This is a method that depends on the image as vessel and not upon the image of vessels holding contents. The image as vessel is infinitely dense and capable of many scales of such superposition. When each point can contain within itself all other points, there is no need to move to engage in visitation. The conductive movement in place of a set of images can inscribe a figure or meta-image that is a syncretic union of all of the components and their relations. For Flesh, it is a Capricorn-like figure that is birthed from this relation, a poetic image that can now go on to copulate and produce further hybrids. The path toward what-is is a recognition of correspondence between images, as eternal as it is immediate. The Poem is an attempt to elucidate and offer up the concrete being of the world through tracing the concrete, conductive routes relating its poetic images.

**CATTt Experiments in Multiple: Indicating Corbu’s Wide Images**

The complex, opaque interrelation of images in the *Poème* is shown by J. K. Birksted’s recent publication *Le Corbusier and the Occult* to be characteristic of the rituals of the Free Masons, from whom Le Corbusier may have taken many an example of “figural thinking”. What remains to be done is to take Birksted’s detailed historical
study of Le Corbusier’s involvement with the Free Masons and combine it with rhetorical tools developed by Ulmer for working rigorously and inventively with multi-media materials including images and emblems and show, with case studies of Darwin and Einstein in the history of science, that opaque symbologies are a ubiquitous component of human creative endeavor. This combination will be effected first by examining Birksted’s text closely, presenting key conclusions that he draws from the historical materials gathered, then moving backward from the conclusions to re-present some of the detailed components of his research using the repeating image-metaphor of “lock-and-key” for the objects investigated. The selection of the lock-and-key image for continued query is drawn from a famous line from Jean-Luc Godard’s Notre Musique: “We always discuss the key to the problem, never the lock.”

**On Hermetic Logic**

To begin, it should be determined what exactly is “hermetic” about the figurative language of the Poème. The term “hermetic” was coined to describe the syncretistic character of written works attributed to Hermes Trismegistus, a combination of the Greek god Hermes and the Egyptian god Thoth, supposedly writing in the 2nd and 3rd centuries. The group of approximately twenty writings, the Corpus Hermeticum, made its way into Renaissance Europe in the fifteenth century through a Latin translation by Marsiglio Ficino (Sarton 1962, 345-6), where they exerted a great deal of influence on thought and culture, especially in dealings with alchemy. Thus, “hermetic logic” is syncretistic and its elements are multivalent in function and origin, characteristics that reflect the fuzzy historical figure of the author Hermes Trismegistus, and the unclear places and dates of publication of the Corpus.
J. K. Birksted’s *Le Corbusier and the Occult* traces the long thread that may lead from Le Corbusier back to the *Hermetica* by way of the Free Masons. Birksted’s historical research links the fully developed symbolic system of the Poème to Masonic symbol systems, particularly that of the Scottish Rite, to which Le Corbusier had the closest involvement throughout his life. The Scottish Rite, even more than other Masonic ritualistic practices, focuses on symbols and emblems that are meant to be multivalent. This observation leads Birksted to a wonderfully phrased contribution to Corb-scholarship, which we can state first and work backward to arrive at a picture of Le Corbusier’s symbology that will, in the end, be somewhat different from Birksted’s:

“Thus, what is usually presented as the problem—‘Le Corbusier’s spiritual agenda for architecture which still remains remarkably obscure’ (Birksted 2009; Samuel 2000, 182)—is in fact the solution” (Birksted 2009, 304).

A Masonic source for this idiosyncratic multivalent character of symbols and emblems is described in a Planche text from the Grande Loge de France, which explains that Masonic symbols are deliberately multivalent to keep them from becoming dogmatic even though they remain deeply religious (ibid, 244). The brunt of Birksted’s presentation is spent elucidating the connections that emerge in the historical record between Le Corbusier’s life and Masonic activities, and as Eco warns in the tongue-in-cheek randomized text that introduces this essay, “The Templars have something to do with everything.” The paper trails of Le Corbusier’s life are indeed littered with Masonic rendezvous and crossings; dinner dates and lectures, family friends, contributors to *L’Esprit Nouveau*, and even Corbu’s library are pocked by Masons to the point where the incidents reach such a density and character that one is forced in the end to
conclude with Birksted that Le Corbusier was at least knowledgeable and interested in the contents and structures of Masonic rituals. Thus, “hermetic” is a particularly valid descriptor of the symbology of the Poème.

**Flashes of Unexpected Insight**

So, hermeticism, syncretism and obscurity are the solution to the figural content of Le Corbusier’s later works. So, let’s step backward from this penultimate observation and ask: what is the lock to which obscurity and hermeticism are the key? Birksted’s task, which produced a profusion of overlooked details to be gleaned from history, was to question Le Corbusier’s supposed inventive “‘flashes of unexpected insight’” (ibid, 18-19; Le Corbusier, Jeanneret 1946, 23). What makes these “flashes” so fascinating is the extent to which they are accepted as a description of Le Corbusier’s creative processes by historians and scholars (Birksted 2009, 21; Turner 1987, 135; Brooks 1987, 36) with Timothy Benton raising the stakes and calling such creative events that produces the Villas Cook and Savoye “Immaculate Conceptions” (Birksted 2009; Benton 1987, 201). Is this really how invention works: immaculately? This would seem to be far too simple an explanation of creative activity to anyone who has ever created anything. Returning to the previous metaphor for the trajectory of our investigation, the key of invention certainly fits miraculously well and turns to unlock the door in an instant, but we mustn’t forget that in the process several mechanisms within the lock must be moved: the key fits many hidden teeth. It is precisely the hidden complexity of the lock that makes the key into such a miraculous object, and Birksted goes looking for the oily pins hidden within the depths of Le Corbusier’s creative processes. In the process, he finds the Free Masons and their particular practices utilizing symbology.
Birksted attempts to salvage empirical evidence from the historical record of coincidences using Charles Sanders Peirce’s theory of signs, identifying different possible relations between signs and their objects: icons, indexes, symbols and traces. To provide empirical evidence, signs of several kinds must be employed (Birksted 2009, 35; Pierce 1992, 226, 227). So, when Birksted successfully shows linkages between the works of the seventeenth century Classical French architect François-Joseph Belanger and the conception of Villas Savoye and Favre-Jacot, he is superimposing iconic resemblances, icons, indexes and symbols to empirically establish a place for Belanger within Le Corbusier’s inventive process (Birksted 2009, 36). The jump from Belanger to the rituals of the Free Masons comes from an attempt to arrive at a more generalizable content to the solution to establish a broader validity beyond mere empirical presence (ibid, 35). What is being sought is recurrence: signs, symbols and figures that continue to reappear, and patterns that are retraced throughout Le Corbusier’s long career. It is only once the signs become generalizable that we as readers and inquirers have reason to believe that they are important, and that the linkages they inscribe are more than incidental.

The Catechism of Invention

Returning again to an increasingly familiar and heuretic image, the key is a miraculous tool in large part because the manner in which it works the lock, raising and lowering the many hidden pins, can be repeated. The key unlocks the door every time. Like Birksted, I am haunted by a description that Le Corbusier gave of the contents of his mind as containing “signs that recall time-honored ideas, ingrained and deep-rooted in the intellect, like entries from a catechism, trigger[ing a] productive series of innate
replies’” (Birksted 2009, 7; von Moos 2005, 19 [The original text reads: “Signes faisant appel à de vieilles notions bien établies et assises dans l’étendement, usées comme une phrase de catéchisme, détecteurs d’une série féconde d’automatismes.”]). These contents form an incessantly repeatable, generalized, and transmittable system.

Seeking the generalization and of the catechism, Birksted moves from Belanger, to the Free Masons, then specifically to the formulated ritual contents of the Scottish Rectified Rite, created by Jean-Baptiste Willermoz in the late eighteenth century to clarify and increase the efficacy of the symbols and ritualistic practices of the Masons (Birksted 2009, 227-34). The Medieval cathedrals and their builders are a basic reference for the revamped life-guide that is the Rite, underscoring an active social and political aspect that involved inseparable symbolic and concrete action (ibid, 229, 231). Surely, one can see how such a guiding system might seem perfectly applicable to Le Corbusier’s own life and the problems he attempted to tackle throughout his career.

Could the Scottish Rectified Rite, with its utilization of emblematic imagery, knighthood and chivalry, be a component of Le Corbusier’s catechism? Knowledge of this emblematic symbology would have begun during childhood interactions with family and friends in his home town of La Chaux-de-Fonds, and continued with heightened fascination as the opportunities for repetition and interaction unfolded along with his career and travels. Birksted’s historical research does an admirable job in describing the details of Masonic ritual emblematics and symbols and all of the opportunities the Le Corbusier would have had to develop knowledge of such practices for application to his own life and work. A great deal of detail that was previously missing has been provided to the key that is Le Corbusier’s creative process. We can, because of the work of
Birksted and many other historians who have successfully deployed the rhetorical tools of history in examining and presenting Le Corbusier’s life and work, move beyond the specificity of this singular person and, using the Poème as a case, we can examine the role that image-systems play in human creativity in general. We might learn what it means to make a key.

**Poem of the Right Angle as Widesite**

We’ve covered a lot of ground to arrive at a primary goal of this investigation: an explanation of Le Corbusier’s Poem of the Right Angle as an example of a widesite, stuffed full of images of wide scope and assembled since early childhood for the purposes of inventive reasoning. We can return to Le Corbusier’s particular word-choice in referring to the guiding materials that he brought with him to Paris when he left his hometown of La Chaux-de-Fonds: “usées comme une phrase de catéchisme, détecteurs d’une série féconde d’automatismes” (von Moos 2005). At this point, it should be sufficient to identify some of the figural contents of the Poème as images of wide scope and begin to show that Le Corbusier himself, while unaware of the terminology deployed here, was aware of what a set of such images is and how it works.

Because the figures deployed in the Poème are so multifarious, perhaps the most effective way to go about decoding some of the core components of Le Corbusier’s widesite would be to identify a few elements that are seen to recur throughout his career, starting from a rather young age. We can identify three such figures to begin: the raven or crow, the glacier, or the variegated phases and forms of water, and the unusual form of his own hands. This brief list does not represent the
most interesting or even most essential components of either the Poème or Corbu’s widesite. It merely serves here to test the hypotheses presented, staging the opportunity for future analyses.

**The Raven, The Crow**

A more accurate title for this recurrent figure in Le Corbusier’s work would be something like the “Dark Bird,” because many different varieties of bird emerge in his drawings and paintings from early adulthood, and his identification of his own identity with these creatures began early as well. A crow-like figure does appear in the Poème, but it is vague and can easily be missed except in the observance of detail. In the Iconostase of the Poème, there is an identifiable bird-man/woman as the right-hand figure of panel E.2. This bird-person appears against a swathe of red and has a blue head with a beak-like nose. This may seem a trifling detail, however, once the overwhelming amount of bird-person representation in Le Corbusier’s work is enumerated, his choice of face structure here in E.2 of the Poème can be seen to be more than mere accident. Also, if we open the species-limitation of this figure by naming it the Dark Bird, we can call attention to the much more prominent owl emblem displayed on panel B.3. Other dark bird species appear throughout Le Corbusier’s works, vying for attention as part of a similar representational image next to the most famous representations of the crow.

Of course, the crow was chosen by Le Corbusier as a self-identifying image, one component of his pseudonym, formed from the words “corbeau” and from the name of an ancient ancestor, Lecorbesier (Weber 2008, 178). The French “corbeau” has a telling English translation, meaning variously a large crow, a raven, a rook, a black coat (which
would make its wearer resemble one of these dark birds), a priest (who would wear such a coat), a corbel, or the writer of poison-pen letters (“Corbeau”, Harper Collins). All of these associative meanings were useful when Charles-Édouard Jeanneret first began using this new moniker in the pages of his periodical *L’Esprit Nouveau* in 1920 (Weber 2008, 178-9). And before the crow/raven/rook portmanteau took hold of Jeanneret’s mind, he presented himself as another bird of darkness, identifying himself as a great condor perched high and aloof on a mountain pinnacle on a postcard to his parents, Christmas 1909 (ibid, 70).

The bird-figure of E.2 has indeed been identified as a priest in a detailed analysis of the alchemical content of the *Poème*’s symbology. James Splawn recognizes the raven’s meaning within alchemical traditions, signifying *nigredo*, a state of primordial blackness evocative of putrification, dissolution and death in a stage of passage to a higher state of being (Splawn 1990, 75). In B.3, the owl is identified by Splawn’s analysis as a symbol of knowledge, combining powers of procreation and wisdom to forge a new force (ibid, 41-42). We see here in the *Poème* and in Le Corbusier’s avatars the common thread of new knowledge, dissolution and the passage to a new stage of life or existence. In the early appearances of the Dark Bird wide image, the condor is an avatar indicating loneliness, estrangement, and change within the family discourse at the entrance of the young Jeanneret into his career discourse; the pseudonym Le Corbusier allows the architect to finally take on his avatar as a public identity, one no less aloof, mysterious, lonely or estranged, only this time from the mainstream paradigms of contemporary architecture. Taking on part of the wide image of the Dark Bird during the publication of *L’Esprit Nouveau* is a repetition of a process.
learned through inventive change set against existing discourse relations. Near the end of his career in the 1955 publication of the *Poème*, Le Corbusier has long since begun to identify the value of the Dark Bird as an emblem relating to the mysterious and alienating processes of invention.

**The Glacier: The Water Cycle**

The appearance of water as a vehicle for understanding all manner of things in the universe is something that is so frequent in Le Corbusier’s writings that it could be seen as an immediately identifiable trope in his communication of key ideas and concepts. The phases of the water cycle appear often in the *Poème*: A.2 features storm clouds releasing precipitation into the horizon-forming sea; A.4 shows the serpentine forms of rivers viewed from the air as snake-like clouds; A.5 shows a puddle or cloud form encroaching into the light from a dark field. An exhaustive list of the appearance of water elements in the *Poème* is made futile by the profusion of water-related elements and symbols like the conch, and the fish most explicitly, and the moon, all of which appear throughout the Iconostase.

While it is widely known that Le Corbusier used the image of a river’s course as a metaphor for his “law of the meander”—the natural and ever-changing contingencies that exert forces and pressures dynamically over time, producing a meandering trajectory of action—whether that action be the work done by gravity on a body of water, or the actions of individuals struggling in the midst of their contemporary environment and all of its contingent problems. This meandering path also moves water from the river’s source—usually a high mountain glacier—to its lowest level—the level of the oceans—from whose body it will evaporate and form a part of the atmosphere to be
redistributed via cloud activity around the world, feeding the ever-changing trajectory. What is interesting for this examination of the recurrence of the Water Cycle as a wide image is its source in early discourses of the popcycle, in Le Corbusier’s family and his childhood in La Chaux-de-Fonds.

Charles-Édouard Jeanneret’s father was an avid mountain climber and served as president of the local chapter of the Club Alpine Suisse. He would lead yearly group excursions to the highest region of the high Alps of Valais, and the Jeanneret family frequently vacationed in the region in the summer (Vogt 1998, 312). As soon as the boys were old enough, Édouard Jeanneret-Perret led his boys on climbs to even higher portions of the Alps, amongst the glaciers and over the Great Saint Bernard Pass (ibid, 315). These excursions with their father were a profound part of the boys’ childhood learning, a manner of relating the activities of the family to the prized aspects of the region in which they lived and the famous features of their nation. Close contact with the glaciers of the Valais allowed for an affective link with the source of many of Europe’s major river systems, a link that was a structural component of cognitive development simultaneously in more than one discourse of the popcycle.

**Le Corbusier’s Hands:**

Le Corbusier’s hands had the unusual feature of the Mount of Libra: the center two mounds of each hand were fused (Moore 1980, 134, n 43). This rare feature was certainly a source of fascination throughout Le Corbusier’s life, and ended up tying in nicely to investigations into alchemy and astrology later in his life. Libra is the architect’s sign—the sign of balance, and is linked to Capricorn—binding Fall and Winter in the triadic year (ibid, 129 n 37). Capricorn appears as a common figure in Le Corbusier’s
paintings and drawings, and panel C.5 of the Iconostase shows a multivalent Capricorn-woman figure being grasped by a large hand. And, of course, the hand figures prominently itself, being a key component of G.3: the level of the Iconostase titled as Outil [tool], and is the only figure represented on level F.3, Offre (la main ouverte) [offer (the open hand)]. The Capricorn-Hand figure of C.5, the right-most panel of the level titled Chair [flesh], shows a symbolic linking of this astrological sign with embodied and worldly flesh, a link found in the hands of the creator of the Poème.

The Poème as a Tool

The Poème can thus be seen to gather together Le Corbusier’s Wide Images in order to create a densely syncretistic, interwoven symbolic set: a Widesite. This site for Ulmer takes the form of a website, but this was impossible for the creator of the Poème. Le Corbusier, while not having access to digital media, was a master of multimedia publishing and presentation, always searching for new and appropriate formats for expressing the complex ideas of architecture, urbanism and modernism.

The Poème forms a Widesite that describes Le Corbusier’s cognitive relation to all of the institutional discourses of his life, or of modernism. In fact, Le Corbusier’s invention of a method of producing a contemporary society is a placement of himself, and by hypothetical extension all of humanity, into a specific inventive relation with certain features of the world, certain contingencies of production and the solving of contemporary problems plaguing the twentieth century human environment. It is this invented method that is his modernism, or a way or method of producing the modern. This special modernism must be learned through practice and one must draw on precedents and examples, and these precursors need not be directly related to the
discipline or discourse within which the invention is prescribed. In the Iconostase, Le Corbusier is telling the viewer how he is positioned in relation to all of the discourses that inform him and construct his world, a series of relations that is found to produce modernism.

The Poème thus became a tool for navigation, a powerful guide for Le Corbusier, the components of which the architect began assembling in childhood and had grown increasingly complex throughout his career. This guide, or a Widesite like it, can also be constructed by each and every viewer using similar materials—Wide Images of great affect—to identify their position in relation to the institutions with which they are forced to interact and marking their own creative figures for the play of invention. The Poème culminates in a holistic and multifarious image of The Open Hand and the poem itself as a tool offered to mankind, encompassing all of the stuff of his world and pointing toward a new immanent condition. We cannot yet see the inside of the lock, but we have been granted the right and ability to make our own keys.
CHAPTER 7
CONCLUSION

From Heuretics to Cyber-history

This project began with an application of heuretics as a framework for analyzing Le Corbusier's urban oeuvre. This framework offered an opportunity to recuperate some of Corbu's more obscure and generally problematic works, initially focusing on *When the Cathedrals were White*. Gathering the initial results together, a large outline of material to be covered in the full dissertation was constructed, allowing the necessary contexts and directions for further study to be clearly documented. Once this research structure was in place, it became clear that a new research method was being attempted through the analytic application of heuretics and that this hypothetical historical method itself should be recognized and examined as a component of the project. Thus, cyber-history gained a name and possibility for separate rigor retroactively, once work on its initial application was already underway.

The explanation of cyber-history, its foundations, precedents, and rationale, plays the role of both an introduction to *Le Corbusier and Ecstasis*, and its conclusion. The final format of this project began only after years of work applying heuretics to Le Corbusier's career, and this work was preceded by several attempts to establish an adequate methodology for this subject. Some of the tools used to direct detailed research are offered as an appendix for the present text, opening the conclusion of this cyber-history up to alternative frameworks that may find continued use in future applications.
The Cyber-Script

The detailed outline for heuretic analysis that gathered previous output together in a unified form was considered as an instance of method production. Carefully considering the role of this guiding document was seen as essential to the development of cyber-history, itself intended to articulate those aspects of historical research that serve as a guide for contemporary projects. An outline produced early in a project, to assess the relative value of initial studies and delineate relevant contextual materials and the scope of research yet to be done, serves as a guide in the application of the chosen research methods. Traditionally, and colloquially, these early outlines and the content that slowly fills the indicated topics are referred to as manuscripts. The use of this word has become increasingly inaccurate since its first use in the late sixteenth century to distinguish hand-written texts from the publications produced using moveable type printing press technology that were growing in popularity. Over time, the term “manuscript” came to denote any process document that had not yet been typeset by a publisher, regardless of whether the document was written by hand or typed on a typewriter or on word processor software on a computer. The etymology of the word “manuscript” indicates nothing of the process of content production for a text; it merely indicates that the text was written by hand.

Because the early outline for the present work was not exclusively written by hand, calling it a manuscript is a bit of a misnomer, an appellation used only for lack of a better term. The outline for *Le Corbusier and Ecstasis* was a multimedia production, assembled from pieces of hand-written text and drawings, digital scans, photographs, digital text files, and a great deal of new writing on a word processor. Its most salient
feature is not its physical format, but rather the role it plays as a guide for the development of a complete research document. It is more appropriate to call any such document produced as a methodological guide a cyber-script, for the same reasons that a historical narrative produced as a guide can be called a cyber-history. The cyber-script helps the author to organize pertinent material into configurations or that may remain non-discursive, constructing multimedia arrays of topics relevant to the project at hand: a multimedia dispositio. Slowly, the adjacencies between the topics of the array are given greater detail, culminating in a map of the work to come, formatted for inventio, or the construction of new discursive contents.

Figure 7-4. The Cyber-script for Le Corbusier & Ecstasis: A Cyber-history
For the *Le Corbusier and Ecstasis* cyber-script, a digital format was decided to be most useful, and a webpage was constructed to house the document on ARCHODOS.com. The cyber-script arranges the topics of discussion to be developed in the text into a graphic interface of numbered icons, each linking to a content page containing a discussion topic prescribed by the initial outline. The appearance of each icon reflects the level of development of its content. The content icons are arranged in boustrophedon form, where horizontal strands run alternately from left-to-right and right-to-left, so the content sequence snakes through the chapter structure, indicating textual continuity through spatial proximity. Each content page began in downloadable portable document format until further text development began on its content. Once development of the text for a content page reached a full draft phase, the PDF link was replaced by a link to a post on a blog dedicated to the project. One side of the cyber-script is dedicated to an update log documenting the dates of the most recent updates to the project.

The web-based format for the cyber-script aids committee interaction with the project as it develops, allowing committee members as well as the general public to access and add comments to any piece of the dissertation during the drafting and development process. Updates to the content could be made from anywhere in the world where an internet connection was available, allowing detailed topical discussions to take place despite various contributing members traveling and engaged in their own work, a flexibility that proves particularly useful to dissertation development.
New Content

Perhaps the best way to evaluate the progress of a heuretic analysis is to take stock of the new material produced to describe the methods analyzed. Our cyber-history has resulted in recognition and made use of methods used by Le Corbusier to produce his modernism: ecstasis and the radiant method.

Ecstasis

Ecstasis is a movement in place characterized by an intense feeling of “ecstasy,” or movement outside of oneself. This maneuver of epiphany involves the construction of a virtual frame in the subject’s mind, enrolling sensory information, memory, ideology, etc. Epiphany is the present addition of information that creates a cascade of adjacencies across the different discourses of an individual’s popcycle. Le Corbusier used his sketchbooks and journals a guide to develop and hone the epiphanies of ecstasis. Writing in his later years, Le Corbusier attested to having moments of epiphany in his early years that remained palpable in his memory throughout his life.

In ecstasis, the mind places preference on the conductive relays that are presently occurring between mental images, placing lesser importance on inferences about physical location in relation to an abstract exterior extension. As an indefinite embodiment, ecstasis is a questioning of extension and materiality using the senses to make inferences about the body’s surroundings through conductive inference.

Radiant Method

With the tying of the goal of the Second Machine Age to ecstasis, Le Corbusier’s second technique of moving/seeing emerges, characterized by catastrophic states induced by liminal phenomena that Le Corbusier calls “radiant moments”. The radiant
moments replaced what Jeanneret called “ecstatic moments” in his wanderings during the *Voyage d’Orient*, and they are distinguished from the earlier experiments in ecstasis by the presence of an increasingly specific goal: the Second Machine Age. These events that Corbu called “Radiant Moments” form his relationship with the yet to come Second Machine Age; the radiant moments are Le Corbusier’s way of understanding the unknown space so fervently sought through his modernisms: the space of the *Radiant City*. Radiant moments that are deliberately sought and cultivated become the material of a radiant method.

**Appropriating Cyber-histories**

While the present work is the first example of a deliberately constructed cyber-history, there are lines of research and individual works already complete that are very similar to the goals driving this project. We can appropriate some works as precedents and examples to indicate possible further directions for research in cyber-history. Because there are certain problems encountered when using heuretics analytically, examination of other research frameworks to enroll in cyber-historical analysis would be beneficial to development of rigorous research tools. The most common problem encountered during this study was a lack of specificity in identifying CATTt components for Le Corbusier’s method experiments. This can be expected when using the CATTt generator to analyze any method where the inventor did not utilize it as a creative tool to simulate the activity of their *inventio*. Because the inventor was using their *inventio* directly, and not attempting to identify five simple components for method generation using the CATTt, dozens of prospective components are syncretically constructed from existing materials, their contribution to the general project of invention never clearly
identified. In Le Corbusier’s publications analyzed here feature several points of contrast and analogies, and vague theories. CATTt analysis must proceed opportunistically, finding moments of clarity to parse out operative material for each CATTt component through contingencies in the content of each work. Because few method inventors simulate their *inventio* using the CATTt Generator, other means of investigation should be explored as possible mediators between historical inventive activities and our analytical tools.

**Any Retroactive Manifesto: *Delirious New York***

Any retroactive manifesto is necessarily a cyber-history. While any retroactive manifesto, comprised of work to construct a methodology for some existing condition or practice, will be a cyber-history through its attempt to articulate the historical production of the method subject, a cyber-history need not take the manifesto format. The most famous self-proclaimed example of a retroactive manifesto is Rem Koolhaas’s *Delirious New York* (1994). Koolhaas observes that manifestos have an inherent lack of evidence, while the urban condition of Manhattan features mounds of evidence with no manifesto (ibid, 9). Manhattan is a product of an as yet unformulated method of Manhattanism; Koolhaas takes it as his task in the book to formulate this method and its constituent “culture of congestion, in order for it to claim its place in the catalogue of contemporary urbanisms (ibid, 10).

*Delirious New York* is a powerful example of the documentation, and simulation, of method development through historical analysis. The similarities between Koohaas’s project to articulate Manhattanism and our current cyber-history analysis of Le Corbusier’s works to articulate his modernism and urbanism lie in both research
projects attempting to document the historic emergence of urban methods that are simultaneously active (through widespread influence) and latent (due to a lack of self-consciously articulated method production). However, changes in Koolhaas’s project to articulate Manhattanism to make use of heuretic CATTt analysis in discussion of method formation could avoid unnecessary inclusion of criticisms resulting from the contingencies created by choices made identifying method generating components. Firstly, Koolhaas calls Manhattanism “an unformulated theory”, while it would be much more consistent with the aims of the work “to establish Manhattan as the product of an unformulated” method (ibid), however hypothetical that method might be. The overarching theory here is that Manhattan was constructed via the hypothetical method described in Delirious New York. To compare and contrast the results of our own cyber-history with Koolhaas’s analysis, we can focus attention on our discussion of Le Corbusier’s first trip to New York in Chapter 5 with an analysis of the same trip in Delirious New York, in the section titled “Europeans: Biuer! Dalí and Le Corbusier Conquer New York” (ibid, 235-281). Not having heuretics at his disposal, Koolhaas employs Salvador Dalí’s Paranoid-Critical Method to evaluate the results of Corbu’s trip, with the result of making Le Corbusier paranoid.

Koolhaas identifies Corbu’s Radiant City as Manhattan’s twin, the two growing “progressively together in spite of a surgeon’s desperate efforts to separate them. (ibid, 259)” This analysis correctly identifies Le Corbusier’s use of Manhattan as a contrast for establishing his Radiant City, but implies that this is a deficiency in the proposed urbanism, creating inconsistencies that would ultimately contribute to the plan’s shortcomings: “despite Le Corbusier’s frantic efforts to outdistance Manhattan, the only
way to describe his new city—verbally and even visually—is in terms of its differences from Manhattan” (ibid). Here, the analysis exaggerates the role of Manhattan as a contrast in Le Corbusier’s proposition of a Radiant Urbanism; the contrast is not the only means used to describe the Radiant City, and is a useful, perhaps necessary, conceptual and rhetorical tool for describing that which does not yet exist. Here, the catastrophe diagram of the radiant moment and the multiple discourse concurrence across the popcycle allow the contrast that Le Corbusier drew with Manhattan to link to a larger context of intellectual activities. The contrast is only one component of an inventive ecstatic moment.

Koolhaas uses the exaggeration of the role played by Le Corbusier’s contrast of Manhattan and the his own Radiant City to support the diagnosis of Le Corbusier’s paranoia. Le Corbusier as paranoiac becomes one of the ultimate results to carry away from the historical analysis of Delirious New York: when the Parisian authorities reject Corbu’s Ville Radieuse, he becomes a “Cartesian carpetbagger, peddling his horizontal glass Skyscraper like a furious prince dragging a colossal glass slipper on an Odyssey from Metropolis to Metropolis. In the best traditions of paranoia—natural or self-induced—it is a worldwide journey” (ibid, 259-61). When the authorities in none of the cities he visits are interested in his plan, it only reinforces Corbu’s paranoia: “I am kicked out./ Doors slam behind me./ But deep inside me I know:/ I am right,/ I am right,/ I am right” (ibid, 261, quoting Le Corbusier’s diary entry for July 22, 1934).

If neither the cyber-historical or paranoid-critical analyses of Le Corbusier’s Ville Radieuse and its relation to Manhattan is an inaccurate or revisionist representation, then I believe that the analytical framework that produces an understanding of the
fecund creativity of the human mind is more useful to “place among contemporary urbanisms” (ibid, 10) than is the story of a madman, to be held at a distance through a suspicious and exclusionary gaze. Koolhaas chose to introduce his methodological experiment with a quotation from Giambattista Vico’s *Principles of a New Science* that reads as an unheeded warning that the foundations of any intellectual project should be well seated in strong and hale minds:

> Philosophers and philologists should be concerned in the first place with poetic metaphysics; that is, the science that looks for proof not in the external world, but in the very modifications of the mind that meditates on it.

> Since the world of nations is made by men, it is inside their minds that its principles should be sought. (ibid, 9; quoting Giambattista Vico, *Principles of a New Science*, 1759)

Finding Vico’s words at the opening of Koolhaas’s study and the end of our own allows us a moment to return to our own introduction and the rooting of our analysis of what is known in the contrary image of simultaneous katabasis and anabasis. Vico scholar James Robert Goetsch, Jr. saw that to elaborate his New Science, Vico himself was engaged in a coincidence of katabasis and anabasis, based on katabasis as “a descent” or “a way down”, and the dual meanings of anabasis: both as “an ascent”, and through *anabainō* meaning “to go back” or “to return to the beginning” (Goetsch 1995, 1). The superposition of anabasis and katabasis indicates a movement of going down to attain one’s purpose, and also a return to the beginning, evoking a basic Vichian principle: “Doctrines must take their beginning from that of the matter of which they treat” (ibid; quoting Vico 1984, 314). Cyber-history, based on heuretics, attempts to analyze an inventors’ works to establish their mental images as a complete and functioning Wide Site, ready to engage new method experiments. This is a return to the beginning to
construct the site of mental production, or a return in order to disembark. Treating and tending to the mind—its images, concepts, defaults and predilections—furnishes the traveler with a properly constructed inventory of items necessary for the journey of invention.

Moving from a specific instance back to the generalized conditions of inquiry, this initial application of cyber-history articulated the site of Le Corbusier's *inventio* as a Wide Site, offering evidence that the architect was himself engaged in self-conscious inventory and development of his productive images over the decades of his career, culminating with his *Poem of the Right Angle*. The research framework of cyber-history, outfitted with the terminology, concepts, and directives of heuristics, maps Le Corbusier's publications as the slow production of a guide for inventing a modern method for architecture and urbanism. Heuristics, due to its foundation in the comfortable treatment of both discursive and non-discursive multi-media, works well for a cyber-history focused on architecture and other highly visual, spatial, and material subjects. Heuristics orders the components of a research framework to turn an object into a verb, indicating what one might do with any given material. In the present study, heuristics serves a double role, both as a theory for founding the analytical methods of cyber-history, and as the logic structuring the inquiry. As analytical exercises, many theoretical research pursuits have goals similar to the guide-constructing conceits of cyber-history, and can be useful in identifying possibilities for further attempts at anabatic inquiry, indicating new components to be linked to a context provided by the logic of invention.
Science and Technology Studies and Actor-Network Theory: Towards Chandigarh as a Widesite

The diverse field of Science and Technology Studies can be appropriated as a cyber-history of science, wherein each study searches for actual methods employed in the development of scientific knowledge as a heterogeneous and largely unexamined domain of complex social, psychological, economic, and political interactions, rather than the more monolithic ideal of the scientific method that typifies discussion and documentation of scientific research. To this end, Bruno Latour’s *Aramis, or the Love of Technology* (2002) is a fine exemplar of cyber-history, and the work of the Actor-Network Theorists is utilized as an urban analytical framework in “The Chandigarh Appendices” that serve as the open-ended and reflexive conclusion to *Le Corbusier and Ecstasis*.

In his designs for Chandigarh, Le Corbusier embedded symbological content, much of which either repeats or parallels figures that appear in his other late works like *The Poem of the Right Angle* and the forms and painted images of Ronchamp. Through these symbolic artifacts, Chandigarh serves as a physical deployment of Le Corbusier’s widesite in the format of the city itself. “The Chandigarh Appendices” explore theories to plug into cyber-historical inquiry of the urban environment, enriching our research framework and allowing heuristics to play its native role as the logic of invention in describing Chandigarh as the index of a method to generate a modern urban condition. In both appendices, theoretical material garnered from different frameworks for analyzing urban environments is applied to examination of Le Corbusier’s role in developing “The Edict of Chandigarh” and how it continues to influence the dynamic development of the city today. The theoretical vocabulary is supplied by Actor-Network
Theory, then explored further by unpacking ANT’s focus on processes of narrative production through the topological rhetoric of Michel Serres in his analysis of Livy’s *Ab urbe condita*. 
Introduction to The Chandigarh Appendices

The concepts and strategies developed by Actor-Network theorists for the sociology of science developed a rich treatment of space and spatiality, here deployed for a specific case in the history of architecture and urbanism. Actor-Network becomes a historical framework, an alternative epistemology for the understanding of an unusually cryptic case: the creation and development of Nek Chand’s Rock Garden in Chandigarh, India. Both of “The Chandigarh Appendices” present alternative analytical frameworks that were proposed prior to the development of heuretic cyber-history, and are included here as examples in utilization of various conceptual tools available for analyzing architectural history. In both appendices, the city of Chandigarh itself becomes the larger target of epistemological alterations, as the understanding of the Rock Garden’s development (covered in Appendix A) and the lack of correspondence between the prescribed or legislated and the physical development of Chandigarh (Appendix B) necessitate that the iconic modern city’s historical narrative be re-imagined. This shift in what is knowable and operative in the production of historiography proceeds incrementally: necessary concepts from history, sociology, mathematics, and post-structuralism are introduced in such a manner as to construct a new site for discourse. The ground of the emergent discourse is introduced by the end of each appendix, and new questions are presented for the continuation of research in analysis of urban conditions and their narrativization in historical and interpretive documents.
The Rock Garden of Chandigarh: Contestation and Extension

What We Know About Nek Chand’s Rock Garden

In 1958 the roads inspector Nek Chand secretly started work on a project on the outskirts of Chandigarh, India. What began as a collection of stones from the riverbeds in the Shivalik Hills of the Himalayas turned into a personal process of construction for Chand, who was working to construct a miniature world from memories of his native village Berian Kalan in Pakistan, from which he was in exile. By the time the garden was discovered by a team of workmen clearing underbrush in 1973, Chand’s secret project had become a vast collection of sculpted figures amidst a heavily constructed landscape of miniature mountains, rivers and waterfalls. Upon discovery, Chand was surprised when the local officials decided to support this clandestine and very much unplanned piece of the city. Nek Chand was appointed “Creator-Director,” relieved of his duties as roads inspector for the city of Chandigarh and given a staff of workmen and considerable funding to continue making the garden. Now, after three phases of construction, the thirty-acre Rock Garden is the second largest tourist attraction in India, after the Taj Mahal.

Even the extremely simplified account of the Rock Garden’s history recounted above is open to discussion and contestation. Any cursory survey of the existing literature discussing the garden confounds the elucidation of details in time as well as space. The dates given and the corresponding events that they serve to mark are variable depending on the source. The date of the workmen’s discovery of Chand’s site is placed in 1973 according to Lucienne Peiry’s article “Nek Chand’s Kingdom in Chandigarh” (1995, 16), 1972 by Iain Jackson’s “Politicised Territory: Nek Chand’s Rock
Garden in Chandigarh” (2002, 53), and 1975 in the “Chronology” composed for Peiry and Lespinasse’s *Nek Chand’s Outsider Art.* (2005, 155) Do these dates take into account the observation that M.N. Sharma, the former Chief Architect of Chandigarh, was given a personal tour of the clandestine garden in 1969, years before the larger “public” discovery? Does Sharma’s foray into Chand’s inner sanctum count as a discovery, or is this official contact somehow a separate mode of interaction? Spatially, while simple plans of the garden have been published (Maizels et al 2001, 26; Piery & Lespinasse 2005; 157) the actual size of the site fluctuates, seeming to rest somewhere between thirty (ibid, 157) and forty (Rajer 2001, 24) acres.

It seems that an opportunity exists in the ambiguities evident in the current records of the Garden’s space and time, a time and space having more to do with memory, simultaneity and displacement than with the fixed quantities of dates and areas. The lack of correspondence in figures is symptomatic not only of the germinal nature of the literature surrounding Chand’s project, it is a symptom of the modes of creation and existence of the Rock Garden itself. Our opportunity exists as the possibility of constructing a history for this site which adequately grasps these characteristics inherent in the subject.

We can begin to explicate the peculiar character of the Rock Garden as well as the city of Chandigarh by unpacking the two questions already posed: does Sharma’s 1969 visit to the site count as discovery?; what of the Garden is captured and what escapes in the fixation of specific times and spatial measures, and what does the index offered tell us about the Garden’s historical conditions?
The Clandesine

If Chand’s introduction of M. N. Sharma to the Rock Garden in 1969 is known and yet does not count as discovery, then the project has a somewhat elusive character placed beyond that which is merely secret. The visitation of the highest authority in the creation of the city, the Chief Architect, the official enunciator of the city’s existence, must surely count to some degree as an official observation, a witness of existence of the highest order. The fact that this moment of interaction has significance and yet does not fully qualify as discovery may signal the presence of a distinct ontology: that special form of existence that we understand as urbanity.

The city of Chandigarh, as a fully planned city created *ex nihilo*, has a particular and peculiar relation to its urbanity. The city’s existence was enunciated in an official and complete form before its physical existence commenced; its urbanity as well as its official existence preceded its human population and built form. Physical existence in Chandigarh is thus something which must be granted and author(iz)ed.

The contingent physicality which is indicative of Chandigarh’s urbanity can be useful in explaining many of the problems and debates that surround the city regarding authorization. A large portion of this discourse focuses on the existence of the unauthorized and unplanned communities of Mohali and Panchkula, cities in their own right, existing in what was designated/planned/authorized as a ten-mile Greenbelt and no-build zone around the city of Chandigarh (Kalia 1987, 120). The official completed form of Chandigarh had a defined population of 500,000 to be held entirely within this buffer (Krishan 2002, 428) and created an urban environment that excluded or drastically altered many aspects of its future population’s quotidian existence, such as
the prevalent informal markets and economies which Indians typically utilize to procure everyday services and food items.

A distinction that will prove provisionally useful as we begin to unravel the strands at play in the Rock-Garden—a subject is the observation of areas of spatiality and interaction of elements which are “controlled” vs. areas which are decidedly “uncontrolled”. This distinction will allow us to articulate differences in the directives of the many agents found in and around the story of the Rock Garden. In an attempt to rehabilitate and develop the importance of the “everyday” in discourse and Marxist praxis, Henri Lefebvre posited the existence of an “Uncontrolled Sector”: human activity (praxis) takes advantage of the oppositions it introduces into the world by transcending and consolidating them—a process which is utilized to refine and create more profound existents (Lefebvre 1968, 136-7)—this human activity comprises the Controlled Sector: the whole activity of production (ibid, 135). By contrast, the Uncontrolled Sector comprises “everything which human activity has so far been unable to orientate and consolidate, everything not yet “produced” through man and for man” (Lefebvre 1968, 137). If we are to apply this distinction to Chandigarh’s urbanity, we must modify it slightly, observing that even informal economies are economies and unplanned construction is still the work and production of man, the distinction of control for Chandigarh is placed upon the act and idea of the complete plan itself; a permanent urban plan which makes few references to deviations produced through human endeavor as well as natural activity. Thus, in addition to the Uncontrolled Sector of “brute chance” and nature, we can identify an Urban Uncontrolled which comprises every aspect of urbanity which eludes precision.
The emergence of unauthorized building in the Greenbelt commenced simultaneously with the construction of the city itself. The city plan never made provisions for the construction workers who provided the physical labor to build the city to reside within the city limits. This restriction would have made the city all but impossible to construct if the 10 mile no-build zone was also enforced. Thus, that which was relegated to the exterior of the plan has been an integral component of the physical city since the first moments of its existence. This unauthorized and un-enunciated yet obviously present segment of the population indicates to us the peculiar nature of physical existence in Chandigarh. Much of the city’s physicality, collectivity and urbanity has always been quite visible and yet somehow clandestine. In fact, if we look at the two conditions implied in the etymology of the word [from the Latin “clandestīnus”: clande: “secretly”; intestīnus: “internal”], the contingencies of physicality which apply to Chandigarh’s urban environment indicate entities which will be secret and concealed from the point of view of officiation as well as physically internal and even integral to the city.

The clandestine quality of many of Chandigarh’s existing conditions creates unusual patterns of enunciation and derision. According to the plan, physical entities apparent within the city must either be authorized or cease to exist. While this is not unusual (building codes exist to officiate built environments around the world in just such a manner), what carries the conditions of Chandigarh and many other cities in India beyond simple issues of codification and eradication is scale: the entities to be officiated or removed include communities with a combined population of nearly one million people (Ribeiro & Ansari 2002, 433)! There are currently as many unauthorized
constructions and persons physically occupying the areas designated by the Chandigarh master plan as there are authorized/defined/designated entities. There are correspondingly multiple modes of officiation and existence within the plan in praxis that are not a part of the officially sanctioned practices indicated in the Edict of Chandigarh.

There were initially two Phases for the planned development of the city. Designed as a series of modular sectors, Phase 1 is comprised of the fully designed, or complete, Sectors numbering 1-30. Phase 2 is the planned but not completely pre-designed Sectors 31-47 (ibid). Because the Urban Uncontrolled was immanent in the construction and continued existence of the official city plan, maps of Chandigarh must also include Urban Uncontrolled Sectors. Areas around the city that began as unauthorized constructions have now gained official status as Sectors 48-56 are currently under development in attempts to provide for unexpected population growth (ibid). Also represented in the environs surrounding Chandigarh would be Sectors 57-81 of Mohali, an unplanned extension of Chandigarh’s sector grid completely within the original Greenbelt no-build zone. These outlying sectors are slowly being stripped of their clandestinity, making the official documentation and physical existence of the urban environment correspond more closely, to officiate their interiority. For the newly determined Phase 3 of the city’s development, Sectors 48-56 are being granted interiority through authorization in attempts to stabilize the official components of the city plan. Mohali on the other hand is openly attempting to blur the distinction between interior/authorized spaces and the unauthorized communities and developments occurring in the no-build zone. They have extended the graphic and numeric
representation of Chandigarh’s urban fabric in an effort to camouflage the differentiations and exteriority of official enunciation.

There are other modes of clandestine occupation which present forms of interiority distinct from those attempted by the outlying areas. Within the sectors currently authorized to exist (1-56), the population has surpassed the planned-for quantity of 500,000 people. More than 100,000 of these people currently live in slums, some of which originated as clusters of workers’ camps during the construction of the city (ibid). Their interiority is physical; they are exterior to the planned city and maintain invisibility at the level of official documentation. This variation in the built environment was unplanned; heterogeneity was strictly choreographed through the separation and proximity of programming within each sector from the earliest of planning documents. There is also a clandestine hybridization of program that has existed in Chandigarh’s urban environment for quite some time. Many of the constructions that were zoned for and built as private residences are actually being used for commerce, small-scale industry, etc (Doshi et al. 2002. 256). These deviations are all but undocumented and are probably far more prevalent than the literature and analyses of the city would indicate.

This digressive discussion of clandestinity serves to provide a context for thinking about the secretive nature of Nek Chand’s work. Concealment as a concept has become multifarious and is presented as the negotiation of a network composed of other concepts: interiority/exteriority, officiation, authorization, physicality and visibility. Nek Chand began his garden as an active negotiator of relationships, and the clandestine functioned as a space within which to work.
In 1969, M. N. Sharma, the Chief Architect of the State of Punjab and Chandigarh, was guided by Nek Chand to “an inconspicuous spot, a hundred meters away from the last major road, southeast of the Capitol Complex, at the head of the city” (Sharma 2001, 28). Thus, the officiator of physicality for the city of Chandigarh arrives on the site of the Rock Garden, and yet discovers nothing. The unexpected textures of historical narrative reveal themselves here to be more than mere mistake; Sharma must not be understood as a single figure in this story, with a name and title which coexist and are completely correspondent. Such an understanding makes no reference to the title that M. N. Sharma carries in 1969, its significance, its powers and purpose.

**Mobilization: the 4 moments of translation**

Titled as Chief Architect of the State of Punjab and Chandigarh, Sharma is embodied with the powers of a collection of persons: their powers of free will to decide what to erect, where. Nek Chand as well, as an official roads inspector for the city, has a title of collective power: the power to authorize the existence of Chandigarh’s transportation networks, the ability of material assemblages of bricks, gravel and bitumen to become something else, to serve as a network. Now in the woods, in an area “cordoned off by bitumen drums” (ibid), neither man is acting in authority. Although they are both physically mobile, the people of Chandigarh and its transportation networks have not been mobilized, are not present and embodied in this network of spaces and materials. Sharma himself makes reference to this distinction between their corporeal presence that day and another, official presence, stating: “My admiration for Nek Chand’s great creative potential conflicted with my position as Chief Architect and Secretary of Chandigarh Administration.”
What has happened is that the two individuals involved in the secluded meeting in this narrative have become problematized. Their titles, their authority, have become ever-so-slightly separated from the rest of what we may call them or they may call themselves and a new space of interaction has must be observed. The ground is set for the four moments of translation.

According to a schema developed by Michel Callon to understand experimental attempts at the domestication of French scallops, translation is a process which negotiates and delimits the identity of actors involved and their possibilities of maneuver and interaction (Callon 1986, 203). We have already come upon the process that Callon identifies as the first phase of translation: problematization:

definition of groups, their identities and their wishes are all constantly negotiated. . . . Therefore, these are not pregiven data, but take the form of an hypothesis that is introduced by certain actors and is subsequently weakened, confirmed or transformed. . . . To problematize is simultaneously to define a series of actors and the obstacles which prevent them from attaining the goals or objectives that have been imputed to them. (ibid, 228)

Problematization has already proven to be an incredibly useful concept when deployed in a detailed historical analysis of recorded events, revealing the possibility of allowing the multifarious objectives and identities of identified agents to be set at play in a complex negotiation process. What is hoped is that this problematized negotiation leads to the development of a historical narrative that emerges from the recorded conditions and references the workings of retroactive assumptions in shaping the reception of this recorded information.

Callon’s second phase of translation is titled by a neologism: \textit{Interessement} [etymology: ‘to be interested is to be in between \textit{(inter-esse)}, to be interposed’]. To interest other actors is to build devices which can be placed between them and all other
entities who want to define their identities otherwise” (ibid 207-8). It is through the process of *interessement* that both Chand and Sharma receive their authority as official stewards of the territory of Chandigarh. As the government authorities attempt to guide the formation of the State of Punjab’s new capital city, it defines and delineates: it identifies territories and textualizes them through the processes of naming and describing. Thus Chandigarh becomes a city, planned to be built in a certain place – a specification which proceeds via the medium of text. Other bodies, elements or actors are also named to give faculty to the process of textualization. Many titles are bestowed as needed; M. N. Sharma becomes Chief Architect, Chand becomes Roads Inspector. But these delineations are not fixed; rather, for *interessement* to exist as defined, reality must be understood as an ongoing process. Callon clarifies that the entities enlisted in problematization are formed, adjusted and defined during action (ibid, 207-8).

*Interessement* implies that the interested or linked elements are not only redefined by their relations to one another, but redefine and are redefined by other elements outside of the linkages formed [figure A1]. This process, this action, is the third phase of translation: enrolment (ibid, 211).

The fourth phase of translation identified by Callon is mobilization. It is through the process of mobilization of allies that a spokesperson is formed. Elements in the network of relations being examined are mobilized in the formation of the alliances of enrolment, progressively forming chains of intermediaries (ibid, 216).

Through the designation of the successive spokesmen and the settlement of a series of equivalences, all these actors are first displaced and then reassembled at a certain place at a particular time. . . . [M]obilization . . . has a definite physical reality which is materialized through a series of displacements. (ibid, 217)
It is through the process of *interessement* that we finally come upon the conspicuous nature of the Rock Garden’s site in the 1960s, as well as its special variety of clandestinity.

Figure A-5. *Interessement*, diagrammed

As Chief Architect, Sharma is bestowed with the powers of the people in the creation and supervision of urbanity and the physical existence of the city of Chandigarh. Sharma represents the people of the city in their multitudinous, collective existence. Their will, their power has been effectively translated, through a chain of intermediaries, to a form in which it can be held and directed by a single man; the means by which this transformation takes place is through the textual contents of official documents. These documents not only translate the collective powers of the people to their representative, they simultaneously produce numerous local relations and make this spot, where two men interact with “naturally sculpted stones and waste materials” (Sharma, 2001), inconspicuous.
The Capital of Punjab (Development and Regulation) Act of 1952 empowers the city’s chief administrator to issue directions for the erection of buildings (Kalia 1987, 122), effectively translating and defining the authority of physicality for Chandigarh into the title carried by Sharma, and the Punjab New Capital (Periphery Control) Act of 1952 translates the design of the city with provisions for a periphery greenbelt into text, and subsequently into the powers of administrators (ibid, 123). The documents produced that effect such translation of power in the process of delineation and construction of the city are profuse, but these two suffice to define the site of our narrative and the two men present on this day in 1969.

A chain of intermediaries has been formed through the enrolment and mobilization of multiple elements in a dense network which has been titled “Chandigarh.” In the process, the land itself, that tilting plain below the Himalayas, has been redefined, divided, specified. A city has begun to emerge, at first only on paper, in texts and documents in the form of edicts, sketches, plans and sections. As the city takes form its surroundings are also changed, and this demarcation becomes formalized and heightened as the Greenbelt is formalized and the ex-urban becomes programmed and enunciated as law in the Periphery Control Act. The plain itself for miles around the planned networks of the city becomes obscure. It becomes a no-build zone; it shall not be touched. This ex-urban, obscure, and inconspicuous context has been mobilized as an integral element of the urban; the exterior contexts of the city of Chandigarh have been granted a certain interiority in the programming of the Greenbelt; the untouched surrounding areas have been mobilized and defined as rigorously as the 30 sectors of Phase 1. Nek Chand’s collection has become clandestine.
**Precision/collection**

Our second question now becomes important: what is the nature of the information captured in the dates of the garden’s existence and measurements of its physical size? We can now see that the question of when cannot merely be answered with a date, and the where of the garden involves more than enumeration as well; there are more subtle distinctions which would escape us if we were content with numbers alone, distinctions which the production of historical knowledge have kept intact in this case, however inadvertently. An event occurred in the woods, sometime between 1972 and 1975, that was decidedly different from the “encounter” (Sharma 2001)\(^2\) described above. A work crew “stumbled by accident upon Nek Chand’s private world” (Piery 1995). What would soon become the Rock Garden, was now officially discovered.

**Deferment vs. translation.** The event of this discovery is unanimous—this work crew, individuals who are identified by their work in the official employment of the state, workmen who remain anonymous and are identified only by their official position as agents of the state, has performed the action deferred by both Chand and Sharma—the collection of stones and stolen materials has now become public. In the historical account, we don’t know precisely who because the agents remain abstract. We are also still at a loss as to precisely when, but the recorded conditions are sufficient for the undisputed proclamation of discovery. A process has been initiated which is forever to be intertwined with the process of collection begun a decade earlier by Nek Chand in secrecy: the clearing in the woods has now entered the public domain and by enunciation becomes a garden; stones and found (and stolen) materials become

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“outsider art”; their finder (and thief) becomes artist; a Roads-Inspector becomes Creator-Director, and the process of collection continues.

Nek Chand’s encounter with Sharma remained private. Sharma, the most public of Chandigarh’s authorities, has been granted the distinction of individual, physical and concrete mobilization. The process of interessement in 1969 places M. N. Sharma between a collection of stones and stolen state property on one side, and the title of Chief Architect of the State of Punjab and Chandigarh on the other. The Chief Architect decided to remain at the office with the roads-inspector.

Problems: . . . obstacles . . . thrown across the path of an actor which hinder his movement . . . result from the definition and interrelation of actors that were not previously linked to one another. (Callon 1986, 228)

The problem in 1969 is titular: the only obstacles found within the boundary of the oil drums come in the form of names: the title of Chief Architect is an obstacle to Sharma, the title of roads-inspector is an obstacle for Chand, the title of “state property” and “construction materials” is a problem in regard to the collection of stones, detritus, bricks and “you name it!” (Sharma 2001)³ (One could hardly think of a more appropriate exclamation.)

The workmen have not been granted the same powers of distinction; they “stumble” upon an obstacle; they carry only as much agency within the narrative as the bulldozer which they operate. The obstacle, the problem, for them is the collection itself. Their interessement places them between their work: the clearing of underbrush in the Greenbelt; and the wall of drums, a collection of “certainly-not-underbrush”. Agency is quickly displaced along the chain of enrolled elements: the chain of command.


**Precision/Multiplicity.** What has opened up before us across the multiple accounts of the Rock Garden’s birth and its continued existence is a complex network of processes which can be gathered under the large umbrella of translation. The difficulty in pinpointing (pinning/pointing) dates or measurements of spatial extension comes from the density of the network and the heterogeneous nature of the elements of which it is composed. The Rock Garden becomes a fitful tool for illustrating the complexities of urbanity and the heterogeneity of its materials and its multiple, simultaneous processes of translation and representation became a part of the network of Chandigarh when a bulldozer was confronted with an unexpected wall in a clearing.

**A collection of stones; blanc mass.** What became the Rock Garden began as a collection of stones, stones transported from the Shivalik Hills below the Himalayas. Chand was fascinated by these stones from the sacred hills; they “seemed endowed with ‘the presence of a life’ and ‘inhabited by the gods and goddesses’” (Piery 1995, 13). Thus, the Garden begins with mobilization, the enrollment of stones as deities. This deification is perhaps the ultimate mobilization, for what we have in this initial collection is a mass of “blank figures” or blancs.

I have given the name joker, or blank domino, to a sort of neutral or, rather, multivalent element, undetermined by itself, that can take on any value, identity, or determination. . . . Like the chameleon, they are determined by their surroundings. Or by an external determination. Or by the ensemble in which they are put into play.

This joker is found everywhere . . . all simple or complex practices of interpretation.

Thus there exist blank elements. (Serres 1991, 93)

The stones’ perceived life is heightened once they are gathered together. The dense spatial arrangements of the earliest stage of Chand’s private kingdom of gods and
goddesses are a result of the arranger’s subtle responses to the playful possibilities the stones present. The stones present the order of the Garden. “Because of the joker, the order of the game is best referred to as a process of ordering to register that uncertainty and chance” (Hetherington & Lee 2000, 170).

**Miniaturization; the emergence of the past.** Another powerful component of the Rock Garden as a collection is the early emergence in the productive process of a dense mode of representation, initially tied to miniaturization. “I miss my native village and shall never forget it” (Piery 1995, 20). The intimate first phase of the Rock Garden is structured around a miniature reconstruction of the village where Nek Chand was born, and from which he has been living in exile for most of his life.

Berian Kalan now lies in Pakistan. When Nek Chand was born in that village fifty-six miles north of Lahore it was a small part of British Colonial India (Piery 1995, 11). In the summer of 1947, Partition divided the vast and newly independent land: western Punjab (and Berian Kalan with it) became a piece of predominately Muslim Pakistan, a nation separate from predominantly Hindu India (Hindustan). Mass exodus began and Nek Chand became a refugee; he would not return to Pakistan for many decades. However, he would find a chance to return to Berian Kalan through mining the spaces and forms still intact, still inhabited in memory.

This miniature village is decidedly different from the collection of stones that have been set at play around it. The stones are not representations; they are mobilized by their location as deities at play. They remain stones, but they have been made to dance. The miniature forms of the village have been made to be houses. They provoke inhabitation by the mind of the viewer. It is the viewer who must play within these forms.
The engagement of elements is heterogeneous from the beginning, and the myriad elements will continue to multiply as the process of material collection and translation continues. But in this clearing, time is not linear or successive; space is not extensive or homogeneous; each element has a time signature—a particular mode of being in relation with other elements in time—as well as a topology: a logic of spatiality. The miniature and the colossal, the present and the past all are brought into peculiar relations in the network of the Garden.

**The Emergence of the Diegetic Effect**

This text is an experiment which attempts to ground discussions of the spatial production of Chandigarh in a way not previously attempted, to re-form knowledge in such a manner as to reveal familiar and well-documented events, places and persons in new guises and offer different understandings of their relationships. The key to such an experiment is specificity: when working with an object as complex as the urban environment, changes in methodology will surely indicate shifts in epistemology and the knowable results to be obtained.

Readers familiar with published scholarship on Chandigarh will be perplexed by the lack of utilization of well-known bases of the discourses dealing with the history and development of this iconic city, a ground which features the architect Le Corbusier, his plans for the city, his urbanisms and his relationship with the project for producing this unique urban project. I would like to refer all interested parties to that body of work most frequently utilized in studies of Chandigarh (especially *The Open Hand*, edited by Russell Walden (1977) and Vikramaditya Prakash’s *Chandigarh’s Le Corbusier* (2002),
both works which prove extremely helpful in establishing a larger context for my own small experiment conducted herein.

This experiment, which attempts to scout out different methodologies for representing the object of the city and its relation to the works which inform it, in this specific instance a set of works which comprise the discourse of Chandigarh, is one characterized by distance. This distance establishes possibilities for a method which could just as easily develop as a supplement or stand in contrast to this present discourse, but the status sought is that of a supplementary aid. Much of the distancing effect produced in the positioning of this work in relation to the history and criticism of Chandigarh is owed to the adoption of Actor-Network Theory as a tool for analyzing the events of a city’s development. It is from this position that the distance appears to be doubled, for this present work seems to appeal to the history and techniques of ANT not only as a theoretical tool, but also as an analogy, a relay which indicates that a way of working in one field of discourse may be applicable to a decidedly difference one from that for which it was developed. Actor-Network Theory is an array for the sociological analysis of Science and Technology Studies, thus the sociological study of urban environments, the formation of the urban object as a technological object and the social production of that object’s development are at the foreground of the theoretical context of the present experiment, constituting a set of issues which emerge from the confluence of ANT and urban studies.

The author believes that Actor-Network Theory is applicable to the study of the Rock Garden’s development and its relation to the simultaneous development of Chandigarh. What is revealed through this application informs both the discourses on
Chandigarh’s development and Actor-Network Theory as an analytical tool. Something emerges from working—through the application of ANT to urban history—that could be called the diegetic effect. Through utilizing Actor-Network Theory as a tool, a diegesis developed is developed out of analysis (diegesis, coming from the ancient Greek for “lead through”, refers to a narrative). What emerges from this analytical method is a diegesis of the development of the object under examination: the actor-network becomes a character-space. A powerful example of this diegetic effect is of course Latour’s Aramis: Or the Love of Technology (2002), where in the work’s final format, analysis is represented in the form of a detective story, to wonderful effect.

In the analysis of Chand’s Rock Garden, a diegesis emerges (an Actor-Network) which attempts to tell the story of Chandigarh’s development from not only the point of view offered by the Rock Garden and those other elements which were active in its physical space of incubation—the other characters present during the time of the diegesis and in its specific locations—but a story told from a point of view only known indirectly to the analyst: indirectly through recorded interviews and other text information (the analyst not having been present during the events being examined). This is the most important aspect of the ANT application conducted here: the textual record offers data—information—which the physical environment no longer offers, or at least cannot articulate in the same manner as it did during the examined events.

The point is made above that many of the discrepancies which are evident in the text-record of the Rock Garden could be dealt with and sorted through in a variety of ways; the Rock Garden’s physical extension could be measured. What is offered as being of interest to Actor-Network analysis is emergence of certain lacunas and nebulae
in the representations of the Rock Garden and that these features offer us a unique access-point to the idiosyncrasies of those representations which date back to the nascent stages of development where enunciation is formative. To attain consistency in the space of the diegesis (symmetry in the actor-network) the specific point of view offered by text-records must be applied to the guises by which all of the elements are allowed to emerge and their relations understood – all actors-characters must pass through their articulation as text-information before being allowed to be set at play in the analytical environment which is explicitly textual. All elements are thus formed as text-elements prior to the work of the analyst, who must also maintain the textual symmetry of the environment. ANT commonly features diegesis as a relay for the organization of information; what was developed to store cultural information in the oral theater of the Ancient Greeks (Havelock 1986) has been applied in science and technology studies.

This articulation of the diegetic analogy as a component of Actor-Network Theory’s offering to the analysis of scientific and technological development is helpful to those wishing to study the development of urban environments. The diegesis relay allows for the utilization of the narrative characteristics of historical and theoretical discourse within a framework which governs the value of these characteristics instead of repressing them. The utilization of narratives allow for the development of a localized account of Chandigarh’s history which is articulated by spatial proximities and characteristics represented as text-information and allows the analyst to access the time of development under consideration, a time which is immanent to the characters’ substance and is not another time (or an other time).
The idiosyncratic account of the Rock Garden’s development pieced together from the discursive scraps presented above underscores the importance of symmetry in analysis as dictated by the methods of Actor-Network Theory. What has been observed from a distance in the accounts of Nek Chand’s Rock Garden reveals a complex network of heterogeneous elements with diverse relations. Dates are confounded by the existence on-site of multiple times; size and spatial extension become a convoluted mixture of scalar relations; living people dance and play with gods-as-stones that seem in turn content to play amongst themselves. What we are left to ask is why this place, this clearing in the woods, seems so different from its surroundings; to what exactly do we owe our enchantment? What of the garden could be found in the city which surrounds it, in the relations of actors and elements of diverse types, the enchantment of urbanity? Who shall become caught in the interessement of the city; what does Chandigarh look like as a network?

END NOTES

1 Kalia cites the government of the State of Punjab 1952 Periphery Control Act as providing an 8km periphery belt; a 1962 amendment to the act set the Greenbelt’s size at a 10 mile radius around the planned sectors of the city.

2 M. N. Sharma is careful to never use the word “discovery” in his description of the events which unfolded in 1969: he opts instead for “encounter” and “recognition” (Sharma 2001).

3 Sharma’s description of the materials: “strange looking metal pieces, flagstones, over-burnt bricks, broken pots, chinaware, tree trunks, weeds, rags, plastic dolls, battered hats, broken coloured bangles, used shoes, fused bulbs, worn out tires, bottles, parts of rusted bicycles, discarded building materials, birds’ nests—you name it! [sic]” (Sharma 2001)
Introduction

This text applies Rene Thom’s catastrophe theory morphologies to the historical narrativization of urban environments. The confluence of narrative and topology could yield a qualitative yet stable spatial representation of the dynamic development of the human environment. Catastrophe Theory seeks such a qualitative and stable representation of discontinuous or chaotic behavior. Applied in its nascent state to sociology, economics, psychology and linguistics, catastrophe theory’s descriptions are here applied to urban forms as a series of Narrative Spatial Operators that affectively change the narrative space of urban histories or narratives of urban formation. Each operator is understood to be a combinatorial set of several of Rene Thom's elemental catastrophe morphologies, elemental relations found in communicative materials and used as building blocks of meaning. What is sought is the application of these elemental blocks to the city as an evolving environment. Such an application could possibly be developed into a method for explaining archetypal moments in the development of human settlements, an ontology and epistemology of development that is dynamic like the city itself, yet simple and easily accessed. This topological narrativization is briefly deployed to examine certain aspects in the development of the city of Chandigarh, India.

At its simplest, Catastrophe Theory is used to model the behavioral potentials of systems with multiple variables within multidimensional spaces. This description casts a vast net over perceived or postulated systems; all that is needed to apply catastrophe
theory to phenomena are the presence of multiple, interacting variables and the possibility of understanding their interactions as tending toward conditions of stasis. These postulated tendencies describe the existence of attractors within the systems analyzed. Following the mathematical shortcut created by Laplace in his early eighteenth century study of celestial mechanics, if the forces at work upon an object within a system could be summed into a single quantity, the forces and object will tend to move toward a position where the summation of forces is minimized. This minimum position is known as a minimal potential. Because the object in the system exhibits a tendency to move toward this local minimum, it is said to be an attractor. Once within the domain or general area of the attractor, the behavior of the system will move toward a stable local point of minimal value (Woodcock & Davis 1978). In addition to the local minima, the potential position of the attractor could also be a local maximum point within the system, but these positions tend to be rather infrequent and unstable.

Rene Thom, the creator of catastrophe theory, initially applied its systems to linguistics. Within the stable unfolding of catastrophe surfaces, he found fixed analogs of language’s morphological structures. Morphemes and phonemes represent an analogical negotiation of space, forming a system of sound that indicates things out in the world, in physical space. The referential spatiality between the expressive material of language and the things it indicates becomes apparent when morphemes are built into expressions of the relationships between things in the world as simple verbs and conjugates. Catastrophe theory finds its efficacy in explaining complex phenomena with two and three dimensional space graphs. Thus, the relations between variables, the topologies of the systems and the catastrophes themselves can be graphically
represented and understood visually, as lines and surfaces [see Figure B-1]. With this graphic interface as his tool, Thom searched for stable occurrences in mathematical spaces that evoke the simple spatial relations so abundant in linguistic communication, relations that are at times quantitatively elusive. For workability, Thom limited the number of dimensions of the topological spaces utilized to five: adding dimensions beyond five would yield a plethora of stable catastrophes – far too many to be easily identified on sight, a condition necessary for usefulness. The original catastrophes are named to describe their figural, visual qualities; they are: fold, cusp, swallowtail, butterfly, elliptic umbilic, hyperbolic umbilic, parabolic umbilic.

**Morphologies and Operators: Language, Narrative, and Space**

While Thom sought to apply catastrophe theory to linguistics, the geneticist C. H. Waddington became interested in using catastrophe topologies as a tool to understand homeorhesis in biological processes, where stable canalized pathways of change resist disturbing influences in embryonic development (ibid). Waddington identified that initially homogenous clusters of embryonic cells differentiate, forming increasingly complex systems of limbs, nerves, and variously programmed tissues. This led to the belief in a qualitative and consistent way of tracking the flow of this developmental process.

The sudden, discontinuous emergence of heterogeneity from homogenous sets of elements in time can be regressively linked to the consistencies perceived through time and across multiple examples of developmental processes – a continuous metastructure that references the possible emergence of the discontinuous phenomena. Combining this initial ambition with Thom’s linguistic application of catastrophe theory, we arrive at our current project – producing a stable, qualitative description of the
language of evolution, or cast in another manner, the narrativization of history. The historical development of cities provides us with an application that is directly spatial—the evolution of the human built environment, how it is understood and communicated. We are seeking a language for the narrativization of urban development, which must contain a rigorous analog for spatial relations as well as a means for describing temporality.

**Thom’s 16 Elemental Morphologies**

Rene Thom identified 16 stable morphologies derivable from the elementary catastrophe systems. Their elementary designation is due to their limited quantity; defining the morphologies in a manner that limits their number to 16 aids in making the forms qualitatively identifiable by being easily remembered. The catastrophes and morphologies referenced by Thom’s two-dimensional diagrams are also easily distinguishable and unchanging without limiting their applications. Thus, the seven different catastrophes and their 16 morphologies can be utilized to describe a seemingly infinite variety of conditions, making complex yet qualitatively similar phenomena in different fields of study graspable.

These two-dimensional morphology diagrams were produced for their didactic quality—their forms and titles are easily understood even if the implications and derivations of each form are beyond the viewer/user. Complex topological unfoldings in spaces with up to five dimensions here become simple relational diagrams describing common spatial operations. The spatiality of Thom’s French names is referenced by the new names given to the morphologies by Wolfgang Wildgen in his rigorous reworking of catastrophe theory’s applications to linguistics, *Catastrophe Theoretic Semantics: An*
Elaboration and Application of Rene Thom’s Theory (1982). In this reworking, the morphologies are refined and become known as archetypes, their corresponding names are: The Archetype of (1) Stable Existence; (2,3) Birth/Death; (5) Capture; (6) Emission; (7) The Archetype of Metastable Change; (12) Transfer. Wildgen also develops several of his own elemental archetypal morphologies which, while sometimes rather elaborate, highlight the profoundly spatial nature of Thom’s original set: The Archetype of: Frontiers; Local Change; Change in Possession; Beating (heartbeat); Transient Existence; Gradual Birth/Death (capture); Passage; Polarization; Neutralization; Reduction of a Trimodal Field; Generating/Abolishing Transferred Objects; Indirect/Instrumental Action; Object/Instrument Prominence; Compromise; and the Messenger (Wildgen 1982). These morphologies index the profound link between language and space, allowing for dynamic relations to be maintained in the linguistic, descriptive process. Thom’s morphologies offer a progression from continuous, uninterrupted existence (to be), to physical-spatial operations (to tie, to cut off) – a sense of this progression is recovered in Wildgen’s archetypes. The progression from a simple ontological condition of existence to increasingly complex relationships between phenomena proceeds via folds in the behavior surfaces mapped in the catastrophe graphs. As spatial dimensions increase beyond three (up to seven dimensions (ibid)) we identify folds of folds as well as folding surfaces contained within folded spaces, etc.

The richness found in the catastrophe systems allows for analogy with the multifarious conditions of linguistic forms. A specification should be observed to maintain the utility of this analogy: spoken language, while being a sensory analog of spatial relations (the expression of spatial relations in the medium of sound), is itself an
extremely dynamic system. Definitions, accents, habits and lexicons are only consistent in their flux, exhibiting conditions of change played out maximally in oral communication. Thom's catastrophe morphologies provide a ground within or against which the flux of language occurs. Certain relationships of elements – to one another, to space and to time – can be combined and recombined to create any spatio-temporal situation described by language.

One way to understand the manner in which the morphologies work is through “scene-and-frames” semantics, where events in their prototypical shape are composed as diagrammatic analogical “scenes”, as in the presentation forms of theater or film (ibid). Using a semantics of scenes and frames to describe a commercial event, the scene is seen to have a set of prototypical characters: buyer, seller, objects exchanged, money, etc. To communicate information about this event, we select parts of a scene to first construct minimal sentences by placing the characters and other scenic elements in simple relationships. Wildgen chose to utilize scenes-and-frames semantics for his application of catastrophe theory, to provide within this specific linguistic paradigm a classificatory schema of the typical spatial and temporal relationships among characters in the scenes (ibid).

The analysis of language is more easily conducted upon its written forms, which provide an index of oral communication found in a slightly more stable, fixed mode of expression (Havelock 1986). If working with texts instead of oral communication, we need to specify the application of catastrophe morphologies to literate communication; this leaves implications for further study of orality (to be explored elsewhere). Our text will be the historical narrative of city formation and development.
Table of Archetypal Morphologies

(1) être (to be)
(2) finir (to finish)
(3) commencer (to begin)
(4) changer (to change)
(5) capturer (to capture)
(6) emettre (to emit)
(7) faillir (almost)
(8) cracher (to spit)
(9) rejeter (to reject)
(10) traverser (to cross)
(11) secouer (to shake)
(12) donner (to give)
(13) envoyer (to send)
(14) prendre (to take)
(15) lier (to tie)
(16) couper (to cut off)

Figure B-6. Archetypal morphologies in catastrophe theory
For this analysis we will include at least one more text. The philosopher Michel Serres applied Thom’s catastrophe morphologies to narrative processes in his text “Language and Space: From Oedipus to Zola” (Serres 1992). In his text, Serres identified a Set of Operators at work in every narrative:

- The Bridge: a path that connects two banks, making a discontinuity continuous.
- The Well: a hole in space, which can disconnect a trajectory that passes through and simultaneously connects piled spatial varieties and produces a new trajectory – the fall.
- The Hotel: organizes spatial extension into local domains of minimal differentiation.
- The Labyrinth: organizes global space into complex and intertwining relations.
- The Prison: defines a finite space within a global condition.
- Death: the cessation of existence. (ibid)

Serres describes the Operators as perfectly recognizable reproductions of constellated relations commonly found in myths, relations that comprise the series of important events described in the mythic narrative. These operators perform their work specifically on the spaces described in narratives, and one could make the case that the operations implied by each operator form an inclusive subset of modes of relation between Thom’s more simple elementary morphologies. For example, the Well Operator could be seen as a bundling of archetypes 4 (changer), 10 (traverser), 15 (lier) and 16 (couper). The beginning and ending of the catastrophic event also adds to the archetypal set of each operator: 2 (finir), 3 (commencer), etc.

Much of Serres’s insights in communications theory and narrativization depend on moving beyond the binary logic of membership in classical set theory, where an element either belongs to a set or does not (Zadeh 1993); Serres’ analyses frequently
include fuzzy sets and sack logic. In his influential exploration of communications theory, The Parasite, the logic of fuzzy sets is utilized to describe a full spectrum of infinite values and conditions between exclusion and inclusion, thesis and antithesis, etc (Serres 2007). In this way, a milieu is constructed out of what was previously a simple selection, a field of equally possible relations among elements, finite groupings formed along with the maintenance of infinite possibilities. Similarly, sack logic is presented as an alternative to what Serres describes as case logic, a logic of rigid boxes that describe spaces of definite and unchanging size/volume. In case logic, a box or case that holds a large volume can fit a smaller case inside it, but the possibility of including the larger case within the smaller is impossible; if the cases are rigid, the larger will not fit within the smaller. However, utilizing sack logic, the volumes that can be contained by sacks are finite and as clearly describable as the volumes of the rigid cases, yet there is a greater range of inclusive possibilities and relationships between the spaces that can be held. A large sack may well contain a greater volume of material than a small sack, yet under certain conditions, the sacks being empty or nearly so, the largest of sacks could be tightly crumpled and fit within a sack that describes a much smaller volume of space. Both systems, cases and sacks, are perfectly logical and consistent, yet the range of possible conditions and relations they describe are drastically different. The milieu of the fuzzy set and the scalar manipulations of sack-spaces are both useful for describing the spatial logic of language and narrative; a large variety of spatial conditions and phenomena can be described while maintaining the logical consistency of the system employed.
The logic employed by the set-structure of the Operators includes the gradual assessment of element membership, exhibited by fuzzy sets and the inclusive scalar flexibilities of sack logic; the binary yes/no condition of classical sets is expanded to provide a multitude of possibilities for member relations. It is important to realize here that we are dealing with a set of Operators that describe ways of working (on) spaces. The changes induced are not necessarily transformations, not merely the changing of conditions from \( a \) to \( b \), but are more frequently temporary alterations of a milieu, representing the dynamic component of dynamic systems. This will become clearer when the Operators are deployed to describe dynamic narrative spaces.

**Deployment 1**

**Chandigarh, Narrative Scales and Sack-Logic**

For this investigation, Chandigarh, India offers an appropriate setting to deploy the catastrophe Operators and explore how a city’s historical narratives influence features of the physical environment, and how relationships formed by individual citizens and planners evolve over time with that environment, as an object of knowledge. Several layers of historical narrativization are at work in the formation of Chandigarh as an object of knowledge in writing. Based on an iconic design by the European modernist master, Le Corbusier, Chandigarh was planned as the modern capital city of the State of Punjab following the Partition of India in 1947, when British India split into the separate nations of India and Pakistan. At the most general, then, Chandigarh represented a modern capital planned as a single, massive project and indicative of the new directions of a sovereign Indian nation. On another level, Chandigarh was planned after the Partition had caused Punjab’s loss of its traditional
cultural center, Lahore. Thus the newly invented urban fabric was imbued with the tenor of loss and displacement. Finer-grained details – including administrative, design and construction documents – reveal deeper complexities that appear to subvert the more general narratives (Kalia 1987).

Chandigarh is a poignant example because of the stature still granted to the Edict of Chandigarh, an iconic planning document from the city’s inception that determined the urban environment in considerable detail. Commemorated by its inscription in a plaque, the Edict is an abbreviated version of the Establishment Statute of the Land of 1959, and today presents the defining spatial features of the city to the world on the official municipal website (http://chandigarh.nic.in/knowchd_edict.htm). But the narrative of development indicated by the static presence of the Edict as a development guide for the city’s form is of course far too simple to capture the evolution of an entire urban environment over the past fifty years: there is a profusion of discrepancies between the planning document as written and the dynamic urban environment to which it gave rise. These deviations should not necessarily be cast in a negative light, however. In fact, they are telling characteristics of the spatial image-metaphors chosen to model the urban as an object of knowledge.

A topological analysis of Chandigarh’s historical narratives offers a spatial structure to sift rhetorical details about the design and formation of the city. If we apply səck logic to the narratives, complexities at the documented but quotidian scale of daily interactions – among individual members of the governmental or administrative bodies, alongside the multiplicity of designers engaged in any city-scale project – would not be considered contradictory or be found to logically invalidate members of a more general
set of elements. As a narrativization structure that encompasses local narrative details within increasingly larger and more general “meta” narratives, the design and development of Chandigarh becomes at the global historical level an instance of propagation of the “International Style” of the Modern Movement, performed to large extent by the agency granted to Le Corbusier, his ego and his talents. If the metaphorical space of the narrative is perceived as a rigid system of containers (using case logic), generalizations effected in the construction of increasingly larger scales to contain local details seem to negate the value or applicability of many local elements. The observation of element profusion at multiple scales contradicts the containment effected by generalization unless each scale and the topos it describes can be seen to be flexible, bendable, and collapsible.

Imagine that the complexities of quotidian elements (such as the large cast of designers at work in the project of designing Chandigarh and the individual agency each would command) and the separate variables they may beg for in system-state representation become dimensions that can easily be collapsed, folded and thus contained within a deceptively simple (and seemingly larger) sack-system. Initially, this image of a crumpled ball of forgotten and problematic material hidden within an all-but-empty and apparently clear/clean container might seem akin to the metaphorical image of the Grand Narratives of Modernism as a monolithic solid, pocked by tiny fissures and cracks that ultimately undermine its logic. Yet while the sack-image allows for the co-existence of multiple scales and disparate/contradictory details, there is an important qualitative difference: metaphorically, the sack-image eliminates the mental picture of smaller “fissures” undermining a larger narrative. The largest sack, the Grand Narrative
of the Whole City nurtured by an umbilical connection to a singular City Plan and the genealogical material of the founding father, is not altered in any radical or structural manner by the presence of a possibly infinite series of crumpled sacks contained within. The Grand Narrative becomes a *topos* that will hold a variety of contents. Utilizing a spatial metaphor of sack-logic thus modifies the understanding of relevance and value of the narrative materials represented in the rhetoric of history.

**The Edict and the Well: Deployment of Narrative Operators**

The Edict of Chandigarh discursively represents the inauguration of an urban environment, and in the vocabulary of spatial Operators enumerated above it has a dual spatial function in the topology of the city’s narrative. To “inaugurate” is “to take the auguries” or omens of a place or event, to presage its dynamic development. Topologically, the Well works as a hole in space, cutting trajectories that cross it and simultaneously connecting diverse layers of space by forming new trajectories made locally possible by the working of the hole. Like the Edict of Chandigarh, any planning document that offers a general guide for the possible forms of the urban environment can be seen to operate on a discursive topology by forming a Well, augmenting existing local trajectories of development and supporting new trajectories through a process of gathering and funneling into determined local conditions.

The richness of relations possible with the vocabulary of spatial Operators allows us to see that a local operation that affects the space of the urban system in representation forms a new space or *topos*. The workings of the Well Operator can be seen to form a Bridge, connecting separate domains by a continuous path that was not previously possible. The Operators, like the layers of narrative representation in the
previous section, can be usefully envisioned utilizing sack logic. Such discursive modeling augments our conception of the dynamic and often unpredictable relations between the seminal vision for a city, and the everyday details of the complex urban environment it precipitates. Perhaps it is obvious that the Edict of Chandigarh promoted certain directions for the city’s development while precluding others. However, by means of a topological metaphor like sack logic, these generative parameters may be appreciated in a more nuanced light, stimulating rather than prohibiting a profusion of new idiosyncrasies and an infinite conception of scales within the confines of the domain of operation. In short, such operations stimulate the perpetual variegation of a city and its narrative. In turn, each spatial Operator contains multiple archetypal morphologies which, when postulated and examined individually, add a finer grain of specificity and rigor to the topological representations. Recalling the “bundling of archetypes” mentioned previously, the Well formed by the Edict can be seen to combine 4 (changer), 10 (traverser), 15 (lier) and 16 (couper) and perhaps 5 (capturer), and each of these morphologies can be tied to specific aspects of the administrative object being examined.

**Deployment 2**

**Qualification**

It is not enough to piggy-back upon Serres’ *Rome*, bringing slightly different information to bear on the text. To be useful, the current textual analysis must create new ground, and what is proposed here is a reading of *Rome: The Book of Foundations* that opens the text toward the direction of catastrophe topologies, an explication of the topologies already contained in the work to provide a qualitative, dynamic and spatial
description of the events chosen by Serres from Livy’s Ab Urbe Condita. This altered understanding of narrative events in the history of Rome could provide a template of dynamic topologies for experimental application to other text-locations.

**Milieu/Emergence**

I see a sort of topology before logic, a space preliminary to its operations. We never think about the space where the operation unfolds. (Serres 1991, 178, 180)

Having described our analytical work-space and its contents, we are ready to enter and begin working. A relentless emergence and interrelation of spatial operations and events will characterize the analytical processes performed. In the way that Serres’ analysis supplements and amplifies the spatial rigor inherent in Livy’s original text, the text-unfolding will describe the work-space, underscoring the topological characteristics of Serres’ analysis, as well as serve as an analogical text system that enacts relationships and phenomena temporally. We begin with a threshold condition, the emergence of the space through which we will navigate, at the site of a catastrophe.

**Catastrophe 1: the Invention of Writing**

To take the auguries is to believe in a world without man; to inaugurate means to give homage to the real as such. . . . There is, first, the sens of objects.

The tracks of hooves drive readers away from the dark cave. And the voice of oxen brings them back. But on this day . . . an ox’s throat was cut on the altar.

History hears everybody calling; the historian, most often, hears only a single voice. (ibid; 13, 14, 15)

The entirety of the space navigated and described by Livy, the space of inauguration, becomes for Serres a conflation of operators, primarily the labyrinth and the well. The characters of the historical narrative (unrestricted by historical actuality),
navigate a labyrinth (the character of the world before foundation). At a certain point in this meandering navigation of the complex space of the labyrinth, the characters encounter a well.

Serres reminds us that Evander, the king around whom the events of Book 1:5 of Livy’s text revolve, is also credited as the mythical creator of writing and appears in the myth of Hercules’s defeat of Geryon. In that myth, a victorious Hercules claims Geryon’s prized oxen. Later, as Hercules sleeps, some of the oxen are stolen by the shepherd Cacus, who hides them in a deep cave, pulling them by their tails so that their tracks appear to lead out of the cave. Hercules awakens, searches for his oxen and finds the tracks. As he puzzles near the cave entrance, the oxen inside begin calling out, and Hercules storms into the cave for revenge upon Cacus. Before Hercules can kill him, however, other shepherds appear with their king, Evander. As the shepherds are about to kill Hercules, Evander recognizes the demigod and stops his people from making such a grave error. Instead, Hercules is acclaimed, a temple is dedicated to his name and oxen are ordered to be sacrificed. In this pre-foundation myth, a foundation before the foundation of the city, the narrative emerges: Evander arrives in time to narrate the events, creating the historical account. At the heart of the labyrinth, formed by Cacus through his dissimulating activities and subsequently navigated by Hercules, the characters and events gather around the site of the dark cave – the Well.

Serres describes the well-operator as a hole in space, a local tear in a spatial variety. This hole forms a disruption, a disconnection of spatial trajectories; it also connects disparate spatial varieties, or the strata through which the well has been cut. Actions are intensified in a new trajectory as the elements gather into the domain and
fall into the site of the well (Serres 1992). In the Hercules myth, the characters’ separate and meandering paths—a labyrinthine patchwork of spatial variety—are gathered into the dark cave, the domain of the Well.

When Evander arrives at the cave, a catastrophe occurs; Evander himself forms a well and everything nearby is swallowed by it. The well begins as one operator among several, the cave being its local instance. The gathering of characters and events around this operator leaves the space open for impending catastrophe: the catastrophe of the fall into the well, the creation of a new trajectory. Evander’s arrival creates a new trajectory out of the gathering elements: he creates the narrative of history, allowing the well-operator to perform its operation on the space. The navigation of space is changed in a catastrophic instant, a final loss of balance into the trajectory of the fall.

The finality of this threshold catastrophe should be underscored here to specify the character of Rome: The Book of Foundations as a uniquely historical text in Serres’ otherwise a-historical topological philosophy. The site of inauguration at the mouth of the cave, with an event that leads to the ritual establishment of a temple in honor of Hercules, finds its founding agency in the character of Evander. The king arrives suddenly to the site and provides a timely interpretation of the environment and characters currently at play within it. Serres reminds us that Evander is credited in Greek mythology as the inventor of writing, the figure who made it possible to narrativize events and thus make them static, linear representations in a text (Serres 1991, 16). While Hercules’s life has been spared, a catastrophe has emerged in the act of sparing enacted by the king; a single interpretation has come to reign on the scene, Hercules shall be honored and his crimes rendered unimportant.
The figure of Evander marks the entry into text-space, an interpretive space of representations that will become later receive further formatting to become history. Rome is a book of foundations within which Serres enacts an epistemological archaeology of repetitive layers of historical and cultural founding (Assad 1999, 12). Many of Serres’ other writings indicate the possibility of non-closure, an inventive a-historical time founded on physical reality (ibid, 12-13). The space and time of Rome is closed, a characteristic that it taken from being based on the re-reading of Livy’s historical account of the founding of the city. The closure of the historical system is effected in the scene of the first catastrophe at the site of a well (the cave where Hercules hides the stolen oxen). A new well is formed through Evander’s founding actions, his interpretation of the oxen’s tracks, the complexity of the preceding events being filtered, simplified, closed. This is the initial condition of founding in Rome, and the idiosyncrasies of the Well-operator will be at work upon the subsequent topological manipulations of founding-events.

**Catastrophe 2: Multitudes and Mixing**

The place of indecision, the place of indetermination – the pass. (Serres 1991, 45)

According to Livy, the city of Alba is located on a hill-pass and in a valley, connected by a spring that feeds the river *Albula*. After one of Alba’s kings, Tiberinus, drowns in the Albula, the river is renamed and given an identity apart from that of the city, becoming the river *Tiber*. In this story, the river flowing from the spring (the Albula) forms a topological bridge, bringing the high (mountain pass) and the low (valley) together. And yet the bridge-river is paradoxical, since its flow simultaneously unifies
and divides space: while the river brings certain places together it keeps others apart, creating the need for other, more literal bridges.

Operating as a Bridge, the river connects space locally with its flow, yet it also alters local and global conditions. The topology of the Bridge does not merely connect banks that are already there, it defines them as banks, which guide and attend the river through space (Heidegger 1993). The river emerges from the topology of the Bridge as it operates on the landscape.

As in the previous catastrophe, which introduced writing and narrativization, we do not encounter merely one operator in Alba’s space: the river Albula (above characterized as a Bridge-operator) itself runs into a Well. In an intersection of spatial operators, the Bridge (the river Albula and the flow of its currents connecting and dividing the physical space through which it flows) is gathered into the Well (the Well formed by Evander in the founding of narrative space) by receiving the name of the sylvan king whose life it took: Tiberinus.

All the waters of the world are waters of collection; they already come from up high. . . .

Without these temporal plateaus mixed with valleys, there would be no hope, no future; there would never be any change, always redundancy . . . there would be no history. (Serres 1991, 47)

The simultaneous interaction of multiple operators makes explanation quite dense. What is ultimately important for the reader (of Serres’ Rome, of Livy and of this present text) is to understand that the topological operator of the Bridge is implicated by Serres in the formation of history as an interpretive narrative. In the above quote, all of the waters of the world form a system that pools, flows and gathers into various dynamic forms via gravitation. This observation is an instance of the same topological
activity that creates the possibility of history through change within the system.
However, in observing this Bridge-activity, we must not forget the inauguration at the site of the cave: the initial founding, or pre-founding of the city. We noticed in the activity of Evander the emergence of a Well within which history as textual representation of a temporal narrativization must take its place. The use of the Operator-typologies becomes evident (along with the complex signifying activities of language) in the ability to call by a fixed name the complex actions being performed within our delimited topological system. We have so far indicated the interaction of Well and Bridge operators at inaugural events of the city, the foundation of writing and the naming of landscape features.

Applying the imagery of “sack logic,” in this example we find the sack-space of the Bridge crumpled and stuffed into the sack of the Well, and vice versa. However, perhaps it is not enough to observe that the two sets can be made to fit easily within each other. Perhaps they must always be found together; the presence of one indicating the presence of the other, with sacks and spaces in heterogeneous complicity.

We move along. Evander has pushed the group into the Well by providing an interpretation of events, the single trajectory of historical time is created in the catastrophe event/moment of the fall. The movement does not stop there, at the founding of the threshold. Once the continuity of the trajectory is established, once we are within the Well-operator itself and we can perceive its space, our space becomes again navigable. This navigation is not the same as previous wanderings, the meanderings of Hercules or Ulysses through the milieu before the fall; we are now
falling. We may look into the strata of spatial varieties as we pass, but we must pass.

We are refused wandering, our trajectory is determined by the flow of the trajectory.

Each defined meaning is only a scenography – that is to say, an outline drawn from a particular site. . . . [T]hat is what the meaning of history comes to: scenes. Scenes, and thus sites, from which to see representations. (ibid, 23)

History—linear, progressional history—follows the current of time. The Sylvan Kings of Alba come from the black box of the woods that surround the city (ibid). Savage/Sylvan thought, combinatorial thought, invades space and freezes time, and the Sylvan Kings of Alba create history in the same manner, by invasion of space and freezing of time. We are forced to perceive from the trajectory of the Well by projecting it from the flux of the river. The Sylvan Kings’ representation, their projection, is akin to the look found in Robert Doisneau’s regard oblique (Doane 2000). This gaze fixes the set of disparate spaces for an instant, within a context of movement or flux. This is the nature of Sylvan “combinatorial” thought; the Kings combine the visions of passing spatialities within their mobile point of view (which has also become our point of view from the trajectory passing the layers of space through which the inaugural Well catastrophe cuts). Fixed scenes appear on the Bridge, through the instantaneous and continuous combination of visions of the surrounding context which it offers to those who must traverse its space. This is the freezing action of the gaze, the look that attempts to focus on local moments within a larger context that is moving past at an accelerating rate.

It is as a byproduct of this hysteresis (the jumping from stasis to mobility and the hesitating inertia of the glance) that the process of foundation is renewed. We have already been given an example of this interaction of freezing stasis and flux in the event
of Tiberinus’s death in the River Albula; the river receives his name: Tiber. Just as the founding of our trajectory within the Well produced an image of the Bridge that presages the importance of the river Albula, the historical renaming of the river by the Sylvan Kings provides the instance of a new interaction of spatial operators that brings the conditions associated with a operator. The new fixity provided through naming the flux itself through the catastrophe of Death (the cessation of being), produces the Prison. The Prison is a spatial operator of fixity, it confines locally that which moves globally. It is the operator of hysteresis, an inertia that emerges from fluctuation.

What changes the space of the Well-Bridge to a Prison is the operation of Death. The inert weight of the Bridge operation is revealed when a passenger’s existence is compromised. The inertia of the Bridge began as a lag: the hysteresis of movement and fixity that is experienced in the halting grasp of vision from within the movement dictated by the space of the Well-Bridge. The emergence of the Death operator within the trajectory space of the Well-Bridge changes the gravity of the situation; the perceptual lag accompanied by the negotiation of fixation and movement finds a new and greater condition of fixity in the cessation of life. Hysteresis becomes linked to the physical weight of the dead man’s flesh, carried away in the trajectory of the river. This apparent weight will then be used to cover the lost body, a covering that seeks and intensifies fixity. The body that floats can be concealed within the opaque capacity of the waters only if it is tied to a ballast, creating a watery prison. Rome, through the weight of its stone, sediments the object of the sign (Serres 1991, 58). It is in this way that markers appear on the path of fluctuation along the Bridge, within the Well.
What we must constantly remember as this series of topological operations unfolds is that the process of abridging Serres’ text (and Livy’s text) by assigning each founding event a spatial operator produces a short-hand of topological manipulations. So far Alba, ruled by the Sylvan Kings, has renamed its local river after an historical moment of royal death. Each founding is a catastrophe that operates on the spatial system of the city. The topological shorthand of this account is: a Prison is formed in the hysteresis encountered on the Bridge formed from the trajectory of the fall into a Well.

The value of forming a typology of founding catastrophes from the examples provided in the history of Rome is that once the stable set of spatial operators is identified, it can be applied to other historical spaces, such as the founding events of other cities. “The filtering of the text by the preceding operators leaves a certain number of irreducible residues” (Serres 1992, 39). Very quickly, we have moved through three spatial operators in the account of Rome’s founding. The interactions between the operators and the order of their incidence will determine characteristics of the topological space of the city, the limits or global conditions of its history. This same kind of topological analysis of urban development performed on many cities would provide the ground for a systemic comparison based on dynamic events. Before we consider this new qualitative but fixed comparative system, we should continue through the account of Rome to find examples of a few more spatial operators.

**Catastrophe 3: The Blast; Collectivity**

Livy 1:16 - Romulus is dismembered.

[W]hile [Romulus] was holding an assembly of the people for reviewing his army, in the plain near the lake of Capra, on a sudden a storm having arisen, with great thunder and lightning, enveloped the king in so dense a mist, that it took all sight of him from the assembly. Nor was Romulus after
this seen on earth. The consternation being at length over, and fine clear weather succeeding so turbulent a day, when the Roman youth saw the royal seat empty, though they readily believed the fathers who had stood nearest him, that he was carried aloft by the storm, yet, struck with the dread as it were of orphanage, they preserved a sorrowful silence for a considerable time. Then, a commencement having been made by a few, the whole multitude saluted Romulus a god, son of a god, the king and parent of the Roman city. . . . I believe that even then there were some, who silently surmised that the king had been torn in pieces by the hands of the fathers; for this rumor also spread, but was not credited. . . . (Titus Livius 2004, Book 1: 16)

The inert bridge is blown to pieces, ripped apart by the multiple forces which continuously contort its body. The connectivity that the bridge offers comes at a price because the structure of its operation necessitates fixity: the fixity of the combinatorial thought of the Sylvan Kings; the fixity of the sign that marks the connection; the structure of the bridge that allows for the continued existence of the mobile space it supports. When the trajectory that founds the Bridge is challenged by an increased fixity of the Prison, we reach the site or moment of another catastrophe: the bridge fails – death (cessation of existence).

The blast itself is a point of departure with an empty origin (Serres 1991, 90-91). In this instant of the Bridge’s destruction is witnessed the disruption of the mobility that it made possible, and the consequence is the emergence of historical time. A continuity is established via this destruction; in the disappearance of the Bridge as a connective operator, the Bridge-object is replaced by the Hotel: the emergent form of multiplicity. This new operator will bring about a spatial condition that makes possible the founding of conditions of collectivity (ibid, 91, 105-6), a fundamental characteristic of the urban environment.
We have witnessed two catastrophes that implicate Wildgen’s archetype of death thus far: Tiberinus dies on the Bridge and imparts an object-hood to its mobile space; the Bridge collapses under the historical weight imparted by the name of the King, and a new multiplicity is formed from the inert object. This second event, the collapse of the Bridge from the weight of the repetitive practice that is the name of the King (the local stasis of the Prison/sign), is the formation of the Hotel operator. The conditions of mobility are made imminent to this new topology, and the Hotel replaces the stasis of the Prison with multiplicity. The object, the local structure of the Hotel, is multiple. Sedimentations and fixations are temporally limited; they come at a price to those who occupy the fixed spaces of stasis within the global condition of flux.

It is the blank nature of the structure provided by the Hotel that receives the multiple so well. To operate on space the Hotel merely leaves its boundaries open. In contemporary usage of the term, the Hotel operates on space by counting; numbers are assigned to blank portions, a great number of visitors can thus be accepted. Hotel-space is in this manner adjacent to calendar-space. The material of the Bridge is distributed throughout the formless-material, the boundless or blank space of the Hotel.

In the order of operations thus recounted—Well, Bridge, Prison, Hotel—the emergence of the latter is a modification of the static, weighted space of the Prison found in the social structure under Sylvan rule. The Hotel offers dynamical multiplicity amidst fixity. Fixity and mobility must achieve a balance of sorts in a blank, indeterminate space. The object of the Bridge is distributed throughout the Hotel, or in Livy’s equally cryptic narration of the event on the plain, the king had been torn in pieces by the hands of the fathers. Serres adds to the scene of this Romulus’s
disappearance the myth that such a distribution was made possible by the hiding of
pieces of the king’s body in the robes of some of the Fathers (ibid, 89, 99-102). It is in
this way that the object enters history.

There is no object without the collective and no human collective without
the object. Rome constructs the object. . . . I call that which circulates in the
group and constitutes it by its circulation the quasiobject. . . . The quasi
object resolves the problem of totality without addition; no, it is not their sum
that produces the senate or the ensemble of Fathers. It is the trace of blood
inside their togas. The body of the king passes, bit by bit, passes from dark
fold to dark fold, tracing a path. . . .

This quasi object is a marker of relationships, and without it these
relationships fade away or are lost. They float in the immediate. The quasi
object stabilizes time. While it passes, the network is fairly stable. It is the
first object of history. (ibid, 105-106)

The structure of the Bridge has been distributed in the blank structure of the
Hotel as a series of blank quasi objects. Soon, the forces that the operator resists will
risk another catastrophic jump; a new attractor will form from the movement of social
relations. The archetype of death will re-emerge and a new topology will be established.
It is because of the empty center/origin of the Hotel topology, in its blank dispersal of
quasi objects, that movement and flux are maintained. Rome has no unity, only
multiplicity; “[i]t needed to be ceaselessly founded” (ibid, 150).

In the merging of operators- Evander becomes a Well; Tiberinus becomes the
Bridge through death; the Bridge becomes the quasi-objects of the multiple collective
through death and dispersal into the Hotel. This space lacks a well-formed subject: its
subjects consistently merge with the operators of its dynamic topology. In the spaces of
history that emerge from the initial catastrophe of the fall into the Well, we move further
and further from the fixed and singular subject, the heroic figures of the meander: quasi-
gods, Hercules and Ulysses. We have been marked with a trajectory, we cannot return
to the space or time of meanderings without leaving the Well, the space of our
determination: “standard multiplicity cannot withstand time. Only the mixture withstands
time, because the mixture is time” (Serres 1991, 151). The logic of the Well is the logic
of capture. The multiple is always captured by the single; Livy’s is a history of capture
(ibid, 237). The narrativization of history is the capture of the multiple in the singularity of
the Well’s trajectory; the multitude invades the spaces cut through by the Well.

“History is a knot of different times” (ibid, 268). To sort through the complex
interactions of catastrophes and spatial operations discussed thus far, we can
supplement the manipulations possible in sack-logic with another relational logic
developed by Serres: desmology, the logic of knots. The crowd, the multiple people of
Rome, found the city as confluence of times: the time of the trajectory (the space of the
Bridge), and the time of cut spatialities (a time of sets created by the connective
capacity of the Well). Desmology allows us to describe the sowing/sewing of spatial
operators, the necessity of which is already demonstrated by the fundamental
combination of the Bridge and Well operators at work in historical narrative.

**Tying Knots: Inclusion**

Three spatial catastrophe-events have thus far been identified within Livy’s
account of the founding of urban conditions: the emergence of writing as a conduit for
historical narrative; the formation of the stasis of the historical, repetitive sign; the
emergence of the collectivity of the citizens of the Roman republic. These operations
are conveyed by the quasi-mythic events described in Livy’s history. Serres selects
these events to exemplify founding acts that generate the city-form. These examples
indicate a spatial logic, a topology integral to the meanings encoded in the historical
narrative; a topology that Serres contends applies to all narratives. What is obtained through the examination of foundation as an affective spatial activity is precisely the spatial character of multiplicity described in its own terms, the idiosyncrasies of the multiple found within the qualitative singularity that we identify as city.

The logic of founding events allows for a seemingly infinite variety of spaces of relation to emerge, a variety that does not undermine the descriptive power of the means of expression or its logical consistency. From a single narration of place (Livy’s history of Rome) emerges a rigorous language of space that is ubiquitously applicable. If this language proves to be useful in further application, describing spatial relations of seemingly disparate conditions (Chandigarh, New York, Teotihuacan, Erewhon), then it could reveal imminent similarities between urban objects, indicating qualifications of urbanity. It is in this flash of recognition, the emergent event so effectively spatialized by catastrophe theory’s topologies, that we might find the morphology of the city.
LIST OF REFERENCES


Mill, J. S. 1865. A System of Logic, Ratiocinative and Inductive: being a connected view of the principles of evidence and the methods of scientific investigation. Longmans, Green, and co.: London.


BIOGRAPHICAL SKETCH

Mathew Demers received his Bachelor of Design in Architecture from the University of Florida in 2004, graduating *summa cum laude*. He continued studies at the University of Florida, where he taught architectural design, history, and theory as a Graduate Teaching Assistant, receiving a Master of Architecture degree in 2007.