

# Articulating Cyber-History: Method-Based Historical Analysis and Problem-Solving

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**ABSTRACT:** George Santayana's 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 to create new solutions to contemporary problems. This paper articulates this aspect of applied history as "cyber-history" through analysis of research on historiography's emergence in Ancient Greece, finding correspondence with Michel de Certeau's concepts of productive consumption and tactical agency, and ending with possibilities for application to architecture curricula, rigorously fusing historical research, critical theory, and the projective work of the design studio.

The use of history as a guide for contemporary, projective activity has been apparent since its beginnings in the writings Herodotus and Thucydides documenting and seeking an understand of the events of the Greco-Persian Wars and the Peloponnesian War of the 5<sup>th</sup> century BCE. It is the nature of this *productive* aspect of history that cyber-history examines, specifically the production of new methods.

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. *Strategy* is possible when the subject can be isolated from its environment and assume a proper place defined as its own. A tactic is activity that cannot utilize a *propre*, where there is no clear borderline to use in distinguishing an exterior party, or when the activity must take place in the territory of the other. Tactical discourse is suited for studying the production of design methods; if a project requires establishment of new ways of operating, then the designer has no *propre* from which to start. Cyber-history accesses the productive and inventive content of history, founded in a re-reading of Herodotus' movements and writings as fundamentally tactical, and continuing with adaptation of historical materials to similar method-generating experiments.

**KEYWORDS:** cyber-history, heuristics, Ulmer, CATTt Analysis

## INTRODUCTION

The title of this paper should inspire several questions in the reader, the first being, 'what is cyber-history?'; skeptically followed by, 'why would we need such a thing?' The second part of the word *cyber-history* is familiar; *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). The aspect of historical research that engages contemporary creativity and problem-solving is focus of the present work.

The prefix "*cyber*" is recognizable because of its recent popularity but uncanny because its widespread use is evocative and not based on any specific meaning. Today, "*cyber*" evokes the vaguely 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*, "steersman/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 developments in automation, artificial intelligence, and computing technologies, and also influenced researchers in anthropology (in the work of Gregory Bateson), sociology (Norbert Wiener's owns *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 history's use has been active from the beginnings of ancient Greek historiography, in the work of Herodotus, then Thucydides, who attempted to document and ultimately understand the world-changing events of the Greco-Persian Wars and the Peloponnesian War of the 5<sup>th</sup> 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. This makes it prudent to name the practices sought herein, to isolate it from and thus protect the work of conventional historical research. Cyber-history is not meant to replace history, as it could not be useful without the prevailing practices with 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.

## 1.0 TOWARD A TACTICAL HISTORY

### 1.1. Strategy vs. tactics

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. 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 (de Certeau 1988).

In tactics, fragmentary and heterogeneous elements are continuously manipulated to assemble opportunities, the agent constructing 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' (de Certeau 1988, xix). For our purposes, 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 as an alternative to object-based discourse, we can examine: Herodotus' *Histories*, Thucydides' *History of the Peloponnesian War*, and Xenophon's *Anabasis*, and the contributions made by each to early developments in historiography.

### 1.2. History and perilous

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). 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" (Lateiner 1989, 7). In this aspect, Herodotus' 'history' is strategic, the communication to one's own culture of information about 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). 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. The periplous also objectifies gathered information. Each element, whether descriptions of Herodotus' experiences or stories related by other informants, was placed in a specific physical location, relative to both the other elements in the collection and to 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 spoken or written language (Hedrick 1996). For early prose writers interested in documenting established truths, objectification was

conceptual tool that allowed the author to sidestep this distrust of language. Greek historians after Herodotus would take the development of their craft along this tangent of objectivity for generations, following the empirical rigor of Thucydides, who generally avoided histories of the past, regarding reconstructions of all periods before his lifetime as mired in uncertainty (Lateiner 1989).

Thucydides attempted to remove uncertainty from historical method, focusing on his own personal experiences as a general in the Peloponnesian War. Cultural history, as attempted by Herodotus' inquiries into how and why the different cultures of Greece and Persia came to war, was abandoned as a project for at least a century after Thucydides focused the field of history on political and military narratives. After the popularity of Thucydides' *History of the Peloponnesian War* led to its widespread influence amongst historians in the 4<sup>th</sup> century BCE, historical accounts became annalistic, or focused on highly localized, singular events (Lateiner 1989).

### 1.3. Using Xenophon's *Anabasis* as a guide

Xenophon's *Anabasis*, written in the 4<sup>th</sup> 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*. The *Anabasis* tells 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 it 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.

'*Thálatta! Thálatta!*', 'The sea! The sea!', is what The Ten Thousand shouted when they finally caught sight of their goal, 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 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). When Alexander the Great invaded Persia in the 4<sup>th</sup> 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). 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.

## 2.0 HEURETICS: A DIGITAL RHETORIC FOR METHOD INVENTION

### 2.1. Invention in rhetoric

In the 17<sup>th</sup> century, the theologian Richard Burthogge wrote, "Ratiocination Speculative, is either Euretick or Hermeneutick, Inventive or Interpretive..." (Burthogge [1678], 48, quoted in Ulmer 2004, 33). It is only since the mid-16<sup>th</sup> 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 or *topoi* of the topics to look for a statement (Ong 2004). Scholastic reforms in the 16<sup>th</sup> century 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. *Inventio* 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 (Ong 2004). The neat placement of discursive content in a geometrically stable space, a diagrammable 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 study 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.

## 2.2. From hermeneutics to heuristics

"Euretics," from the Greek "eureka"- I've found it!- the exclamation famous for 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, has recently been explored by Greg Ulmer to develop a rhetoric for digital media. Just as the film camera incited a wave of method invention in the early 20<sup>th</sup> century, digital media that includes the capability for working with text, image, sound, and movement simultaneously and rapidly through a common base of binary code, transforms media into a fecund invention apparatus. Just as writing enhanced humanity's memory, granting freedom to develop increasingly abstract systems of reason, 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 digital media. Ulmer's *heuristics* is meant to be the speculative production of such rules: a digital rhetoric.

Hermeneutic discourse 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, concept, and arguments that establish value through 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 of working: we must invent a new method. Heuristics will need to provide us with a way to invent new methods, to supplement the tools of Hermeneutics. Thus, the relevant question that guides heuristics is not the same as that which guides hermeneutics and criticism. Instead of asking "What might be the *meaning* of an existing work?"; the question guiding heuristics is: "Based on a given theory, how might *another* text be composed?" (Ulmer 1994)

## 2.3. The CATTt Generator

Hermeneutic logic must come after the heuristic 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). To better understand the process of method invention upon which heuristics 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).

There are five components in the CATTt Generator, one for each letter. The first is a *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). The second component is an *Analogy*, a discourse or method from some other field that offers a model for a successful way of working (Ulmer 1994). Next is *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.... (Ulmer 1994, 9).

The next CATTt components is a *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 (Ulmer 1994). The final component is a final presentation format, forming the *tale* or *tail* of the CATTt. The *tale/tail* is there to remind the inventor "that the invention, the new method, must itself be represented in some form or genre" (Ulmer 1994, 9).

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 (Ulmer 1994). 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 and scientific experimentation; theory- Freud; target- family and entertainment institutions contacted via changes in artistic practice; tale- manifesto (Ulmer 1994).

Using the CATTt Generator for analysis in this way underscores the fact that it is a simulation of *inventio*, the conditions of invention, and not the conditions themselves (Ulmer 1994). The conditions of invention, or what *actually happens* in the human brain to produce some new socio-cultural material, are as of yet only vaguely understood, approachable with a seemingly infinite array of research frameworks. 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 that is easily documented and repeatable (Ulmer 1994).

### CONCLUSION: CATTt ANALYSIS IN THE ARCHITECTURE STUDIO

The CATTt Generator is used to simulate *inventio*, the complex and obscure contingencies of invention, in method production. Just as Ulmer analyzed historic discourses on method to formulate the CATTt, it can in turn be used as a concise tool to analyze instances of historic method production. CATTt analysis is particularly well-suited to the pedagogy of the architectural design studio, offering a conceptual tool that can engage both architectural history and design, and decrease student anxiety by articulating the agency of the designer in method production. CATTt analysis places the student in the role of de Certeau's productive consumer. For de Certeau, consumption is devious and ubiquitous:

It [consumption] insinuates itself everywhere, silently and almost invisibly, because it does not manifest itself through its own products, but rather through its *ways of using* the products imposed by a dominant economic order. (de Certeau 2002, xii-xiii)

In the studio, the student is asked to consume history as information used *toward the production of new work*. This is not a hermeneutic task, where the student as receiver is to decode a message sent by the teacher, but rather an activity where the student must use inference to fill a gap. The gap is a part of the assignment that cannot be conveyed by the teacher but nevertheless must be provided by the student, namely an individual method of production, the produced design project being an instance of that method.

CATTt analysis begins in the studio with the selection of a building to study. This can be relegated to the students, in which case they should choose a building in which they have personal interest and is sufficiently well-documented, or can be organized by the teacher. The number of buildings analyzed, and whether or not they are considered to form experimental sets, will alter the results of the studio, and should be carefully considered beforehand. The students then research the buildings, the narratives of their commission, design, and construction, their citations and discussion as exemplars or topics in criticism and architectural theory, and possibly their appearances in popular culture, attempting to formulate the most likely content for each component of the CATTt. Presentation of the CATTt analysis and studio discussion is documented by each student in a multimedia assemblage (a website is appropriate, but physical formats could also be prescribed effectively) containing the operative materials identified through their analysis. Gathering these assemblages together in a collective database of findings concludes this stage of the project.

Once the students have familiarized themselves with history, theory, and criticism of architecture through their analytical use of the CATTt Generator to simulate the *inventio* of precedents, they can begin using the CATTt Generator projectively, to *produce* a method to design a new architecture. Students can be provided with a program, site, clients, etc, in the manner familiar to studio pedagogy. Each student is then free to raid the CATTt database for the most appropriate components to apply to the new experiment in method production, carefully documenting the role played by each chosen component. If the professor is interested in pursuing this trajectory in the production of architectural poetics, each student can also begin mapping their own design *inventio*; A series of assignments can direct each student to identify their affective relationship with their chosen field of study and profession (Ulmer 2003). Armed with a collection of *inventio* simulations, the student has an index of architectural tactics, the value of each to be determined through their application to cross a gap, solve a problem, or produce the appropriate design amidst the dynamic contingencies of practice.

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