

# The Craft of Thought

Meditation, rhetoric, and the making of images,  
400–1200

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## Collective memory and *memoria rerum*

Ut sapiens architectus fundamentum posui: alius  
autem superaedificat.

St. Paul

### AN ARCHITECTURE FOR THINKING

#### I. *MACHINA MEMORIALIS*

This study could be thought of as an extended meditation on the myth that Mnemosyne, “memory,” is the mother of all the Muses. That story places memory at the beginning, as the matrix of invention for all human arts, of all human making, including the making of ideas; it memorably encapsulates an assumption that memory and invention, or what we now call “creativity,” if not exactly one, are the closest thing to it. In order to create, in order to think at all, human beings require some mental tool or machine, and that “machine” lives in the intricate networks of their own memory.

In terms of the five-fold “parts” of rhetoric formulated memorably in antiquity for teaching the subject, *The Book of Memory* centered on *memoria*; this one centers on *inventio*. The order will seem backwards, since “everybody knows” that the ancients taught Invention, Disposition, Style, Memory, Delivery, in that order. Medieval scholars took Cicero’s early treatise “On Invention” (*De inventione*) as the First Rhetoric, calling the *Rhetorica ad Herennium*, then attributed to Cicero, the Second or New Rhetoric. This latter is the textbook that describes an art of memory based upon the building plan of a familiar house, in whose rooms and recesses an orator should “place” images that recall to him the material he intends to talk about. So in medieval textbook tradition too, Invention precedes Memory.

Mnemonics, “artificial memories,” and “memory tricks” (as they



“Collective memory” and memoria rerum

were called in the nineteenth century) have been viewed with skepticism; they were so even in antiquity, and certainly are now. One early seventeenth-century Chinese student, to whom the Jesuit missionary Matteo Ricci taught the art of memory as a help in studying for the onerous examination for the imperial civil service, finally complained to a confidant that the system was itself so cumbersome to learn that it was easier and took less memory just to memorize the original material. And surely, his assumption must have been, the good of an art of memory is to remember things in order to regurgitate them by rote later on.<sup>1</sup>

In this matter, as so often, the presentation of a subject in textbooks is misleading about daily practice: it seems to have been at least as much so to Ricci as to the exasperated student. For the orator’s “art of memory” was not in practice designed to let him reiterate exactly in every detail a composition he had previously fabricated. For one thing, to sound as though he were reciting from memory like a parrot was one of the worst faults a Roman orator could commit. It was also foolish, for if he were to forget his lines or if (very likely in the debates of the Republican Senate) he were flustered by some unexpected event or attack, he would have nothing to say. The goal of Roman oratory was to speak eloquently *ex tempore*; this was the sign of a master.<sup>2</sup>

Thus the orator’s “art of memory” was not an art of recitation and reiteration but an art of invention, an art that made it possible for a person to act competently within the “arena” of debate (a favorite commonplace), to respond to interruptions and questions, or to dilate upon the ideas that momentarily occurred to him, without becoming hopelessly distracted, or losing his place in the scheme of his basic speech. That was the elementary good of having an “artificial memory.”

The example given in the *Rhetorica ad Herennium*, of imagining the scene of a sick man in his bedroom, to whom a physician, carrying a ram’s testicles on his fourth finger, offers a cup, is intended to recall the chief issues of a case at law, not to enable a word-by-word recitation of a previously made up and memorized speech. Remembering these themes as a readily reconstructable quasi-narrative scene of related figures, each of which cues a particular subject in the case, will help an orator readily to compose his speeches *ex tempore*, in response to the actual flow of the court proceedings.

All scholars who study the subject of rhetorical memory remain

## Machina memorialis

much indebted to Frances Yates. But for all its pioneering strengths, her work unfortunately does reinforce some common misconceptions about the possible cognitive uses of “the art of memory,” and thus the nature of its influence on the making of images and “places” for this purpose. Yates herself believed that the goal of the art of memory was solely to repeat previously stored material: she characterized the medieval versions of the ancient art as “static,” without movement, imprisoning thought.<sup>3</sup> She could not have been more wrong.

She also found what she called “the Ciceronian art,” for all its fascination, preposterous and unworkable.<sup>4</sup> Agreeing, if reluctantly, with people like Matteo Ricci’s Chinese student, she presented mnemotechnic as becoming first a pious and then an arcane study after antiquity, valued by Renaissance practitioners precisely because, even while they made extravagant claims for its practical utility, it was secret and difficult. Yates presented the medieval authors (such as the Dominican friars Albertus Magnus and Thomas Aquinas) who linked mnemonic craft to piety as mistaken and misdirected. Preferring the arcane to the mainstream, she ignored the basic pedagogy of memory in the Middle Ages, finding only a few medieval sources for the sixteenth- and seventeenth-century authors with whom she was primarily concerned.<sup>5</sup>

I repeat: the goal of rhetorical mnemotechnical craft was not to give students a prodigious memory for all the information they might be asked to repeat in an examination, but to give an orator the means and wherewithal to invent his material, both beforehand and – crucially – on the spot. *Memoria* is most usefully thought of as a compositional art.<sup>6</sup> The arts of memory are among the arts of thinking, especially involved with fostering the qualities we now revere as “imagination” and “creativity.”

This is not a development that one can trace by analysing the textbook tradition of rhetoric. As a “part” of rhetoric, *memoria* was added to the textbook tradition by the Stoics, and its place in the order was not set for quite some time.<sup>7</sup> When it is discussed, authors pay scant attention to it, repeating a few general precepts. The only elaborated examples of mnemotechnical schemes are in the *Rhetorica ad Herennium*. And yet Cicero also says that the master orator’s memory is fundamental to his craft. This opinion is repeated often, and classical pedagogy strove to furnish each student’s mind with a solid foundation of memorized material. The technique, though not

## “Collective memory” and *memoria rerum*

the content, was similar in the Jewish schools that produced the earliest Christian teachers.<sup>8</sup>

The meditational practice of monasticism is not particularly indebted to the pagan rhetorical practice described in the *Rhetorica ad Herennium*. I will make this point at length and often in this study; I emphasize it now because many scholars have assumed, as Yates did, that there was ever only one art of memory, “the” art of memory. It is clear, however, that the monks also developed what they called an “art” or “discipline” of memory. This is different in many respects from the “Ciceronian” one, but because those who developed it had the same general rhetorical education, the methods used share certain essentials. There are enough similarities that when the art described in the *Rhetorica ad Herennium* was revived in the thirteenth century, it could be made to seem familiar to late medieval culture. But the medieval revival of this specific art, transmitted and adapted primarily by the orders of canons and friars, took place fully within the context of monastic memory craft. That is why it seems to historians now that the ancient art of the *Rhetorica ad Herennium* suffered a peculiar sea-change, and why its cultural translation seems filled with “mistakes” when they read descriptions of it from the later Middle Ages.

Monastic *memoria*, like the Roman art, is a locational memory; it also cultivates the making of mental images for the mind to work with as a fundamental procedure of human thinking. Because crafting memories also involved crafting the images in which those memories were carried and conducted, the artifice of memory was also, necessarily, an art of making various sorts of pictures: pictures in the mind, to be sure, but with close, symbiotic relationships to actual images and actual words that someone had seen or read or heard – or smelled or tasted or touched, for all the senses, as we will observe, were cultivated in the monastic craft of remembering.

## 2. INVENTION AND “LOCATIONAL MEMORY”

The relationship of memory to invention and cognition may sound straightforward; it is not. For the notions of what constitutes “invention” have changed significantly from the small-group societies of the pre-modern West to the rationalist individualism of the nineteenth century. Most importantly, in antiquity and through the Middle Ages, invention or “creative thinking” received the most detailed attention in the domain of rhetoric, rather than of psychology or

### *Invention and “locational memory”*

what we would now call the philosophy of mind. We should not forget this critical difference from our own intellectual habits.

We tend now to think of rhetoric primarily as persuasion of others, distinguishing “rhetoric” from “self-expression” (a distinction now often built into the syllabi of American college composition courses). But in western monasticism, the craft of rhetoric became primarily focussed not on tasks of public persuasion but on tasks of what is essentially literary invention. It is not true to say (or imply), as histories of the subject have done, that the monks killed off rhetoric. They redirected it to forming citizens of the City of God, a characterization made long ago by Christopher Dawson:

alike in the East and the West, [the Church Fathers] were essentially *Christian rhetoricians* who shared the culture and traditions of their pagan rivals . . . Throughout the Church, rhetoric had recovered [its] vital relation to social life: in place of the old *ecclesia* of the Greek city it had found the new *ecclesia* of the Christian people.<sup>9</sup>

The writings of those Church Fathers, each with an excellent rhetorical education – Augustine, Jerome, Basil, Cassian, Cassiodorus, and Gregory – formed an essential part of the basic curriculum of monasticism.

The Latin word *inventio* gave rise to two separate words in modern English. One is our word “invention,” meaning the “creation of something new” (or at least different). These creations can be either ideas or material objects, including of course works of art, music, and literature. We also speak of people having “inventive minds,” by which we mean that they have many “creative” ideas, and they are generally good at “making,” to use the Middle English synonym of “composition.”

The other modern English word derived from Latin *inventio* is “inventory.” This word refers to the storage of many diverse materials, but not to random storage: clothes thrown into the bottom of a closet cannot be said to be “inventoried.” Inventories must have an order. Inventoried materials are counted and placed in locations within an overall structure which allows any item to be retrieved easily and at once. This last requirement also excludes collections that are too cumbersome or too unparticular to be useful; think about why it is so daunting to locate one’s car in a vast parking lot.

*Inventio* has the meanings of both these English words, and this observation points to a fundamental assumption about the nature of

“Collective memory” and *memoria rerum*

“creativity” in classical culture. Having “inventory” is a requirement for “invention.” Not only does this statement assume that one cannot create (“invent”) without a memory store (“inventory”) to invent from and with, but it also assumes that one’s memory-store is effectively “inventoried,” that its matters are in readily-recovered “locations.” Some type of locational structure is a prerequisite for any inventive thinking at all.<sup>10</sup>

These structures need not bear a direct relationship to the “art of memory” described in the Republican Roman *Rhetorica ad Herennium*. To limit the study of “locational memory” to this one variety has obscured both the generic concept and the medieval and even Renaissance developments of *memoria*. More important than (at least through the mid-thirteenth century), and in addition to, the precepts of the *Rhetorica ad Herennium*, there developed very early on in Christianity a *disciplina* or *via* of inventive meditation based on memorized locational-inventory structures (deriving from Biblical sources, but more of that later), which was called by the monks “*memoria spiritalis*” or “*sancta memoria*.” This traditional practice of meditation also was deeply implicated in the pedagogy of ancient rhetoric as well as the textual pedagogy of Judaism, making many of the same assumptions about “invention” and how it is to be done that we find more generally in non-Christian sources. As a consequence, it did not develop in total isolation from the ancient rhetorical practices of invention and composition. The monastic art also employed a “locational memory” as its foundational schema.

The model of memory as inherently locational, and having a particular cognitive role to play, is quite distinct from another philosophical model, equally influential in the West and equally ancient. This is the idea, known to the Middle Ages primarily through the works of Aristotle (and hence not influential in the monastic practice of *sancta memoria*) that defines memories temporally, as being “of the past.”<sup>11</sup> Augustine too had emphasized the temporal nature of memories in his meditations, in the *Confessions* and elsewhere, on how we perceive “time” in our minds. The two traditions are frequently confused, even now, and to help sort out their differences, it might be useful to pause over the analysis of prudential *memoria* by Albertus Magnus, the first medieval philosopher to try seriously to distinguish and reconcile them. Albertus is an early scholastic figure, and wrote some fifty years after 1200, but his analysis clearly shows the continuing influence of monastic *memoria*.

### *Invention and “locational memory”*

Albertus retained a conviction that a locational model of memory was essential for purposes of cognition. In his treatise “On the Good” (ca. 1246), when discussing the nature of prudence, he raises the apparent conflict between describing memory as essentially temporal and describing it as essentially locational. The *Rhetorica ad Herennium* states that “artificial memory consists of backgrounds and images.”<sup>12</sup> How can memory *consist of* “places” when Aristotle says that its essence is temporal?

Albertus responds that “place” is required for the mental task of recollection. While it is true that memory can only be “of” matters that are past, presented to us in “images,” the *task* of remembering requires that the images so stored be in places. Two very different questions are being inappropriately confused by the erroneous observation of a “conflict” between Aristotle and Cicero concerning the nature of memory, Albertus implies. The one question, “What is memory?” (answer: “Memory is stored-up images of past experiences”) is an ontological one, “What is the content of memories?”<sup>13</sup> But the other question, “What is memory?” (answer “Memory consists of backgrounds and images”) is a psychological one having to do with cognitive use, “What is the structure of memories?”

“Place,” Albertus says, is “something the soul itself makes for storing images.” He cites Boethius’ commentary on Porphyry’s *Isagoge*, one of the basic logic texts of the medieval school, to the effect that “Everything which is born or made exists in space and time.” The images which memory stores are such creations. But their temporal quality, that they are of the “past,” does not serve to distinguish them, for “pastness” is a quality which they all share. So, in order to remember particular matters, one focusses on what distinguishes one memory from another, namely the qualities that constitute “place.”<sup>14</sup>

Our minds “know” most readily those things that are both orderly and distinct from one another, for “such things are more strongly imprinted in it and more strongly affect it.” The two qualities which Albertus emphasizes are *solemnis* and *rarus* – “orderly” and “spaced apart” from one another. These are not their actual properties, but are imagined to be so. Albertus understood that mnemonic places are entirely pragmatic; they are cognitive schemata rather than objects. They may entail *likenesses* of existing things (a church, a palace, a garden) but they are not themselves real. They should be thought of as fictive devices that *the mind itself makes* for remembering.

### “Collective memory” and memoria rerum

The mental “places” are associatively related to some content, “through analogy and transference and metaphor, as for example, for ‘joy’ the most similar ‘place’ is a cloister garth [pratum], and for ‘feebleness’ an infirmary [infirmaria] or hospice [hospitale] and for ‘justice’ a courtroom [consistorium].” Thus, what we would call an allegorical connection, and seek to attach to some real content (though that reality is conceptual rather than material), is understood here by Albertus as primarily a convenience, made necessary by the epistemological condition that no human being can have direct knowledge of any “thing.” All knowledge depends on memory, and so it is all retained in images, fictions gathered into several places and regrouped into new “places” as the thinking mind draws them together.

### 3. HAVING A PLACE TO PUT THINGS

Before I discuss further how creativity was related to locational memory, however, I need to make some more elementary definitions. These are not peculiar to any one mnemonic technique, but are shared by many because they appear to build upon the natural, biological requirements of human learning and thinking. First of all, human memory operates in “signs”; these take the form of images that, acting as cues, call up matters with which they have been associated in one’s mind. So, in addition to being signs, all memories are also mental images (*phantasiai*).<sup>15</sup>

In rhetoric, the term *phantasiai* is generally reserved for emotionally laden fictions that act powerfully in memory and on the mind.<sup>16</sup> Some traditions in ancient philosophy also recognized an emotional component in all memory. Memory images are composed of two elements: a “likeness” (*similitudo*) that serves as a cognitive cue or token to the “matter” or *res* being remembered, and *intentio* or the “inclination” or “attitude” we have to the remembered experience, which helps both to classify and to retrieve it. Thus, memories are all images, and they are all and always emotionally “colored.”

Pre-modern psychologies recognized the emotional basis of remembering, and considered memories to be bodily “affects”; the term *affectus* included all kinds of emotional reactions.<sup>17</sup> This link of strong memory to emotion is, interestingly enough, also emphasized by at least some contemporary observation. A news article on developments in neuropsychology reported that “emotional mem-

### *Having a place to put things*

ories involving fear [other emotions seem not to have been part of the test] are permanently ingrained on the brain; they can be suppressed but never erased.”<sup>18</sup>

But more is involved than simply an emotional *state* associated with a memory. Latin *intentio*, derived from the verb *intendo*, refers to the attitudes, aims, and inclinations of the person remembering, as well as to the state of physical and mental concentration required. It involves a kind of judgment, but one not that is simply rational. Memories are not tossed into storage at random, they “are put in” their “places” there, “colored” in ways that are partly personal, partly emotional, partly rational, and mostly cultural. Without this coloration or “attitude,” *intentio*, which we give to the matters we know, we would have no inventory and therefore no place to put the matters we have experienced.

Cicero sometimes used the word *intentio* almost as English uses the word “tuning,” as a musician tightens (the root meaning of *intendo*) the strings of his instrument. In his *Tusculan Disputations* (a work revered by Augustine, as he tells us), while reviewing various Greek theories of the soul’s nature, Cicero mentions with favor Aristoxenus of Tarentum, “musician as well as philosopher, who held the soul to be a special tuning-up [intentionem quandam] of the natural body analogous to that which is called harmony in vocal and instrumental music; answering to the nature and confirmation of the whole body, vibrations of different kinds are produced just as sounds are in vocal music.”<sup>19</sup> The Stoic concept which Cicero is rendering is *tonos*, “tone” (as of muscles and of strings), a word also used generally for the “modes” of music.<sup>20</sup> The concept is recognizable in monastic *intentio*, but it was applied spiritually and emotionally.

The monks thought of *intentio* as concentration, “intensity” of memory, intellect, but also as an emotional attitude, what we now might call a “creative tension,” willingly adopted, that enabled productive memory work to be carried on (or that thwarted it, if one’s *intentio* were bad or one’s will ineffectual). Reading of the sacred text, both communal and in “silence,” needed to be undertaken with a particular *intentio*, that of “charity.”

This “intention” is not a matter of doctrinal or philosophical content, of definitions and classifications. Rather, it bears an analogy to the rhetorical notion of *benevolentia*, the attitude of good will and trust which an orator hoped to evoke in his audience by first approaching them in that spirit. As Augustine famously stated: “I call



### “Collective memory” and memoria rerum

charity a movement of the mind toward [the goal of] fruitfully enjoying God for His own sake, and [my]self and my neighbor for God’s sake.”<sup>21</sup> A “movement of the mind toward” something involves not only *affectus*, or emotion, but also *intentio*.

This conception of *intentio* is certainly related to the one I just discussed; if *intentio* is a part of every memory image, if it is the coloration or attitude we have towards an experience, on the basis of which we have determined where to “hook” it into the linked chains of our “places,” then rekindling that sort of *intentio* will enable us to start finding those memories again. Notice also that in this cognitive model, emotions are not discrete mental “entities,” but are intricately woven into exactly the same memory networks as are the facts and objects of our experience, what we now call “data.”<sup>22</sup> And, though our memories are “intended” in this sense from the start, we constantly restructure and recompose them by means of the different other *intentiones* we bring to our various occasions of remembering.

In such a psychology, there can be no such thing as either a truly objective or a truly unconscious memory, because each remembered thing requires to be intentionally “marked” and “hooked in” to our own places. But like the cogs and wheels of a machine, the mnemonic “places” enable the whole structure to move and work. Mnemonic images are called “agent images” in rhetoric, for they both are “in action” and “act on” other things.

The power of this elementary technique is that it provides immediate access to whatever piece of stored material one may want, and it also provides the means to construct any number of cross-referencing, associational links among the elements in such schemes. In short, it provides a random-access memory, and also sets of patterns or foundations upon which to construct any number of additional collations and concordances of material. This latter goal, the making of mental “locations” for “gathering up” (*collocare*) and “drawing in” (*tractare*), is where *memoria* and invention come together in a single cognitive process.

#### 4. “LIKE A WISE MASTER-BUILDER”

In ancient mnemotechnic, architecture was considered to provide the best source of familiar memory locations. Architecture also plays an essential role in the art of memory which is basic to my present study, but the monastic version of architectural mnemonic carries non-

“*Like a wise master-builder*”

Roman resonances that make something rich and strange from the forensic orator’s set of memory “rooms.” These resonances, as one might have predicted, are Biblical.

The monastic architectural mnemonic is founded, like a vast superstructure, on a key text from St. Paul, who, in 1 Corinthians 3:10–17, compares himself to “a wise master-builder”:

According to the grace of God which is given unto me, as a wise master-builder, I have laid the foundation, and another buildeth thereon. But let every man take heed how he buildeth thereupon. For other foundation can no man lay than that is laid, which is Jesus Christ. Now if any man build upon this foundation gold, silver, precious stones, wood, hay, stubble, Every man’s work shall be made manifest: for the day of the Lord shall declare it, because it shall be revealed by fire; and fire shall try every man’s work of what sort it is. If any man’s work abide which he hath built thereupon, he shall receive a reward. If any man’s work shall be burned, he shall suffer loss: but he himself shall be saved; yet so as by fire. Know ye not that ye are the temple of God, and that the Spirit of God dwelleth in you? If any man defile the temple of God, him shall God destroy; for the temple of God is holy, which temple ye are.<sup>23</sup>

This passage gave license to a virtual industry of exegetical architectural metaphors. Both as activity and artifact, the trope of building has, as Henri de Lubac noted, “une place privilégiée dans la littérature religieuse, doctrinale ou spirituelle.”<sup>24</sup> The trope was used by Philo, the second-century Jewish exegete, and there are also intriguing connections between early Christian use and the mystical “work” of Jewish *merkabah* meditation, which uses several of the same basic structures as early Christian exegesis.<sup>25</sup> In medieval Christianity, this Pauline text soon became the authority for a fully developed mnemonic technique, using the *planus* (and sometimes also the *elevatio*) of a building laid out in one’s mind as the structure for allegorical and moral meditation, the “superstructures” (*super-aedificationes*) of *sacra pagina*.

Paul uses his architectural metaphor as a trope for invention, not for storage. Likening himself to a builder, he says he has laid a foundation – a foundation which can only be Christ – upon which others are invited to build in their own way.<sup>26</sup> From the beginning of Christianity, the architecture trope is associated with invention in the sense of “discovery,” as well as in the sense of “inventory.” The foundation which Paul has laid acts as a device that enables the

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inventions of others. This may seem a minor point in this text, but it acquired major significance later on as exegetical scholars elaborated this “foundation” for meditational compositions of their own, invited to do so by St. Paul himself.

The structures to be built upon were, initially, limited to those measured out and described in the Old Testament. This is an early tradition, probably with Jewish roots. De Lubac quotes Quodvultdeus (an associate of Augustine of Hippo): “If you have a taste for building, you have the construction of the world [Genesis 1], the measurements of the Ark [Genesis 6], the enclosure of the Tabernacle [Exodus 25–27], the erecting of the temple of Solomon [1 Kings 6], all aspects in earthly terms of the Church itself, which they all figure forth.”<sup>27</sup>

The earliest uses of this trope indicate that the compositional devices which utilized Biblical buildings were never treated solely as having a single content, like a diagram, or one specific task, in the manner of a mathematical theorem, but rather as dispositive heuristics, devices for “finding” out meanings.<sup>28</sup> The distinction between these two cognitive attitudes resides in whether a book or a church is thought of as an object to be observed and studied for what it is in itself – for example, assuming that it just *is*, all by itself, an encyclopedia in symbol-language, which we thus can describe as it “really” is – or whether one thinks of a book or a church as a machine, a tool that people use for social purposes such as symbol-making. It’s the difference between considering the work you are contemplating as an end or as a means – or, in familiar Augustinian terms, between enjoying something for its own sake and using it for social, that is ethical, purposes (remembering that Christians strive to be “citizens” of the City of God).

Gregory the Great articulated the “four senses” of Biblical exegesis in the form of a powerful mnemonic, a composition tool which works on the model of the inventive *circumstantiae* (for example, who, what, where, when, how) of ancient forensic rhetoric:<sup>29</sup>

First we put in place the foundations of literal meaning [historia]; then through typological interpretation we build up the fabric of our mind in the walled city of faith; and at the end, through the grace of our moral understanding, as though with added color, we clothe the building.<sup>30</sup>

This maxim, much quoted later in the Middle Ages, is a recollection

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*ad res* of Paul; Gregory could expect his audience to recognize it as such. And he also casts the act of Biblical interpretation as an invention process, an act of composing and fabrication.

The literal text is treated as though it presented a set of memorial cues for the reader, a “foundation” which must then be realized by erecting on it a mental fabric that uses everything which the “citadel of faith” tosses up, and then coloring over the whole surface. In the context of Scriptural hermeneutics, the “walled city” (*arx, arcis*) puns both aurally on *arca* (“strongbox” and “Ark”) and visually on the Temple citadel of Ezekiel, the “city on a hill” in Matthew, and the Johannine “Heavenly Jerusalem.”<sup>31</sup> It is a useful coincidence too that Gregory uses the word *historia* where later writers speak of *sensus litteralis*: for the Biblical histories, especially of the Old Testament, are treated as though each were a story-outline, one of *One Hundred Great Plots*, whose chief purpose is to be retold.

In the minds of monastic writers, every verse of the Bible thus became a gathering place for other texts, into which even the most remote (in our judgments) and unlikely matters were collected, as the associational memory of a particular author drew them in. Associations depending upon assonance and dissimilarity are just as likely to end up being collated as those of consonance and likeness. A memorative web can be constructed using either principle, and often (as in rememberings of the Last Judgment) using both together.

And the proof of a teller is in the quality and character of his fabrication and coloring – the reconstruction, not the repetition of the “facts” of foundational plots. There seems to be very little interest in “the facts” *per se*. Instead, retelling a story is cast as a question of judgment and character. Paul says that “the fire shall try every man’s work.” He emphasizes that this is not a determinant of salvation – a poor workman will be saved even if his work burns up (1 Corinthians 3:15). But the assaying fire will manifest the quality of individual work – whether your walls are built of gold or of stubble. The concern in Paul, as in later writers using this theme, is with ethics, not with reproduction, or – to put the matter in terms of memory – with recollection not with rote. *You* are God’s temple, the commonplace went, and the inventive work of building its superstructures is entrusted to your memory. This Pauline theme is realized over and over, in literary works, in monastic architecture, and in the decoration of both.

The inventional nature of the master-builder trope is still clear in its

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twelfth-century use. That master-teacher, Hugh of St. Victor, says that since sacred scripture is like a building, those studying it should be like masons, *architecti*.

Take a look at what the mason does. When the foundation has been laid, he stretches out his string in a straight line, he drops his perpendicular, and then, one by one, he lays the diligently polished stones in a row. Then he asks for other stones, and still others . . . See now, you have come to your [reading], you are about to construct the spiritual building. Already the foundations of the story have been laid in you: it remains now that you found the bases of the superstructure. You stretch out your cord, you line it up precisely, you place the square stones into the course, and, moving around the course, you lay the track, so to say, of the future walls.<sup>32</sup>

Notice how this passage recalls the Pauline text, without ever directly mentioning it (a very common device for intertextual *memoria*).<sup>33</sup> A student is to use the mental building he has laid out on the foundation of his “historical” knowledge of the Bible – that is, of its “story” – as a structure in which to gather all the bits of his subsequent learning. Such mnemotechnically constructed “superstructures” (a Pauline word) are useful not as devices for reproduction alone (rote), but as collecting and re-collecting mechanisms with which to compose the designs of one’s own learning, and “be able to build [i]nto [t]his structure whatever [one] afterwards finds” in the “great sea of books and . . . the manifold intricacies of opinions” that one will encounter throughout one’s own life.<sup>34</sup> It is as important to get this foundation right as it is for any builder to make his foundations “true.”

But the foundation is not to be confused with the completed structure. It is the *ground*, but not the key: it “authorizes,” in the medieval sense, by initiating and originating further construction. The “key” – the “character” and “finish” of the master-mason’s craft – will lie in the relatively beneficial use which one makes of this common grounding. This is, as St. Paul stressed, a matter not just of salvation but of beauty and benefit, of *ornamentum* conceived of in the classical sense in which “usefulness” is merged with “delight.” Medieval reading habits are based upon a model of craft mastery, the “courses” of stone or brick or other materials which a master mason may make in building a wall, with concomitant emphasis upon preparation (the ground), routines of exercise (discipline), and stages

“*Like a wise master-builder*”

in a *way* towards making a finished artifact, a mastery that affords pleasure.<sup>35</sup>

When the foundation plan has been laid out with one’s internal builder’s measuring line, one’s *lineus* or *linea*, and picked out with stones, then the walls may be raised:

and if [the mason] by chance finds some [stones] that do not fit with the fixed course he has laid, he takes his file, smoothes off the protruding parts, files down the rough spots and the places that do not fit, reduces to form, and so at last joins them to the rest of the stones set into the row ... The foundation is in the earth, and it does not always have smoothly fitted stones. The superstructure rises above the earth, and it demands a smoothly proportioned construction. The divine page is just the same ... The foundation which is under the earth we have said stands for history, and the superstructure which is built upon it we have said suggests allegory.<sup>36</sup>

The shape or foundation of a composition must be thought of as a place-where-one-invents. Everything is fitted onto it. And as the composer, acting like a master builder or *architectus*, fits his tropes onto the foundation stones of a text, he must smooth, scrape, chip off, and in other ways adapt and “translate” the *dicta et facta memorabilia* he is using as his materials.<sup>37</sup> So the edifice of one’s life (so to speak), although created from stories available to all citizens, is also a fully personal creation, an expression (and creation) of one’s character.<sup>38</sup> This is plain in St. Paul’s injunction to be like a wise master-builder: the fire will try the quality of your work.

Thus, because it builds entirely through the associations made in some individual’s mind, memory work has an irreducibly personal and private or “secret” dimension to it. That is also why it is a moral activity, an activity of character and what was called “temperament.”<sup>39</sup>

At the same time, because most of its building materials are common to all – are in fact common places – memory work is also fully social and political, a truly civic activity. The constant balance of individual and communal, *ethos* and *pathos*, is adjusted and engineered with the tools of rhetoric: images and figures, topics and schemes. Essential among these tools are the memorial *res*, the building blocks of new composition.

“Collective memory” and memoria rerum

5. THE WISE MASTER-BUILDER’S MACHINE

However, a memory, no matter how beautifully put together, is not itself invention. It is, as my heading should emphasize, a machine for performing the tasks of invention. This constructional view of human memory is very difficult for modern students to grasp intuitively: we are deeply attached to the belief that memory should be for reiterating and repeating things like a parrot, that memory is only good for passing examinations; we profess to be appalled (while knowing it all along to be true) that our memories can be “wrong.”

Another kind of difficulty for some of us may arise from modern ideas of machines. As we use the word, “machine” is often contrasted to “human,” betraying our deep assumption that what is mechanical (like what is artificial) is antithetical to human life and particularly to human “values.” We can think of machines as suspiciously non-human and indeed as rivals of human endeavor, as we can think of technologies as self-sufficient “systems,” perhaps even with lives of their own. But pre-modern, pre-industrial, cultures did not share this assumption. Their machines were fully human.

A *machina*, according to Isidore of Seville, is a device that architects or *masiones* (“masons”) use in order to construct the fabric of buildings.<sup>40</sup> In classical Latin *machina* was any sort of a hoist – hence its association with building. Isidore derives the word *masiones* from *machina*, because masons, also called *architecti* or “master-builders,” build upon foundations and so require *machinae* in order to work on the high walls and the roof.<sup>41</sup> So the concept of an *architectus* seems for Isidore to be someone who particularly fashions walls and roof: he may also lay the foundation, as St. Paul says of himself, but the proof of his excellence will lie in his superstructures, Paul’s “superaedificationes.” A mason or *architectus* is also an inventor and maker, as was the inventor of architecture, Daedalus. And Isidore ends this discussion by observing that St. Paul called himself an *architectus* because, like a wise master-builder, he built up and added onto a foundation.

Machines move. They are engines which move other things about, and they themselves have moving parts. An early Christian specification of the trope is as the *machina universalis*, the cosmic machine constructed and raised by God, as first artificer and master builder. “He indeed, the artificer of this world, fabricated a machine, and like a wise master-builder he hung the heaven on high, formed the earth

### *The wise master-builder's machine*

into a great mole or dam, bound together the seas in links.”<sup>42</sup> A machine is the essential tool of the Pauline “wise master-builder.”

Any structure that lifts things up or helps to construct things is a *machina*. Isidore says that the wheel driven by water in a water mill is a kind of *machina*. Tertullian called the Cross “the machine of the pierced body,” and in a much later monastic trope, the human body was sometimes called *machina rerum*, a microcosmic analogy to the *machina aetherea* of the cosmos.<sup>43</sup> Machines could also be destructive engines: the word is used for siege engines in many chronicles. It can refer to the trellises which lift and support the vines (in Jerome) or – in a riddle of Aldhelm’s – to the hoist that was used to build on top of a cliff a beacon for seafarers.<sup>44</sup> All these structures lift, raise, and move. They are also all constructions of a variety of materials, made for a variety of purposes, good and ill. They are all *tools* for lifting and making.

Mental constructions can also be called machines, and it is this use of the metaphor that most interests me here. In one of his letters, Augustine recalls 1 Corinthians 8:1, “scientia inflat, charitas aedificat,” “knowledge puffs up, but charity builds.” This verse is yet another Pauline turn on the trope that thinking is like constructing a building (that is, “edification”). Augustine then comments that “knowledge should be used as though it were a kind of machine, by means of which the structure of charity rises up, which lasts forever, even as knowledge shall be destroyed.”<sup>45</sup> Gregory the Great, invoking the same figure, says that “the machine of the mind is the energy of love” by which in this existence we are lifted on high.<sup>46</sup> This “machine” is contemplation, which can lift up the human soul. Implicit in this characterization, of course, is that “contemplation” is also an inventive act, a “construction.”

Medieval *memoria* thus includes, in our terms, “creative thought,” but not thoughts created “out of nothing.” It built upon remembered structures “located” in one’s mind as patterns, edifices, grids, and – most basically – association-fabricated networks of “bits” in one’s memory that must be “gathered” into an idea. Memory work is also process, like a journey; it must therefore have a starting-point. And this assumption leads again to the need for “place,” because remembering is a task of “finding” and of “getting from one place to another” in your thinking mind.

Hugh of St. Victor, master-constructionist that he was, exploited the building trope at many points (several of which we have already



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examined) in his treatise on education, which he called *Didascalicon*. In characterizing geometry, of all the seven liberal arts the one essential for a wise master-builder, he calls it “well-spring of perceptions and source of sayings.”<sup>47</sup> This is an odd characterization, we might suppose, for such a non-verbal, abstract art. Hugh was quoting Cassiodorus; but Cassiodorus was characterizing the *topica* of argument, the “seats of argument, the well-spring of perceptions, the origin [as initiator] of speaking.”<sup>48</sup> In other words, Hugh understood geometry, the science of “forms,” to apply not just to the physical world but also to the cognitive one, to the fabricating of the schemes and patterns for thinking, for constructing the buildings of the mind from and within the *sedes* or locations of remembered “things”: *sensus* (perceptions, feelings, attitudes, judgments), *dictiones* (sayings and speakings), and *facta* (“events” as stories).

MEMORIA RERUM, REMEMBERING THINGS

6. INVENTORY FABLES: TEACHING THE LORE OF ONE’S CRAFT

The literary criticism directed in this century at mythic and visionary stories has considered them mostly in terms of their mimesis, their “representation of reality” in Erich Auerbach’s phrase – whether that “reality” be natural, social, or psychological. I have a somewhat different set of questions to ask about them, having to do with their cognitive functioning. I can best illustrate this difference by considering a category of common mnemotechnical myths.

Astronomers are accustomed to divide up the visible stars into “constellations” named for various things – animals, mythic beings, implements. For sky charts, artists draw a more or less naturalistic figure of a hunter (for example) around the stars that make up Orion – his belt, his dagger, his feet, his arms – and the two dogs which follow him, *Canis major* and *Canis minor*.

Such charts are very old. Plate 5, from a manuscript made about the year 1000 by a famous scribe, Abbot Odbert of the monastery of Saint-Bertin in north-western France, shows a chart of the northern sky made for a common textbook, Aratus’ *Phainomena*, a Greek poem about the constellations that was translated into Latin in antiquity and used as an elementary astronomy text in monastic pedagogy.<sup>49</sup> It was common in monastery libraries, and contained

*Inventory fables: teaching the lore of one's craft*

both descriptions of individual constellations (with drawings in some manuscripts), and charts of the whole sky with the circles of the Celestial Equator, the Ecliptic (with all the Zodiac constellations painted in it), and the Milky Way (labeled *lacteus circulus*). In Plate 5, Orion and his dogs are visible in the lower right quadrant, between the Ship (Puppis) and the Whale (Cetus), and just below Gemini. At the center of this chart are Ursa minor, the Little Bear, with Polaris, the North Star, in its tail, and Draco, the dragon, snaking around to point at Ursa major, the Great Bear.

In explanation of the origins of these figures, we are earnestly told by some modern encyclopedia articles that vaguely defined “primitive peoples,” viewing the night sky, thought the star groups “looked like” such creatures, and they then named them accordingly and made up myths to explain how they got there. All the star myths are assumed to be of a genre known as etiological fable, a story to explain the origin of something. The book of Genesis is filled with such stories; Kipling’s *Just-So Stories* are an example as well (as indeed, is the encyclopedia explanation I just cited).

When I look up at the grouping of stars called “Orion” I confess that I see nothing “like” a human hunter – and in fact I’m never sure which stars (beyond the basic pattern, which I can see readily) “belong” to Orion and which do not. Orion’s dogs seem to me even less imitative of the shapes of dogs I have known. So, either “primitive people” (the Hellenistic Greeks!!) were a lot more easily satisfied with what constituted the likeness of a hunter and his dogs than I am, or something else was going on in their minds than recognizing earthly shapes in the skies.

Indeed, the makers of Aratus manuscripts, and other medieval encyclopedias of the constellations, seem to have felt it necessary to describe the individual constellations as star *patterns* first of all: patterns which were then keyed to a constellation’s name by drawing a rough figure around them. Plate 6 shows several such groupings from a ninth-century manuscript of a work by Isidore of Seville (itself liberally incorporating material from Aratus), also made in northern France. These books, though made for students whose minds were as primitive as the minds of beginning students always are, do not counsel a student “now look up in the sky and find the dog.” Instead they counsel “look in the sky for thus-and-so pattern of stars in thus-and-such position,” the same way we do now. In other words, the teachers who made these books assumed that *the pattern* is what one

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would recognize, not a “dog” or a “bull”: they recognized, just as we now do, that such names are conventional.

But if the constellation figures are not imitative of some *thing*, even if it is only fantastical, then what are they for? What people needed from star charts was a way of quickly and unerringly picking out certain stars, for their position was essential in the conduct of daily life – to calculate the calendar, to navigate, to plant, to know when to do a host of things. And a great many random items, such as the individual stars, are not retrievable, and so cannot be learned unless they are organized into patterns that allow people readily to find them.

The constellations form a stellar inventory, one that is easily reconstructable, both in part and as a whole, and also one whose plan is completely distinctive. A sky map has the qualities of being both *solemnis* and *rarus*, to use Albertus Magnus’ terms. The purpose of organizing stars into constellation patterns is not “representation,” but to aid human beings, needing to find various stars, to locate them by means of a recognizable pattern retrieved immediately and securely from their own memories. Constellations are mnemotechnical *tools*.

The constellation patterns were also embedded in stories (though few people now know them): narratives that attach the patterns together, or embed important characteristics about the particular constellations, such as where and at what season they appear in the night sky. “Locating” things to be remembered in a story is an elementary human mnemonic principle; known in practice to every society, the mnemonic power and flexibility of narrative was confirmed in the experiments of F. C. Bartlett earlier in this century.<sup>50</sup>

In the case of Orion, several stories are told. Nearly all of them refer to the constellation’s position in the sky. He is associated with Artemis (another hunter, though she especially used a bow) in some; or he was stung to death by a great scorpion (on Artemis’ order); or he was chasing the Pleiades when they were all turned into stars. Orion is a constellation of the late fall – hunting season, the season marked by the Zodiac constellations of Scorpio (the scorpion) and Sagittarius (like Artemis, an archer, and one who, embodied in Chiron the centaur, was instructed by her). The position of Orion is such that as the stars move, Orion could be said to “chase” the Pleiades. A myth of the birth of Orion has him “born from urine,” making a pun on his name, Orion, and the Greek word for urine, *ouron*.<sup>51</sup>