

**Enemies of Science: The Handmaiden's Handmaiden in the Early  
Medieval West**

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## ABSTRACT

The gradual blending of classical science and epistemology with indigenous/traditional practices and modes of understanding (particularly magic and religion) in the early western Middle Ages tends to be misunderstood. The purpose of this study is to address the reason(s) why the early medieval West has been labeled an irrational, unscientific "Dark Age" in order to point out that this conception's existence has more to do with limited historical perspectives than with reality. The anachronistic superimposition of modern presuppositions and methodological expectations is a very old phenomenon. Ironically, however, it has crept into the history of science and extended to ostensibly objective "scientific" historiography to such a degree that dismissiveness regarding the *other* ways of knowing that have informed our scientific and epistemological development frequently tends to obscure historical continuity.

My goal in this undertaking is to firmly establish how we may understand that the intellectual revolution beginning in twelfth-century Europe was founded on a rich and multifarious tradition of knowledge and understanding; the preceding seven or eight centuries of the early Middle Ages was not one of intellectual "darkness" and should not be discarded as such. The approach I have taken is intended to demonstrate, rather than simply state, this goal by roughly imitating of the process of intellectual transmission in the early Middle Ages. Therefore, primary sources are supplemented by numerous secondary interpretations from various academic disciplines in the hope that collecting and reforming ideas in this fashion will draw out the inherent connectivity of ideological thought structures and approaches to the natural world.

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## **INTRODUCTION: Into the Darkness?**

Science is, to varying degrees at given times and locations, considered not only a means by which foundational knowledge is discovered and established but also a foundation in and of itself. It is thus a way of looking at the world that fluctuates in importance and scope along with the ideas of the cultures by which it is developed. With that in mind, however, the very term “science,” when employed in relation to the late Roman Empire and on into Dark Age Europe without some clarification of its scope, accompanying philosophy, and socio-cultural contexts, can lead to mistaken identity. In that sense, the epithet resembles other terms formerly applied to describe pursuits and practices markedly different from (perhaps even bordering on antithetical to) those they subsequently came to signify. This is not to say that we can realistically hope to simply drop the ideological framework of the time in which we live; there is an immense difference between *recognizing* that framework and thinking we can actually *remove* ourselves from it. What we can do, however, is dedicate ourselves to explaining the actual ideas of a past time and their surrounding contexts to the best of our honest abilities in order to allow connections to reveal themselves more naturally; in short, to attempt to see things through the eyes of our ancestors as much as our present vantage point will allow.

Perhaps the associations of darkness with this period stem from misunderstandings of a mysterious past. In recent decades, however, historians and anthropologists have begun to shatter the stubbornly persistent conception of early medieval Europe as inescapably dark and altogether brutish and nasty. This is a difficult task and one that is by no means complete. As Barbara Tuchman argued that fourteenth

century Europe (France, in particular) is an enigmatic “distant mirror” for the twentieth century, I believe the earlier medieval period is an equally new frontier for scholars willing to dig beneath longstanding outward appearances to find reflections of common humanity.<sup>1</sup> An aversion to opacity is slowly being replaced by a strong interest in that very quality. It is no small irony that our cultural forebears in the first millennium C.E. witnessed, contributed to, and defied their own version of dogmatic resistance to approaching and understanding the unknown. Their unknown was nature itself and their resistance (if I may employ the term so liberally) came to be typically theological. Our unknown, on the other hand, has been their world and our dogmatism historical, philosophical, and scientific. These self-inflicted barriers were, and continue to be, products of general ideology and, as such, essentially susceptible to the ravages of time. We tire of them or grow curious about what they conceal, thus beginning, continuing, and/or hastening the process of their erosion. In this way, the history of ideas—that is, both in actuality and in our various retellings—is never static; we always have something to learn on both sides of the looking-glass. Thus, my approach to the Dark Ages is deeply indebted to the conception of historicism C.S. Lewis offers in his peerless work, *The Discarded Image*: “the belief that by studying the past we can learn not only historical but meta-historical or transcendental truth.”<sup>2</sup> With this in mind, I wish to offer a retelling of the history of science in the early Middle Ages by considering the essential otherness of the specific rationality being developed in those centuries. “At any rate,” as Etienne

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<sup>1</sup> Barbara W. Tuchman, *A Distant Mirror: The Calamitous 14<sup>th</sup> Century* (New York: Ballantine Books, 1978).

<sup>2</sup> C.S. Lewis, *The Discarded Image: An Introduction to Medieval and Renaissance Literature* (Cambridge: Cambridge University Press, 1994), 174.

Gilson remarks in his introduction to *Reason and Revelation in the Middle Ages*, “it should not be considered a waste of time to substitute for the usually received one a less conventional convention.”<sup>3</sup>

Early medieval Europe presents a complicated case for the study of science as one of those rare time periods in which knowledge of socio-cultural and ideological context is not only helpful, it is absolutely imperative for a realistic understanding of its development. Moreover, knowledge of the physical world in the early Middle Ages was quite literally provisional, a fact that necessarily pushes our study of it back to its sources in Late Antiquity. Yet the common conception of the period roughly defined by the disintegration of the Roman Empire around the fifth century at one end and, at the other, the introduction of long-lost classical texts to Western Christendom in the twelfth century as a “Dark Age” is our most formidable roadblock. Often persisting in spite of itself, this stereotype is too ingrained, too sensational, and so conveniently supportive of the dichotomy-imposing view of otherness against which we may broadly define concepts such as “civilization” and “science.” But, like all stereotypes, this one contains a kernel of truth. Civilization and science, *as we have come to know them*, were often in dire straits in the early medieval West—after all, the period that began with the disintegration of one of the most celebrated and successful civilizations in human history also endured such hardships as climate deterioration, Gothic wars in and around Italy, Frankish military conquests in Gaul, religious persecution, bubonic plague, Viking raids, and the First Crusade. But these difficulties had another side to them: the climate took a turn for the better around the eighth century, a period of Ostrogothic rule in the West in the late

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<sup>3</sup> Etienne Gilson, *Reason and Revelation in the Middle Ages* (New York: Charles Scribner’s Sons, 1938), 5.

fifth to early sixth century under the emperor Theodoric witnessed a revival of Hellenism in Italy, the Carolingian renaissance of the eighth and ninth centuries refocused and reemphasized learning and culture, and the First Crusade helped open the door for the twelfth century translations of Greek and Arabic texts.

At no point will I attempt to stubbornly profess, for fear being somehow marginalized as a typically post-modern rabble rouser, that this study is not at all what it appears to be: an argument for a reconceptualization of the early Middle Ages' place in the history of science. But it is not *merely* that. Trying to dramatically invert the cliché by offering a complete exorcism of the demon of darkness that often shrouds this period in mystical, fantastic obscurity, while tempting, would nonetheless demonstrate poor scholarship and a general lack of perspective. I wish to begin by examining that demon, drawing attention to it in the belief that we should understand *why* the demon exists—particularly as it appears to the history of science. The authority that discipline often draws from its object of study tends to endow the darkness cliché with an irrefutable, misleading factuality that can easily hinder an acknowledgment of the actual significance of a six- or seven-hundred year period of Western thought and rationality. I think that focusing on the intellectual assimilation and homogenization taking place in the period which preceded it in the late Roman Empire will demonstrate another way that we might understand the subsequent “Dark Ages” were more than an embarrassing interlude in our intellectual past.

In many ways, what we have done with our Aristotelian epistemological foundations has made the early Middle Ages *seem* dark, ostensibly lacking rationality (and therefore wholly irrational). The scientific method and its accompanying

philosophy, as it has developed in the last five hundred years or so, has permeated all our other ways of knowing and addressing the world to such a degree that we find its effects still forming and informing humanistic and philosophical debate as well as matters relating to the “hard sciences.” Largely because of this, the early medieval epoch is one of fundamental otherness against which modern science and rationality may define themselves. Such an approach is not, of course, entirely incorrect, but I think, like most convenient dichotomies, it does call for qualification. Reality is always more complex than a simple binary construct can express, especially when we consider a time as diverse and dynamic (though not always in positive senses) as the early Middle Ages. As Gilson observes in *The Spirit of Mediæval Philosophy*, “of course, as a matter of fact and practice, historical research proceeds by way of abstractions, and we all map out for ourselves a certain limited domain which extends as far as our competence will warrant. The chief thing here is not to take the limitations of our method for the limits of reality.”<sup>4</sup>

This study, then, is clearly and necessarily about more than the history of what we would now call “science” just as science is really about more than the study of the natural world. Both have to do with human understanding of the natural world and the continuity of thought; in short, consciousness and connections. And how fitting. For all the talk about the pervasive disconnectedness of early medieval people in the West as clinging to the illumination of civilization like a candle in the wind, the first era of the Middle Ages was actually a time of rather impressive creativity founded on hermeneutical connections to an increasingly distant past and a diverse (and often unstable) present. These

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<sup>4</sup> Etienne Gilson, *The Spirit of Mediæval Philosophy*, trans. A.H.C. Downes (New York: Charles Scribner’s Sons, 1940), 1.

connections, filtered as they were through the manuscript tradition, provided the raw materials for the medieval cosmological thought system Lewis simply calls the “Model.”<sup>5</sup> I believe it is this Model—both its structure and the rationality required for it to work—that so confuses us about the period in which its creation was initiated.

As Rémi Brague notes in *The Wisdom of the World*, from Late Antiquity to the Middle Ages—what he sees as a “specific period in the history of thought”—“knowing what the physical world truly was was supremely relevant for answering the question, ‘What are we doing on earth?’”<sup>6</sup> The relation between this outward inquisitiveness and internal meaning is the primary consideration of a cosmology, “one of those purely-Greek-looking words that the ancient Greeks never ventured to create.” But “cosmology” has become an effective term for addressing two others the Greeks *did* use whose contents “have drawn closer as time has gone by, to the point of being almost indistinguishable;” namely, *cosmography* and *cosmogony*.<sup>7</sup> As Brague explains,

By *cosmography* I mean the drawing or description of the world as it appears at a given moment, with regard to its structure, its possible division into levels, regions, and so on. This description may, indeed should, take into account the static or dynamic relationships between the various elements that make up the world:

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<sup>5</sup> Lewis uses this term, which he has fittingly appropriated from Plato’s *Timaeus* (for example at 38c and 39e), throughout *The Discarded Image*. In the *Timaeus*, the “model” is the “intelligible and always changeless” Form according to which the creator fashioned the universe in imitation as “something that possesses becoming and is visible;” 48e-49a.

<sup>6</sup> Rémi Brague, *The Wisdom of the World: The Human Experience of the Universe in Western Thought*, trans. Teresa Lavender Fagan (Chicago & London: The University of Chicago Press, 2003), 2.

<sup>7</sup> *Ibid.*, 3.

distances, proportions, etc., as well as influences, reactions, and so forth. It implies the attempt to uncover the laws that govern those relationships. It is therefore a generalized geography that ... does not deal only with the earth, but with all of the visible universe.<sup>8</sup>

*Cosmography* thus describes a sense of place while *cosmogony*, as Brague defines it, is “the story of the emergence of things” that “explains how things came to form the world as we know it, in the structure in which we find it today.”<sup>9</sup> It is a genesis tale<sup>10</sup> explaining how and why we came to occupy that place and can therefore be mythical, scientific, and/or philosophical, while always supplying a snapshot of “the world as it is imagined or conceived at a given moment by a given group of people.”<sup>11</sup>

*Cosmology*, therefore, is best understood in the present context as descriptive of what the developing early medieval Model signified: a mixture of both *cosmography* and *cosmogony*; something that is “an account of the world in which a reflection on the nature of the world as a world must be expressed” rather than the “simple discourse” implied by the word *logos*. Brague suggests:

A cosmology must take account of its own possibility, and of the primary condition of its existence, that is, the presence in the world of a subject capable of experiencing it as such—a human being. A cosmology must therefore necessarily imply something like an anthropology. An anthropology is not just a collection of

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<sup>8</sup> Ibid., 3.

<sup>9</sup> Ibid., 3.

<sup>10</sup> Such as what we find in the book of Genesis and Plato’s *Timaeus*, two texts of immense influence throughout the early medieval period.

<sup>11</sup> Brague, *The Wisdom of the World*, 3.

considerations that might be made about certain dimensions of human existence—the social, economic, or anatomical dimensions, and so on. Nor is it limited to a theory that seeks to isolate the essence of the human being; it also encompasses a reflection on the way in which man can fully realize what he is—an ethics, therefore.<sup>12</sup>

Thinking of the Model as a cosmology thus defined will help us see and understand it as something essentially blended and created, a synthesis of sorts that reflects an “accomplished vision of the world” and man’s place therein while simultaneously attempting to address *why* existence is so constituted and *how* it may be addressed.

The Model, then, was both an observable *thing* and a method of moralistic, ethical reconciliation with and within that very object. In early medieval cosmology, what we now typically see as two distinct modes of conception—the literal and the figurative—were often combined or found casually intermingling as though they possessed no inherent differences. Indeed, it could be reasonably argued that they did not. In *Saving the Appearances*, Owen Barfield suggests part of this difference of perspective between modern and medieval thought in the realm of literal and figurative stems from the extent to which things were seen as representational. For the medieval mind the “*ordinary* way of looking at, and of thinking about, phenomena, was to look at and to think about them as appearances—representations. For which, therefore, knowledge was defined, not as the devising of hypotheses, but as an act of union with the represented behind the representation.” In this way the notion of the literal took on a Platonic sense of representation and what is represented (or, more clearly, both the literal and the

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<sup>12</sup> Ibid., 4-5.

figurative); one intrinsically refers to the other and ultimately serves to connect thoughts and ideas to observation in a way that modern thinking typically does not. Our figurative is, in a sense, “an approximation to, or variant of, *their* literal;” the literal and figurative, the realistic and the allegorical are, for the medieval mind, one in the same.<sup>13</sup> It is no wonder then that we have such difficulty addressing early medieval science on its own terms: our frame of reference, our rationality, does not neatly apply.

Regardless of any particular notions of accuracy or even internal consistency, the Model offered a structure for solutions to the questions of life’s meaning based on a mode of thinking that was no less rational to early medievals than ours is to us. Though our answers to such questions have certainly changed since the early Middle Ages, developing them “concerns us as much as it concerned our ancestors” as they directly relate to and reflect “the nature of humankind.”<sup>14</sup> This general inquisitiveness regarding the fundamental elements of life is the trademark of human intellectual endeavors and, in their own way, early medievals made a science of it. As we will see, Late Antique and Dark Age writers were, somewhat unwittingly, collecting ideas and knowledge from what they had at hand—a few books and ordinary firsthand experience—and contributing to a system of perception and comprehension that more or less had (or created) “a place for everything and everything in its right place,”<sup>15</sup> both literally and figuratively. Thinking of this process as one of construction is a conceptually accessible and surprisingly applicable analogy by which to understand what was actually taking place in

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<sup>13</sup> Owen Barfield, *Saving the Appearances: A Study in Idolatry* (New York: Harcourt, Brace & World, 1965), 87.

<sup>14</sup> Brague, *The Wisdom of the World*, 2.

<sup>15</sup> Lewis, *The Discarded Image*, 10.

this period, even though it might seem odd to us that the constructed product was such a blend of metaphysical abstraction and unverified physical observation, or, even more pointedly, irrationality and rationality.<sup>16</sup> Additionally, we would do well to keep in mind that this was construction not according to a particular blueprint but more in line with arbitrary and often inconsistent parameters that were dictated, in a reciprocal arrangement, by religion and classical thought. This process calls to mind Lewis' observation that "some books ... must be regarded more as we regard those cathedrals where work of many different periods is mixed and produces a total effect, admirable indeed but never foreseen nor intended by any one of the successive builders."<sup>17</sup>

It is surely fair to conclude that the period from Late Antiquity to the "end" of the early Middle Ages around the twelfth century represents quite a lull in original scientific thought as we know it today.<sup>18</sup> But that does not at all justify a circumvention of approximately one thousand years of Western thought and culture when considering the

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<sup>16</sup> I agree with Brague's claim "that during a long period in ancient and medieval thought (assuming we can distinguish them here), the attitude that is believed to enable man to achieve the fullness of his humanity was conceived, at least in a dominant tradition of thought, as being linked to cosmology. The wisdom through which man is or should be what he is was a 'worldly wisdom.' The period during which this was so had a beginning and an end. It thus forms a closed entity, one that can be distinguished from its prehistory and post-history—the one in which we now exist;" *The Wisdom of the World*, 2.

<sup>17</sup> Lewis, *The Discarded Image*, 210.

<sup>18</sup> As Lewis concisely explains it, "Astronomy and medicine, and (later) Aristotle, came in Latin translations of Arabic translations of the Greek. That is the typical descent of leaning: from Athens to Hellenistic Alexandria, from Alexandria to Baghdad, from Baghdad, *via* Sicily, to the university of Paris, and thence all over Europe;" *Studies in Medieval and Renaissance Literature* (Cambridge: Cambridge University Press, 1966), 49.

development of science and knowledge.<sup>19</sup> Reasonable relativism and open-mindedness are imperative for proper historical analysis, especially for the study of the history of ideas. A.C. Crombie's oddly Kuhnian remarks on this matter are particularly illuminating:

An obsolete system of scientific thought, which may appear very strange to us looking back from [the present], becomes intelligible when we understand the questions it was designed to answer. The questions make sense of the answers, and one system has given place to another not simply because new facts made it obsolete, but more significantly because for some reason, sometimes the result of fresh observations, sometimes because of new theoretical conceptions, scientists began to rethink their whole position, to ask new questions, to make different assumptions, to look at long familiar evidence in a new way.<sup>20</sup>

The important thing is to understand the questions in the context of the greater system of thought within which the system operates. These questions point toward meanings, causes, and modes of existence that spring from our uniquely human desire to not only discern and order the apparent chaos of our surroundings (to make the unintelligible intelligible) but to actually create justification for that desire within a system of thought.<sup>21</sup>

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<sup>19</sup> It is worth noting that, of the history of medieval science works I consulted for this study, nearly all discuss the first half of the Middle Ages only cursorily, often confining five or six centuries of western intellectual history to a (brief) introductory chapter or paragraph.

<sup>20</sup> A.C. Crombie, *Medieval and Early Modern Science*, vol. 1, *Science in the Middle Ages: V-XIII Centuries* (New York: Doubleday, 1959), 1-2. For clarity's sake, I think we can read his use of the term "scientists" as "scientific minds" for the context of the present study.

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For historians, then, the issue is not just a matter of how the system functioned, but of uncovering the source(s) of its ideas and reason(s) for their adoption and adaptation. Norman Cantor is correct in noting that “adaptability is essential to the success of any intellectual system,”<sup>22</sup> but the ideas that make them up and, more importantly, the questions they answer can survive quite a long time as they are adopted by and adapted to subsequent systems.<sup>23</sup> Past intellectual systems were never just suddenly discovered to be wrong; rather, they shift, adapt, and live along with our ideas, predispositions, and understandings. With that in mind we should do our best to, as Lewis suggests, “regard all Models in the right way, respecting each and idolising none.”<sup>24</sup>

It is true, however, that we need do nothing more than consult our current knowledge of the physical workings and contents of the solar system, for example, to remind ourselves that some of early medievals’ *particular* assertions were simply incorrect. The earth is not the lowly center of a vast (though finite), enclosed, spherical universe of seven planets (including the sun and moon)<sup>25</sup> whose rotations through their

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<sup>22</sup> Norman F. Cantor, *The Civilization of the Middle Ages* (New York: HarperCollins, 1993), 14.

<sup>23</sup> See, for example, Jean Seznec’s *The Survival of the Pagan Gods: The Mythological Tradition and Its Place in Renaissance Humanism and Art*, trans. Barbara F. Sessions (Princeton: Princeton University Press, 1981).

<sup>24</sup> Lewis, *The Discarded Image*, 222.

<sup>25</sup> From the earth, the Platonic order was as follows: moon, sun, Mercury, Venus, Mars, Jupiter, and Saturn (*Timaeus* 38b; *Republic* X.616e). This order would also be asserted by the likes of Aristotle (*Metaphysics* XI.viii.1073b), and, most significantly for the early Middle Ages, Macrobius (late fourth/early fifth centuries) in his well-known and influential *Commentary on Cicero’s Somnium Scipionis*, wherein Macrobius acknowledges and dismisses the other predominant order held by Cicero and Ptolemy which considered the sun to occupy the “middle position” between Venus and Mars (I.xix).

respective spheres have ultimately been dictated by a God<sup>26</sup> occupying/embodying the realm just beyond the firmament.<sup>27</sup> We do not inhabit a terrestrial realm composed of four elements that extends to the lunar sphere, nor is the celestial superlunary realm composed of *aether*, the quintessence or fifth element—what Lewis delightfully refers to as “that strange half-matter in which so many different ages have believed, on what seems to a layman very inadequate evidence.”<sup>28</sup> Of course, to our minds, there is little adequate evidence for any of this or for a great deal of the classical, antique, and early medieval ideas we will encounter in the following pages. Rather, there is preponderance of evidence to the contrary. But I think looking back into our past with a purely evaluative frame of mind often obscures our ancestors’ ingenuity and creates a dislocated

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<sup>26</sup> The “creator” or *dēmiourgos* of Plato’s *Timaeus*, for example, who crafted the universe and its primary constituents and determined its motions, all as a perceptible imitation of an intelligible Form (28a-29b; 52a-b). The early Christian God was but another version of what is obviously an ancient principle.

<sup>27</sup> The sphere of the ‘fixed stars’ (*Timaeus*, 36c-d, for example).

<sup>28</sup> Lewis, *Studies in Medieval and Renaissance Literature*, 53. The distinction between the superlunary realm of *aether* and the sublunary realm of fire, air, water, and earth was definitively articulated by Aristotle in his *On the Heavens* and *Meteorology*. It played a major role in early medieval cosmology and we find it repeated by Macrobius in support of the Platonic order of the planets (*Commentary*, I.xix). The fundamental premise is that the sublunary realm is transitory, the realm of mutability, decay, and death, whereas the superlunary realm is that of constancy and eternity, of perfect motion and incorruptibility. Aristotle asserts the former because of the observable phenomenon of the weather (*Meteorology*, I.339a12-341a36) and the latter “For in the whole range of times past, so far as our inherited records reach, no change appears to have taken place either in the whole scheme of the outermost heaven or in any of its proper parts.... And so, implying that the primary body is something else beyond earth, air, fire, and water, [our ancestors] gave the highest place the name of *aether*, derived from the fact that it ‘runs always’ for an eternity of time” (*On the Heavens*, I.270b14-24).

sense of ‘them’ and ‘us;’ indeed, as Lewis points out, “no model is a catalogue of ultimate realities, and none is mere fantasy. Each is a serious attempt to get in all the phenomena known at a given period, and each succeeds in getting in a great many. But also, no less surely, each reflects the prevalent psychology of an age almost as much as it reflects the state of that age’s knowledge.”<sup>29</sup> The real issue is much larger than particulars if we realize that ‘rationality’ is a subjective term that, through its changes of meaning and application, inevitably reflects how and what we think and have thought about *ourselves*. This universe *meant* something to them, arguably more than the real one does to us. As Terry Jones suggests in the Foreword to *Medieval Views of the Cosmos*, “in mocking the simplicity of our ancestors it is often we who are betraying our own ignorance” rather than somehow revealing theirs.<sup>30</sup>

One of the most intriguing notions regarding the cosmological Model our early medieval ancestors were creating is one put forward by Lewis: that the Model itself was a work of art—not just a single work amongst many but as the ultimate work within which all others of the time were necessarily created. In Lewis’ words:

It might be supposed that this beauty of the Model was apparent chiefly to us who, no longer accepting it as true, are free to regard it—or reduced to regarding it—as if it were a work of art. But I believe this is not so. I think there is abundant evidence that it gave profound satisfaction while it was still was still believed in. I hope to persuade the reader not only that this Model of the Universe is a supreme

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<sup>29</sup> Lewis, *The Discarded Image*, 222.

<sup>30</sup> Evelyn Edson and Emilie Savage-Smith, *Medieval Views of the Cosmos* (Oxford: Bodleian Library, 2004), 7.

medieval work of art but that it is in a sense the central work, that in which most particular works were embedded, to which they constantly referred, from which they drew a great deal of their strength.<sup>31</sup>

Though Lewis' primary aim is to show the Model's value in relation to literature, this value can easily be extended to an appreciation of art fusing with religion and science (or vice versa). Generally speaking, as Barfield points out, "whatever their religious or philosophical beliefs, men of the same community in the same period share a certain background-picture of the world and their relation to it." He describes the medieval "background-picture" as one of a "reciprocal participation between man and the elements by which he was surrounded." In such a cosmological outlook, Barfield suggests, "it is clear that [man] did not feel himself isolated by his skin from the world outside him to quite the same extent as we do. He was integrated or mortised into it, each different part of him being united to a different part of it by some invisible thread."<sup>32</sup> This is what

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<sup>31</sup> Lewis, *The Discarded Image*, 12.

<sup>32</sup> Barfield, *Saving the Appearances*, 78, 79. In the *Timaeus*, for example, the creator concluded that "it is impossible for anything to come to possess intelligence apart from soul. Guided by this reasoning, he put intelligence in soul, and soul in body, and so he constructed the universe" (30b). This is how "divine providence brought our world into being as a truly living thing, endowed with soul and intelligence" (30c). Later, after establishing the elements (32b-32c), giving the universe its shape (33b), dictating its motions (34a), establishing the planets (38c-39b), creating the gods (39e-40b) and *daimones* (40d-e), and ordering the gods to fashion the mortal beings (40b-d), the creator "turned again to the mixing bowl he had used before" in fashioning the soul of the universe and "implanted" the now slightly less pure soul matter in their bodies (41d-42a). Additionally, "copying the revolving shape of the universe, the gods bound the two divine orbits into a ball-shaped body, the part that we now call our head. This is the most divine part of us, and master of all our other parts" (44d). The head is thus "the most divine, most sacred part of ourselves"

makes the Model so interesting and understanding it so imperative to understanding the period in which it began to form. After all, the Model provides the conceptual backdrop for Dark Age rationality; they were very much one and the same.

We have no reason at all to think the Model was in any significant way dissatisfying or that early medievals were pining for something better that would answer their questions more satisfactorily. Why, then, do we tend to look back on their Model of the universe and its supporting rationality disdainfully as though we are embarrassed about more than six hundred years of our intellectual heritage? Because it was irrational or unreasonable? Because it was a senseless, disorganized collection of curious and misunderstood fragments? Because our science *works* and theirs by and large did not? These questions and others like them represent our apprehensiveness about the early Middle Ages but their legitimacy is only as starting points for further inquiry. Moreover, I think the actual reason behind them is much simpler, having far less to do with specifics and much more to do with preference and perspective: the aforementioned notion of *otherness* (conscious or unconscious).

Otherness has been a conceptual and rhetorical tool for quite a long time so, in order to take a step forward, it will be helpful to first take a quick step back and consider for a moment Rome's longstanding relationship with the so-called 'barbarian' peoples north of the Empire. Interestingly, as Thomas S. Burns writes in *Rome and the Barbarians*, "barbarians' figured prominently as cultural foils in ancient intellectual

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(45a) and it, along with our souls, connected us directly not just to the world outside, but to the world above. These ideas are the bases of the popular medieval notion of man as the microcosm of the macrocosmic universe.

discourses about change and values. In fact, it is only within this intellectual sphere that the term barbarian was regularly used.” Additionally,

Barbarians were always and only the essential other, lumped together for ridicule or praise, all largely contrived for the moment, past or present. They were ‘outsiders’ without whom there could be no insiders. The Roman world was incomprehensible without barbarians. Had barbarians not existed, Romans surely would have invented them as the Greeks did the Amazons, for to understand self Romans needed other.<sup>33</sup>

Put simply, “barbarian” primarily meant “not Roman” and its use as a descriptive term took on additional vehemence and/or dismissiveness as interaction between peoples in Roman territories and their immediate neighbors became more and more violent.

While it was true that the peoples of temperate Europe were in many ways obviously not Romans, neither did they represent a totally mysterious antithesis. Through centuries of trade, Roman military outsourcing, and simple geographical proximity the barbarians (particularly those living in sub-Alpine Gaul) became an *internal other*, at once within the breadth of Roman culture but also genuinely misunderstood, purposefully misrepresented, and conveniently outside the mainstream.<sup>34</sup> But this was a dynamic

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<sup>33</sup> Thomas S. Burns, *Rome and the Barbarians, 100 B.C.-A.D. 400* (Baltimore and London: The Johns Hopkins University Press, 2003), 15, 14.

<sup>34</sup> Additionally, Burns notes that “if what it meant to be Roman can only be approximated, then understanding the sense of identity for anybody not Roman is clearly even more difficult;” *ibid.*, 30. For a thorough account of the Roman-barbarian interaction from an archaeological perspective see Peter S. Wells, *The Barbarians Speak: How the Conquered Peoples Shaped the Roman Empire* (Princeton: Princeton University Press, 1999); Richard Hingley, *Rural Settlement in Roman Britain*. London: Seaby,

relationship of reciprocal exchange that transcended polemical rhetoric. As Burns puts it, “Romanization was a process by which barbarians, typically from societies with limited local diversity, adapted to the challenges of living near Romans and, in the process, left their own imprints upon Roman society.”<sup>35</sup> Thus, even invoking the negative definition of barbarians as “not Roman” became an act of cultural identity for both parties, allowing them to substantiate and intensify what were more or less arbitrary distinctions. But “like us,” Romans “were conditioned by preconceptions, and, again like us, they rarely saw the wholeness of the ‘others’ lives.”<sup>36</sup> These preconceptions and the limited perspectives they foster have sustained fundamental notions of otherness throughout human history, stubbornly obscuring our vision and distorting our sense of reality. At the same time, though, they have also created opportunities to fill in the gaps by providing historical problems whose solutions are likely to teach us much about ourselves, past, present, and future. As Lewis notes, for instance, “it may perhaps be held that the barbarian legacy is not really less, but only less flaunted and more disguised; even that it is all the more potent for being secret.”<sup>37</sup>

As for the Middle Ages, there is no doubting that the Model began to change with the twelfth-century introduction of classical Greek and Arabic texts. But, like that of the barbarians, the early medieval legacy would not simply be left behind and discarded. Instead, the particularly Aristotelian rationality many of those translations introduced had

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1989. For the continuation of Roman society after the dissolution of the empire see Samuel Dill *Roman Society in Gaul in the Merovingian Age* (New York: Barnes & Noble, 1966).

<sup>35</sup> Burns, *Rome and the Barbarians*, 27.

<sup>36</sup> *Ibid.*, 26.

<sup>37</sup> Lewis, *The Discarded Image*, 8.

to be integrated into and reconciled with the specific Platonic rationality that had for so long held—and would continue to hold—the Model together.<sup>38</sup> The effects were gradual. Nevertheless, the relationship between the early Middle Ages and the centuries that followed would become more and more like that between the Romans and their barbarian neighbors. Science would become an increasingly distinct field of study, first separating itself from magic and then from the theology in the name of which it had for so long been undertaken. But this study's purpose is not to trace out that subsequent process; rather, it is to offer a sketch of how the Model came to be in the first place, accepting how and why we may fail to notice the existence of creativity, ingenuity, and, yes, even *science* in the early Middle Ages but also recognizing that they were part of an important ideological and rational system that was not, in actuality, the antithesis of what would follow.

It is easy, however, to think that, beginning in the twelfth century, Aristotle's scientific methodology, Ptolemy's astronomy, Galen's medicine, and other pieces of classical thought rescued Western Europe not only from darkness but from a particularly irrational darkness that had previously known, at best, only confused traces of such works. Thus, we hear talk of a "sudden awakening to the discovery that the universe was

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<sup>38</sup> As E.M.W. Tillyard puts it, "Indeed from Augustine himself through the Middle Ages and the Renaissance, through the Elizabethans to Donne and Milton, the old arguments persisted;" *The Elizabethan World Picture A study of the idea of order in the age of Shakespeare, Donne and Milton* (New York: Vintage Books, 1959), 5.

governed by scientific laws”<sup>39</sup> and encounter books entitled *The Renaissance of the Twelfth Century*<sup>40</sup> and *Aristotle’s Children: How Christians, Muslims, and Jews Rediscovered Ancient Wisdom and Illuminated the Middle Ages*<sup>41</sup> that marvel at the fact that they can speak of anything even remotely resembling a “renaissance” in the Medieval period. But that is not to say I wish to deny the very real importance of the changes surrounding the twelfth century. As M.D. Chenu concisely explains:

With the breaking up of the feudal system and its large land holdings, with the economic and political emancipation of urban craftsmen organized into corporations, and with the rise of a market economy accompanied by a growing circulation of goods and people, the introduction and expansion of new technologies had the effect of revolutionizing the material conditions of life as well as the manner of perceiving, apprehending, and portraying the world.<sup>42</sup>

Moreover, despite its long-lasting negative effects, the First Crusade of 1096 helped establish lines of transmission between the Latin West and the Greek and Arabic East that

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<sup>39</sup> M.D. Chenu, “Nature and Man at the School of Chartres in the Twelfth Century,” from *The Evolution of Science: Readings from the History of Mankind*, ed. Guy S. Métraux and Francois Crouzet (New York: Mentor Books, 1963), 222.

<sup>40</sup> Charles Homer Haskins, *The Renaissance of the Twelfth Century* (Cleveland and New York: Meridian, 1957).

<sup>41</sup> Richard E. Rubenstein, *Aristotle’s Children: How Christians, Muslims, and Jews Rediscovered Ancient Wisdom and Illuminated the Middle Ages* (Orlando: Harcourt, 2003)

<sup>42</sup> M.D. Chenu, “Nature and Man at the School of Chartres in the Twelfth Century, 223-4.

had been all but shut off for centuries.<sup>43</sup> The fact that these “intellectual riches”<sup>44</sup> were previously unavailable to Western minds in their complete forms (the Islamic world possessed them by the ninth century) does not mean that the ideas they contained were wanting as well; it is in this context that we may understand what Lewis means when he refers to medievals as “literate people who had lost most of their books.”<sup>45</sup> The original sourcebooks were missing but portions of the ideas they contained were kept alive and developed by the early Latin writers to whom the complete texts would have been more readily available. Thus, the early Middle Ages inherited and adapted a scientific method and complex thought system of their own—one derived in large part from Aristotle’s infamous teacher and the Platonic, Stoic, and Neoplatonic traditions that followed and developed Plato’s works. This, I think, is due to the fashion in which texts were transmitted in the first half of the first millennium C.E. *as well as* the general appeal of the Platonic rationality and its derivatives to late Roman and early medieval sensibilities.

Keeping in mind Gilson’s warning that “we have no right to isolate in our history things that in fact were united in reality,”<sup>46</sup> this study addresses the early medieval Model’s specific rationality by way of its three most prominent elements: religion, magic, and science. The brief description of this terminology in Part I will help lay the

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<sup>43</sup> See chapter 13 in Norman Cantor, *The Civilization of the Middle Ages*, 289-303; Jonathan Phillips, *Defenders of the Holy Land: Relations Between the Latin East and the West, 1119-1187* (Oxford: Oxford University Press, 1996) and *The Crusades, 1095-1197* (New Jersey: Pearson, 2002).

<sup>44</sup> Edson and Savage-Smith, *Medieval Views of the Cosmos*, 117.

<sup>45</sup> Lewis, *Studies in Medieval and Renaissance Literature*, 49.

<sup>46</sup> Etienne Gilson, *The Spirit of Medieval Philosophy*, trans. A.H.C. Downes (New York: Charles Scribner’s Sons, 1940), 1.

groundwork for understanding the inherent interconnectivity of these elements within the rationality expressed by writers from Late Antiquity through the early Middle Ages. Parts II and III consider some of the most notable and influential of these sources and the ways they show us not only what the Model was made of but also how it worked. The purpose of all this is to demonstrate that seeing these ideas for what they were requires an open-mindedness and willingness to engage history on its own terms while recognizing the interpretive contributions offered by various modern disciplines. Historical knowledge helps us keep track of who we are but we also stand to gain even more nuanced and revealing insights from conscious examinations of how we choose to historicize.

## **PART I: Science, Magic, and Religion**

As David C. Lindberg observes in the preface to *Science in the Middle Ages*, “the term *science* has connotations in the twentieth century that are quite inapplicable to the Middle Ages.”<sup>47</sup> Thus, it is typical to call what *they* did “natural philosophy” and what *we* do “science” for either of two reasons whose legitimacy is at best partial:

historiographically speaking, in the hopes that we are preserving historical context by referring to something in the way it was more or less referred to during the time in question<sup>48</sup> or, a bit more judgmentally, because the early Middle Ages were essentially devoid of the science we find in the periods immediately preceding and following it (classical Greece and Imperial Rome and then the late Middle Ages to the present). However, I think both reasons tend to perpetuate a confusing sense of otherness and externality, regardless of one’s intentions. Calling the early medieval approach to and conception of nature “natural philosophy” does not by itself automatically establish the social and ideological context of the period nor does calling it “science” exclude that context. At the same time, running away with Lindberg’s observation leads to a dismissal of the following sort offered by the historian of science Edward Grant in *The Foundations of Modern Science in the Middle Ages*:

If the achievements of the late Middle Ages in natural philosophy and science bear such a positive relationship to the early modern period, is it not plausible to suppose that a similar relationship might obtain between the early Middle Ages ...

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<sup>47</sup> David C. Lindberg, ed., *Science in the Middle Ages* (Chicago: Chicago University Press, 1978), xi.

<sup>48</sup> See, for example, Brian P. Copenhaver, “Did Science Have a Renaissance?” *Isis* 83, no. 3 (1992): 387-407.

and the late Middle Ages? In a word, no. The relationships are radically different. With a few minor exceptions, Greek science was absent during the early Middle Ages.... The Greco-Arabic science that entered Western Europe in the twelfth century was not merely the enrichment of a somewhat less developed Latin science. It signified a *dramatic break* with the past and a new beginning.<sup>49</sup>

Grant is certainly right that *Greek science* was largely absent but he at no point acknowledges the particular *early medieval science* that, for reasons we will explore, grew out of, added to, and changed the classical tradition into something with which the twelfth century “renaissance” had to necessarily begin a process of reconciliation.<sup>50</sup> So, because of modern connotations, referring to the early Middle Ages as unscientific sets a particular standard by which to assess (and even disregard) the epistemology of the time, severely limiting our conception.

Though both “natural philosophy” and “science” can be used against the early Middle Ages to negatively define something *other*, they may also help establish respective identities in a positive sense, as we saw with the Roman use of “barbarian.” Thinking of these terms in this sense should broaden our perspectives and allow for the

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<sup>49</sup> Edward Grant, *The Foundations of Modern Science in the Middle Ages: Their Religious, Institutional, and Intellectual Contexts* (Cambridge; New York: Cambridge University Press, 1996), 205.

<sup>50</sup> M.D. Chenu, in “Nature and Man at the School of Chartres in the Twelfth Century,” rejects the use of the classification “Renaissance” as implying an essentially imitative period, instead presenting such periods—the twelfth century, in this case—as ones of creative renewal and addition, stating in a footnote at the outset of the essay that “The term ‘Renaissance’ is no more than the expression, within the framework of an ‘antique’ perspective, of the capacity for permanent renewal that characterizes Western Christianity;” 221n, 220-22.

application of “science” and “natural philosophy” to a more diverse set of practices and ideas; in short, to try to see things through their eyes *first* and then describe them with words of our own. Therefore, I will use “natural philosophy” and “science” somewhat interchangeably to broadly cover any “systematic” or even unsystematic “study of the natural world”<sup>51</sup> when discussing what kind of world early medievals were studying.

Moreover, I will risk attaching modern weight to the matter of magic by referring to it as such rather than employing the Latin term *magia* or any of the other variations thereof.<sup>52</sup> This is not terribly problematic because neither term (“magic” nor *magia*) sufficiently covers all the practices which have been considered magical throughout western history—nor it is not my aim to do so here. Thus, as Lynn Thorndike suggests in his masterful *History of Magic and Experimental Science*, “magic” may be “understood in the broadest sense of the word, as including all occult arts and sciences, superstitions, and folk-lore.”<sup>53</sup> Taking this a step further, I use “magic” in reference to a type of “systematic study of the world” that not only overlaps and conflicts with natural philosophy and religion but complements them as well. This use of “magic” in such a general sense will, I hope, make it easier to see through popular, sensationalized,

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<sup>51</sup> Elspeth Whitney, *Science and Technology in the Middle Ages* (Westport: Greenwood Press, 2004), 230.

<sup>52</sup> For instance, “magic” is satisfactorily defined in the Oxford English Dictionary as “The pretended art of influencing the course of events, and of producing marvelous physical phenomena, by processes supposed to owe their efficacy to their power of compelling the intervention of spiritual beings, or of bringing into operation some occult controlling principle of nature; sorcery; witchcraft;” *The Compact Edition of the Oxford English Dictionary*, 1971, s.v. “magic.”

<sup>53</sup> Lynn Thorndike, *A History of Magic and Experimental Science*, vol. 1, *During the First Thirteen Centuries of Our Era* (New York: Columbia University Press, 1923), 2.

marginalized conceptions of it to the beginnings of its significant role in the development of Western thought and culture without allowing the discussion to be bogged down in its variations.

In considering a period as historically distant as the first millennium C.E., the best we can realistically hope for is an understanding of what *types* of things the modern terms “science” and “magic” may reasonably be said to refer to. This, I think, is also all we really need. I agree with Lindberg’s assertion that ceaselessly debating by what broad title we should refer to “the objects of [our ancestors’] scholarship” is essentially practically “pointless” if those objects are our primary concern.<sup>54</sup> Labels can easily mislead or distract, especially when we forget that “a word does not perhaps exist to designate all of physical reality without implying a specific perspective on that reality.”<sup>55</sup> Rather, “the important thing is to agree on what we are talking about and to employ terminology that facilitates communication on that subject;”<sup>56</sup> being either consumed by or oblivious to semantic issues can easily distract us from recognizing not only the basic, fundamental links in history but also in our ordinary discourse about that history. As with most things in life, the truest, most sensible path lies somewhere in between opposing extremes. Thus, I will follow Brague’s lead and “make use of words that are already

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<sup>54</sup> David C. Lindberg, “The Medieval Church Encounters the Classical Tradition,” from *When Science and Christianity Meet*, ed. David C. Lindberg and Ronald L. Numbers (Chicago: The University of Chicago Press, 2003), 9.

<sup>55</sup> Brague, *The Wisdom of the World*, 5.

<sup>56</sup> Lindberg, “The Medieval Church Encounters the Classical Tradition,” 9.

present in our vocabulary but [I] will not restrict myself to employing their commonly-held meanings.”<sup>57</sup>

With that in mind, this study is based in part on Thorndike’s idea that “magic and experimental science have been connected in their development; that magicians were perhaps the first to experiment; and that the history of both magic and experimental science can be better understood by studying them together.”<sup>58</sup> In fact, for the early medieval period, they *must* be studied together—not necessarily as one in the same or only for their applied, practical aspects but as intimately related (and often indistinguishable) elements of the total thought structure embodied by the Model. Of course there were inconsistencies and disagreements within that structure, as we will see, but not in any modern disciplinary way. Magicians did not fight natural philosophers with magic nor did natural philosophers fight magicians with natural philosophy. Rigid distinctions like this simply did not exist in the early Middle Ages. Thus it is helpful to realize that, as with science, “magic implies a mental state and so may be viewed from the standpoint of the history of thought.”<sup>59</sup> The vast majority of the time, when conflict arose, it was not so much over matters of efficacy but because of political and religious assertions (if we can really even distinguish them for this period either) regarding the interpretation(s) of what the cosmological view should and could allow. No one denied magic wholesale.

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<sup>57</sup> Brague, *The Wisdom of the World*, 2.

<sup>58</sup> Thorndike, *A History of Magic and Experimental Science*, vol. I, 2.

<sup>59</sup> *Ibid.*, 4.

Despite the similarity of their objects and methods of pursuit, religion, magic, and science were not always on equal or even amenable terms. Christian theology was a major component of the Western intellectual landscape by as early as the fifth century C.E.;<sup>60</sup> knowledge and the means by which it was attained thus became increasingly religiously oriented. By this period, Western thought had already lost much of its element of classical Greek theoretical development and practical application and gained a preponderance of abstract, allegorical notions of faith and mysticism—selectively derived as many of them were from Antiquity. Additionally, contact between the Latin world and the indigenous populations of Western Europe profoundly impacted cultural development as the Romano-barbarian relationship continued as a Latin-Celtic/Germanic one. It was this homogenization of ideas and practices into something altogether new that Lewis terms “the medieval synthesis itself, the whole organization of their theology, science, and history into a single, complex, harmonious mental Model of the Universe.”<sup>61</sup> This dynamic hybridization created a palimpsest of religio-magical natural philosophy or (possibly more accurately) magical-scientific religion within which any attempted distinctions regarding acceptable ways of knowing (and employing that knowledge) were bound to be ideologically motivated and largely arbitrary. Harmony was certainly the goal but interpretive discord was, as always, inevitable.

The final five or six centuries of antiquity, or what Lewis calls the “transitional period,” represent the “age which brought the characteristically medieval frame of mind

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<sup>60</sup> But this is not to suggest Christianity had by then achieved hegemony. Burns notes that “the thorough Christianization of the empire had, however, scarcely begun by 400;” *Rome and the Barbarians*, 10.

<sup>61</sup> Lewis, *The Discarded Image*, 11.

into being” and, as Grant notes, witnessed “the gradual disintegration and transformation of the Roman Empire and the triumph of Christianity as a state religion.”<sup>62</sup> In this “last age of antiquity,” “many writers ... were, perhaps half-consciously, gathering together and harmonising views of very different origin: building a syncretistic Model not only out of Platonic, Aristotelian, and Stoical, but out of Pagan and Christian elements.”<sup>63</sup>

Thus, as E.M.W. Tillyard describes,

the Middle Ages derived their world picture from an amalgam of Plato and the Old Testament, invented by the Jews of Alexandria and vivified by the new religion of Christ. It was unlike paganism (apart from Platonism and some mystery cults) in being theocentric, and it resembled Platonism and other theocentric cults in being perpetually subjected to the conflicting claims of this and another world.<sup>64</sup>

As a result of this heritage, like most historians of medieval science Elspeth Whitney remarks that

the early Middle Ages was a period of preservation and retrenchment, rather than of new and innovative thought.... Knowledge continued to be organized around the scheme developed by Roman writers ... known as the seven liberal arts, but the

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<sup>62</sup> Edward Grant, *Physical Science in the Middle Ages* (Cambridge: Cambridge University Press, 1977), 1.

Additionally, Whitney notes that “with Christianity as the official state religion, the issue of the proper relationship of reason and faith became a major component of the place of science in society;” *Medieval Science and Technology*, 5.

<sup>63</sup> Lewis, *The Discarded Image*, 12.

<sup>64</sup> Tillyard, *The Elizabethan World Picture*, 4.

scientific content of the mathematical arts and the more advanced sciences had almost entirely dropped from view.<sup>65</sup>

This decline of classical knowledge was a legacy of Roman character as much as a result of early Christianity's development and other social factors. As Brian Stock suggests, "despite an avowed admiration for Greek learning, at heart the Roman had little time for theory. He was interested in law and order, an efficient administration, a sanitary city, and his family. His daily experience led him to believe that nature's forces could be imitated, even placated: he was less sure they could be understood."<sup>66</sup> That the late Empire was dealing with barbarian invasions, political discontinuity, and religious cult movements leads Grant to suggest

If a reasonable degree of political stability, urban activity, and patronage of some kind, are essential or at least conducive to the pursuit of science, the absence of

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<sup>65</sup> The seven liberal arts had been originally outlined by the Roman scholar Marcus Terentius Varro in the first century B.C.E. The three language arts (the *trivium*) were grammar, logic, and rhetoric and the four mathematical arts (the *quadrivium*) were geometry, arithmetic, astronomy, and music. This formed the backbone of education throughout the Middle Ages and was passed on approvingly by authorities such as Augustine of Hippo (354-430) and Martianus Capella (fifth century); Whitney, *Medieval Science and Technology*, 7; A.C. Crombie, *Medieval and Early Modern Science*, 13. "Varro's theoretical science was to experience a revival of a sort in Capella's encyclopedia, through which traces of it would survive; but Varro's book itself was soon after to pass out of sight;" William H. Stahl, *Roman Science: Origins, Development, and Influence to the Later Middle Ages* (Madison: University of Wisconsin Press, 1962), 121.

<sup>66</sup> Stock, "Science, Technology, and Economic Progress," in *Science in the Middle Ages*, ed. David C. Lindberg (Chicago: Chicago University Press, 1978), 4; Grant, *A History of Natural Philosophy*, 95; Stahl, *Roman Science*, 104.

these enables us to comprehend, in a quite general way, how scientific understanding and achievement could have deteriorated and stagnated over so long a period of Western European history.<sup>67</sup>

As a result, so the argument goes, the people of the transitional period had more pressing and practical needs to meet.<sup>68</sup> If we couple these factors with Christianity's "intense and widespread search for other-worldly salvation," it seems clear that these people often lacked both the relative leisure and ideological willingness to engage in natural investigation for its own sake.<sup>69</sup> According again to Grant, the thinkers of the age who under different conditions may have pursued natural philosophy began to dedicate their mental energy to religious matters as the social and ideological value system shifted: "By 500 A.D., the Christian Church had drawn most of the talented men of the age into its service.... Honor and glory were no longer found in objective, scientific comprehension of natural phenomena, but rather in furthering the aims of the universal Church."<sup>70</sup>

Yes, the Romans were generally known for their practicality and efficiency and yes, Late Antiquity and the early Middle Ages were fraught with social and political

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<sup>67</sup> Grant, *Physical Science in the Middle Ages*, 2

<sup>68</sup> See, for example, chapter three, "The Age of the Barbarian Invasions," in Cantor, *The Civilization of the Middle Ages*, 89-121.

<sup>69</sup> It is worth at least mentioning that "some of the greatest scientific works of the ancient world," such as Ptolemy's *Almagest* and Galen's medical and biological treatises, were written "during the first few centuries of the Roman Empire, when Christianity was relatively weak and uninfluential, struggling for survival against its many rivals;" *ibid.*, 3. However, as Brian Stock notes, these Hellenistic writers were themselves bringing Greek theoretical science "down to earth;" "Science, Technology, and Economic Progress in the Early Middle Ages," 5.

<sup>70</sup> Grant, *Physical Science in the Middle Ages*, 4.

turmoil but the core truth of all this requires a bit of qualification. Taken at face value, assertions that set the history of science against this backdrop sit atop a slippery slope leading to dismissive and oversimplified notions of fundamental Roman disinterest in metaphysical matters and the early Church's inherent theological antipathy to objectivity, rationality, and reason.<sup>71</sup> Again, we find another instance of a this-and-that comparison, applied now to Greeks and Romans as well as the budding relationship between science and religion. Our conception of the early Middle Ages is often drawn from just such a view of their relationships, particularly for the latter. However, as Friedrich Heer notes, the “‘seeking out of the secrets of nature’ should not be regarded as something set apart from the religious and political preoccupations of the moment; it was intimately bound up with the prevailing outlook on the world.”<sup>72</sup> Such an outlook, filtered as it was through traces of selective Roman “popularizers and encyclopaedists, and early Christian neo-Platonists,”<sup>73</sup> and based primarily upon interpretation and selection, seems altogether unscientific—a Model only religion could love.

Basically speaking, “Plato’s universe was easily adapted to Christian philosophy.”  
As described in *Medieval Views of the Cosmos*,

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<sup>71</sup> Not to mention such premises assume we can clearly define what it meant to be Roman in an abstract sense and that such a definition would apply to all Roman citizens. They also paint a skewed picture of uncomplicated minds both unable and unwilling to engage in rigorous theoretical reflection.

<sup>72</sup> Friedrich Heer, *The Medieval World: Europe, 1100-1350*, trans. Janet Sondheimer (New York: The New American Library, 1962), 239.

<sup>73</sup> Edson and Savage-Smith, *Medieval Views of the Cosmos*, 117; Lewis, *The Discarded Image*, 22-75; David Knowles, *The Evolution of Medieval Thought* (New York: Vintage, 1962), 3-58. All three of these works provide nice synopses of the transitional period.

The moving intelligences of the heavenly bodies were transmuted into angels, and God, of course, became the ultimate prime mover. Plato's idea, echoed by Aristotle, that the spheres increased in 'honour' the further they were removed from the earth, found resonance for Christians in the image of ascent into the heavens and a celestial hierarchy, corresponding to the ideal earthly one. For centuries Christian philosophers continued to tinker with their cosmology, adding refinements and details, based on theology more than on observation.<sup>74</sup>

Lewis, however, warns us against thinking that early medievals' desire for harmony was necessarily manifest in the relationship between the Model and Christian theology:

Their cosmology and their religion were not such easy bedfellows as might be supposed. At first we may fail to notice this, for the cosmology appears to us, in its firmly theistic basis and its ready welcome to the supernatural, to be eminently religious. And so in one sense it is. But it is not eminently Christian. The Pagan elements embedded in it involved a conception of God, and of man's place in the universe, which, if not in logical contradiction to Christianity, were subtly out of harmony with it. There was no direct 'conflict between religion and science' of the nineteenth-century type; but there was an incompatibility of temperament.

Delighted contemplation of the Model and intense religious feeling of a specifically Christian character are seldom fused except in the work of Dante.<sup>75</sup>

This idea of a religion growing up both alongside and yet still within a cosmology, constantly drawing from and reconciling itself with what was "known" about the world,

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<sup>74</sup> Edson and Savage-Smith, *Medieval Views of the Cosmos*, 26.

<sup>75</sup> Lewis, *The Discarded Image*, 18-19.

is absolutely central to the early medieval science-magic-religion dynamic. It is therefore also central to seeing not only how their specific rationality played out but how the Model, with its blend of the literal and figurative, physical and metaphysical, Christian and pagan, *was* the backdrop for their science. It was the framework for conceptualizing the natural world and man's place therein, no less observable, understandable, or usable for its mysticism and abstractions.

## **PART II: “What have the Romans ever done for us?”**

Because “no medieval writer whether on science or magic can be understood by himself, but must be measured in respect to his surroundings and antecedents,”<sup>76</sup> this story takes us back to the Roman Empire. Though Crombie points out that the Romans “made hardly any original contributions to science,”<sup>77</sup> the fact remains that “some of them were sufficiently interested in trying to understand the world of nature and to make careful compilations of the learning and observations of Greek scholars.”<sup>78</sup> Lindberg explains that “in the Roman world there was a certain appreciation of Greek philosophy and science, but little need for translations from Greek to Latin, since the Roman scholar was generally able to read Greek. Nevertheless, a few translations were executed” such as Cicero’s (106-43 C.E.) of “at least the first third of Plato’s *Timaeus*.” In this way:

There developed a thin body of knowledge based on Greek sources—evident in such works as the encyclopedias of Varro, Celsus, and Pliny and the slightly more specialized writings of Lucretius, Vitruvius, and Seneca. However, with the gradual collapse of Roman civilization, knowledge of Greek became even scarcer, and the Latin-speaking world was increasingly limited to the meager sources already in its possession. Those few who were still able to read or translate Greek

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<sup>76</sup> Thorndike, *A History of Magic and Experimental Science*, vol. I, 4.

<sup>77</sup> Additionally, in *Roman Science*, William H. Stahl acknowledges that “Roman science was of a distinctly low order” and warns us that improper “deferential or sympathetic treatment” of it simply because it hails from “a dominant civilization may be a grievous mistake.” 3-4.

<sup>78</sup> Crombie, *Medieval and Early Modern Science*, 10-11.

philosophical and scientific classics generally had no interest in doing so. The learning of the East and West had been severed.<sup>79</sup>

Of greatest importance for my present purposes among these early individuals were the Roman Stoic philosopher Seneca (ca. 4 B.C.E. – 65 C.E.) and Pliny the Elder (ca. 23-79 C.E.)<sup>80</sup> whose respective works “exercised considerable influence on the discussions of natural philosophy that followed in the early Middle Ages.”<sup>81</sup> As we shall see, though the complete works of Aristotle and other Greek thinkers were themselves missing from the early medieval intellectual repertoire, derivatives of Aristotelian notions found their way into early medieval texts.

Though Seneca’s *Naturales Quaestiones* is, as William H. Stahl puts it, “a collection of stock information gathered from earlier works, interspersed with moralistic reflections, a few personal observations of nature, and occasional expressions of independent judgment,”<sup>82</sup> it is a highly significant representation of the kinds of texts involved in the Latin transmissive activity from antiquity to the Middle Ages for several reasons. Despite the cursory and fragmented nature of its specific content, the *Naturales Quaestiones*’ two primary sources are Aristotle and the native Syrian Stoic philosopher Posidonius (ca. 135-51 B.C.E.), both of whom Seneca cites directly, along with “almost

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<sup>79</sup> Lindberg, “The Transmission of Greek and Arabic Learning to the West,” in *Science in the Middle Ages*, 52.

<sup>80</sup> Grant writes, “Although the Latin encyclopedic tradition actually began in the first century B.C. with Marcus Terrentius Varro (116-27 B.C.), its two most significant early representatives were Seneca (*d.* 68 A.D.) and Pliny the Elder (23/24-79 A.D.);” *Physical Science in the Middle Ages*, 7.

<sup>81</sup> Grant, *A History of Natural Philosophy*, 95-6; *Physical Science in the Middle Ages*, 7-8.

<sup>82</sup> Stahl, *Roman Science*, 98.

forty” other authors (only five of which, including Posidonius, are Latin).<sup>83</sup> Posidonius, though none of his works survive, “was the great popularizer of learning for the Greco-Roman world, and because of his encyclopedic interests and his ability to present information in a readily digestible form, he became the chief transmitter of Greek philosophy and science to the Romans.”<sup>84</sup> Seneca was certainly no exception to this general assessment; Posidonius was his “chief authority” and, significantly, “is believed to have been largely responsible for the distinctly Platonic characteristics in Seneca’s Stoicism.”<sup>85</sup> But, as Thomas H. Corcoran notes in the introduction to his translation of the *Naturales Quaestiones*, Seneca’s “inaccuracies, or freedom, in transmitting the statements of his Greek sources need not prove that he knew them only through a Latin intermediary. He is just as inaccurate in quoting Latin poets. His practice, and generally that of all ancient writers, was to cite and quote from memory.”<sup>86</sup> Seneca was deliberately

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<sup>83</sup> Ibid., 99; Grant, *A History of Natural Philosophy*, 96; Seneca, *Natural Questions*, vol. 1, trans. Thomas H. Corcoran (Cambridge: Harvard University Press, 1971), xii.

<sup>84</sup> Stahl, *Roman Science*, 46; Stahl devotes an entire chapter to “The Posidonian Age,” 43-61. Additionally, Philip Freeman’s *The Philosopher and the Druids: A Journey Among the Ancient Celts* is an historicizing account of Posidonius’ travels and writings, (New York: Simon & Schuster, 2006).

<sup>85</sup> Ibid., 99. As Seznec notes in *The Survival of the Pagan Gods*, “The method of interpretation which consists in endowing mythology with edifying meaning goes back at least as far as the Stoics. Their great desire to reconcile philosophy with popular religion led not only to their attempt ... to regard the gods as symbols of the physical world; they also undertook at times to discover spiritual significance in the figures and even in the names of the gods, and moral lessons in their adventures.... Thus the allegorical method came into being;” 84-5.

<sup>86</sup> *Natural Questions*, vol. 1, xiii.

creating something; he was more than an unconscious, disinterested copyist collecting “stock information.”

What Seneca gives us is an early instance of the burgeoning encyclopedic eclecticism of Aristotelian natural philosophy through a heavily Platonic mode of Stoical thinking.<sup>87</sup> As Grant describes, “Seneca was given to drawing morals from natural phenomena, much as Christian authors did in later centuries. The apparent purpose of his treatise was to use natural philosophy to underwrite religion and morality”<sup>88</sup> and, as a result, he was mistakenly “regarded as a Christian by medieval Churchmen.”<sup>89</sup> But even more importantly, we find underlying the *Naturales Quaestiones* notions of the Aristotelian distinction between practical and theoretical philosophy and their objects of study (the terrestrial and celestial realms) coupled with Platonic-Stoic (and later Neoplatonic, as we will see) contemplative veneration of the divine, superior celestial realm of perfection, of what ought to be. In fact, he makes much of this clear at the very outset of his Preface where he writes:

the great difference between philosophy and other studies is matched, I think, by the equally great difference in philosophy itself, between that branch which deals with man and that which deals with the gods. The latter is loftier and more intellectual, and so has permitted a great deal of freedom for itself. It has not been restricted to what can be seen; it has presumed that there is something greater and more beautiful which nature has placed beyond our sight. [ ] In short, between the

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<sup>87</sup> “Posidonius’ *Peri meteoron*—the main source of Seneca’s *Natural Questions*, as has been mentioned—was based upon Aristotle’s *Meteorologica*,” Stahl, *Roman Science*, 47.

<sup>88</sup> Grant, *A History of Natural Philosophy*, 96.

<sup>89</sup> Stahl, *Roman Science*, 98.

two branches of philosophy there is as much difference as there is between man and god. One teaches what ought to be done on earth; the other what is done in heaven. One dispels our errors and furnishes a light for us to see through the uncertainties of life; the other rises far above this fog in which we wallow, and, rescuing us from darkness, leads us to the place whence the light shines.<sup>90</sup>

That place was real, consisting of a substance, and separated from the terrestrial realm by the sphere in which the moon revolved around the earth, as we find expressed by Seneca's contemporary Pliny (echoing Aristotle): "the frontier between the moon and the other heavenly bodies is at the point where the air ends and the aether begins. All the space above the moon is clear and filled with continual light, but to us the stars are visible through the night in the same way as other lights in shadows."<sup>91</sup> Thus Pliny suggests "This theory leads mortal minds upward to heaven, and discloses to their observation from that height, as it were, the greatness of the three greatest parts of the universe."<sup>92</sup> We reach that place by exercising our minds, our faculties of reason—that aspect of our makeup that connects us to god (who is "entirely reason")<sup>93</sup> and the heavens—and relinquishing earthly, physical things. We are thus intimately connected, both literally and figuratively, to that to which we should aspire and it is by emulating the celestial realm through reason that a mind "is nurtured, grows, and returns to its origin just as though freed from its chains."<sup>94</sup> We thus have "a natural interest in studying nature,"

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<sup>90</sup> Seneca, *Natural Questions*, Pref. I.1-2.

<sup>91</sup> Pliny, *Natural History*, vol. I, trans. H. Rackham (Cambridge: Harvard University Press, 1938), II.vii.

<sup>92</sup> *Ibid.*, II.viii.

<sup>93</sup> Seneca, *Natural Questions*, Pref. I.14

<sup>94</sup> Seneca, *Natural Questions*, Pref. I.12.

which is “above all the study of the celestial world,”<sup>95</sup> not only because its nobility is (imperfectly) reflected in us but because to know nature is to know self.<sup>96</sup> For a first-century Stoic like Seneca, engaging in natural inquiry is quite essentially a “religious exercise.”<sup>97</sup>

These ideas are some of the most fundamentally important aspects of the upward and inward-looking rationality so characteristic of the early medieval Model. But along with a preponderance of morals and ethics drawn from natural observation, Seneca discusses divination at length. As the historian of magic and witchcraft Richard Kieckhefer puts it, Seneca “had profound confidence in the validity of divination: the movement of planets, the falling of meteors, the flight of birds, and especially the occurrence of thunder and lightning served for him as portents of future events.”<sup>98</sup> For example, Seneca scoffs at the “horoscope experts” for ascribing powers to only five

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<sup>95</sup> Brague, *The Wisdom of the World*, 130, 126.

<sup>96</sup> Pliny suggests God operates according to “the power of nature;” *Natural History*, II.v.

<sup>97</sup> Thorndike, *A History of Magic and Experimental Science*, vol. 1, 101. For example, Seneca writes: “If we enter temples with composure, if, when we are about to approach a sacrifice, we lower our eyes, draw in our toga, if we assume every sign of modesty, how much more ought we to do so when we discuss the planets, the stars, the nature of the gods, lest in our ignorance we assert something rashly, impudently, or even knowingly!” *Natural Questions*, VII.30.

<sup>98</sup> Kieckhefer, *Magic in the Middle Ages* (Cambridge: Cambridge University Press, 1990), 24. Similarly, Thorndike observes that Seneca “accepts natural divination in well-nigh all its branches: sacrificial, augury, astrology, and divination from thunder. He believes that whatever is caused is a sign of some future event.” *A History of Magic and Experimental Science*, vol. 1, 103.

planets when it is clear to him that “all the stars above us claim a share of us for themselves.”<sup>99</sup> He continues,

Perhaps the lower stars, and those which look upon us sometimes one way sometimes another because they change position more frequently, influence us more directly. But even those stars which are motionless, or like motionless stars because their speed is equal to that of the universe, are not without power and control over us. One star influences one person, another star influences another.

They carry on their work in duties that have been distributed among them.

However, it is more difficult to know what power they have than to doubt whether they have power.<sup>100</sup>

There is no doubt in Seneca’s mind that they do (have power).

Though Seneca’s heavily Platonic/Stoical *Naturales Quaestiones* was one of the early Latin vehicles for the survival of the eclectic antique natural philosophy from which

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<sup>99</sup> This is clearly Platonic as we find in the *Timaeus* that the creator divided the soul mixture “into a number of souls equal to the number of the [fixed] stars and assigned each soul to a star” (41d) before “implanting” soul in human bodies (42a). He then endows each person with emotions, dictating that “if they would master these emotions, their lives would be just, whereas if they were mastered by them, they would be unjust. And if a person lived a good life throughout the due course of his time, he would at the end return to his dwelling place in his companion star, to live a life of happiness that agreed with his character” (42a-b). It is interesting to note Pliny’s inconsistent rejection of this idea in the *Natural History*: he first suggests the stars are “not assigned to each of us in the way in which the vulgar believe;” “There is no such alliance between us and the sky that the radiance of the stars there also shares our fate of mortality” (II.vi) and later claims “Hipparchus before-mentioned, who can never be sufficiently praised, no one having done more to prove that man is related to the stars and that our souls are a part of heaven” (II.xxiv).

<sup>100</sup> Seneca, *Natural Questions*, II.32.

many subsequent texts were drawn, it can appear to be one of the simplistic delusions from which the twelfth century translations of classical Greek texts would begin to resuscitate reasonable science by wading through the preponderance of lore. Seneca, in one of his moments of prescience, seems to recognize as much: “The time will come when diligent research over very long periods will bring to light things which now lie hidden.... There will come a time when our descendants will be amazed that we did not know things that are so plain to them.”<sup>101</sup> He knew full well that changes do not occur overnight, that the process of knowledge accretion can be painstakingly slow. Indeed, for works such as the *Naturales Quaestiones* he would enjoy a very long and influential literary life as an “ethical and moral philosopher”<sup>102</sup> and some of the attitudes he and others held regarding divinatory astrology would be debate fodder from his own time<sup>103</sup> to the Middle Ages, early, high, and late. The point is that, though things change, the old always leads into the new to the point that all that is really new is the interpretation of the same old problems and questions. Of course Seneca was wrong about astrological divination, for example—but not completely (which may partially explain the persistence of such practices). The universe *is* connected, things *do* influence others, and “whatever has a series of occurrences is also predictable,”<sup>104</sup> more or less. Subsequent inquiry on such matters began with these assumptions as well as the Stoical moral and ethical

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<sup>101</sup> Seneca, *Natural Questions*, VII.25.

<sup>102</sup> Thorndike, *A History of Magic and Experimental Science*, vol. 1, 100.

<sup>103</sup> Pliny expressed his disbelief in Book II of his *Natural History*: the stars are “not assigned to each of us in the way in which the vulgar believe;” “There is no such alliance between us and the sky that the radiance of the stars there also shares our fate of mortality.” II.vi.

<sup>104</sup> Seneca, *Natural Questions*, II.32.

doctrines that embodied those notions of connectivity in our observation of and participation with nature. That rationality had, and continues to have, value, even for science. This spiritualistic, moralistic rationality put forth by seemingly misinformed Latin writers was the subsequent basis of the early medieval Christian worldview and has become, along with the indirect and selective process of textual transmission, the primary grounds for the period's dismissal in the histories of thought and science. Pliny, another Stoic, gets much the same treatment despite covering a great many more subjects.

At first glance, Pliny's *Naturalis Historia* represents the typical "concrete, practical Roman approach to the world"—"a natural philosophy of facts and information, with relatively little theoretical structure."<sup>105</sup> Indeed, with its thirty-seven books surviving in full, it "was the largest known collection of facts" until the twelfth century and "the key work in any comprehensive study of what constituted Roman science," being widely read, copied, and referred to for centuries after its completion.<sup>106</sup> But, in Thorndike's words, "The *Natural History* is a great storehouse of misinformation as well as of information, for Pliny's credulity and lack of discrimination harvested the tares of legend and magic along with the wheat of historical fact and ancient science in his voluminous granary."<sup>107</sup> This common—though rarely so well-articulated—characterization is precisely what makes Pliny's great tome at once both fascinating and confusing to modern sensibilities. An intensely curious man, Pliny offers us knowledge and practice in their most unabridged forms, "scrupulously cit[ing] his numerous sources" (of which,

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<sup>105</sup> Grant, *A History of Natural Philosophy*, 96-7.

<sup>106</sup> Crombie, *Medieval and Early Modern Science*, 10-11; A thorough treatment of the *Naturalis Historia* may be found in Thorndike, *A History of Magic and Experimental Science*, vol. I, 42-99.

<sup>107</sup> Thorndike, *A History of Magic and Experimental Science*, vol. I, 44.

much like Seneca, “the number of Greek authorities he cites is more than double that of Latin ones”),<sup>108</sup> though the rationality it betrays does not quite fit the distanced scientific objectivity we might expect from such an empirical work. Indeed, we would certainly be hard-pressed to call Pliny’s style or his work “scientific” by modern standards. That, of course, is not my aim, nor need it be for us to recognize the important place of the *Naturalis Historia* in the *history* of natural science.

We find in Pliny what classical natural philosophy was becoming though we should take care to not see this as an entirely deliberate, conscious, manipulative process on the parts of the popularizers nor as a careless, accidental result of waning interest in the sciences. As mentioned, Pliny was not at all lacking in either appreciative curiosity or intellectual capacity, he just does not seem to have been as curious about the same kinds of things in the same kinds of ways or as concerned with theoretical consistency as many of his classical Greek predecessors or early modern successors—which is to say the way historians of science tend to seek.<sup>109</sup> Pliny’s is a history of ideas and, in that sense, actually more broadly encompassing than a history of science; it is a conglomeration, a

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<sup>108</sup> Grant, *A History of Natural Philosophy*, 96. Stahl notes how the Elder’s nephew, Pliny the Younger, suggested in a letter “that intimately records Pliny’s scholarly practices and accomplishments” how “No book passed through his hands without his excerpting from it; he maintained that none was so bad it did not have something of value;” *Roman Science*, 102-3; 104. Much like Seneca, Pliny got his Aristotle “at second or even third hand;” *ibid.*, 105.

<sup>109</sup> Stahl’s concise description of Pliny’s work in relation to the history of science seems representative of the basic light in which the *Naturalis Historia* is ordinarily viewed; *Roman Science*, 105-6.

storehouse of selected lore no less important for its eclecticism and eccentricity.<sup>110</sup> As he states in his Preface, the *Naturalis Historia* is not a depository of “digressions, nor of speeches or dialogues, nor marvelous accidents or unusual occurrences—matter interesting to relate or entertaining to read.” Rather, as he plainly puts it, his “subject is a barren one—the world of nature, or in other words life.”<sup>111</sup>

While this certainly sounds scientific and rational to us, the *Naturalis Historia* may be legitimately considered “the best starting point of a survey of ancient science and magic.”<sup>112</sup> Pliny is, as Valerie Flint notes, the “most instructive” Roman source of attitudes toward magic, at times denouncing magic that is “maliciously manipulative”<sup>113</sup> or superstitious and false<sup>114</sup> while advocating what he sees as its more plausible forms at

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<sup>110</sup> H. Rackham, in his introduction to his translation of the *Naturalis Historia*, writes that Pliny’s selection from his sources “he has shown scanty judgement and discrimination, including the false with the true at random; his selection is coloured by his love of the marvelous, by his low estimate of human ability and his consciousness of human wickedness, and by his mistrust of Providence;” ix. Pliny’s account of his sources is as follows: “As Domitus Piso says, it is not books but store-houses that are needed; consequently by perusing about 2000 volumes, very few of which, owing to the abstruseness of their contents, are ever handled by students, we have collected in 36 volumes 20,000 noteworthy facts obtained from one hundred authors that we have explored, with a great number of other facts in addition that were either ignored by our predecessors or have been discovered by subsequent experience;” *Natural History*, Pref., 17.

<sup>111</sup> Pliny, *Natural History*, Pref., 12-13.

<sup>112</sup> Thorndike, *A History of Magic and Experimental Science*, vol. I, 3 (italics added). As Stahl puts it, “It is not really science but the curious phenomena of natural science that absorb [Pliny];” 103. See also 105-6.

<sup>113</sup> Flint, *The Rise of Magic*, 27, 15.

<sup>114</sup> See *Natural History*, vol. VIII, trans. W.H.S. Jones (Cambridge: Harvard University Press, 1963), XXX.i.

others. He tells us that it has advanced under the guise of three legitimate arts “that hold supreme dominion over the human mind;” namely, medicine, religion, and astrology (this last “because there is nobody who is not eager to learn his destiny, or who does not believe that the truest account of it is gained by watching the skies”).<sup>115</sup> That Pliny “fails to maintain a consistent skeptical attitude towards magic” is perhaps exemplified by his disbelief that a toothache is cured “by the ash of the burnt heads without any flesh of dogs that have died of madness”<sup>116</sup> on one hand, and, on the other, his conviction that “adamas,”<sup>117</sup> the “‘unconquerable force’ that defies Nature’s two most powerful substances, iron and fire, can be broken up by goat’s blood.” Significantly, this second statement is not offered idly as isolated trivia but presented in support of a key component of the prevailing cosmological scientific view at the time; namely, “the agreement and disagreement that exists in Nature, the Greek terms for which are respectively ‘sympathia,’ or ‘natural affinity,’ and ‘antipathia,’ or ‘natural aversion.’”<sup>118</sup>

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<sup>115</sup> Pliny feels this “supreme dominion” is pervasive, that because of this “three-fold bond, magic rose to such a height that even today it has sway over a great part of mankind;” *Natural History*, XXX.i.

<sup>116</sup> *Natural History*, XXX.viii.

<sup>117</sup> Pliny suggests this name was “given to the ‘knot of gold’ found very occasionally in mines in association with gold,” calling it “the most highly valued of human possessions, let alone gemstones;” XXXVII.xv.

<sup>118</sup> Pliny, *Natural History*, XXXVII.xv. Cf. XXVI.lx: Regarding “superficial abscesses,” Pliny writes “Those with experience tell us that it makes all the difference if, while the patient is fasting, the poultice is laid upon him by a maiden, herself fasting and naked, who must touch him with the back of her hand and say: ‘Apollo tells us that a plague cannot grow more fiery in a patient if a naked maiden quench the fire;’ and with her hand so reversed she must repeat the formula three times, and both must spit on the ground three times.”

In this case, “adamas” and goat’s blood are antipathetical and their combination is thought to produce an observable result. Though this particular instance is, of course, nonsensical, it is nonetheless illustrative of a rationality in which connective and disconnective relationships alike reveal and define the inherent order of things of which they are necessarily part. This fundamental principle is borne out in the very building blocks of the universe: the four elements (in descending order, fire, air, water, and earth).

As Pliny expresses it, in this time-honored arrangement that he helped transmit to the Middle Ages, “the mutual embrace of the unlike results in an interlacing, the light substances being prevented by the heavy ones from flying up, while on the contrary the heavy substances are held from crashing down by the upward tendency of the light ones. In this way owing to an equal urge in opposite directions the elements remain stationary, each in its own place, bound together by the unrelenting revolution of the world itself.”<sup>119</sup> Considering how these scientific notions underlie both rejection and acceptance of magic, we can now begin to see that the characterization of the *Naturalis Historia* as “the best starting point of a survey of ancient science *and* magic” is really a tenuous dichotomy at best. Seemingly in spite of himself, Pliny has offered to posterity a work so “crammed with marvelous properties and fantastic ceremonial”<sup>120</sup> that it is often quite difficult to distinguish between the practice of magicians and natural scientists in this early

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<sup>119</sup> Pliny, *Natural History*, II.iv. As Lewis describes: “The fundamental concept of modern science is, or was till very recently, that of natural ‘laws,’ and every event was described as happening in ‘obedience’ to them. In medieval science the fundamental concept was that of certain sympathies, antipathies, and strivings inherent in matter itself. Everything has its right place, its home, the region that suits it, and, if not forcibly restrained, moves thither by a sort of homing instinct;” *The Discarded Image*, 92.

<sup>120</sup> Thorndike, *A History of Magic and Experimental Science*, vol. I, 72.

compendium of natural knowledge. Though Pliny (inconsistently) disapproved of and/or dismissed certain *kinds* of magic, magic in general was not irrational “misinformation” at all but, rather, a very real part of the rational landscape from which he drew his natural information as a man devoted to a scientific experience of the natural world. As Thorndike points out (and Pliny reveals), magic was far more than a thoughtless practice or frivolous activity of the unsophisticated: “There can be no doubt ...that [magic] was then applied not merely to an operative art, but also to a mass of ideas or doctrine, and that it represented a way of looking at the world.”<sup>121</sup> Both affirmations and denials of its efficacy were firmly grounded in a cosmology that also supported science.

It is this very ambivalence toward and (more importantly) indecisiveness about magical practices that helps reveal not only the very real place they occupied in late antique culture and consciousness but also the difficulty associated with distinguishing magic from either natural philosophy, acceptable religious practice, or even other forms and applications of *itself*.<sup>122</sup> Indeed, though he is “convinced ... that magic is detestable, vain, and idle,” he still feels “it has what [he] might call shadows of the truth.”<sup>123</sup> For writers like Seneca and Pliny, “the occult powers and signs within nature were not inherently magical. Magic was a parody of such things, the practice of the infamous magi. Yet their scientific writings provided material for what later writers would indeed call magic.” Magicians “stand out in Pliny’s pages not as mere sorcerers or enchanters or wonder-workers, but as those who have gone the farthest and in most detail—too far and

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<sup>121</sup> Ibid., 4.

<sup>122</sup> Ibid., 44-99; Flint, *The Rise of Magic in Early Medieval Europe*, 13-15.

<sup>123</sup> Pliny, *Natural History*, XXX.vi.

too curiously in Pliny’s opinion—into the study of medicine and of nature.”<sup>124</sup> Thus, when early writers like Pliny took issue with magic it was not to deny its existence or efficacy<sup>125</sup> but to disapprove of the extent to which its practitioners used their knowledge of the natural world for manipulative and malevolent purposes via supernatural agency.

This is not at all an attempt to awkwardly conflate Pliny’s apparent encyclopedic indiscretion with consistent intentionality or calculated purpose. His writings suggest that he was, at times, confused, undecided, or both. At first it seems strange that a well-educated person who called experience “the most efficient teacher of all things”<sup>126</sup> would devote so much time and energy to collecting and then writing seriously about things of which he clearly had no direct experience. But his goal was simply to gather interesting information about the world based on his own observations *and those of traditionally reputable sources*, not gather it, critique it, and validate or invalidate it by experimentation; indeed, to do so would have been quite impractical given the breadth of his research, not to mention entirely un-Roman. His was a subjective compendium of ideas, a survey of sorts: sometimes contradictory and inaccurate, often unoriginal, and

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<sup>124</sup> Thorndike, *A History of Magic and Experimental Science*, vol. I, 64-5. Significantly, Thorndike later notes (72) that “there is more magic in the *Natural History* which is not attributed to the *magi* than there is that is;” indeed, it is the fact that “virtually [the] entire work is crammed with marvelous properties and fantastic ceremonial, which makes it so difficult” to distinguish between the practice of magicians and natural scientists in this early compendium of natural knowledge.

<sup>125</sup> According to Peters, though magicians were “hated and distrusted, there was also widespread belief that their arts did indeed pose a considerable threat to the well-being of the Greek and Roman community;” Peters, *The Magician, the Witch, and the Law*, 4.

<sup>126</sup> Pliny, *Natural History*, XXVI.vi.

generally lacking the verifiable, demonstrable (repeatable) proof we now cherish as the ultimate justification of legitimacy. This was natural knowledge that an intelligent Roman with access to many sources and possessing incredible patience and diligence found interesting enough to record and periodically expound upon. His naturalistic attitude<sup>127</sup> toward this knowledge and praise of experience are as an historian rather than a practicing scientist but that should not lead us to dismiss the *Naturalis Historia* any more than should the presence of lore and magic. The fact remains that, no matter which way we look at it, the *Naturalis Historia* was an authoritative text and an essential catalyst in the persistence of these attitudes and ideas from Pliny's time and on into the Middle Ages.

Yet because of its diverse, inconsistent, and frequently fantastic content and seemingly imprudent mode of presentation, the *Naturalis Historia* is often noted as a prime example of the emerging encyclopedic tradition that, as Grant puts it, "aided and abetted" the decline of natural science.<sup>128</sup> For instance, though Seneca's "highly moral tone and the ethical observations about natural phenomena" in the *Naturales Quaestiones* "endeared [him] to Christian writers" and helped ensure the survival of his works to and through the Middle Ages, these characteristics are also considered to have "detracted

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<sup>127</sup> Pliny is far more concerned with the present world than that of a mystical deity: "I deem it a mark of human weakness to seek to discover the shape and form of God.... For mortal to aid mortal—this is god; and this is the road to eternal glory" (II.v). He also suggests God is not supremely powerful but instead subject to the laws of nature: "not even for God are all things possible;" "which facts unquestionably demonstrate the power of nature, and prove that it is this that we mean by the word 'God'" (II.v).

<sup>128</sup> Grant, *Physical Science in the Middle Ages*, 5; Stock, "Science, Technology, and Economic Progress,"

from the value of his book as a scientific treatise” in later centuries.<sup>129</sup> These encyclopedias, along with the works of earlier Romans like Varro, Vitruvius, and Cicero, were, as Elspeth Whitney describes them, “popularized versions of Greek science”<sup>130</sup> through which the difficult, theory-laden works of Greek thought were condensed and abbreviated. In this way, the very ideas upon which natural investigation had to that point been founded were being pared down and edited but also infused with contemporary moralistic and ethical dimensions that would come to typify the particular angle of Dark Age rationalism.

Pierre Courcelle warns us that although these writers would often refer to or even cite the classical authors of the original works they were compiling, direct knowledge of those sources was at best illusory. In authors like Seneca and Pliny,

The taste for learned compilations brought a disregard for consulting the sources.... The [later] Latins who were most devoted to Plato and Aristotle, like Macrobius, or Augustine, or Boethius, knew the ancient Greek text only from the most recent commentary and could not distinguish one from the other. This absence of direct contact with the classical masterpieces, this lack of perspective, this want of a historical sense, is one of the gravest signs of decadence. The best minds could not resist. They meditated, not on the texts, but on the commentaries on which they in turn produced commentaries. From commentary to commentary, thought thinned out and degenerated.<sup>131</sup>

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<sup>129</sup> Stahl, *Roman Science*, 100.

<sup>130</sup> Whitney, *Medieval Science and Technology*, 4.

<sup>131</sup> Pierre Courcelle, *Late Latin Writers and Their Greek Sources*, trans. Harry E. Wedeck (Cambridge, Massachusetts: Harvard University Press, 1969), 414. See also Thorndike’s discussion of the transmission

This trend really began to take shape after Pliny and Seneca in the second century C.E. though, as Stock notes, the encyclopedia's "form and its characteristically obscure language did not really come into vogue until the fourth century," when the Roman world began its split into a Latin-speaking West and a Greek-speaking East.<sup>132</sup> The body of available and accessible texts in the West, reflecting the social situation, became almost exclusively Latin—a trend which would continue to the twelfth century.

Still, all this might very well lead us to conclude that the prominent Roman treatises, filled as they were "with conflicting and contradictory reports"<sup>133</sup> by "compilers of others' ideas" who "substituted erudition for original investigation,"<sup>134</sup> necessarily rendered the later Latin Encyclopedists who inherited them—Chalcidius (fourth century), Macrobius (395-423), Martianus Capella (fifth century), Boethius (*ca.* 480-524), Cassiodorus (*ca.* 488-575), Isidore of Seville (*ca.* 560-636), and Bede (*ca.* 673-735)—

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of Dioscorides' *De materia medica* as a particularly illuminating example of the "general vicissitudes to which the transmission of the text of any ancient author may have been subjected;" *A History of Magic and Experimental Science*, vol. I, 605-12.

<sup>132</sup> Stock, "Science, Technology, and Economic Progress," 7. A good marker of this initial rupture is the death in 395 of the last figurehead emperor in the West, Theodosius; Grant, *God and Reason in the Middle Ages* (Cambridge and New York: Cambridge University Press, 2001), 29. Later, in 529 the Eastern emperor Justinian closed the Neoplatonic school at Athens in order to "strike a blow against paganism;" Grant, *A History of Natural Philosophy*, 61. For a discussion of the dissolution of the Roman Empire, see Cantor, *the Civilization of the Middle Ages*, 40-66. Burns observes that "Slowly but irresistibly the empire mixed peoples and cultures, and by the fifth century it was no longer just a mixing bowl but a melting pot, something that the city of Rome itself had long been;" *Rome and the Barbarians*, 12.

<sup>133</sup> Grant, *Physical Science in the Middle Ages*, 6.

<sup>134</sup> Stock, "Science, Technology, and Economics Progress," 4.

little more than perpetrators of the same. But, as we have seen with Seneca and Pliny, the practice of compilation cannot be legitimately reduced to intellectual piracy and a general lack of discretion and interest. Science was changing, not crumbling from ignorance and ineptitude. Acknowledgement of the authority of one's predecessors (a practice we find articulated as far back as Aristotle)<sup>135</sup> and subsequent selection from their works became a sort of observation of natural phenomena in itself by creative compilers with passionate interest in their subjects. Though it may seem so, the approach to natural questions was not reshaped during this transitional period of the late Empire and early Middle Ages because a practical interest in the perpetuation of select established practices and answers completely supplanted the methodological and theoretical means by which to question them and develop new ones. Rather, this change was due more to science becoming "a mental discipline for the contemplative,"<sup>136</sup> a hyper-theoretical, abstract rationality filled

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<sup>135</sup> Grant (*A History of Natural Philosophy*, 45) suggests Aristotle became the "first historian of philosophy" when, in *Metaphysics* I.983b1-983b5, Aristotle stopped to consider previous opinions before proceeding with his discussion: "let us call to our aid those who have attacked the investigation of being and philosophical reality before us. For obviously they too speak of certain principles and causes; to go over their views, then, will be of profit to the present inquiry, for we shall either find another kind of cause, or be more convinced of the correctness of those which we now maintain." We find something similar in Pliny's Preface to the *Natural History* (21-24): "You will deem it a proof of this pride of mine that I have prefaced these volumes with the names of my authorities. I have done so because it is, in my opinion, a pleasant thing and one that shows an honourable modesty, to own up to those who were the means of one's achievements, not to do as most of the authors to whom I have referred did.... Surely it marks a mean spirit and an unfortunate disposition to prefer being detected in a theft to repaying a loan—especially as interest creates capital."

<sup>136</sup> Benjamin Farrington, *Greek Science: Its Meaning For Us* (New York: Penguin, 1961), 197.

with lore by way of eclectic compilers that, in the early third century, would receive a new boost of Platonic cosmology in, as Stahl puts it, “the new philosophical religion of Neoplatonism.”<sup>137</sup>

Founded by Plotinus (ca. 204-268/270 C.E.) and significantly enhanced and refined by Porphyry (232-309 C.E.), Neoplatonism’s principles of unification (in both thought and practice—if I may so anachronistically distinguish between them in order to make a point) would have a profound impact on early medieval rationality; indeed, all of the aforementioned Latin Encyclopedists were Neoplatonists.<sup>138</sup> Very much a cosmological philosophy, it focused largely on Plato’s *Timaeus* (his only major cosmological treatise—a work with immense importance for the Middle Ages), extending it to a “fully organized” and “coherent general scheme of things;” most notably, the infamous Chain of Being which would find its greatest exposition in the early Middle Ages by way of Macrobius’ (395-423) highly influential *Commentary* on the concluding part of Cicero’s *Republic*, the *Somnium Scipionis*.<sup>139</sup> As Seznek explains, the Neoplatonists “revive the [allegorical] method” of the Stoics, “but they use it on a

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<sup>137</sup> Stahl, *Roman Science*, 121. Stahl suggests the second century “presents a virtual hiatus in the course of Roman science,” melodramatically lamenting that “This malformed babe, born into an inhospitable world, allowed to develop rickets from lack of proper nourishment, had fallen into a state of decline without ever having given indications of attaining manhood” (120).

<sup>138</sup> This fact, however, should not lead us to make the mistake of thinking their Neoplatonism was one in the same as Plotinus’ and Porphyry’s.

<sup>139</sup> Lovejoy, *The Great Chain of Being*, 61. Lovejoy writes: “In Plotinus still more clearly than in Plato, it is from the properties of a rigorously otherworldly, and a completely self-sufficient, Absolute, that the necessity of the existence of this world, with all its manifoldness and its imperfections, is deduced” (62).

broader scale and in a different spirit.” Thus, “the universe is for them nothing but a great myth, endowed with spiritual meaning. Their attitude is no longer one of rationalization, aimed at explaining away shocking absurdities; it is the attitude of believers and mystics, reverently seeking the depths of meaning within a sacred text.”<sup>140</sup>

It should come as no surprise then that Neoplatonism was rife with magical (particularly astrological and theurgical<sup>141</sup>) import based as it was on a cosmology that considered earthly beings to be “linked with each other and with the heavenly bodies in an intricate, living network of influences” (the Chain). Of course, these influences could then be exploited by “both magic and prayer” which worked through such “natural sympathetic bonds within the universe.”<sup>142</sup> This infusion of natural philosophy with a spiritual element—a practice that both endeared Neoplatonism to early Christian writers and caused concern—is to Grant the first of two “basic features of Neoplatonic commentaries.” The second is the fact that “Plato and Aristotle could not contradict each other;” indeed, “they regarded the study of Aristotle as essential to a proper

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<sup>140</sup> Seznec, *The Survival of the Pagan Gods*, 85.

<sup>141</sup> “Neoplatonists sought to achieve a mystical union with the One and toward that end employed various theurgic practices, which under the influence of Iamblichus [d. ca. 330], were called the Chaldean rites;” Grant *A History of Natural Philosophy*, 53. See also Kieckhefer, *Magic in the Middle Ages*, 27.

Interestingly, the term ‘Chaldeans’ was used for astrologers since the time of Aristotle; *Apuleius: Rhetorical Works*, trans. and ann. Stephen Harrison, John Hilton, and Vincent Hunink; ed. Stephen Harrison (Oxford: Oxford University Press, 2001), 195n.

<sup>142</sup> Kieckhefer, *Magic in the Middle Ages*, 27.

understanding of Plato.”<sup>143</sup> Thus, thanks in large part to the Neoplatonic reconciliation of Aristotle and Plato we get a fusion of Aristotelian continuity<sup>144</sup> and Platonic plenitude that hierarchically structure the universe and its contents in a Chain of Being that comes, more than anything else, to characterize the early medieval Model and ground its rationality (literally and figuratively).<sup>145</sup> As Macrobius explains,

Since Mind emanates from the Supreme God and Soul from Mind, and Mind, indeed, forms and suffuses all below with life, and since this is the one splendor lighting up everything and visible in all, like a countenance reflected in many mirrors arranged in a row, and since all follow on in continuous succession, degenerating step by step in their downward course, the close observer will find that from the Supreme God even to the bottommost dregs of the universe there is one tie, binding at every link and never broken. This is the golden chain of Homer which, he tells us, God ordered to hang down from the sky to the earth.<sup>146</sup>

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<sup>143</sup> Grant, *A History of Natural Philosophy*, 55, 54. The typical practice of reconciliation, it seems, was to attribute differences and disagreements to semantics or the philosophers’ respective particular methodologies.

<sup>144</sup> Though, as Lovejoy notes, Aristotle “is oftenest regarded . . . as the great representative of a logic which rests upon the assumption of the possibility of clear distinction and rigorous classification,” he is “responsible for the introduction of the principle of continuity into natural history;” *The Great Chain of Being*, 57, 56. See, for example, *Metaphysics*, X, 1069a 5 and *Physics*, VI, 231a 24 (as noted in Lovejoy, 55, n39).

<sup>145</sup> Lovejoy, *The Great Chain of Being*, 55-66; Lewis, *The Discarded Image*, 43-4.

<sup>146</sup> Macrobius, *Commentary on the Dream of Scipio*, trans. William Harris Stahl (New York: Columbia University Press, 1990), I.xiv.15.

Lovejoy suggests this brief passage “was probably one of the chief vehicles through which [this conception] was transmitted to medieval writers.”<sup>147</sup> Thus, the early Neoplatonists developed ideas that “through the [later] commentaries of Chalcidius and Macrobius, would give medieval readers the impression they were encountering the best productions of Greek science,”<sup>148</sup> which, for early medieval sensibilities, they were.

But even before Plotinus established his Neoplatonic school of thought, Apuleius of Madauros (ca. 125- ca. 180 C.E.), as a product of the second century’s Platonic revival, was composing works with Platonic underpinnings that would carry them to the Middle Ages when he would receive additional attention (mostly negative) by none other than the great patriarch Augustine of Hippo (354-430). Best known for his *Metamorphoses* (or *The Golden Ass*) and for beating a legal case in which he was accused of obtaining a wealthy wife through magic, Apuleius, a well-educated Roman who likely had a working knowledge of Greek,<sup>149</sup> authored *De Deo Socratis*, a lecture dealing with the “*daimonion* or guardian spirit of Socrates.”<sup>150</sup> This short work has,

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<sup>147</sup> Lovejoy, *The Great Chain of Being*, 63.

<sup>148</sup> Stahl, *Roman Science*, 121.

<sup>149</sup> Stephen Harrison writes that Apuleius’ “life falls at the height of the Greek intellectual revival of the second Sophistic, when Greek writers famously sought to revive the past glories of their culture in the rich cities of the Greek Mediterranean under the protection of Roman rule. Apuleius’ choices of career and literary genre are fundamentally influenced by what was happening to his contemporaries in the Greek world;” *Apuleius: Rhetorical Works*, 2.

<sup>150</sup> *Ibid.*, 5. Plato writes of this “personal divine voice or guardian” of Socrates in the following passages: *Euthyphro* 3b, *Apology* 31d and 40b, and (most notably) *Phaedrus* 242b-c. This subject—and Plato in general—was quite popular amongst writers of the Second Sophistic; *Apuleius: Rhetorical Works*, 186.

according to Lewis, a “twofold value for those who are embarking on medieval studies.”

Generally speaking,

In the first place, it illustrates the sort of channel through which scraps of Plato—often scraps which were very marginal and unimportant in Plato’s own work—trickled down to the Middle Ages. Of Plato himself they had little more than an incomplete Latin version of a single dialogue, the *Timaeus*. That by itself, perhaps, would hardly have sufficed to produce a ‘Platonic period’. But they also received a diffused Platonism, inextricably mixed with neo-Platonic elements, indirectly, through such authors as Apuleius, [Chalcidius, Macrobius, Pseudo-Dionysius, and Boethius]. These, with the *Platonici* whom St Augustine read (Latin versions of the neo-Platonists), provided the intellectual atmosphere in which the new Christian culture grew up. The ‘Platonism’ of the early ages was therefore something very different from that either of the Renaissance or of the nineteenth century.<sup>151</sup>

The “incomplete Latin version” of the *Timaeus* Lewis alludes to is Chalcidius’ translation up to line 53b and accompanying, disproportionately lengthy commentary.<sup>152</sup> Secondly,

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<sup>151</sup> Lewis, *The Discarded Image*, 43. Lewis is here referring to Augustine’s *Confessions* (VII.ix) wherein Augustine, discussing the Platonists he read, mentions what he found in their works that was on par with Christian theology and other important theological points stemming from those that they did not address.

<sup>152</sup> Lewis notes, however, that “This is hardly what we should call a commentary, for it ignores many difficulties and expatiates freely on matters about which Plato had little or nothing to say;” *ibid.*, 49. It must also be noted that Chalcidius’ commentary was not the only work of it kind available to the Latin encyclopedists and it seems many early writers drew from commentaries on the *Timaeus* by the likes of Cicero, Proclus, and Porphyry. See, for example, Pierre Courcelle, *Late Latin Writers and Their Greek Sources*, 169-70, 302.

and more specifically, *De Deo Socratis* is an even earlier example of an exposition of the two principles of “diffused Platonism” on which later Neoplatonists would base much of their reasoning: that of the Triad (continuity) and that of Plenitude.<sup>153</sup>

The “Principle of the Triad,” drawn from the writings of Plato and Aristotle, was an idea that served to connect things both hierarchically and by common faculties or characteristics allotting a proper place to all.<sup>154</sup> The placement and order it conferred upon each aspect of the created universe is best exemplified by the aforementioned Chain of Being in which “every speck of creation was a link,”<sup>155</sup> an intermediary between the levels directly above and below it. This is primarily a derivative of Plato’s claim in the *Timaeus* that “it isn’t possible to combine two things well all by themselves, without a third; there has to be some bond between the two that unites them,”<sup>156</sup> an idea Aristotle expanded upon at several instances.<sup>157</sup> For example, in *De animalibus historia*, Aristotle writes that “Nature proceeds little by little from things lifeless to animal life in such a way that it is impossible to determine the exact line of demarcation.”<sup>158</sup> Each link was thought to possess a certain degree of affinity to the links directly above and below it—this situation was not only one of connectivity but also of balance and fluidity infused in

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<sup>153</sup> Lewis, *The Discarded Image*, 43-4. These principles are implied in *De Deo Socratis*, Apuleius does not name and expound upon them specifically; they are simply part of his rationale.

<sup>154</sup> *Ibid.*, 43, 56; Tillyard, *The Elizabethan World Picture*, 26.

<sup>155</sup> Tillyard, *The Elizabethan World Picture*, 26.

<sup>156</sup> Plato, *Timaeus*, 31b-c.

<sup>157</sup> Borrowing Lovejoy’s citations, Aristotle expresses this idea in *Parts of Animals* (IV, 5, 681a), *Metaphysics* (XI, 1075a 10), and *Generation of Animals* (761a 15), *The Great Chain of Being*, 56.

<sup>158</sup> Aristotle, *History of Animals*, VIII.i.588b.

all existence. Thus, “We see how everything links up with everything else; at one, not in flat equality, but in a hierarchical ladder.”<sup>159</sup>

Keeping this sort of fluid hierarchy in mind, we may extend the Principle of the Triad to all of creation and see how a Principle of Plenitude necessarily follows with direct implications for the notion of habitation. Just as the three fundamental realms are composed of a substance (divine, aether, and the four elements) so “if, between aether and Earth, there is a belt of air, then, it seems to Apuleius, *ratio* herself demands that it should be inhabited. The universe must be fully exploited. Nothing must go to waste.”<sup>160</sup> Thus, with the celestial realm of perfection occupied by the immortal, perfect “godlike beings” (the deified stars of Plato’s *Timaeus*<sup>161</sup>) and consisting of immutable aether, we find the upper air between the lunar sphere and lower air surrounding earth occupied by demons, beings superior to mortal humans but inferior to the “deified stars” and thus, possessing some characteristics of each, serving as the intermediaries between the two.<sup>162</sup> In the *Symposium*, for example, Socrates is told that because “everything spiritual ... is in between god and mortal,” these beings

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<sup>159</sup> Lewis, *The Discarded Image*, 12.

<sup>160</sup> Lewis, *The Discarded Image*, 44. As Apuleius rhetorically inquires, “Has creation employed no bond to link itself together, but rather allowed itself to be divided into a human and a divine part, becoming consequently discontinuous and (as it were) disabled?” (*De Deo Socratis* 127; see also 138-40).

<sup>161</sup> Plato, *Timaeus*, 38c-d; 40a-b.

<sup>162</sup> The reason demons are characterized as such is quite logical: As Apuleius writes, “We must therefore compound an intermediate nature for them in accordance with their intermediate location, so that the character of the region’s inhabitants is determined by the character of the region itself” (*De Deo Socratis*, 140. See also 141).

are messengers who shuttle back and forth between the two, conveying prayer and sacrifice from men to gods, while to men they bring commands from the gods and gifts in return for sacrifices. Being in the middle of the two, they round out the whole and bind fast the all to all. Through them all divination passes, through them the art of priests in sacrifice and ritual, in enchantment, prophecy, and sorcery. Gods do not mix with men; they mingle and converse with us through spirits instead, whether we are awake or asleep. He who is wise in any of these ways is a man of the spirit, but he who is wise in any other way, in a profession or any manual work, is merely a mechanic.<sup>163</sup>

According to Apuleius (who is, as he repeatedly asserts, but a mouthpiece for Plato), they had bodies with enough weight to keep them in their aerial realm,<sup>164</sup> were not readily visible,<sup>165</sup> and had “immortality in common with the gods above, and susceptibility to emotion in common with men below.”<sup>166</sup> But, as intermediaries, they did not have actual powers of their own.<sup>167</sup> Rather, their efficacy was derivative and they were “assigned to individual humans as witnesses and guardians in the conduct of their lives.” A wise man like Socrates thus “recognized and revered this god within” with its connections to the real gods at times when the “resources of wisdom were cut off and [he] needed not advice but a divine sign, so that where he hesitated through doubt, he could stand firm through

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<sup>163</sup> Plato, *Symposium*, 202e-203a.

<sup>164</sup> Apuleius, *De Deo Socratis*, 140-1

<sup>165</sup> *Ibid.*, 144

<sup>166</sup> *Ibid.*, 147

<sup>167</sup> See, for example, *ibid.*, 144

prophecy.”<sup>168</sup> Though we may certainly recognize much allegory and even bits of divinatory magic in all this, demons were nonetheless real considerations that served an important function in a Platonic view that, in many ways, held what we would consider abstraction in higher esteem than worldly utility.

More than anything else, Apuleius’ short treatise is an exhortation to take up the “good,” virtuous life (*eudaimonia*) of philosophy; mental cultivation is the cultivation of one’s *daemon* which is essentially the faculty of human reason (mind) that connects us to the celestial realm of perfection and truth.<sup>169</sup> Demons were literal beings with figurative import. Two centuries later Apuleius’ discussion of demons would draw the ire of Augustine who would dedicate several chapters of his *De civitate Dei* to a frequently scornful treatment of *De Deo Socratis* based primarily on a rejection of any notion of demonic superiority over humans because, for Augustine, a superior body could not trump a superior soul in the hierarchy of beings.<sup>170</sup> Instead of denying the existence of

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<sup>168</sup> See Apuleius’ discussion of this class of demon at 154-8 and later at 162. The other classes (which Apuleius notes are far less important) are discussed at 150-3.

<sup>169</sup> Apuleius’ Platonism (mixed with quite a bit of Seneca’s *Epistles*) is truly on display here: “Why, then, should not we too be roused by the example and mention of Socrates, and give ourselves over to desire to follow a philosophy like this, seeking after similar divine powers? But we are dragged down from this objective for some obscure reason; there is nothing that astonishes me more than the fact that men do not cultivate their mind, though all desire to live as well as possible, all are aware that the mind is the sole source of life.... Accordingly, mark off their items of daily expenditure; you will find much lavish outlay in their accounts, but nothing spent on themselves, that is, on the cultivation of their *daemon*, a cultivation which is nothing but a pledge of allegiance to philosophy;” *ibid.*, 167-70.

<sup>170</sup> Augustine, *The City of God Against the Pagans*, trans. R. W. Dyson (Cambridge; New York: Cambridge University Press, 1998), VIII.14-22. Referring to Plato’s ordering of the elements (*Timaeus* 32b) Augustine

demons, he sees demons as essentially base, fickle, and wicked and reinterprets Apuleius' account<sup>171</sup> (deliberately or merely incidentally) in order to deny their efficacy as anything but malevolent spirits.<sup>172</sup> Demons "do indeed dwell in the air; but they do so only because they were cast out from the sublimity of the higher heaven."<sup>173</sup> Thus, through Augustine we see how an earlier compiler<sup>174</sup> of interpretations (Apuleius) would himself be reinterpreted to suit the expanding Christian culture. Augustine's declaration that "the demons hold sway, as over prisoners and subjects, over the many men who are clearly

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suggests "By this, we are to understand that, even though Plato's classification of bodies seems to be the correct one, the same order is not to be observed when assigning merits to souls; for it may well be that a superior soul will inhabit an inferior body and an inferior soul a superior body;" *The City of God*, VIII.15.

<sup>171</sup> Augustine takes the portion of demonic intermediary character that relates them to men as expressed by Apuleius (passions, emotion, etc.)—that makes them *part* of us—as grounds upon which to reject demonic inhabitation of a superior realm, their benevolence, and, in effect, their inherent connection with us (their role as *real* intermediaries). They are vehicles of deception alone (tools of Satan) and can therefore not act as intermediaries between humans and divine Providence—"they are spirits whose sole desire is to harm us;" *The City of God*, VIII.16-18, 20, 22.

<sup>172</sup> According to Augustine, "there is no reason why we should think that the demons are worthy to receive our religious submission merely because they inhabit a loftier element;" "On the contrary, men are to be placed above the demons, because the despair of the demons is not to be compared with the hope of the godly;" *ibid.*, VIII.15. See also *ibid.*, 22.

<sup>173</sup> *Ibid.*, 22.

<sup>174</sup> As Harrison writes in his introduction to Apuleius' rhetorical works, "there seems to have been almost no branch of ancient learning in which Apuleius had no interest." Considering his body of work, "It is also clear ... that Apuleius was more of a compiler of existing materials than an original investigator;"

*Apuleius: Rhetorical Works*, 9.

unworthy to share in the true religion”<sup>175</sup> plainly employs the distinguishing practice of otherness that will be so instrumental in early medieval knowledge determination.

Considering this hodgepodge of information and lore, Grant feels the Latin Encyclopedists who inherited it “deserve our gratitude for a valiant attempt to preserve and comprehend the tattered remnants of ancient science. But there is no denying that a scientific dark age had descended upon western Europe.”<sup>176</sup> Similarly, Stock suggests:

The encyclopedic tradition was a mixed blessing. It summarized and expounded many ancient ideas which might otherwise have been lost, but it created a heavy dependence on authority. It also adopted a language of allegory which deliberately attempted to conceal scientific truth, just as phenomenal appearances were assumed to be covering an inner, formal reality.<sup>177</sup>

It is true that the works and ideas of Roman writers like Seneca, Pliny, and Apuleius and Neoplatonists like Plotinus and Porphyry deeply influenced the later Latin Encyclopedists whose treatises “contained virtually the sum total of general scientific fact and comprehension through the early Middle Ages” and were much copied and widely read throughout the Middle Ages (though, it should be noted, by a proportionately miniscule literate class).<sup>178</sup> But I think we would be remiss to view the process of selection, extraction, and abstraction practiced by the Roman compilers and early Neoplatonists as merely arbitrary or purposefully deceptive. To do so would be to mistakenly superimpose a perceived outcome upon original intent and at the same time gauge human curiosity by

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<sup>175</sup> Augustine, *The City of God*, 22.

<sup>176</sup> Grant, *Physical Science in the Middle Ages*, 12.

<sup>177</sup> Stock, “Science, Technology, and Economics Progress,” 8.

<sup>178</sup> Grant, *Physical Science in the Middle Ages*, 8-11.

the presence, or lack thereof, of a particular way of knowing the natural world as a direct indication of an age's degree of sophistication. Following the thread of fundamental human curiosity is the key to understanding the history of science's meandering trail, particularly through ostensibly difficult times when rationality takes on a form that differs from that to which we have become accustomed. But that "other" is by no means alien and it does not simply get washed over: it is inevitably internal to the greater fabric of thought connecting us to our past more intimately than we might at first recognize.

While Seneca, Pliny, Apuleius, and their Neoplatonist successors connected Late Antiquity and the early Middle Ages to strands of classical thought, albeit somewhat indirectly, they also helped push along the development of new attitudes and ideas about the natural world and, arguably more importantly, mankind's relationship to it. Their cosmology was clearly not a scientific one in most senses we would recognize. Its intricacies and specifics were by and large mystical, magical, and fantastic, based on textual sources rather than direct observation, and provided tools for contemplation and natural philosophizing instead of detached practical application. We tend to fixate on where they looked for answers and how, comparing that to other, more physically, materially efficacious thought systems instead of trying to comprehend why they did so and what kind of thought structure this led them to erect. That we may find their justification wanting is not sufficient grounds to label them "irrational," "delusional," or anything of the sort. Our impulse to compare specifics and technicalities, especially when coupled with a strict sense of progress, can lead to a limited view based on anachronistic preconceptions which obscure the persistent undercurrents of human history. It seems almost counterintuitive to step back and look at the larger currents of history that are

sweeping these little things along but sometimes that is precisely what we must do—and do first. Only then can we truly recognize a period like this for what it was: a representation of the fluidity of not only scientific but also cultural and intellectual heritage.

Then, as now, the natural world was addressed according to how it was conceived; a conception that was a subjectively<sup>179</sup> selective empirical gathering and synthesizing of *ideas* more so than observable facts. As the Latin world became increasingly Christianized from the fourth century<sup>180</sup> onward, we find pagan, quasi-Christian, and Christian texts whose contents shared much in common being drawn from and infused with many of the same sources; the Stoic and Neoplatonic doctrines of looking inward and upward for truth not only continued, they grew and increased in complexity. The developing religion of the book was quite literally a product of its time, constructing its Model of the universe from the raw materials at hand, picking and choosing what it would consider amenable to Christian doctrine and what it needed to denounce as *other*. With their “chance collection” of texts from which to draw, the early medieval motto was quite clear: “All apparent contradictions must be harmonised,” as Lewis puts it.<sup>181</sup> In their “preponderant concern for unification”<sup>182</sup> medievals had to build

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<sup>179</sup> I use this term in a wider sense of humanity rather than the individual level.

<sup>180</sup> The 313 Edict of Milan established official tolerance of Christianity which, as David A. Lopez writes, extended “[the Emperor] Constantine’s concern for religious unity to a group previously considered outside the boundaries of licit Roman religion.” This act of Constantine’s was primarily a political maneuver to consolidate the populace; Lopez, *Separatist Christianity: Spirit and Matter in the Early Church Fathers*, (Baltimore: Johns Hopkins University Press, 2004), 138-9.

<sup>181</sup> Lewis, *The Discarded Image*, 11.

a Model that would “get everything in without a clash,” something which could be done “only by becoming intricate, by mediating its unity through a great, and finely ordered multiplicity.”<sup>183</sup> Thus, as Stahl notes, “The science of the Dark Ages had a spiritual kinship with Roman science from its very beginnings.... The written word is taken as sufficient authority. It is not by accident that the word ‘authority’ comes from the same Latin root as ‘author.’”<sup>184</sup> This is what natural science had become and would continue to be for quite some time: an eclectic assortment of ideas and facts and *books*, all observable through a rational lens colored with allegorical representation and otherworldly salvation.

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<sup>182</sup> Seznec, *The Survival of the Pagan Gods*, 49.

<sup>183</sup> Lewis, *The Discarded Image*, 11.

<sup>184</sup> Stahl, *Roman Science*, 119.

### **PART III: The Fall of Science or the Science of the Fall?**

First and foremost, early medieval writers were (literally) studying books and, secondly, (figuratively) looking at the collected cosmology contained therein. Thus, the Model that reached the early Middle Ages was necessarily provisional; early medievals were commenting on commentaries, selecting from what had already been selected, or methodically copying in monastic scriptoria. The rising religion of Christianity played no small part in the perpetuation, development, and selection of knowledge from these precious texts. Though more distinct and powerful by the fifth century, Christian knowledge was still in a very real sense as much an amalgamation as the encyclopedic tradition alongside which it grew up and from which it appropriated portions of classical thought. The words of the ancients, Christian or otherwise, were becoming more and more sacred as time went on.

It may seem rather strange that at a time when “literacy was of course far rarer than now, reading was in one way a more important ingredient of the total culture;” it is an undeniable fact that the Middle Ages “depended predominantly on books” for the transmission and preservation of ideas.<sup>185</sup> The process of reading, copying, and commenting upon available Latin (and, at times, Greek) texts was the primary means by which the early medieval West enacted its received intellectual identity. Books were—much as they have always been—also sources of power for those who possessed them as well as verifiable connections to a past whose apparent glory deepened the meaning of the present. Though writing had long been a venerable practice by that time, the high esteem with which early medievals held their literary predecessors was striking and

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<sup>185</sup> Lewis, *The Discarded Image*, 5.

surely amplified by the relative paucity of manuscripts. That is not at all to suggest they never disagreed with what they found in their textual sources; indeed, the process of selection, especially as practiced by early Christians, was in itself a method of expressing assent and/or dissent that extended beyond the bounds of mere literary criticism.<sup>186</sup> But, generally speaking the late antique and early medieval works that have survived suggest “observation” meant consulting manuscripts and “experimentation” commenting upon them. These were, like their predecessors, *active* compilers—intermediaries, if you will.

Like thinkers of any age in any place who in some way strive to comprehend and then communicate that comprehension, these people were participants in and developers of a tradition of ideas; they did not exist to wipe out the old and in order to replace it with something completely new. In fact, they were quite the opposite. As Arthur Lovejoy states in *The Great Chain of Being*,

The seeming novelty of many a system is due solely to the novelty of the application or arrangement of the old elements which enter into it. When this is realized, the history as a whole should look a much more manageable thing. I do not, of course, mean to maintain that essentially novel conceptions, new problems

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<sup>186</sup> Rosamond McKitterick, in relation to the “conflict between the Arians and the Catholics and the first recorded proscription of texts in the interests of the Catholic church” writes that, “Implicit in such condemnation of texts, whether by pagans of political or Christians works or by Christians of heretical works, is the reaction to a set of texts defined by each group as of central importance to their identity and group self-consciousness. To destroy such a text or set of texts was to attack a community, whether spiritual or actual. Conversely, the creation of a text and its dissemination in book form, owned by, or accessible to, members of a group, reinforced the sense of belonging to that group;” *History and Memory in the Carolingian World* (Cambridge: Cambridge University Press, 2004), 219.

and new modes of reasoning about them, do not from time to time emerge in the history of thought. But such increments of absolute novelty seem to me a good deal rarer than is sometimes supposed.<sup>187</sup>

This sentiment rings *especially* true for the early Middle Ages, a time when reflection and commentary on the old sources was the primary mode of original authorship. The transmission of ideas for medieval writers and thinkers was more consciously adaptive and deferential than that which we practice now with our proliferation of competitive, pretentious critical analyses that frequently tend to draw attention to the individual behind the idea(s). Though early medieval writers' were certainly not without individuality, they primarily operated as agents—vehicles—through which the greater ideas were relayed; sense of self was more generally collective. To clarify:

Far from feigning originality, as a modern plagiarist would, they are apt to conceal it. They sometimes profess to be deriving something from their *auctour* at the very moment when they are departing from him.... They are anxious to convince others, perhaps to half-convince themselves, that they are not merely 'making things up.' For the aim is not self-expression or 'creation;' it is to hand on the 'historical' matter worthily; not worthily of your own genius or of the poetic art but of the matter itself.... And the paradox is that it is just this abdication of originality which brings out the originality they really possess.<sup>188</sup>

In this way, I think it quite reasonable to conceive of the "absolute novelty" of medieval thought as exemplified by their emphasis on the ideas rather than on themselves as

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<sup>187</sup> Lovejoy, *The Great Chain of Being*, 4.

<sup>188</sup> Lewis, *The Discarded Image*, 210-12.

authors entitled to credit for their pedantic displays. That inherent subordination of the individual in the Middle Ages was, of course, a clear manifestation of their cosmological view—a view conveyed and cultivated through writing.

This selective, deferential “bookishness” was an inherited trait intimately bound up with the Model and its rationality,<sup>189</sup> an outward demonstration of an ideology of which Christianity was gradually (and not coincidentally) becoming a larger, more influential and distinct component. But, as mentioned, both Christians and pagans beheld roughly the same Model; Christian cosmology was in large part an appropriation and development of the pagan. Much as the created universe deferred to the authority and ubiquity of God, the authority of text was borne out in their deference to and reliance upon the great movers of antiquity, who must actually, despite some potentially misleading outward appearances, be in agreement regarding fundamental truths (an approach reminiscent of the early Neoplatonists). As Lewis writes, medievals

find it hard to believe that anything an old *auctor* has said is simply untrue. And they inherit a very heterogeneous collection of books; Judaic, Pagan, Platonic, Aristotelian, Stoical, Primitive Christian, Patristic. Or (by a different classification) chronicles, epic poems, sermons, visions, philosophical treatises, satires. Obviously their *auctors* will contradict one another. They will seem to do so even more often if you ignore the distinction of kinds and take your science impartially from the poets and philosophers; and this the medievals very often did in fact though they would have been well able to point out, in theory, that poets feigned.<sup>190</sup>

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<sup>189</sup> Ibid., 11.

<sup>190</sup> Ibid., 11.

The impulse to compile, to extract what one deemed valuable and pertinent (or what one understood) from the traditions and writings of various cultures, was, along with deferential reverence for traditional authority, a key component of early Christianity and part of the foundation of Western thought. In the first several centuries C.E., pagan ideas and practices were wholly rejected, appropriated willingly or unknowingly, and adopted with trepidation—or all three at once.<sup>191</sup> As Christianity grew, paganism, whether from antiquity or the indigenous populations of Europe, became the primary other against which the relatively young religion had to define itself. But, to an even greater extent than the barbarians were Rome’s internal other, paganism was internal to Western consciousness; continued incorporation was not only inevitable, it was one of the pillars of Christianity.

For example, Augustine of Hippo, whose authority in the development of early Christian thought may be second to none, provides a clearly and admittedly Neoplatonic outlook in two of his most significant works, *De civitate dei* and *De doctrina Christiana*. As David Knowles explains, “St Augustine, in his search for truth, had found what he believed to be a true presentation of reality in what he had read of Plato, Plotinus and

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<sup>191</sup> For example, “Some of the early Church Fathers were openly hostile to Greek philosophy; Tertullian (ca. 155-230) saw only error and delusion in secular learning and asked, on this account, ‘What has Athens to do with Jerusalem?’ Others, such as Clement of Alexandria (second and third centuries) and Gregory of Nyssa (ca. 335-394), having been trained in rhetoric and philosophy, saw in Christianity the answers to questions raised in those disciplines and so proposed to use them, at least as preparatory studies, in the service of revealed truth;” William A. Wallace, “The Philosophical Setting of Medieval Science,” in *Science in the Middle Ages*, ed. David C. Lindberg (Chicago: University of Chicago Press, 1978), 92.

Porphyry.”<sup>192</sup> Writing in the late fourth and early fifth centuries in northern Africa, Augustine was aware of the affinity between pagan natural philosophy and his theology, praising, for instance, Socrates’ opinion

that men ought to devote their efforts to the purification of life through good morals, so that the mind, relieved of the oppressive burden of lusts, might by its natural vigour raise itself up into the realm of eternal things and contemplate, in purity of understanding, the nature of that incorporeal and changeless light in which the causes of all created natures have their unwavering abode.<sup>193</sup>

In the next chapter, Augustine attributes Plato’s greatness to his “having brought philosophy to perfection by uniting the two parts [action and contemplation], which [Plato] then divided into three departments:

the first moral, which is chiefly concerned with action; the second natural, which is devoted to contemplation; and the third logical, which distinguishes the true from the false. This last is necessary to both the active and contemplative branches; but it is nonetheless contemplation which especially claims investigation of the truth as its province.<sup>194</sup>

That this is actually a somewhat mistaken attribution—essentially a Neoplatonic inversion of the Stoic division of philosophy rather than Plato’s original doctrine—is of little consequence. The point remains that this early father of the church was to some extent aware of the general ideological connectivity he demonstrated through his

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<sup>192</sup> David B. Knowles, *The Evolution of Medieval Thought* (New York: Vintage Books, 1962), 35.

<sup>193</sup> Augustine, *The City of God Against the Pagans*, trans. R. W. Dyson (Cambridge; New York: Cambridge University Press, 1998), VIII.3.

<sup>194</sup> Augustine, *The City of God*, VIII.4.

perpetuation and adaptation of pagan thought; for the most part, he knew his sources and his selections from them were reasoned, conscious decisions based on theological predispositions.

Augustine was apprehensively selective, however, and his practical acceptance of elements of classical learning was directly tied to the expansionist elements of his theology.<sup>195</sup> This fact is revealed no more clearly than in the following passage from *De doctrina Christiana* in which Augustine invokes a Biblical parallel in support of his sentiments:

Any statements by those who are called philosophers, especially the Platonists, which happen to be true and consistent with our faith should not cause alarm, but be claimed for our own use, as it were from owners who have no right to them. Like the treasures of the ancient Egyptians, who possessed not only idols and heavy burdens which the people of Israel hated and shunned but also vessels and ornaments of silver and gold, and clothes, which on leaving Egypt the people of Israel, in order to make better use of them, surreptitiously claimed for themselves (they did this not on their own authority but at God's command, and the Egyptians in their ignorance actually gave them the things of which they had made poor use)—similarly all the branches of pagan learning contain not only false and superstitious fantasies and burdensome studies that involve unnecessary effort, which each one of us must loathe and avoid as under Christ's guidance we abandon

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<sup>195</sup> According to Cantor, Augustine felt "In Platonic terms, the church was the embodiment of the Holy Spirit. Its function was to absorb, to educate, and to reform the world;" *The Civilization of the Middle Ages*, 78.

the company of pagans, but also studies for liberated minds which are more appropriate to the service of truth, and some very useful moral instruction, as well as the various truths about monotheism to be found in their writers. These treasures—like the silver and gold, which they did not create but dug, as it were, from the mines of providence, which is everywhere—which were used wickedly and harmfully in the service of demons must be removed by Christians, as they separate themselves in spirit from the wretched company of pagans, and applied to their true function, that of preaching the gospel.<sup>196</sup>

This judgmental attitude found its way into the encyclopedias and dictated a shift, albeit a slight one, from perceiving them as exhaustive sources of knowledge to sources of all *necessary Christian knowledge*; the faithful could pick and choose from what had already been picked and chosen, all the while being mindful of the potential dangers of pagan learning. Thanks in large part to Augustine’s attitude regarding truth appropriation, a new, strengthened incarnation of otherness would help direct the course of western Christian education from the fifth to the eighth centuries.

Indeed, much as we saw earlier with Seneca, Pliny, and Apuleius, this practice of selecting favorable or interesting bits of information led to the creation of texts whose scientific content was, as Cantor puts it, “frequently derived from the realms of fancy and superstition.”<sup>197</sup> But it was not purely arbitrary. The adherence to intellectual tradition, the reformation of Greek scientific knowledge perpetuated by the encyclopedists, the

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<sup>196</sup> Augustine, *De doctrina Christiana*, trans. R. P. H. Green (Oxford; New York: Clarendon Press, 1995), 2.144-45.

<sup>197</sup> Cantor, *The Civilization of the Middle Ages*, 81.

imperial rise of theology as the ultimate authority in truth-determination, and the integration of the thoughts and beliefs of the indigenous populations of Europe all contributed to this development while also setting the stage for disputes over what kinds of knowledge were acceptable. This contentiousness was surely an inevitable outcome of such a dynamic mixture if for no reason other than the near impossibility of objectively debating interpretive matters of faith and belief—the cornerstones of early medieval rationality, Christian or pagan. What was to be gleaned from the study of the natural world? Where was the line of demarcation to be drawn between acceptable natural knowledge and magic? How much pagan learning was permissible? Even by the fifth century, conversion of the general population (particularly in Europe) to Christianity was by no means complete,<sup>198</sup> leading to disagreements over practices and ideologies, particularly as they related to the acquisition and establishment of knowledge.

But we must not make the mistake of one-sidedly attributing such disagreements to the pressures imposed on society at large by the increasingly dominant religion—doing so would be to miss the basic contemporaneousness of Christian thought. In the course of developing their theology, early Christians like Tertullian (*ca.* 155-230), Origen (185-*ca.* 254), and Augustine picked up on and *intensified* interpretations of the natural world and the extent to which it could and should be understood that had been developing for centuries. In fact, though we can be distracted by the frequently defiant language of their writings, such castigation is a clear indicator that the internality of the other played across the early churchmen's subconscious; it was imbedded in their philosophy, their history, and their cosmology and they had to find ways to set themselves apart. Thus, despite their

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<sup>198</sup> Kieckhefer, *Magic in the Middle Ages*, 40.

conviction that they were preaching the one “true” faith, that some degree of outward compromise was the key to the conversion of unbelievers became clearer as time went on. For example, the great English historian and scholar Bede, writing in the first part of the eighth century, recorded for posterity an important and now well-known letter from Pope Gregory I (ca.540-604). Written in 601 to a missionary group the shrewd pagan king of Kent, Æthelbert, had rather cautiously allowed to settle in his kingdom four years earlier in 597, the letter briefly outlined the diplomatic approach to conversion the monks there were to take.<sup>199</sup> Gregory writes that “after long deliberation about the English people,” he has decided

that the idol temples of that race should by no means be destroyed, but only the idols in them. For the shrines are well built, it is essential that they should be changed from the worship of devils to the service of the true God. When this people see that their shrines are not destroyed they will be able to banish error from their hearts and be more ready to come to the places they are familiar with, but now recognizing and worshipping the true God.<sup>200</sup>

Gregory also directs his missionaries to allow the continuation of sacrificial feasts as long as they are carried out “for their own food and to the praise of God” rather than devil-worship, noting that this way “while some outward rejoicings are preserved, [the English

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<sup>199</sup> For a thorough discussion of this matter see chapter 15, “Christianities of the North: The Saxons of Britain,” in Peter Brown, *The Rise of Western Christendom: Triumph and Diversity, A.D. 200-1000* (Malden, MA: Blackwell, 2003), 340-354.

<sup>200</sup> Bede, *Bede's Ecclesiastical History of the English People*, ed. Bertram Colgrave and R.A.B. Mynors (Oxford: Clarendon Press, 1969), I.xxx.

pagans] will be able more easily to share in inward rejoicings.”<sup>201</sup> This is certainly not by any means an admission of defeat on Gregory’s part. Rather, it is a practical recognition of the fact that, as he puts it, “it is doubtless impossible to cut out everything from their stubborn minds: just as the man who is attempting to climb to the highest place, rises by steps and degrees and not by leaps.”<sup>202</sup> The Christians had to play the game and take their time in pursuing converts.

Pope Gregory’s correspondence with his mission in Kent is illustrative of how early medieval Christian writers were working in and as part of a dynamic intellectual and cultural situation. Though the Latin learned were certainly few, we see, however, that they were not operating in an intellectual vacuum. King Æthelbert was not unfamiliar with Christianity (he had married a Christian Frankish princess) but he was not going to, as Peter Brown puts it, “allow himself to be ‘bewitched’ by the religion of these foreigners, in such a way as to forsake traditional rites without due consultation with his own nobility.”<sup>203</sup> This is not simply a quaint figure of speech: Æthelbert quarantined the missionaries on an island for several days while he decided what was to be done. When he finally did meet with them, he did so in the open air, taking care, as Bede writes, “that they should not meet in any building, for he held the traditional superstition that, if they practised any magic art, they might deceive him and get the better of him as soon as he entered.”<sup>204</sup> That the king was actually fearful of potential sorcery, though unlikely, is nevertheless hard to determine. But we *can* say with reasonable assurance that he was

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<sup>201</sup> Ibid., I.xxx.

<sup>202</sup> Ibid., I.xxx.

<sup>203</sup> Brown, *The Rise of Western Christendom*, 345.

<sup>204</sup> Bede, *Ecclesiastical History*, I.xxv.

wary, wanting to assure his “more conservative followers” that their traditions would not be unscrupulously jeopardized.<sup>205</sup>

I offer this brief example to show one way we might understand that the pagans of Europe were not a static, passive group of “common culture” onto which the “specialized culture” of Christianity was superimposed. They were thus a contemporary example of the process of ideological fluidity and dynamism I have been discussing throughout this study in relation to the transmission of thought. As Kieckhefer notes, “much of the culture at any time was common: not universal or uniform but sufficiently diffused that it cannot be assigned to any specific subgroup and expressive more of solidarity than of either hegemony or dissent.”<sup>206</sup> Thus, this distinction between “common” and “specialized” cultures is “more nuanced and fluid,” more accurately expressive of reality, than the familiar distinction between “popular” and “elite.”<sup>207</sup> Italian scholar Carlo Ginzburg has masterfully addressed this notion of distinction-blurring reciprocity in the realm of thought and culture between social classes<sup>208</sup>—which I think we may also apply on a broader scale to the history of ideas. As Ginzburg states, cultural anthropology has

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<sup>205</sup> Brown, *The Rise of Western Christendom*, 345.

<sup>206</sup> Kieckhefer, “The Specific Rationality of Medieval Magic,” *American Historical Review* 99, no. 3 (1994): 833.

<sup>207</sup> *Ibid.*, 833.

<sup>208</sup> See the preface to *The Cheese and the Worms: The Cosmos of a Sixteenth Century Miller*, trans. John and Anne Tedeschi (Baltimore: Johns Hopkins University Press, 1980). See also the prefaces to *The Night Battles: Witchcraft & Agrarian Cults in the Sixteenth & Seventeenth Centuries*, trans. John and Anne Tedeschi (Baltimore: Johns Hopkins University Press, 1983) and *Ecstasies: Deciphering the Witches’ Sabbath*, trans. Raymond Rosenthal (New York: Pantheon, 1991).

redefined and reapplied the term “culture” to allow us to see that the subordinate classes “in fact possessed a culture of their own:”

if only verbally we have now gone beyond not only the antiquated conception of folklore as the mere collecting of curious facts but also the attitude that saw in the ideas, beliefs, and world views of the lower classes nothing but an incoherent fragmentary mass of theories that had been originally worked out by the dominant classes perhaps many centuries before.<sup>209</sup>

Thus, we still have “cultural dichotomy” but there is “also a circular, reciprocal influence between the cultures of subordinate and ruling classes.”<sup>210</sup> This, I believe, gets us to the core of what otherness *actually is* rather than leaving us hung up on the superficial distinctions its many manifestations uphold. We have an “aristocratic conception”<sup>211</sup> not only of cultural levels but of thought systems as well that views hegemony as dictatorial and the preeminent result of hierarchical progress. The early Middle Ages have come to represent the subordinate class, the common culture, of the histories of science and thought. But they were not a clean, static slate of delusion or misinformation onto which were later transcribed reason and truth any more than were the indigenous peoples of Europe such for missionary Christians. The specific rationality developing in the course of thought from Late Antiquity to the early Middle Ages came from a reciprocal influence of cultures (Greek and Roman; Roman and barbarian), philosophical schools (Platonic and Aristotelian), religions (paganism and Christianity), cosmologies (pagan

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<sup>209</sup> Carlo Ginzburg, *The Cheese and the Worms*, xiv.

<sup>210</sup> *Ibid.*, xvii.

<sup>211</sup> *Ibid.*, xiv. I am using this phrase rather liberally here to describe our propensity for one-sided views of thought and culture.

and Christian), and social classes (religious or secular nobility and the general population). This played itself out, to varying degrees and different ways, at every level of society but no more clearly or significantly than in their books. These were—and continue to be—the physical vessels for their rationality and accompanying cosmological Model; the process of selecting their contents, arbitrary or otherwise, can teach us much about that rationality itself.

As we have seen, the basic attitude of the Church Fathers was that “science and human reason in general were useful to the Christian as long as knowledge about the natural world never supplanted love of God or contradicted the tenets of religious belief.”<sup>212</sup> This is fairly good definition of acceptable Christian knowledge—but it was easier said than done. Formal education was still based on the seven liberal arts<sup>213</sup> outlined by Varro in the first century B.C.E. In the early Middle Ages this structure of learning found its most prominent and influential spokesmen in Martianus Capella, Cassiodorus, and Isidore of Seville. Capella’s Christianity is debatable but he was at least a Neoplatonist;<sup>214</sup> Cassiodorus and Isidore were Christians.

In Capella’s early fifth-century encyclopedia, *De nuptiis philologiae et mercurii*, “this uninhibited compiler,” as Stahl refers to him, “used the bizarre allegorical setting of a marriage of the god Mercury to a showily erudite young lady named Philology to

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<sup>212</sup> Whitney, *Medieval Science and Technology*, 5.

<sup>213</sup> These were the *trivium* (grammar, dialectic, and rhetoric) and the *quadrivium* (geometry, arithmetic, astronomy, and music).

<sup>214</sup> Stahl, *Roman Science*, 172; Thorndike, *A History of Magic and Experimental Science*, 545. Courcelle notes that “His indebtedness to Varro ... is immense,” *Late Latin Writers and their Greek Sources*, 213.

introduce an encyclopedia of the seven liberal arts.”<sup>215</sup> Not only was this a secular text, its structure and content was highly mythological leading Thorndike to wonder “why a monastic Christian world should have selected for a text book in the liberal arts a work which contained so much pagan mythology.”<sup>216</sup> The first two books describe the marriage and culminate with Philology’s ascent through the heavenly spheres whereupon arriving at “the globe of the celestial sphere itself and the periphery studded with stars”<sup>217</sup> she is presented with gifts: the seven liberal arts personified as Mercury’s handmaids. At this point, Capella concludes the second book with a short recapitulatory address to the reader, noting now that he has “covered a great part of the story made up of such long and interconnected tales,” “the mythical part is ended; the [seven] books which follow set forth the arts.” “With true intellectual nourishment,” Capella adds, “[these books] put aside all fable and for the most part explain serious studies, without however avoiding entertainment.”<sup>218</sup> This is, “for the most part,” true. In Book VIII on astronomy, the most likely location for astrology and magic, Capella’s discussion is largely “limited to a

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<sup>215</sup> Stahl, *Roman Science*, 170. Stahl writes that Capella’s “borrowings from Greek works appear to have been derived through Latin intermediaries, translations, or adaptations in handbook form” and that “the model for Capella’s encyclopedia was Varro’s *Nine Books of Disciplines*,” 171.

<sup>216</sup> Thorndike, *A History of Magic and Experimental Science*, 545. John J. O’Meara notes that *De nuptiis*, “though both difficult and dull, was the most popular school-book on the subject of the liberal arts, the trivium and quadrivium, for the best part of a thousand years;” *Eriugena* (Oxford: Clarendon Press, 1988), 22.

<sup>217</sup> Martianus Capella, *Martianus Capella and the Seven Liberal Arts*, vol. 2, *The Marriage of Philology and Mercury*, trans. William Harris Stahl and Richard Johnson with E.L. Bruge (New York: Columbia University Press, 1977), II.198.

<sup>218</sup> *Ibid.*, II.219-20.

purely astronomical description of the heavens,”<sup>219</sup> despite his apparently meager comprehension of the descriptions he puts forth.<sup>220</sup> But even this book opens with an allegorical fable the inclusion of which Capella defends by inquiring: “Am I to dispense with all imaginary creatures and introduce no pleasantry or mirth to relieve the boredom of my readers?”<sup>221</sup> I think we can recognize in this an acknowledgement of the importance of the allegorical mode of philosophical discourse for encyclopedists like Capella. The information he is trying to relay in the final seven books of *De nuptiis* is not wholly detached from the “spiritual world” that is so “well fitted for astrology, divination, and magic” he describes in books I and II.<sup>222</sup>

In Cassiodorus and Isidore, though, the distinctions are set up between types of knowledge based on their acceptability and the potential support they may offer or threat they may pose to Christian doctrine. Cassiodorus’ *Institutiones* is essentially a “sixth-century annotated bibliography on secular and sacred texts all educated people should know”<sup>223</sup> divided into two books: the first, dedicated to sacred literature, consists of thirty-two chapters to match Jesus’ years on earth and the second, addressing secular

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<sup>219</sup> Thorndike, *A History of Magic and Experimental Science*, 545.

<sup>220</sup> Though Grant notes Capella “was not very knowledgeable about astronomy” (*A History of Natural Philosophy*, 101), Stahl places him as one of “the great authorities on classical astronomy and world geography in Western Europe during the early Middle Ages” along with Pliny, Solinus, Chalcidius, and Macrobius; *Roman Science*, 189.

<sup>221</sup> Martianus Capella, *De nuptiis*, VIII.809.

<sup>222</sup> Thorndike, *A History of Magic and Experimental Science*, 545.

<sup>223</sup> Rosamond McKitterick, *History and Memory in the Carolingian World* (Cambridge: Cambridge University Press, 2004), 45.

learning, of seven chapters for each of the liberal arts. Interestingly, Stahl claims that Book II had “greater influence upon subsequent intellectual developments. Bede, Isidore, and Alcuin were familiar with Book II but did not know of the existence of Book I.”<sup>224</sup> It is worth noting that Cassiodorus was keen on the preservation of knowledge, dedicating the services of his monks at Vivarium to the task of translating (from Greek to Latin) and copying manuscripts that would be, above all else, essential to the study of scripture.<sup>225</sup> Displaying characteristic Christian caution about secular studies, Cassiodorus concludes Book II of *Institutiones* with a consideration of “why this regular succession of the sciences has been extended as far as the stars [to astronomy].” His explanation is simple: “clearly, in order to lead from earthly affairs minds which have been devoted to secular wisdom and have been purified by training in the sciences and to place these minds in laudable fashion in the celestial regions created by God.”<sup>226</sup> Isidore, bishop of Seville and counselor to Visigothic kings in the early seventh century,<sup>227</sup> expresses a nearly identical statement in his *Etymologiae* wherein he suggests astronomy is the terminus for the liberal arts so “that it might free souls, entangled by secular wisdom, from earthly

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<sup>224</sup> Stahl, *Roman Science*, 206.

<sup>225</sup> Ibid., 204. McKitterick, *History and Memory in the Carolingian World*, 233.

<sup>226</sup> Cassiodorus, *An Introduction to Divine and Human Readings*, trans. Leslie Webber Jones (New York: Octagon, 1966), II, Conclusion, i.

<sup>227</sup> Jonathan Shepard, “Europe and the Wider World,” in *The Early Middle Ages: Europe 400-1000*, ed. Rosamond McKitterick (Oxford; New York: Oxford University Press, 2001), 225.

matters, and set them at meditation upon the things on high.”<sup>228</sup> Truth and wisdom were always to be found above.

With no hope of attaining the objective of “other-worldly-salvation” by theorizing about the imperfect world of sensory perception, it should come as no surprise that “the ecclesiastical writers of the Roman Empire and early medieval period normally treat of spiritual rather than material themes and discuss them in a religious rather than a scientific manner.”<sup>229</sup> This de-emphasis of the earthly realm is essentially the result of the dichotomous element of early Christian cosmological theology—most directly drawn from Neoplatonism—holding the supernatural realm of existence in higher esteem than the imperfect natural realm. Because the physical, perceptible world was merely thought of as an approximation of the “ultimate reality” behind it, knowledge of nature, no matter how extensive, was never true, complete knowledge.<sup>230</sup> In this way, an old idea was adopted and modified to support the self-proclaimed one “true” religion’s singular claim to absolute wisdom.

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<sup>228</sup> Isidore, *Etymologies*, III.71.41 in Ernest Brehaut, *An Encyclopedist of the Dark Ages: Isidore of Seville* (New York: B. Franklin, 1964), 154.

<sup>229</sup> Grant, *Physical Science in the Middle Ages*, 3; Thorndike, *A History of Magic and Experimental Science*, 481.

<sup>230</sup> This idea was another derivative of classical pagan thought which became fundamental to Christian doctrine. As Stuart Clark notes, “In Plato’s *Timaeus* harmonization by proportion (of contrary elements, seasons, physical motions, and components of the soul) became the principle by which the Divinity created order from chaos;” we find this idea repeated and reiterated throughout the Middle Ages; *Thinking With Demons: The Idea of Witchcraft in Early Modern Europe* (Oxford: Oxford University Press, 1997), 43.

The growth of the Christian faith dictated a resurgence of a slanderous rhetorical practice that had already by the first few centuries C.E. enjoyed a long and colorful history, though it became tinged with a new vehemence as the young religion sought to distinguish itself from all others: accusations of magic or sorcery. Thorndike points out that “as a new religion comes to prevail in a society, the old rites are discredited and prohibited as magic. The faith and ceremonies of the majority, performed publicly, are called religion; the discarded cult, now practiced only privately and covertly by a minority, is stigmatized as magic and contrary to the general good.” The new dominant religion, before attaining its position of prevalence, was likewise criticized and dismissed as “outlandish magic” by the hegemonic culture it would eventually overtake.<sup>231</sup> But, as we have seen, it was not just the old religions that were attacked but the old *learning*. Magic and science alike could lead to improper veneration of nature or human abilities when one’s focus should be more properly (and exclusively) directed toward God. Edward Peters relays this idea as expressed by the immoderate early Christian leader Tertullian in the following passage:

The writings of Tertullian condemn both magic and that vain erudition [natural philosophy] that ‘is able to study nature without caring for him who created it and governs it: they only trouble themselves in a great emptiness.’ Indeed, it is as a subspecies of *curiositas* that Tertullian denounces magic, and he denounces less the practice itself than the mental attitude that to him pervades all pagan philosophy,

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<sup>231</sup> Thorndike, *A History of Magic and Experimental Science*, 337.

the passion for knowledge that does not recognize the final end of all true knowledge, the knowledge of God.<sup>232</sup>

Such was the case as early Christians struggled for freedom and recognition in the Roman Empire and it continued (after the reversal of the order) with subsequent Christianizing attempts in northern and western Europe in the early Middle Ages.<sup>233</sup> Whereas, in the tumultuous first few centuries C.E., Romans hurled accusations of magic against political rivals and, as Edward Peters puts it, “religions that they found distasteful,” Christians readily employed similar tactics against *their* would-be detractors.<sup>234</sup>

As Valerie Flint notes, early medieval “Christian proselytizers and legislators were often even more fervent than their Roman predecessors in their condemnation of *magia*—or *magi* or *malefici*—and were enthusiastic users of the machinery these predecessors had constructed for this purpose.”<sup>235</sup> Early Christian writers were quite willing to return the favor and appropriate the very modes of invective the Roman state had previously used against them. But Christian rejections and condemnations of magic were often more than general attempts at delegitimizing competing worldviews. The deeper problem for many of them was that the basic principles of magic (and some

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<sup>232</sup> Peters, *The Magician, the Witch, and the Law* (Philadelphia: University of Pennsylvania Press, 1978), 4.

<sup>233</sup> As Peters notes, “one of the first tasks of Christians was not to condemn the *magos* on any particularly original ground, but to prove that they themselves were not *magoi*,” *The Magician, the Witch, and the Law*, 3. Also, Appendix 3 of Peters’ work is an excellent survey of the primary scholarship on the history of the condemnation of sorcerers and witches.

<sup>234</sup> Edward Peters, *The Magician, the Witch, and the Law*, 12; Valerie Flint, *The Rise of Magic in Early Medieval Europe* (Princeton: Princeton University Press, 1991), 16.

<sup>235</sup> Flint, *The Rise of Magic in Early Medieval Europe*, 9.

natural philosophy as well) threatened to undermine the theological/cosmological order. Not only was magic employed as a slanderous and dismissive label, it was often perceived as a real threat to the intellectual hegemony the young religion was trying to establish. The authenticity of this is certainly debatable but that in no way diminishes the reactions to it; perception can indeed be reality.

Magic was always in some way perceived as meddling, particularly for early medieval sensibilities with their preponderant concern for the other world. Magicians, it seems, were not really people dissatisfied with the general Model (or what they knew of it) but individuals with an interest in intervening, wanting to manipulate the forces holding their cosmology together in order to exercise some level of control. Thus, both religion and natural philosophy could reject magic on essentially the same grounds though, in actuality, there was little to distinguish any one of them from the others. All three operated according to the prevailing view of the world and each was therefore endowed with an equally contentious realism thanks to early medieval rationality.

The most significant sources in the early Middle Ages for this basic cosmology—the Model—were commentaries on Plato's *Timaeus* or other Neoplatonic works dealing with the contents, arrangement, and implications of the universe (of which many are simply elaborations on the former) such as those of Chalcidius, Macrobius, Martianus Capella, Boethius, Cassiodorus, Pseudo-Dionysius, Isidore of Seville, and Bede. This list of writers (only the last three of whom were certainly Christian) spans both a significant amount of time (fourth to eighth centuries C.E.) and geographical space (from the late imperial Roman provinces to Britain), thus giving us a sense of the extent to which thought was connected.

As we saw with Seneca, this reverential skyward gazing was not simply a passive, disconnected, wishful endeavor but inherently participatory and, as Plato explains in the *Timaeus*, the purpose of a divine gift bestowed upon mankind by the gods: namely, sight, “that supremely beneficial function for which the god” gave us eyes.<sup>236</sup> By enabling us to see the “stars, sun and heaven,” sight has

opened the path to inquiry into the nature of the universe.<sup>237</sup> These pursuits have given us philosophy, a gift from the gods to the mortal race whose value neither has been nor ever will be surpassed. I’m quite prepared to declare this to be the supreme good our eyesight offers us. Why then should we exalt all the lesser good things, which a non-philosopher struck blind would ‘lament and bewail in vain?’<sup>238</sup> Let us rather declare that the cause and purpose of this supreme good is this: the god invented sight and gave it to us so that we might observe the orbits of

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<sup>236</sup> Plato, *Timaeus*, 46e-47a.

<sup>237</sup> The universe is spherical: “This of all shapes is most complete and most like itself, which [the creator] gave to it because he believed that likeness is incalculably more excellent than unlikeness” (33b).

<sup>238</sup> This refers to such “lesser good things” as we would find by way of earthbound sense perception—which only allows us to experience approximations of that which is changeless, eternal, and perfect. The distinction between “*that which always is* and has no becoming, and ... *that which becomes* but never is” is a central tenet of Platonic philosophy. “The former,” *Timaeus* explains to Socrates at the outset of his cosmological speech, “is grasped by understanding, which involves a reasoned account. It is unchanging. The latter is grasped by opinion, which involves sense perception. It comes to be and passes away but never really is” (27d-28a). Thus, “the whole universe [*ouranos*] or world order [*kosmos*] ... is a work of craft, modeled after that which is changeless and is grasped by a rational account, that is, by wisdom. Since these things are so, it follows by unquestionable necessity that this world is an image of something” (28b-c, 29a-b).

intelligence in the universe and apply them to the revolutions of our own understanding.<sup>239</sup> For there is a kinship between them, even though our revolutions are disturbed, whereas the universal orbits are undisturbed. So once we have come to know them and to share in the ability to make correct calculations according to nature, we should stabilize the straying revolutions within ourselves by imitating the completely unstraying revolutions of the god.<sup>240</sup>

Here, below the lunar sphere signifying the border between air and aether, we inhabit the terrestrial realm of growth, decay, and death. This is the realm of changeability and inconstancy where the four fundamental elements are perpetually in flux. But in humans “sight begets philosophy”<sup>241</sup> and thus offers us an opportunity to achieve transcendence and revel in the perfection above. We alone of all the creatures with which we share this earthly abode possess the characteristic that connects us to the celestial realm; namely, what Plato calls ‘soul’ or ‘intelligence’ or ‘mind.’

In this way, it was thought that our “very anatomy corresponded with the physical ordering of the universe.” The physical human body “was compounded of the four elements, and on the same principles as was the sublunary world”<sup>242</sup> but was equipped with eyes set in a round head (modeled after the universe itself) atop an erect body—all designed so that we may look up and contemplate that from which we came. As Macrobius writes in his *Commentary*:

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<sup>239</sup> Revolution: of the “seven motions” this one “is most especially associated with understanding and intelligence. And so he set it turning continuously in the same place, spinning around upon itself” (34a).

<sup>240</sup> Plato, *Timaeus*, 47b-c.

<sup>241</sup> Lewis, *The Discarded Image*, 55.

<sup>242</sup> Tillyard, *The Elizabethan World Picture*, 68.

Soul, degenerating as it came into the lower regions and to the earth, discovered that the frailty of the mortal realm made it incapable of sustaining the pure divinity of Mind. Human bodies, on the other hand, were found to be capable of sustaining, with difficulty, a small part of it, and only they, since they alone seemed to be erect—reaching towards heaven and shunning earth, as it were—and since only the erect can always gaze with ease at the heavens; furthermore, they alone have in their heads a likeness of a sphere, the shape which we said was to only one capable of containing mind.<sup>243</sup>

We are physically constructed to look *and think* upward. Thus, just as our heads incline to contemplate the heavens, so do our souls incline (being weightless, bodiless entities in accordance with the realm from whence they came) to return there, though they are held fast to earth by their bodily containers.<sup>244</sup> The notion that “everything has its right place” toward which it inclines “by a sort of homing instinct” does not imply sentience and purpose.<sup>245</sup> Nor, as Lewis notes, is it an any less metaphorical way of “expressing the facts” than our modern concept of governance of nature by ‘laws.’ “The odd thing” is that

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<sup>243</sup> Macrobius, *Commentary on the Dream of Scipio*, trans. William Harris Stahl (New York: Columbia University Press, 1990), I.xiv.9. As Plato writes in the *Timaeus*, “copying the revolving shape of the universe, the gods bound the two divine orbits into a ball-shaped body, the part that we now call our head. This is the most divine part of us, and master of all our other parts” (44d). The head is “the most divine, most sacred part of ourselves” (45a).

<sup>244</sup> Macrobius states that “Philosophers whose views are correct do not hesitate to agree that souls originate in the sky; moreover, this is the perfect wisdom of the soul, while it occupies a body, that it recognizes from what source it came;” *Commentary*, I.ix.1.

<sup>245</sup> Lewis, *The Discarded Image*, 92-3.

the latter “is the more anthropomorphic of the two” because it introduces human concepts of “law” and “governance” that are essentially absent from the medieval notion of inclination.<sup>246</sup>

Not only was this sublunary world thought to be mutable and imperfect,<sup>247</sup> it was also the very bottom of the universe, both literally and figuratively. As Tillyard describes, “the farther the distance from earth and the nearer to heaven, the purer and more brilliant the atmosphere. Contrariwise the earth itself was gross and heavy and the more so towards its own centre.”<sup>248</sup> This was a direct result of the physical universe’s constitutive elements decreasing in nobility and purity as they settled in their proper places at creation:<sup>249</sup> aether/fire, as the purest and lightest, would constitute the highest realm, followed by air, water, and “lastly,” Macrobius writes,

as a result of the downward rush of the matter, there was that vast, impenetrable solid, the dregs and off-scourings of the purified elements, which had settled to the

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<sup>246</sup> Ibid., 94.

<sup>247</sup> “Now all things that lie between the topmost border and the moon are holy, imperishable, and divine because they always have in them the same ether and are never subject to the vacillations of change;” Macrobius, *Commentary*, I.xxi.33.

<sup>248</sup> Tillyard, *The Elizabethan World Picture*, 38.

<sup>249</sup> Boethius writes: “It follows that if something is found to be imperfect in its kind, there must necessarily be something of that same kind which is perfect. For without a standard of perfection we cannot judge anything to be imperfect. Nature did not have its origins in the defective and incomplete but in the integral and absolute; it fell from such beginnings to its present meanness and weakness;” *The Consolation of Philosophy*, trans. Richard Green (New York and London: Macmillan, 1962), III, Prose 10.

bottom, plunged in continual and oppressing chill, relegated to the last position in the universe, far from the sun.<sup>250</sup>

Such is the general conception of “this miserable earth,” as Boethius calls it in *De consolatione philosophiae*, a work that “was for centuries one of the most influential books ever written in Latin.”<sup>251</sup> Just as soul “degenerated” as it descended from on high so did the quality of the elements become heavier and less pure as they descended toward the center of the universe. Thus, a rudimentary conception of gravity logically implied that the earth “must be at the bottom since all things tend toward it.” How can something round be at the bottom of a spherical universe? Macrobius explains “that which is the center is in the middle, and in a sphere only that which is in the middle can be at the bottom.”<sup>252</sup>

Along with occupying the miserable bottom and being composed of “dregs and off-scourings,” the earth is also, relatively speaking, incredibly small.<sup>253</sup> A common literary theme of late antiquity and the Middle Ages was the depiction of an allegorical ascension from earth up through the spheres to the fixed stars whereupon the character(s) will look down from their celestial perch and marvel at “how very small the Earth is.”<sup>254</sup> We find something like this in Book II of Martianus Capella’s *De nuptiis*. Also we find

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<sup>250</sup> Macrobius, *Commentary*, I.xxii.5-6.

<sup>251</sup> Boethius, *Consolation*, I, Poem 5; Lewis, *The Discarded Image*, 75.

<sup>252</sup> Macrobius, *Commentary*, I.xxii.2, 4. Cf. Martianus Capella, *The Marriage of Philology and Mercury*, VI.599-600.

<sup>253</sup> Pliny says the earth is but a “pin-prick;” *Naturalis Historia*, II.lxviii. Cf. Macrobius, *Commentary*, II.ix.9.

<sup>254</sup> Lewis, *The Discarded Image*, 33.

Boethius, in *De consolatione*, being reminded a bit more matter-of-factly by the personification of philosophy that he knows “from astrological computation that the whole circumference of the earth is no more than a pinpoint when contrasted to the sphere of the heavens; in fact, if the two are compared, the earth may be considered to have no size at all.”<sup>255</sup> That we were the primary inhabitants of an earth that was held in such low esteem in relation to the rest of the universe is illustrative of how natural investigation was, to an extent, inherently limited. Just as ideas held the place of prominence for the writers discussed thus far, so was God the focus of the universe. In both cases man was on the outside looking *in* and could only hope to emulate what he “saw.”

As far back as Seneca, for example, western thought had been dominated by the realization that we have allowed ourselves to go astray, to be consumed by earthly desires and delusions of grandeur. Meditative contemplation upon that which is perfect and pure by virtue of that faculty within us possessing like qualities (mind) is the only sensible way to correct and stabilize ourselves, to free ourselves from the constraints a physical existence places on the mind. This idea of earthly despondency and insignificance can be seen reemployed in the Christian concept of the Fall. As Peter Jones writes:

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<sup>255</sup> Boethius, *The Consolation of Philosophy*, II, Prose 7. This was already a rather old idea even back in the first century C.E. when Seneca wrote in his Preface to the *Naturales Quaestiones* that “The mind cannot despise [worldly things] until it goes around the entire universe and looking down upon the earth from above (an earth limited and covered mostly by sea—while even the part out of the sea is squalid or parched and frozen) says to itself: ‘Is this that pinpoint which is divided by sword and fire among so many nations?’” I, Pref. 8.

The Fall meant that mankind no longer had access to the untroubled knowledge of the created world. For the Christian Middle Ages this was a story about order, knowledge and human limitations. Science—as an enterprise to recover knowledge about nature and providence—was an attempt, inevitably doomed to imperfect success by the Fall, to mirror that original harmony and order of creation in the human mind.”<sup>256</sup>

This was still very much a moral and ethical issue as it had been for early Stoics and Neoplatonists but in the Christian mind, what had previously been seen as largely self-inflicted degradation through vanity and other human vices became more clearly articulated as subsequent punishment for such actions.

But there were further implications for our physical position in a universe where powers and influences descended from above through a hierarchical structure of beings and bodies (the Chain)<sup>257</sup> in which no space was left empty (Plentitude). Not only are humans relegated to such a sordid, pitiful abode, we are also subject to the influences of the planetary spheres revolving around us. This rotation of the spheres which caused the planets occupying them to shift position in the heavens was in turn responsible for “the

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<sup>256</sup> Peter Jones, “The Medieval Encyclopedia: Science and Practice,” in *The Cambridge Illuminations: Ten Centuries of Book Production in the Medieval West*, ed. Paul Binski and Stella Panayotova (London: Harvey Miller Publishers, 2005), 297.

<sup>257</sup> Macrobius explains: “the Creator of the universe bound the elements together with an unbreakable chain, as was affirmed in Plato’s *Timaeus* [32c]: in no other way could the elements earth and fire, so opposed and repugnant to each other and spurning any communion of their natures, be mingled together and joined in so binding a union unless they were held together by the two means of air and water;” *Commentary*, I.vi.24.

vagaries of fortune.<sup>258</sup> A person's predominant characteristics were established to some extent by their place and (zodiacal) time of birth but could be either intensified or mitigated according to subsequent planetary influence throughout the course of life. Though the notion of planetary influence is evidence of "a rich survival of classical paganism into medieval culture", the Church "came to terms" with astrology and "even turned to it for support."<sup>259</sup> As the concept of planetary influence often bordered on the theologically disagreeable notion of strict determinism (as the Stoics had held), the reconciliation was basically as follows:

Planetary influence could not remove free will but it could alter the states of mind and imagination which free will has to deal with. Any man can master this psychological raw material and thus refute the prediction; but few men do and therefore the predictions will succeed as regards the majority.<sup>260</sup>

Hence we find "the ordinary, moderate, respectable view ... summed up in the maxim *sapiens dominabitur astris*; a wise man, assisted by Grace, could get over a bad horoscope just as he could get over a naturally bad temper."<sup>261</sup> Put simply, "fault lies not in the influence but in the terrestrial nature which receives it."<sup>262</sup>

The fact that a person could exercise their will in either succumbing to or overcoming their disposition eliminated the contradiction of God, the ultimate Good, somehow bearing responsibility for both good and bad actions and people. In this line of

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<sup>258</sup> Tillyard, *The Elizabethan World Picture*, 52.

<sup>259</sup> Seznev, *The Survival of the Pagan Gods*, 46.

<sup>260</sup> Lewis, *Studies in Medieval and Renaissance Literature*, 59.

<sup>261</sup> *Ibid.*, 59.

<sup>262</sup> Lewis, *The Discarded Image*, 117.

thinking the individual was ultimately accountable for what they did with what they were given and was therefore not “the slave as well as the victim of chance.” This old idea’s survival in the Middle Ages was largely assisted by Boethius. For example, he writes that “God by his Providence simply and unchangeably disposes all things that are to be done, even though the things themselves are worked out by Fate in many ways and in the process of time.” “Therefore,” he adds,

whether Fate is carried out by divine spirits in the service of Providence, or by a soul, or by the whole activity of nature, by the heavenly motions of the stars, by angelic virtue or diabolical cleverness, or by some or all of these agents, one thing is certain: Providence is the immovable and simple form of all things which come into being, while Fate is the moving connection and temporal order of all things which the divine simplicity has decided to bring into being. It follows then, that everything which is subject to Fate is also subject to Providence, and that Fate itself is also subject to Providence.<sup>263</sup>

Thus, God’s autonomy as the ultimate power and influence is not compromised and we maintain the efficacy of numerous other influences that are fundamentally subject to Providence. The notion that “man has it in him to survive the blows of fortune and that ultimately fortune herself is, like nature, the tool of God and the educator of man” is, as Tillyard describes, the “main theme” of Boethius’ renowned *De consolatio*.<sup>264</sup> Humans still have a degree of practically applicable power—power reinforced by books.

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<sup>263</sup> Boethius, *Consolation*, IV, Prose 6.

<sup>264</sup> Tillyard, *The Elizabethan World Picture*, 55-6.

Through philosophical reflection, right action, and patience a person may attain “the rewards of virtue” that reside in the heavens. Man alone was responsible for the predicament in which he found himself and it was therefore up to him to earn salvation. Thus, both man’s connectivity *and* affinity to the universe afforded him the opportunity to redeem himself and be freed from the “cesspool” otherwise known as the earth. As Tillyard points out, we may look to Boethius for a wonderful example of how the fundamental harmony and constancy of the Model as a whole is not toppled or even contradicted by apparent disorder and uncertainty of some of its parts. At the beginning of book two of *De consolatio* Philosophy explains that it is Fortune’s “nature” to be “changeable;” it is simply “the way she always behaves.”<sup>265</sup> We see here with Fortune that, in the Model, “mutability” can be “part of a larger stability, just as the wind shows its constancy in never failing to be changeable.”<sup>266</sup> Even discord was nonetheless demonstrated from within the overall concord of the Model.

This was obviously a very different relationship between man and nature than that which we now understand. Man was stuck in an environment seething with delusion and suffering—and it was his fault for being there in the first place. “The Neoplatonist tradition,” Kieckhefer notes, “disposed its adherents to see the cosmos as a living system with complex and unpredictable influences, not as a system of mechanical and regular influences on which a science of prediction might be based.”<sup>267</sup> Though all things descended from God, much was left in between in the form of various and variable

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<sup>265</sup> Boethius, *Consolation*, II, Prose 1.

<sup>266</sup> Tillyard, *The Elizabethan World Picture*, 17.

<sup>267</sup> Kieckhefer, *Magic in the Middle Ages*, 130.

intermediaries whose influence upon mankind was no less real than the Providential power behind them. This is precisely why even a contemptuous theologian like Augustine did not fully deny the existence of demonic and astrological influence, he merely denounced as magic human manipulation of such forces.<sup>268</sup> By our own free will we can misuse and abuse the gift of sight to improperly satisfy “this disease of curiosity” that we often treat by way of flawed sensory perception<sup>269</sup> and have “dignified by the names of learning and science.” Thus, “men proceed to investigate the working of nature which is beyond our ken—things which it does no good to know and which men only want to know for the sake of knowing. So too, and with this same end of perverted science, people make inquiries by means of magic.”<sup>270</sup>

Magic presented even more of a threat to that cosmological order than did natural philosophy and was therefore even more deplorable. As Flint writes, “Magic may be said to be the exercise of a preternatural control over nature by human beings, with the assistance of forces more powerful than they.”<sup>271</sup> Understanding magic this way requires

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<sup>268</sup> Like Origen, Augustine believes the stars have power but that they cannot override free will. Because not all things that come to be at the same time end up the same, Augustine asks “Will they make only men subject to the stars: men, to whom, alone on earth, God has given free will?” Thus, “it is not unreasonable to believe that, when the astrologers do give very many wonderful answers, this is to be attributed to the hidden prompting of spirits far from good, whose care it is to sow and establish in the minds of men these false and noxious opinions concerning the influence of the stars on our fate. The astrologers’ success is not due to the art of observing and studying horoscopes, for there is no such art;” *De civitate Dei* V.7.

<sup>269</sup> Augustine, *Confessions*, X.35. Augustine suggests sight is used by analogy “by the other senses too when they are attempting to discover any kind of knowledge.”

<sup>270</sup> *Ibid.*, X.35. See also *De doctrina Christiana*, II.46; 73-81.

<sup>271</sup> Flint, *The Rise of Magic in Early Medieval Europe*, 3.

an explanation of the term “preternatural.” The preternatural is the realm of existence populated by its own set of beings and forces, such as demons and sympathies between natural objects, but still, as Clark notes, “regarded as being inside the general category of the natural.”<sup>272</sup> By way of this cosmological dimension, magicians were able to actually affect the world of nature. Given the Christian dichotomy of natural and supernatural, it is easy to see that an intermediary agent possessing some qualities of both, which could be *employed by people* to manipulate God’s order, clearly undermined accepted theology. Thus, as Peters describes, in his *De civitate dei* and *De doctrina christiana* Augustine “gathers up what had been discrete magical practices, classes them all under the heading of *superstitio*, and condemns them emphatically, blaming the deceit of the demons and the undisciplined *curiositas* of ignorant humans.”<sup>273</sup> The following passage from *De doctrina Christiana* is an exemplary articulation of Augustine’s condemnatory attitude:

it happens that, by some inscrutable divine plan, those who have a desire for evil things are handed over to be deluded and deceived by corrupt angels, to whom in God’s most excellent scheme of things this lowest part of the world has been subjected by the decree of divine providence. As a result of these delusions and deceptions it has come about that these superstitious and deadly kinds of divination actually do tell of past and future things, which happen exactly as predicted; many things happen to observers in accordance with their observations, so that as they are

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<sup>272</sup> Clark, *Thinking With Demons*, 152.

<sup>273</sup> Peters, *The Magician, the Witch, and the Law*, 4-6. See, for instance, *De doctrina Christiana*, II.89: “So all the specialists [*artifices*], in this kind of futile and harmful superstition, and the contracts, as it were, of an untrustworthy and treacherous partnership established by this disastrous alliance of men and devils, must be totally rejected and avoided by the Christian.”

caught up in them they may become more and more in the manifold snares of this most deadly error.<sup>274</sup>

This “spiritual fornication,” as Augustine calls it, is wrong but nonetheless admittedly real. Demons were convenient, familiar beings that had been reinvested with malevolence by writers like Augustine and turned exclusively into foes who manipulated and were sometimes manipulated by humans.<sup>275</sup> In passages like these, Peters observes that this influential patriarch

thus links two of the most important strands of early Christian culture: the separation of a Christian learning from the many disciplines of pagan antiquity, and the growth of Christian demonology. In the new organization of legitimate knowledge, everything pertaining to magic, astrology, and divination is rejected as *superstitio* and therefore made a deception of the devil.<sup>276</sup>

In this way, demons and astrological divination were holdovers from the natural philosophical tradition and categorically ostracized as the troublesome side of pagan learning—thus foreshadowing the dimension of conflict in the relationship between religion and science that would be reinvested with vigor after the twelfth century.

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<sup>274</sup> Augustine, *De doctrina Christiana*, II.87.

<sup>275</sup> As Flint notes, “medieval Christians have the dubious distinction of confining the term demon with absolute firmness to wicked spirits alone, and of insisting upon their particular malevolence to humankind;” *The Rise of Magic in Early Medieval Europe*, 107-8.

<sup>276</sup> Peters, *The Magician, the Witch, and the Law*, 6; see also Flint, *The Rise of Magic in Early Medieval Europe*, 92-3. Interestingly, Clark suggests “we would do better to associate demonology with development and, indeed, ‘advancement’ in natural knowledge than with stagnation or decay;” Clark, *Thinking With Demons*, 156.

Why, when they seemingly had so much in common, was the conflict between religion and magic so intense, even more so than disputes in Antiquity between natural philosophy and magic? Precisely *because* they had so much in common; because magic was, in the eyes of early theologians, science gone bad—it was threatening, misinterpretive tampering with the acceptable cosmological order. Magic did not just seek to know; its opponents felt it sought to know the unknowable and use the unusable. Flint suggests the essential difference between religion and magic lies in the notion of control: “Religion . . . requires reverence, an inclination to trust, to be open and to please, and be pleased by, powers superior in every way to mankind; magic may wish to subordinate and command these powers.”<sup>277</sup> The faithful were just that: faithful. The role of humans in the larger order of the universe was supposed to be one of passive reception and transmission rather than assertive dictation and intervention. Nevertheless, there remained an inherent affinity between religion and magic much akin to that which I have suggested existed between magic and natural philosophy.

Thus it might be easy to understand why “the old demons persisted into the Middle Ages, then, and occupied a prominent place in the early medieval magical world.”<sup>278</sup> Indeed, we find them discussed at length in three of our most influential writers: Chalcidius, Macrobius, and Isidore. Of Chalcidius it will suffice for present purposes to note that he differs only slightly from the previously discussed account of demons by Apuleius in that “all demons are for him a distinct species, and he applies the name *daemons* to the aetherial as well as to the aerial creatures.” But more importantly,

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<sup>277</sup> Flint, *The Rise of Magic in the Early Middle Ages*, 8.

<sup>278</sup> *Ibid.*, 107.

“he is completely at one with Apuleius in affirming the Principle of Plentitude and that of the Triad.”<sup>279</sup> Macrobius is similarly Platonic regarding demons. In addition to the *Commentary*, Macrobius wrote the lengthy, eclectic *Saturnalia*<sup>280</sup> wherein he relays a “wholly good” and “admirable” picture of divination and Plato’s demons.<sup>281</sup> “Plato,” Macrobius writes,

refers to spirits (*daemones*) and gods, jointly by name, either because gods are *daemones*, that is to say ‘gifted with knowledge of the future,’ or, as Posidonius writes in his work *On Heroes and Spirits*, because their nature springs from and shares in the heavenly substance—this word for spirits being then derived from *daemones*, which may mean either ‘burning’ or ‘sharing.’<sup>282</sup>

Though the *Commentary* tends to receive the most attention, Macrobius’ *Saturnalia* was by no means relegated to obsolescence. Percival Davies, in the introduction to his translation of the work, names Isidore, Bede, and John of Salisbury as three primary individuals “who were more concerned with the *Saturnalia* than with the *Commentary*,” taking us well into the twelfth century.<sup>283</sup>

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<sup>279</sup> Lewis, *The Discarded Image*, 56. See, for example, J. Den Boeft, *Chalcidius on Demons (Commentarius Ch. 127-136)* (Leiden: E.J. Brill, 1977), 131, 132, 137.

<sup>280</sup> Stahl dismissively suggests we can assume “there is very little if anything of substance in it that is not compilation” in the *Saturnalia*; that it is “a particularly important work to students of ancient religion” but “to the general reader it is another tedious collection of the sort that literary historians have come to associate with Latin writers aspiring to reputations as erudites and antiquarians;” *Roman Science*, 153.

<sup>281</sup> Flint, *The Rise of Magic in the Early Middle Ages*, 103.

<sup>282</sup> Macrobius, *The Saturnalia*, trans. Percival Vaughan Davies (New York; London: Columbia University Press, 1969), I.23.7.

<sup>283</sup> *Ibid.*, 23.

Given this influence, it comes as no surprise that Isidore, despite being a Christian writing nearly two centuries after Macrobius, produced in his *Etymologiae* “an apt summary of that early medieval view of demons which drew widest acceptance.”<sup>284</sup> In this encyclopedia whose contents were drawn from “numerous classical as well as Christian works, [Isidore] put a Christian gloss on all subjects, observations, and calculations known to man.”<sup>285</sup> For instance, echoing Macrobius, Isidore writes:

Demons, they say, were named by the Greeks as if *δαήμονας*, that is, clever and knowing about things. For they foreknow many things that are to come, and because of this they are wont to give some responses. For there is in them a knowledge of things greater than is in human weakness, partly by the keenness of their subtler sense, partly by the experience of very long life, partly by God’s command as revealed by the angels. They are strong in the nature of their aerial bodies.<sup>286</sup>

These beings certainly sound noble and benevolent but this is only half of their story for in the next section Isidore explains:

Before their transgression, indeed, [demons] had celestial bodies. But they fell and changed to an aerial quality, and they are not allowed to occupy the purer stretches

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<sup>284</sup> Flint, *The Rise of Magic in the Early Middle Ages*, 107.

<sup>285</sup> “Isidore offered a kind of ‘rule-of-thumb’ guide to the divine unity behind the apparent confusion of things for persons enjoying little access to stocks of books or conversation about abstractions. Knowledge is not upheld for its own sake, any more than is open-ended speculation and not all the data is accurate. But Isidore allows for inquisitiveness and his assemblage of classical and biblical concepts and lore intermingled with disquisitions on everyday things;” Shepard, “Europe and the Wider World,” 225.

<sup>286</sup> Isidore, *Etymologies*, VIII.xi.15-16.

of yonder airy space, but those misty parts, and this serves as a sort of prison for them until the time of judgment. These are the apostate angels, and their chief is the devil.<sup>287</sup>

Here we have the Christian gloss on the subject that shows us precisely why Flint suggests the reason for the persistence of demonology was essentially twofold: “partly because there was a cosmological structure and a scriptural basis ready to support them, but largely because they were a useful means of isolating persons and practices the Christian world in particular wished to proscribe—or protect.”<sup>288</sup>

The most immediate solution to the existence of demonic agency was something fundamentally similar but yet antithetical in character and function: angels. The purely malevolent demons and demonic magic “called out for a compensatory form of magic (one additionally commendable in that it might help to defeat the demons). Old daemones, subdivided into evil demons and good angels are centrally involved in the process of both rejecting and selecting from non-Christian magic.”<sup>289</sup> A useful example which relates this matter to the larger discussion at hand comes to us in the form of John Scotus Eriugena (ca. 810-ca. 877), the ninth-century Irish emigrant scholar to the Frankish empire of Charles the Bald (823-877), grandson of Charlemagne. Working in the wake of Charlemagne’s initial acts of social reform and intellectual revitalization,<sup>290</sup>

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<sup>287</sup> Ibid., VIII.xi,17.

<sup>288</sup> Flint, *The Rise of Magic in the Early Middle Ages*, 107.

<sup>289</sup> Ibid., 108.

<sup>290</sup> “After A.D. 800, the stridently Catholic Frankish empire founded by Charlemagne seemed, for a moment, to have brought to an end the four centuries of aimless fragmentation which characterized Europe’s loss of its first unity;” Peter Brown, *The Rise of Western Christendom*, 5.

Eriugena was commissioned by the Carolingian Emperor<sup>291</sup> to translate (among other texts) the *Celestial Hierarchy* of Pseudo-Dionysius (sixth century)<sup>292</sup> from Greek to Latin, a work of no small ideological and theological significance throughout the Middle Ages. The *Celestial Hierarchy* not only contributed mightily to the structured repopulation of the aerial and aetherial realms with purely benevolent beings, it also outlined how that structure could and should be emulated here on earth.<sup>293</sup>

It would delay us too long here to delve into the intricacies of the angelic order of Pseudo-Dionysius so I offer John O'Meara's exemplary explanation of the *Celestial Hierarchy's* basic tenor (for he expresses it far better than could I):

While the universe of Pseudo-Dionysius is a spiritual universe of intelligences, it adapts itself as far as possible to the cosmological theories generated by Plato, Aristotle, the Stoics, the Gnostics, and the Neoplatonists, and the notions already inherited by the Fathers of the Church. It is a universe in which there is an arrangement—a hierarchical structure—and agreement of parts. While these parts tend towards similarity of nature, their differences never disappear: they share

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<sup>291</sup> Charles, it seems, was at least as enthusiastic about learning as his grandfather; see O'Meara, *Eriugena*, 9-14.

<sup>292</sup> The unknown author whose works were "falsely attributed to Dionysius the Aeropagite, the Athenian who was converted to Christianity by St. Paul, according to Acts 17. They were actually written some five hundred years later, although we do not know precisely when or where;" Paul Rorem, *Pseudo-Dionysius: A Commentary on the Texts and an Introduction to Their Influence* (New York; Oxford: Oxford University Press, 1993), 3.

<sup>293</sup> "The theological literature of the Latin Middle Ages was influenced by *The Celestial Hierarchy* in two major areas: its teachings about the angels and its general theory or method for the interpretation of symbols;" *ibid.*, 73.

unequally in divine illumination, partly because of divine disposition, but also because of their positive or negative response to the divine gifts. By a kind of continuing circular movement the intelligences elevate themselves to a permanently ordered unity, the object of the divine will.<sup>294</sup>

For Pseudo-Dionysius “the whole universe becomes a fugue of which the Triad (agent-mean-patient) is the ‘subject.’”<sup>295</sup> The nine angelic levels—which correspond to the nine spheres of the universe—are also subdivided into “three main orders,” each with a three-angel hierarchy.<sup>296</sup> Thus, “the total angelic creation,” Lewis notes, “is a mean between God and Man, and that in two senses.” Firstly,

It is a dynamic mean, as God’s executive. But it is also a mean as a lens is a mean, for the celestial Hierarchies are revealed to us in order that the Ecclesiastical hierarchy on earth may imitate, as nearly as possible, ‘their divine service and office.’<sup>297</sup>

This relates to man’s place in that the bottom levels of the ecclesiastical and social hierarchies are occupied by the general population in the same fashion that all of mankind

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<sup>294</sup> O’Meara, *Eriugena*, 60.

<sup>295</sup> Lewis, *The Discarded Image*, 74.

<sup>296</sup> For example, the lowest order consisted of Principalities, Archangels, and Angels with Angels as “the lowest rank.” Though at the bottom, this rank formed “the medium between the whole angelic hierarchy and man.” At the next stage, the angelic hierarchy as a whole formed the medium between man and God, the second angelic order between the first and third, and, within each order, the middle rank between the other two. Every level of the hierarchical universe (except for the two extremes) was an intermediary between the level above and below it, a link in the Chain of Being. See Tillyard, *The Elizabethan World Picture*, 41-2; Lewis, *The Discarded Image*, 61.

<sup>297</sup> Lewis, *The Discarded Image*, 74.

occupied the lowest position in early medieval cosmology. It thus not only provided a theological justification for the inherent correctness of social order but also exemplified the notion of mankind on the fringes of society and the universe. Significantly, it was this particular “cast of doctrine” with which Eriugena, an exceptional scholar with “a high opinion of things Greek” and a proclivity to equating religion and philosophy (rather than subordinating the latter to the former), became fascinated.<sup>298</sup> Indeed, “knowledge of Greek [on the Continent] was concerned not with Homer but with Dionysius the Aeropagite; not with grammar but with the Psalter; not with classical Greece but with the Byzantine Empire; not with the Attic but with the Holy Spirit.”<sup>299</sup> The “mystical, ascetic, world-renouncing theology of neo-Platonism”<sup>300</sup> was not to be usurped even when the opportunity presented itself to translate some of the texts that would, three centuries later, begin to change the western intellectual landscape, gradually adding a new this-worldly twist to its rationality. It was simply not yet time for such a change.

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<sup>298</sup> O’Meara, *Eriugena*, 52, 28. Indeed, O’Meara notes that “it is evident to anyone who is well acquainted with Eriugena’s works that ... he thought in particular that the Greek language was frequently more explicit than the Latin;” 51.

<sup>299</sup> O’Meara, *Eriugena*, 8.

<sup>300</sup> Lewis, *The Discarded Image*, 65.

## CONCLUSION: The Veil of Otherness

What if Boethius' life had not been cut short and he had actually been able to see his "grand scheme of commenting upon and translating into Latin all the works of Plato and Aristotle, together with the mathematical works of Ptolemy" come to fruition? Stahl, as an historian of science, imagines this "gigantic undertaking ... might have made possible in the West a true revival of Greek science," that "if completed," this "set of translations and commentaries contemplated by Boethius ... would have radically changed the intellectual history of the Western world in the early Middle Ages."<sup>301</sup> This is surely a wonderful point upon which to ruminate but it seems odd to assume that such an event in the early Middle Ages might have ushered in the same changes in the same ways the introduction of the corpus of Greek (and also Arabic) texts would initiate in the high and late Middle Ages. I am reminded here of Lewis' observation that "we are all, very properly, familiar with the idea that in every age the human mind is deeply influenced by the accepted Model of the universe. But there is a two-way traffic; the Model is also influenced by the prevailing temper of mind."<sup>302</sup> That we find precisely this with Eriugena, for example, suggests it would be more realistic and pertinent to ask ourselves what Boethius' Neoplatonic commentaries on these great works would have looked like. Boethius certainly had access to Plato, Aristotle, and Ptolemy in their Greek forms, yet his writings, as we have seen in the *De consolatio* in particular, were paragons of that distinctly Neoplatonic rationalism that came to typify the early Middle Ages. Would he or any of the subsequent compilers treating his works have modified

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<sup>301</sup> Stahl, *Roman Science*, 121.

<sup>302</sup> Lewis, *The Discarded Image*, 222.

their worldview according to direct readings of these Greek sources or would they have simply developed and perpetuated Neoplatonic blending and reconciliation? I think the evidence points to the latter.

The early medieval period presents us with a largely belief-driven rationality assembled from myriad pieces of religion, magic, and science; none of these three ways of knowing were inherently irrational or consistently distinct in a reality in which allegory and ordered, symbolic connectivity were ubiquitous. As we have seen, mystical, metaphysical contemplation was the dominant mode of thought in the early Middle Ages. But we must not make the mistake of dismissing this as though what we see as deficient scientific methodology necessitated a rationality built upon the consideration that the supremely important, fundamental things are those we cannot directly know or explain. This rationality, rather than being the only viable product of meager understanding, took hold because, at the time, truth *required* allegorical discourse; that was considered to be its nature in actuality.<sup>303</sup> Thinking early medievals simplistic or mentally inferior merely reveals a preoccupation with our present perspective and the resulting ease with which the notion that change invariably equates to progress allows us to establish and then brush aside the other.

Karen Jolly notes that “the oddness of the pre-twelfth-century view from the standpoint of later Europeans or ‘Western’ thought forces us to reassess the twelfth-century premises on which these modern scientific views were founded, in order to

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<sup>303</sup> See, for example, Macrobius’ discussion of “fabulous narratives” in the *Commentary*, I.ii.4-21.

properly understand the earlier views from which they emerged.”<sup>304</sup> But, to a certain extent, Barfield is right that “we can only reconstruct the collective representations of another age obliquely.”<sup>305</sup> That our perception is indirect and imprecise as a result of our distance is a legitimate point. Indeed, how could we ever hope to verify that our conception of the past is accurate anyway? But to content ourselves with approximation can leave us satisfied with our misunderstandings and permit too much of an arbitrary separation of ‘old’ and ‘new.’ I think Burke expresses this well, writing:

Today we live according to the latest version of how the universe functions. This view affects our behaviour and thought, just as previous versions affected those who lived with them. Like the people of the past, we disregard phenomena which do not fit our view because they are ‘wrong’ or outdated. Like our ancestors, we know the real truth.<sup>306</sup>

Thus, I think a large part of the reason why we may be led to address the early Middle Ages as a period of intellectual opacity is a result of what W.K.C. Guthrie suggests is the tendency of “every age ... to bring into prominence those features of the past which chime in best with its own ideas and preoccupations.”<sup>307</sup> We can too easily fall into the trap of looking only for what we know as we know it *now*.

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<sup>304</sup> Karen Jolly, “Father God and Mother Earth: Nature-Mysticism in the Anglo-Saxon World,” in *The Medieval World of Nature: A Book of Essays*, ed. Joyce E. Salisbury (New York: Garland, 1993), 224.

<sup>305</sup> Barfield, *Saving the Appearances*, 76.

<sup>306</sup> James Burke, *The Day the Universe Changed* (Boston; Toronto: Little, Brown and Company, 1985), 9.

<sup>307</sup> W.K.C. Guthrie, *In the Beginning: Some Greek Views on the Origins of Life and the Early State of Man* (Ithaca, NY: Cornell University Press, 1965), 11.

All collective realities are to some extent relative. But this generalization does not have as a necessary consequence the notion that all realities therefore exist on a relativistic plane of egalitarianism whereby the assumption that “everything is everything” is the ultimate cognitive state; some realities *are* better than others. Nor, on the other hand, does it follow that worldviews can be viewed linearly with the implication that when the specific context to which they most directly relate seems to pass, the worldview passes as well. Rather, as with the Romans and barbarians, the Christians and pagans, religion and magic, and science and religion (and magic) there is always much borrowing, adoption, and adaptation. The other is always based on a certain degree of truth but it is not as separate, external, and antithetical as convenience would lead us to believe. If we know enough of something to say that, in some way, it is what we are not, then it is already part of who and/or what we are—to an extent, it is thus a “rhetorical image used to strike a symbolic resonance.”<sup>308</sup> Otherness suggests strict difference or discontinuity far less frequently than it denotes misunderstanding, intentional or otherwise. And the intensity of that misunderstanding tends to correlate to distance in space and/or time from the other in question.

This is why I believe an overemphasis of continuity theory in the history of science, for instance, can generate a troublingly narrow perspective. Doing so often overlooks or completely discards history’s natural vicissitudes and tangents, allowing us to triumphantly declare that we have discovered precisely that which we set out to find. Continuity is always there; we would simply be better served by striving to determine how it changes and to follow its course rather than editing history to support desired

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<sup>308</sup> Burns, *Rome and the Barbarians*, 16.

conclusions. I would certainly not, for the sake of my own argument, deny that the injection of classical Greek science/natural philosophy and rationalism (in their entirety) into Western culture around the twelfth century had a profound effect on the history of thought. I merely think it a mistake to discount the synthesis of ideas developing in the early Middle Ages which formed the context for that injection; the twelfth century slate was by no means clean.<sup>309</sup> Therefore, though the impulse to search for continuity is extremely important to the study of any aspect of history, it can be detrimental to a full understanding if governed only by predetermined kinds of connections. In this way, the history of science should be able to operate by the same fundamental tenet of openness to new information or interpretations as its object. If we cannot see the forest for the trees, we must ask why and be prepared to adjust our conceptions accordingly.

Still, as Thomas Kuhn notes, there is an impulse to ask why we should “dignify what science’s best and most persistent efforts have made it possible to discard?”<sup>310</sup> Indeed, why concern ourselves with the history of the losers? I think the answer is not just that such histories of discarded images and answers are intriguing for their quaintness

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<sup>309</sup> Kieckhefer notes that “it would be misleading to suggest a sudden revolution in medieval thought.

While there were many in the twelfth century who absorbed the fruits of Arabic science, there were many more who rejected or ignored these developments. John of Salisbury, for example, rejected astrology but for his knowledge of it drew mainly on Augustine, Macrobius, and Martianus Capella rather than the recently translated Arabic writers;” *Magic in the Middle Ages*, 119. Additionally, it is worth considering that not only did the twelfth-century translations increase what we would consider scientific knowledge, they also “increased Western knowledge about occult practices and their interpretation;” Kieckhefer, “The Specific Rationality of Medieval Magic,” 820.

<sup>310</sup> Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago; London: The University of Chicago Press, 1996), 138.

and antiquarian novelty but that they are immanently real and important. Errors and misconceptions do not indicate that something is not science. Along with showing us where and how we may have gone wrong, what things have failed, and what things have endured, they show us where and who we are now because their traces resonate. As R.W. Southern writes, “it can scarcely be doubted that the questions which were raised and often apparently solved in [the Middle Ages] are as living and insistent now as they ever have been.”<sup>311</sup> That their answers and the structures which sustained them have changed since then is not at all a validation of perceived intellectual “progress from error to truth.”<sup>312</sup> That merely betrays intellectual *movement*. We never really go in completely new directions; the old ones, generally discarded as they may be, are inevitably and inextricably part of our consciousness, our rationality. Simple usurpation is a myth.

In this way, our focus may be drawn more toward the fundamental human desire to somehow approach, explain, interact with, and come to terms with the natural world. This curiosity, regardless of the fashion in which it was satiated, is a key to locating continuity in the histories of ideas and science. Viewing the avenues of pursuit that desire for knowledge creates allows us to step back slightly from evaluatively or normatively attempting to determine what science is or is not to better see what it can be and has been. We must remember that thought systems are ultimately shaped by not only the actual questions that were asked but also ideological determinations of acceptable answers.

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<sup>311</sup> R.W. Southern, *The Making of the Middle Ages* (New Haven & London: Yale University Press, 1953), 13.

<sup>312</sup> Lewis, *The Discarded Image*, 222.

The Model and its rationality reveal that, in the early Middle Ages, examination of the natural world was undertaken for specific purposes. The pursuit and implementation of knowledge was not lost in the darkness of the social and political turmoil of the “Dark Ages,” nor should we view the period’s peculiar blend of religion, magic, and science as merely keeping enlightenment and illumination on life support while inquiring minds waited for a classical (particularly Aristotelian) transplant. The centuries preceding the next major shift of the twelfth<sup>313</sup> in the West were intellectually unconventional (because of their mysticism and eclecticism) only if we address them conventionally, that is, on exclusively modern terms. Thus, much of the early Middle Ages’ “darkness” has been a result not so much of a general lack of imaginative and creative activity but of our application of methods predisposed to search for such activity in ways inapplicable to this particular period; in short, *our* lack of creativity.

Recent centuries have witnessed (and participated in) a decline in the acceptance and application of the figurative element as such. That is not, however, to imply that it has vanished but rather that it has been subsumed by concepts of the literal and material;

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<sup>313</sup> It is worth noting that Lewis suggests the fundamental, overarching medieval system of thought (what he calls the “Model”) that developed in the Late Roman Period and early Middle Ages persisted, even through the twelfth century shift—though he does mention that describing “the imagined universe which is usually presupposed in medieval literature and art is not the same thing as writing a general history of medieval science and philosophy.” But we should not take Lewis’ disclaimer as implying a strict division between art and natural philosophy but rather as a statement of the scope of *The Discarded Image*—the work’s focus is medieval and Renaissance literature. Lewis knew full well that such a separation would be arbitrary and anachronistic because there was no such division in the medieval mind; *The Discarded Image*, 13.

we simply see more things in literal terms while at the same time often expressing a certain degree of distaste for the figurative as something intangible and unrealistic. But there is no reason why both ways of knowing cannot work—and work together. We have come not only to expect but to insist upon dichotomy and disciplinary exclusivity and this stubbornness has a strong tendency to cloud our judgment. It can prevent the formation of potentially productive intellectual relationships by closing off lines of communication and empowering polemical discourse to the point of defining areas of study by little more than what they are not. Otherness is tricky; like so much of the early medieval worldview, it is both tangible and intangible, literal and figurative. Science in the early Middle Ages was dramatically different from the science we have come to know since the sixteenth and seventeenth centuries but it was not by any means absent. It was the persistent backdrop for early medieval thought that, partnered as it often necessarily was with magic, afforded Christian theology much of its support structure—and a sometimes adversary.

The desire for order and connectivity expressed by early medieval rationality betrays an epoch in the history of ideas when literal and figurative principles were completely reconcilable. The result was a system of patient, calculated stubbornness in which the square peg could simply be refashioned to fit the round hole. Yet at the same time, this manufactured harmony renders it a marvel of both human intellectual *and* artistic effort. As Lewis puts it, “it is a structure, a finished work, a unity articulated through a great and harmonious plurality. It evokes not mere wonder but admiration.”<sup>314</sup> Its systematized, ordered duality, at the same time both observably physical and

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<sup>314</sup> Lewis, *Studies in Medieval and Renaissance Literature*, 53.

metaphysical, is what allowed so many odds and ends to be gathered up into a relationship of mutual beneficence and order. Because of our relative unfamiliarity with such a mode of thinking, our encounters with the early medieval Model and its frames of reference often end up with us “crassly trying to rationalise a glorious product of the imagination.”<sup>315</sup> In a way, I believe we would do well to regain some of our lost contemplative mysticism and subjectivity to counterbalance the rigidity of objective, observational empiricism.

Subjectivity is an inevitable component of all epistemological endeavors because we understand the world and our place in it as *people*; our ideas are substantiated by the collective perspectives from which they arise. That is precisely why an understanding of the past, not just of the major developments or failures of a given historical period but of both its intricacies and entirety, helps generate a fuller understanding of our present location(s) and possible future(s). The intricacies are important because they breathe life into inanimate objects of field research and voiceless words of ancient texts; they are the progenitors of context and revivers of reality. At the same time, these specifics work to substantiate the entirety, the general picture, of the time and location in question. They must be permitted to combine to tell us their story, thus pulling us into an experience of the past rather than a passive engagement in disconnected observation. Such details are essential to understanding the world-view of the people who enacted and experienced the events about which we read and learn. The humanity of their existence is not fully elucidated and our view of the past merely superficial and disjointed without a comprehension of what our predecessors thought about the world around them and their

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<sup>315</sup> Tillyard, *The Elizabethan World Picture*, 26.

place within it. It may be argued that to truly understand something is to experience it but when that is not possible we must try to see it through the eyes of those who did. It is in this frame of mind that the reality of the past and our connection to it rather than its mere antiquarian novelty is most likely to be recognized. This is the only way to see through the veil of otherness to the fact that, in the first millenium C.E., natural philosophy, magic, and religion were molding themselves into a patently Western worldview that would set the stage for, rather than merely provide the chronological link to, the intellectual renaissance of the high Middle Ages.

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