

Understanding the History of Astrology (and Magic) Accurately: Methodological Reflections on Terminology and Anachronism

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1. Introduction: Grinding New Conceptual Lenses

Understanding the history of astrology accurately as 20th- and 21st-century historians of science, philosophy, religion, politics and culture poses a complex range of challenges—conceptual and contextual—some of which will be explored in what follows. Many more will be explored in my soon to be forthcoming monograph, *Reframing the Scientific Revolution: Astrology, Magic and Natural Knowledge, ca. 1250-1800*, volume I of which, *Structures: 1250-1500*, will soon see the light of day.¹ The twenty some-odd years of

¹ This essay is very deliberately lightly footnoted. There should be enough information in the text to track down every relevant source. Otherwise, I give more specific information in the footnotes. Many of the references can also be found in my *Astrology*, in *The Cambridge History of Science, Vol. 3: Early Modern Science*, eds. L. Daston and K. Park, Cambridge, Cambridge University Press, 2006, pp. 541-61, and in my monograph.

working on this material has inspired these reflections and I sincerely hope that others will find them useful. The entire process has unfolded as a series of increasingly refined approximations, tacking back and forth between big picture issues and detailed treatments of particular people and institutions within their broader socio-political and religious contexts and structures, all of which require focused attention.

To grasp astrology accurately in its proper historical perspective, I have found that we should first identify and correct for two broader distorting modern biases drawn from a fundamentally anachronistic, yet still virtually ubiquitous understanding of astrology's complex range of places within the premodern map of knowledge. Since the various focuses of conceptual lenses seem mainly to be ground, as it were, on the basis of fundamental distinctions and disciplinary configurations, I will endeavor to replace these outdated historiographical lenses with new more accurate ones, ground in accordance with three fundamental premodern conceptual structures.

Before we can see more clearly, however, we must first remove the distorting older spectacles. To know both which lenses distort and how to properly grind new ones, we must be keenly aware of when we are using actors' categories and when we are imposing modern distinctions on the past. Getting the right focus is particularly difficult when past disciplinary configurations resonate strongly with modern assumptions and/or prejudices, which we then tend—usually unconsciously—to read back into the past. I hope

that the analysis adumbrated here and developed in detail in my monograph will provide a new more accurate prescription for use in future investigations, allowing us to see in sharper focus both the broader patterns and the many specific details of past conceptual and disciplinary structures related to the history of astrology. Therefore, close attention to the range of terminology and its respective conceptual referents will be a central concern in what follows.

2. Deconstruction

I will first simply—and proscriptively—identify two of the more problematic conceptual structures pervading the historiography that should be removed (or at least set aside) at the very beginning. First, a fundamentally anachronistic disciplinary configuration. In modern scholarship, astrology is almost always closely associated with the other so-called ‘occult sciences’, especially magic, alchemy and the kaballah, as we find it in numerous influential studies by (among others) Wayne Shumaker, Brian Vickers and Brian Copenhaver. This presumed configuration with the occult sciences is, although not entirely mistaken, deeply problematic conceptually—unless skillfully nuanced—when applied to astrology ca. 1250-1800. For similar reasons, the same applies for including astrology

within the Hermetic and/or Esoteric traditions as well.²

Whether called the Hermetic, Occult or Esoteric traditions, which are essentially progressive variations on a theme, the same strictures apply. Accurately historicizing these terms is required, but very difficult to achieve, especially if we are dealing with a broader audience or one of non-specialists, that is, most readers. At this point, my suggestion is to reject these overarching framing terms altogether, at least for the present, unless they are properly delimited and solidly historicized, as in the introduction to Daniel Stolzenberg’s recent *Egyptian Oedipus: Athanasius Kircher and the Secrets of Antiquity* (Chicago: University of Chicago Press, 2013).

In my view, our understanding is fundamentally compromised and/or distorted by predisposing it from the very beginning in a way that deeply influences and orients both a broad range of further assumptions and the related ‘natural’ questions to ask, especially when some sort of deeper unity (if not fundamental identity) among these disciplines is also assumed. This is particularly problematic when modern scholars begin by assuming—as in Keith Thomas’s classic *Religion and the Decline of Magic*—that astrology is somehow a part or subset of magic.

² Frances Yates coined the term <<Hermetic Tradition,>> which has since been severely criticized. Antoine Faivre, Wouter Hanegraaff and Kocku von Stuckrad are three of the most significant writers who have brought the “Esoteric Tradition” to prominence.

For now, we will simply not make any assumptions along these lines, highlighting astrology's configuration with other disciplines as a question to ask and historicize rather than an assumption to make *a priori*, based on our modern (or postmodern) map of knowledge with its characteristic conceptual and disciplinary structures. We should verify, refine or reject entirely this configuration of astrology with the 'occult sciences' based on both its accuracy and its related utility for characterizing the premodern map of knowledge. The first steps in reconstruction must be taken carefully, since the basic patterns established early on become a foundation for all that follows. To shift the metaphor again: as with conceptual lenses, each distortion tends to compound the next. To clarify these issues, I will explicitly discuss astrology's relationship to magic and divination by focusing on two paradigmatic practices in particular: [1] predicting the future (in relation to divination), and [2] making images or talismans (in relation to magic).

The second conceptual structure to be set aside and brought up for review is the equally pervasive historiographic distinction between 'natural' and 'judicial' astrology. Although this may end up being a useful distinction, we must first clarify what it actually means and trace its existence up to and beyond its modern use in Ephraim Chamber's *Cyclopedia* article "Astrology" of 1728 (162-63). By contrast, Francis Bacon did not use this distinction in his 1623 proposals for astrological reform in the *De augmentis sci-*

entiarum (III.4).³ We find it in a recognizable form, however, in Rule IX of the *Index of Prohibited Books* from 1564 on.

In normal premodern usage, all astrological predictions—whether relating to a person's nativity or revolution, the weather, medicine or political events—were called astrological *judgments* (*iudicia*), and thus in some real sense may be called 'judicial astrology'. We can see this as early as the 1260s in the *Speculum astronomiae*,⁴ but also in the work of Placido Titi, professor of astrology at the University of Pavia, who makes this very point (among others) in the mid-17th century.⁵ Likewise, astrology's causal 'naturalness' vis-à-vis its legitimacy (or otherwise) will also be discussed extensively in my monograph. In the meantime, we will set this distinction aside along with astrology's configuration among the occult sciences, removing them both (at least for the time being) from our interpretive frame-

³ FRANCIS BACON, *De augmentis scientiarum*, in *The Works of Francis Bacon*, ed. J. Spedding et al., 14 vols., London: Longmans, 1857-74; repr. Stuttgart, Frommann, 1963, 1: pp. 554-60.

⁴ *Secunda magna sapientia, quae similiter astronomia dicitur, est scientia iudiciorum astrorum* [...] III.2-3 in the text with translation printed in PAOLA ZAMBELLI, *The Speculum astronomiae and its Enigma: Astrology, Theology and Science in Albertus Magnus and his Contemporaries*, Dordrecht, Kluwer, 1992.

⁵ PLACIDO TITI, *Tocco di paragone*, ed. Giuseppe Bezza, Milan, Nuovi Orizzonti, 1992, ch. 6, «Il titolo di giudiziaria si conviene ad ogni scienza», pp. 50-54. The *Tocco di paragone* was originally published in Pavia in 1666. I discuss Titi in volume III of my monograph.

work in order to assess their value. They will not be missed, nor their consequent built-in confusions. By the end of volume II of my monograph, we will have a much better sense of their utility or otherwise.

3. Reconstruction

Having removed the old distorting spectacles and set them aside, the first step of reconstruction will begin by identifying and grinding the basic framing structures for new interpretive lenses as deeply informed by the three following fundamental distinctions and configurations. Not superimposed on the historical material by questionable modern understandings or misunderstandings, these structures, rather, derive from within the patterns of premodern natural knowledge. More accurately reflecting our premodern actors' conceptual categories, we may thus perceive them more accurately. This principle is at the core of my historicizing methodology, and will permit, I hope, a more accurate 'thick description' of the material in question. In my view, accurate descriptions of sufficient 'thickness' are utterly essential for accurate broader historical discussions.⁶ For now, I will simply indicate the basic conceptual framing structures in order to

⁶ As far as I know, Clifford Geertz coined the term «thick description» and used it to marvelous effect in many of his numerous writings. For a useful introduction, see his *The Interpretation of Cultures: Selected Essays*, New York, Basic Books, 1973.

properly orient what follows. The first will also require a digression on terminology and anachronism.

The first conceptual structure involves the most basic terminology, namely, the term 'astrology' itself, and concerns the utterly fundamental distinction between what we call 'astronomy' and 'astrology'. This fundamental conceptual distinction is found in what came to be its classic formulation in the first chapter of Ptolemy's foundational text for this entire tradition of 'scientific astrology', namely, the *Apotelesmatika*, *Tetrabiblos* or *Quadripartitum*, which was composed in the middle of the 2nd century C.E. and has had an extraordinarily influential international *Nachleben*. In brief (and to be refined), 'astronomy' (that is, mathematical astronomy, as opposed to physical astronomy) is concerned primarily with analyzing and predicting the *motions* of the luminaries (the sun and moon) and the planets, whereas 'astrology' treats their *influences* or *effects* on the earth itself, its atmosphere and inhabitants.

Ptolemy used the same overarching descriptive phrase to refer to both, namely, "foreknowledge through the science of the stars" ("prognostikon tes astronomias"). In fact, both of the terms *astronomia* and *astrologia*—in Latin, Greek and numerous vernaculars—were normally used interchangeably throughout the entire premodern period to refer to *both* of the intimately related but conceptually distinct parts of the overarching category «the science of the stars», which is how both 'astronomia' and 'astrologia' should usually be translated. We

distinguish them today (and have for some time now) as ‘astrology’ and ‘astronomy’ employing a distinctive terminology. This does not mean, however, that the premodern actors confused the disciplines because they used the same term to refer individually and collectively to both major parts, as is sometimes claimed in the scholarship. From Ptolemy on, the disciplinary distinction both conceptually and in practice was well understood.

The two other essential framing structures for our new conceptual spectacles derive from two disciplinary configurations, one of which situates astrology within the broader realm of natural knowledge; the other differentiates astrology’s practical dimension. In addition to revealing astrology’s normal locations within the premodern map of knowledge, the first disciplinary configuration also serves to situate astrology within one of its most important institutional locations, the premodern university, where it was studied, taught and passed down as ‘normal science’ in Europe from generation to generation for roughly 500 years from the 13th throughout the 17th century. As I have argued elsewhere, astrology was integrally configured within three fundamental scientific disciplines, namely, mathematics, natural philosophy and medicine, in which it was studied and taught at the finest European universities. We can see this clearly in the University of Bologna’s 1405 statutes and in much other corroborating evidence.

The third and final fundamental structure is the four types of astrological praxis: revolutions, nativities, elections and interroga-

tions. Revolutions were concerned with large-scale changes, including in the weather, the harvest and state affairs. This was a major feature of the annual prognostications found in almanacs and elsewhere, and included the doctrine of great conjunctions. Nativities, on the other hand, involved the astrological configuration at a person’s birth, and is thus related to issues involving fate. Interrogations entertained questions on a broad range of topics, including personal, medical and business affairs, for which the astrologer would erect a horoscope for the time the question was asked. Finally, elections determined the most favorable moment to begin an enterprise or perform an activity, such as crowning a ruler, passing the baton of command to a general, or laying the cornerstone of an important building, including Saint Peter’s in Rome or the Fortezza da Basso in Florence. Elections also included the controversial practice of making astrological images or talismans. These practices all required the erection and interpretation of horoscopes.

Finally, if we begin by importing a typical view of modern-day astrological thought and practice, we will also have started off on the wrong foot, introducing at the outset significant conceptual distortions, especially if we have in mind the sorts of low-level practices found in daily newspaper ‘horoscopes’, a 20th-century innovation. I also make a fundamental distinction between practical astrology and astrology’s natural philosophical foundations that is developed at length in my monograph. Both are fundamental to a complete understanding,

but to explore this here in its proper depth would take us too far afield⁷.

4. Terminology and Anachronism (1): Astrology and Astronomy

A crisp, clear and accurate grasp of terminology is essential to the success of my study. A central feature of what makes astrology in all its ramifications difficult to clearly understand for modern scholars is the complex interplay between [1] trying to understand the premodern material in its own terms, and [2] trying to understand, discuss and explain it in an accurate manner as a 21st-century historian. Both poles are crucial for a sound understanding: we need first to accurately understand the premodern terminology and related conceptual structures in their own terms, and then we must be able to communicate these structures accurately in a modern historically sound and conceptually clear idiom.

To engage with this question more deeply, we should examine one of the earliest and clearest terminological distinctions along modern lines, namely, that between astronomy and astrology. In the proem to his *Disputations against Divinatory Astrology* published in 1496, Giovanni Pico della Mirandola distinguished astronomy from as-

trolgy in order to preserve and protect astronomy by isolating and rejecting astrology. Here Pico stamped the traditional conceptual distinction with a clear and distinctive terminology, although he was not the first to do so. I should emphasize that Pico's construction of the two disciplines and their relationship also intended to afflict astrology with a profoundly negative evaluation that is also distinctively modern.

As already noted, both before and after Pico, the same terms—either *astronomia* or *astrologia*—were normally used interchangeably to refer to *both* parts of the science of the stars, what *we* differentiate terminologically as “astronomy” and “astrology,” and usually also (following Pico) with a negative valence for the latter. This situation raises some interesting issues (and tensions) concerning terminology and anachronism, and the importance of clarifying what our usage will be and why.

Confusion easily arises because the very same terms can be used in both modern and premodern contexts, but often with significantly (if not always starkly) different conceptual referents with their respective semantic fields. Thus, both modern and premodern usage, once identified and clarified, can more easily be sharpened and refined. Likewise, such awareness can also help us identify characteristically premodern terminological and conceptual structures, and thus trace how they remain continuous and/or transform over time in the complex long-term transition from premodern to modern and now postmodern usage. «Motion» and «mathematics» are two further in-

⁷ In the meantime, see my *Astrology and Magic*, in *A Companion to Albert the Great: Theology, Philosophy and the Sciences*, ed. I. M. Resnick, Leiden, Brill, 2013, pp. 451-505.

structive examples that are both particularly subject to inadvertent conceptual slippage due to what I like to call ‘interparadigmatic refraction’. The result is somewhat akin to walking on conceptual ice, some areas of which are thicker than others, but all of which are extremely slippery. I will discuss mathematics briefly below.

I would now like to introduce what I find to be a useful distinction regarding anachronism, namely, that between terminological and conceptual anachronism, which I will illustrate by exploring the term ‘astrology’ itself in relation to both its premodern and modern usages. The main goal is twofold: [1] to understand the premodern conceptual structures and their proper terminology, and [2] to agree on how we should talk about astrology in a historically and conceptually sound manner. If we can do this successfully with such fundamental concepts and terminology, we will then be on a much more solid footing. At the very least, we should energetically strive to be as conscious and explicit as possible about both terminological and conceptual issues.

The terminological issue arose for me pointedly in a recent correspondence with David Juste, an increasingly significant historian of medieval astrology. In a review of his superb recent book on the Alchandreana, I expressed strong reservations about calling the onomantic techniques articulated there ‘astrological’, preferring instead a descriptive circumlocution, such as «a numerologically-based type of divination with an astrologizing veneer». In the Alchandreana, a ‘horoscope’ is constructed based on the

numerological interpretation of a person’s name, which is then translated into recognizable astrological elements, for example, planets, signs and lunar nodes. Thus, numerology is the basis for the divinatory practice, not the location of actual planets in the heavens and their influence and effects on earth, which are for me the essential elements required for a practice to be called ‘astrological’ or ‘astrology’ proper.⁸

Juste countered my arguments by noting [1] that these authors themselves called their practice “astrology,” and [2] that these texts occur in company with other uncontroversially astrological texts. Thus, *my* usage is anachronistic, imposing my modern categories and definitions on the premodern material. Thinking these issues through inspired the distinction between conceptual and terminological anachronism, a prime example of which arises with the term “astrology” in itself, relating our normal contemporary usage to—and distinguishing it clearly from—Ptolemy’s classic formulation in *Tetrabiblos* I.1.

Nicolas Weill-Parot recently offered a valuable distinction between addressative (destinatif) and non-addressative magical (and other) practices.⁹ Although it is com-

⁸ DAVID JUSTE, *Les Alchandreana primitifs: Étude sur les plus anciens traités astrologiques latins d’origine arabe (Xe siècle)*, Leiden, Brill, 2007, reviewed in «Early Science and Medicine», XIII, 2008, pp. 507-9.

⁹ *Astral Magic and Intellectual Changes (Twelfth-Fifteenth Centuries): ‘Astrological Images’ and the Concept of ‘Addressative’ Magic*, in *The Metamorphosis of Magic from Late Antiquity to the Early Modern Period*,

posed entirely of modern terminology, it is still extremely useful because “addressative” refers in a value-neutral manner to practices directed toward any sentient being, whether angel or demon, daemon or spirit. Non-addressative practices, on the other hand, do not involve sentient beings. Weill-Parot notes that he coined the term precisely for its analytic value, fully recognizing that it is terminologically anachronistic. Thus he provides a modern terminological distinction to clarify a premodern conceptual distinction. Likewise, Brian P. Copenhaver’s prescriptive distinction between amulets and talismans is very useful, despite its self-conscious terminological anachronism.¹⁰ It is valuable precisely because it can clarify for us an important premodern conceptual distinction that did not also possess such a useful terminological distinction.

5. Terminology and Anachronism (2): Astrology, Mathematics and Magic

I will continue discussing terminology, now concerning astrology in relation to mathematics, magic and divination, a notoriously tricky but valuable undertaking. This issue is significant with respect, both, to fully grasping the historical material under

eds. J.N. Bremmer and J.R. Veenstra, Leuven, Peeters, 2002, pp. 167-87, esp. p. 169 ff.

¹⁰ *Scholastic Philosophy and Renaissance Magic in the De vita of Marsilio Ficino*, «Renaissance Quarterly», XXXVII, 1984, pp. 523-54 at p. 530.

consideration, and for straightening out and clarifying basic structures in the historiography.

In studying magic in relation to astrology, we must first ask what we as early 21st-century historians mean by these terms, which will inevitably inform our interpretation of what the premodern actors understood by them. Both must be carefully distinguished. In fact, the more conceptual space we can open up between *our* 20th and 21st-century configuration of the map of knowledge and *their* 13th- to 18th-century concepts and categories, problems and practices—and respective terminology—the sharper our ability to understand both astrology and magic will become. The main goal is to encourage and facilitate clarity, in large measure by minimizing conceptual slippage or muddiness, which, in any case, is not fully preventable. This is particularly tricky when we currently use the same terms that they did, and even moreso when there is significant conceptual overlap in the respective semantic fields, but also revealing and characteristic differences.

In the historiography, we throw around the terms “magic” and “astrology” as if we all know what we mean—and that we all mean the same things—by these simple sounding terms that refer to complex, multifold and richly historically-conditioned semantic fields. Furthermore, we often blithely call “magical” thought or behavior what our historical actors would strenuously object to having so described, as we will see just below in discussing Roger Bacon. Although Marsilio Ficino’s late 15th century *De vita* is often called a seminal text for Renaissance magic and its theoretical

or philosophical foundations, Ficino himself did not primarily represent it as such, but, rather, as both part of a medical text for the health of scholars and as a commentary on particular texts by Plotinus, the late antique Neoplatonist. Most premodern thinkers—at least in the 13th through 15th centuries—did not go out of their way to describe what they were doing as magic, which was normally used as a term of accusation and/or abuse, given that it was usually closely associated with demons, heretics and illegitimate superstitious practices of various sorts.¹¹

Giovanni Pico della Mirandola was a glaring counterexample for the late 15th century with his enthusiastic promotion of what he explicitly called «natural magic» in his *Oratio, Conclusiones* and *Apologia* of 1486-87. Although we would call part of what Ficino discusses ‘magic’, namely, his treatment of images or talismans, he rarely does; and when he does, he almost always does so in an evasive manner. One of Ficino’s tactics is to always retain ‘deniability’, particularly by using the apotropaic motto, “I describe, I do not approve” (*narro non probo*), in relation to talismans.

The upshot is that we need to be acutely sensitive to both the significant and the subtle differences in our historical actors’ thought—both to the terminology and to the underlying conceptual content and structures—even (and especially) if we are considering more than

one person who wrote and acted in the same historical milieu. The fewer unexamined assumptions we import, the more likely we are to see the historical material more accurately and in sharper focus. In the rest of this essay, I will illustrate the general point by briefly discussing a few relevant cases where our 20th- and 21st-century terminology and conceptual referents relate complexly—and sometimes problematically—with premodern usage.

As a first approach, we should clarify the complex semantic fields of what we call astrology and magic. Then we can more crisply and soundly approach the historical material and thus compare and refine our definitions. Even such a basic question as what we mean when we use the terms ‘astrology’ and ‘magic’ is not particularly clear, and it is rarely consistent between scholars, as we can amply see in the historiography. We need to reconstruct these relationships in their own terms, concepts and practices—and as particularized by individual writers—and to stop projecting our contemporary distinctions and constructions onto the past, at least as much as this is possible.

A useful focus related to both astrology and magic is ‘mathematics’, where both contemporary scholars and our premodern actors often use the same (or a closely related) term to refer to what is in many respects an intimately related, but also a significantly different conceptual field, albeit with much overlap. In the premodern period, mathematics (or the *quadrivium*) referred to the four main mathematical arts: arithmetic, geometry, *astronomia* and music. Although we do not normally think of music as a mathematical art, anyone who has studied music theory even superficially knows

¹¹ The classic study is Dieter Harmening, *Superstitio: Überlieferungs- und theoriegeschichtliche Untersuchungen zu kirchlich-theologischen Aberglaubensliteratur des Mittelalters*, Berlin, E. Schmidt, 1979.

well that there is a significant mathematical component.

But when *we* think of mathematics, we would not naturally think of ‘astrology’ in any respect as part of its semantic field. Nevertheless, this was the case in the premodern map of knowledge, and it was institutionalized in medieval and early modern university education, where astrology was taught as a normal part of the scientific curriculum in three distinct disciplines: [1] in the mathematic’s course, which was called alternately «*mathematica*», «*astronomia*» or «*astrologia*», as the sister science of the stars along with mathematical astronomy. It was also taught [2] in the natural philosophy course, with core texts by Aristotle, and [3] in the medical course, with core texts by Galen. It is also well known that astrologers were often referred to simply as «*mathematici*», even in antiquity. Thus, the similarity of terminology without a clear historical understanding can easily lead to significant conceptual slippage with its resultant confusions.

6. Roger Bacon on Mathematics, Astrology and Magic

Next I would like to briefly describe the terminological and conceptual nexus in Roger Bacon’s *Opus maius* of the mid-1260s and related texts concerning his use of what we would call astrology and magic, beginning with his fundamental distinction between what he

calls true and false mathematics (*vera et falsa mathematica* or *mathesis*).¹² For Roger, true mathematics embraces astrology as a legitimate mode of knowledge and practice, for which he also provides his famous geometrical-optical analysis of celestial influences as its natural philosophical foundations. For Roger, true astrological mathematics has significant benefits both for individual human beings (including in medicine) and for the Church overall. Roger is also careful to argue that true astrology does not impinge on human free will or imply necessity in nature, both of which, by contrast, he explicitly characterizes as a part of false magical astrology.

Roger associates this bad astrology—explicitly called ‘magic’ or ‘magical’—with false mathematics. In fact, this illegitimate astrology is one of the five types of what Roger calls magic (pp. 239, 24–240, 8): [i] «*mantike*», which is divination; [ii] mathematics, which is astrology with predictive certainty, and thus the undermining of free will; [iii] «*maleficium*», which deliberately does or intends harm; [iv] «*praestigium*», which makes illusions, optical and otherwise; and [v] «*sortilegia*», the casting of lots, which is often misleadingly translated as sorcery. In this configuration, Roger follows Hugh of St Victor.

Furthermore, Roger offers another fundamental distinction within this same conceptual nexus, that between what we

¹² The main texts are *Opus maius*, book IV (Bridges ed., vol. 1), and Bacon’s edition of the pseudo-Aristotelian *Secret of Secrets*.

might transliterate as judicial vs. operative astronomy («*astronomia iudiciaria et operativa*»), which is very different than our normal but problematic distinction between natural and judicial astrology (*Sec. sec.*, ed. Steele, p. 3, 1-3). It also relates closely to what *we* call astrology and magic. First Roger discusses the four branches of true mathematics: arithmetic, geometry, «*astrologia*» and music. Then he explicitly subdivides what *he* calls «*astrologia*» into «*astronomia iudiciaria et operativa*». «*Astronomia iudiciaria*» (which we should refrain from simply translating as ‘judicial astrology’, at least in the first instance) refers to knowledge-based astrological practices deriving from its four canonical types, namely, revolutions, nativities, interrogations and elections. It is primarily concerned with the making of astrological interpretations or ‘judgments’.

‘Operative’ astrology («*astronomia operativa*»), on the other hand, concerns operating, doing or acting by means of the science of the stars. Elsewhere, Roger further divides operative astrology into two main parts, namely, those dealing with what he calls the words and works of wisdom («*verba et opera sapientiae*»), with the latter (i.e. the *opera*) referring specifically to talismans, which Roger (and others) call «*imagines*». The former refer to the words and their power uttered in various contexts, including in relation to talismans to increase their potency. Both are performed in relation to astrological timing or elections, of which «*imagines*» are an explicit sub-part.

7. Thomas Aquinas on Astrology and Divination

I would also like to briefly introduce the configuration of knowledge and practice in Thomas Aquinas, who distinguishes sharply between legitimate astrology and illegitimate divination, even though *we* often call astrology a type of divination, since they are both concerned with predicting the future. Thomas’s distinction concerning knowledge and praxis in *Summa theologiae* II.^a II.,^{ae} Questions 92 to 96 (composed around 1270) relates directly to Roger’s last distinction between «*astronomia iudiciaria*» and «*operativa*», although Thomas does not use this terminology.

The knowledge part discussed in Questions 92 to 95 concerns astrology and divination with respect to legitimate and illegitimate techniques for foreknowing and predicting what will certainly or likely happen in the future. Because they rely on causal knowledge, Thomas considers both of what we call astronomy and astrology to be legitimate. Astronomy admits certain knowledge and astrology conjectural, or what we would call probable knowledge. Although Thomas refers to each separately as «*astronomia*», he clearly distinguishes each conceptually and in practice. Neither should be called divination, he emphasizes, which does not make predictions based on causal knowledge, but instead relies on demons. He enumerates several examples, including augury and pyromancy.

With legitimate and illegitimate practices for foreknowing and predicting the future thus differentiated, and with astrology characterized as legitimate, Thomas turns to talismans («*imagines astronomicae*») in Question 96, which he in no way considers legitimate, except insofar as their matter has its own elemental qualities and virtues. Thomas's rejection of talismans also relates to the significantly different but closely related contemporary analyses in Albertus Magnus's authentic works and in the deliberately anonymous and most likely pseudonymous *Speculum astronomiae*.¹³ Nevertheless, Thomas's, Albert's and the *Speculum astronomiae*'s analyses—as well as Roger Bacon's—are all articulated within the same framework of natural vs. demonic action or causation. This is a fundamental distinction for determining a practice's legitimacy or otherwise, as is the protection of free will vis-à-vis the certainty of prediction, and the resultant implications for necessity in nature. In fact, Roger Bacon, Thomas Aquinas, Albertus Magnus and the author of the *Speculum astronomiae* all embrace astrology as a legitimate mode of knowledge if practiced within these bounds. We can now see more

¹³ I discuss Albert and the *Speculum* more fully in my *Astrology and Magic*, in *A Companion to Albert the Great: Theology, Philosophy and the Sciences*, ed. I.M. Resnick, Leiden, Brill, 2013, pp. 451-505. For an extraordinarily insightful and thorough study on talismans in the medieval period, see NICOLAS WEILL-PAROT, *Les «images astrologiques» au Moyen Âge et à la Renaissance: Spéculations intellectuelles et pratiques magiques (XIIe-XVe siècle)*, Paris, Honoré Champion, 2002.

clearly that a close attention to terminology and its conceptual referents concerning both modern scholarly and our premodern actors' usage is crucial for attaining an accurate historical understanding of astrology, magic and divination.

8. Conclusion: Astrology vis-à-vis Magic and Divination.

These issues of terminological and conceptual anachronism are thus central to both an accurate understanding of the premodern material and to a scholarly discussion thereof that is as clear and accurate as possible. To further complicate matters, I have found that individual thinkers—even in the same place at the same time—can have significantly different views on the very same subjects, as one finds in both the 13th- and 15th-century figures discussed so far. This is as much the case for the deeply influential writings of Albertus Magnus and his most famous student, Thomas Aquinas, in the 13th century as it is for Marsilio Ficino and Giovanni Pico della Mirandola in the 15th. Thus we should always try to 'localize' our interpretations, first, in an individual thinker's writings, and then in comparison with others. Only then will we have a properly thick and accurate terminological and conceptual basis to accurately trace trends and make comparisons over broader periods of time.

Although it is highly unfortunate, I have repeatedly found in the current state of scholarship that one should assume—

especially when treating both astrology and magic (either individually or in relation to each other)—that very little of the historiography is fully reliable (with a handful of notable exceptions). Therefore, all statements and especially broader conclusions need to be checked against the evidence from primary sources, thus allowing us to build interpretations on more solid foundations. Towards this end, I encourage the practice of thick description with its concomitant extensive citation and translation of primary sources as being much more valuable than the normal practice of summaries, however incisive they may be. Being able to accessibly evaluate an interpretation is essential at this stage of the historiography of both astrology and magic, and thus also of their relationship.

The upshot of this methodological discussion is that I attempt in all three volumes of my monograph to accurately grasp how a range of influential thinkers in the 13th through 18th centuries understood and used, developed and reformed, criticized and/or rejected astrology and its natural philosophical foundations in their various contexts: conceptual, institutional, religious, socio-political and cultural. I am emphatically *not* trying to understand what they thought about what *we* think astrology is (obviously!—but it still needs to be said); rather, to learn from them what *they* thought it was and how it worked. Thus, we first need to reconstruct their views as accurately as possible and as fully as necessary (or possible) in order to attain an adequate understanding.

In other words, the texts we possess are the best approximations we have to anthropological informants, since the past is indeed a foreign country. On the basis of their ‘reports’, I offer in my monograph a reasonably thick description of premodern concepts, categories and practices relevant to our historical actors’ views on astrology and magic. To this end, I focus in volumes I and II on two primary issues: [1] predicting the future (concerning knowledge and divination), and [2] making talismans (concerning operations and magic) at two significant historical “moments”: [1] 1250 to 1280 (vol. I), and [2] 1480 to 1500 (vol. II).

Fortunately, we possess many texts in which the premodern actors tell themselves or each other—and thereby tell us—what they themselves were thinking. These circumstances strongly encourage the readers of this essay and/or my monograph to set aside as far as possible his or her ‘knowledge’—including assumptions, visceral reactions, sympathies and antipathies—of what *we* think about astrology in the early 21st century within our post-Newtonian and post-Einsteinian mental universes and, in an open-minded leap of historical imagination, try to understand what smart people in the past (in the West) thought about astrology and its natural philosophical foundations within *their* premodern, fundamentally Aristotelian, Ptolemaic and Galenic mental world.