

2004

‘Trei poëte, sages dotors, qui mout sorent di nigromance’: Knowledge and Automata in Twelfth-Century French Literature,

Elly Truitt

Bryn Mawr College, etruitt@brynmawr.edu

[Let us know how access to this document benefits you.](#)

Follow this and additional works at: http://repository.brynmawr.edu/history_pubs



Part of the [History Commons](#)

Custom Citation

Truitt, Elly R. 2004 ‘Trei poëte, sages dotors, qui mout sorent di nigromance’: Knowledge and Automata in Twelfth-Century French Literature, *Configurations* 12.2 (Spring 2004): 167-193.

This paper is posted at Scholarship, Research, and Creative Work at Bryn Mawr College. http://repository.brynmawr.edu/history_pubs/26

For more information, please contact repository@brynmawr.edu.

**“Trei poëte, sages dotors, qui
mout sorent di nigromance”:
Knowledge and Automata in
Twelfth-Century French Literature**

E. R. Truitt
Harvard University

A war hero, after being injured in battle, is taken to recuperate in an enormous chamber of unparalleled splendor. Made of alabaster, adorned with precious gems and stones, peopled with noble representatives of an aristocratic court, the chamber also boasts some of the most wondrous marvels ever seen by man. There are four pillars, one in each corner of the room, arranged by “three poets, learned teachers, who were well-versed in the knowledge of necromancy [*Trei poëte, sages dotors, qui mout sorent di nigromance*] . . . so that on each there was a figure of great beauty, cast in metal. The two most beautiful were in the form of maidens; the other two, of youths, no man had looked upon more beautiful.”¹

The war hero is Hector, and his sickroom—known as the *Chambre des Beautés* or Alabaster Chamber—and the four metal people are found in Benoît de Sainte-Maure’s *Roman de Troie* (c. 1165). One of the maidens holds up a mirror to the inhabitants of the chamber so that they may see a true reflection of their appearance, while the second maiden, an acrobat, performs gymnastics and conjures up other automata. One of the youths plays music and replaces the flowers in the chamber twice a day. The second youth, in addition to carrying a censer filled with aromatic gums and spices that ease pain and cure

1. Benoît de Sainte-Maure, *Le roman de Troie*, ed. Léopold Constans, Publications de la Société des anciens textes français, 6 vols. (Paris: Firmin-Didot, 1904–12), lines 14657–14680. (Unless otherwise noted, all translations in this paper are my own.)

disease, secretly conveys to the people in the chamber ways in which their manner is or is not suitable to a courtly society.²

What is more remarkable than the presence of these metal people in this romance is the fact that automata in human form were found frequently in the pages of twelfth-century French romances—copper knights and damsels, golden archers, children, and guardians of tombs. The early twelfth-century *chanson de geste* *Le voyage de Charlemagne* contains a description of the emperor of Constantinople's palace, upon which two golden children blow ivory horns and laugh in a lifelike manner when the wind blows.³ In *Le roman d'Eneas*, written around 1160, a metal archer ensures that the sanctity of Camille's mausoleum remains inviolate.⁴ Another mid-twelfth-century romance, *Le conte de Floire et Blancheflor*, mentions the speaking, moving statues of the eponymous lovers erected on Blancheflor's mock tomb.⁵ The *Roman d'Alexandre*, completed around 1180, features two golden youths, made by augury (*par augure*) and enchantment (*enchantement*),⁶ armed with maces, guarding a drawbridge. In addition, two copper boys, armed with shields and pikes and made by enchantment (*enchant*) guard the tomb of the emir of Babylon.⁷ The First Continuation of Chrétien's *Perceval*, completed in the first decade of the thirteenth century, has two figures guarding the tent of Alardin, an "Eastern" potentate, who can discern knight from churl and maiden from nonvirgin, and then bar the entrances of the latter to the tent.⁸ Furthermore, in the early

2. *Ibid.*, lines 14631–14936.

3. *Le voyage de Charlemagne*, ed. and trans. Jean-Louis Picherit (Birmingham, Ala.: Summa Publications, 1984), lines 351–361. These figures are reminiscent of the *Salvatio Romae*, in which an automaton sounds an alarm whenever a province of the Empire is threatened, and then points in the direction of the threat. See John Webster Spargo, *Virgil the Necromancer* (Cambridge, Mass.: Harvard University Press, 1934), pp. 37–41. For an account of the derivation and narrative function of the automata in *Le voyage de Charlemagne*, see Patricia Tannoy, "De la technique à la magie: Enjeux des automates dans *Le Voyage de Charlemagne à Jerusalem et à Constantinople*," in *Le merveilleux et la magie dans la littérature*, ed. Gérard Chandès (Amsterdam: Rodopi, 1992), pp. 227–252.

4. *Le roman d'Eneas*, ed. J. J. Salverda de Grave, 2 vols. (Paris: Champion, 1925–29), lines 7531–7724.

5. *Le conte de Floire et Blancheflor*, ed. Jean-Luc Leclanche (Paris: Champion, 1983), lines 597–604.

6. Alexandre de Paris, *Le roman d'Alexandre* (Paris: Livre de Poche, 1994), lines 3391–3421.

7. *Ibid.*, lines 7178–7183.

8. *Perceval le Gallois*, ed. Charles Potvin, 6 vols. in 3 (Geneva: Slatkine Reprints, 1977), vol. 3, lines 13352–13372.

thirteenth-century prose cycle *Lancelot do lac* the hero must defeat two copper knights, and must obtain from a copper damsel the keys of the enchantment over the fortress Doloreuse Garde.⁹

Nor are metal people to be found only in the pages of literature. William of Malmesbury, in his twelfth-century Latin account of the kings of England, told the story of Gerbert of Aurillac, later Pope Sylvester II (999–1003), and his discovery of an underground treasure hoard from antiquity. Gaining access to the catacombs by using the “familiar arts of necromancy,” Gerbert and his servant found a golden palace in which “golden knights seemed to be diverting themselves with golden dice, a king and queen of precious metal reclining, with their dishes in front of them and their servants attending them; plates of great weight and price, in which craftsmanship surpassed nature [*ubi naturam vincebat opus*].”¹⁰ When Gerbert’s servant tried to steal a knife, “all the figures leapt to their feet with a roar and the boy shot his arrow into the carbuncle and plunged everything into darkness.”¹¹ Quickly replacing the knife, Gerbert and his servant managed to escape the palace unscathed, but with their cupidity unslaked.

The works I have just noted form by no means the entire corpus of medieval romances and historical narratives in which human automata are mentioned, but this gives an indication of the scope of the presence of such figures in narrative texts.¹² Yet despite the fairly common placement of metal people in twelfth- and early thirteenth-century texts, actual automata were quite rare in Europe during this period. They were, however, much more common in areas under Muslim control and in the Byzantine Empire. The twelfth and early thirteenth centuries saw an influx of texts and artifacts from the Dar

9. *Lancelot do lac*, ed. Elspeth Kennedy, 2 vols. (Oxford: Clarendon Press, 1980), vol. 1, pp. 183, 249–250.

10. William of Malmesbury, *De gestis regum Anglorum libri quinque*, II, 169, ed. J. P. Migne, *Patrologia cursus completus, Series Latina* (Paris, 1862), p. 179, col. 1141. (There is also available an English translation of the whole work, edited and translated by R. A. B. Mynors, completed by R. M. Thompson and M. Winterbottom [Oxford: Clarendon Press, 1998]).

11. *Ibid.*

12. There are some important and helpful catalogues of human automata in medieval literature, sometimes containing extensive quotes: see Otto Söhring, “Werke bildender Kunst in altfranzösischen Epen,” *Romanische Forschungen* 12 (1900), esp. pp. 590–598; James Douglas Bruce, “Human Automata in Classical Tradition and Medieval Romance,” *Modern Philology* 10 (1912–13), esp. pp. 515–526; Edmond Faral, “Le merveilleux et ses sources dans les descriptions des romans français du XIIe siècle,” in *idem, Recherches sur les sources latines des contes et romans courtois du Moyen Age* (Paris: Champion, 1913), pp. 307–388.

al-Islam and the Byzantine Empire into Western Europe—both previously unknown works of ancient philosophers and early Christian writers, and also more recent commentary by Muslim and Jewish scholars. Mainly dealing with philosophy, medicine, and science, these previously unknown writings helped to introduce the Latin West to scientific and technological ideas that had been previously unknown. The actual production of automata did not become common in Europe until the very end of the thirteenth century, due in part to the invention of the mechanical escapement and the more widespread use of toothed gears. I have chosen to focus my study on the period when automata were becoming more widely known in intellectual and courtly communities but when the ability to make them was not yet developed, because of the interesting epistemological questions this disjunction raises.

I focus on twelfth- and early thirteenth-century French literature due to the many examples of human automata that these texts provide. I am limiting my inquiry to metal people for several reasons: Oracular brazen heads are known in this literature, but are sufficiently different ontologically from moving metal people that to include them in this study would be unnecessarily confusing. Artificial humans made by alchemical means, such as homunculi, are fairly unknown in these texts. And mechanical mirabilia and effigies, while fascinating, were not very common in the twelfth century, due to technological constraints; they become much more common by the end of the thirteenth century in Europe.¹³

13. Alfred Chapuis, Edmond Droz, and Édouard Gelis have written several books on the history of automata from a horological perspective. See Alfred Chapuis, *Les automates dans les oeuvres d'imagination* (Neuchâtel: Griffon, 1947); Alfred Chapuis and Edmond Droz, *Les automates, figures artificielles d'hommes et d'animaux* (Neuchâtel: Griffon, 1949); Alfred Chapuis and Édouard Gelis, *Le monde des automates: Étude historique et technique* (1928; reprint Geneva: Slatkine, 1984). On the link between automata and magic, see Merriam Sherwood, "Magic and Mechanics in Medieval Fiction," *Studies in Philology* 44 (1947): 567–592; William Eamon, "Technology and Magic in the Late Middle Ages and the Renaissance," *Janus* 70 (1983): 171–212. For work on automata within the general context of the technological imaginary, see John Cohen, *Human Robots in Myth and Science* (London: Allen and Unwin, 1966); Derek J. de Solla Price, "Automata and the Origins of Mechanism," *Technology and Culture* 5 (1964): 9–23. By far the most work on automata has been done on specific literary texts; see, e.g., Tannoy, "De la technique à la magie" (above, n. 3), which focuses on a close reading of two *laissez* or groups of verses, and provides a valuable account of the function of the automata as signifiers of power and princely dominion. A similar conclusion is also reached, although within the context of the Orientalism of automata, in Huguette Legros's "Connaissance, réception et perceptions des automates orientaux au XIIIe siècle," in Chandès, *Le merveilleux* (above, n. 3), pp. 103–130. See also Penny Sullivan, "Medieval Automata: The 'Chambre des Beautés' in Benoît's *Roman de Troie*," *Romance Studies* 6

My own interests center on the representation of the knowledge needed to make human automata. What are the requisite knowledge and skills, and how do the descriptions of this knowledge in the works in which automata appear reveal the porous boundaries between legitimate and illegitimate knowledge, and between theoretical and practical knowledge? The creation of human automata, albeit imaginary, is entwined with competing types of knowledge and a self-conscious interrogation by philosophers and poets of the legitimacy of mimetic representation and the methods used to represent nature. Both the representations of knowledge and the knowledge of representation are embodied by the fictional automata and their fictional creators. The automata and their makers represent legitimate knowledge used to advance intellectually and morally acceptable ideas, while simultaneously signifying morally and religiously illicit pursuits, illegitimate knowledge, and trafficking with the Devil. Yet they intimate something else—that these categories were unstable and contested, while at the same time drawing attention to their existence.

The presence of metal people in both romances and historical narratives suggests a growing fascination with them as objects of wonder and of many kinds of power. Furthermore, the placement of automata in romances in particular leads to questions that require a consideration of the functions, the audiences, and the authors of romances. Tales of deeds recounted in a past heroic age in chansons de geste, sung or recited by jongleurs and troubadours, were gradually conjoined with a renewed interest in rhetoric, grammar, and the arts of versification, to form the genre of romance.¹⁴ Romances were fre-

(1985): 1–20, which contains an appendix with a complete translation of the episode in the Alabaster Chamber. Arthur Dickson, *Valentine et Orson* (New York: Columbia University Press, 1929), esp. pp. 195–199, discusses the link between demons and automata in a few romances, albeit briefly. For a typology of automata within the context of wonders, see Lorraine Daston and Katharine Park, *Wonders and the Order of Nature, 1150–1750* (New York: Zone, 1998), esp. pp. 88–108. An interesting encyclopedic entry discussing automata in the context of art, though not with a specifically medieval focus, is “Mensch, der Künstliche,” in Elisabeth Frenzel, *Motive der Weltliteratur: Ein Lexikon dichtungsgeschichtlicher Längsschnitte* (Stuttgart: Kröner, 1988), pp. 511–522, esp. pp. 513–514.

14. Douglas Kelly has written several invaluable books on the development of the genre of romance, as well as on medieval French romance in particular. See Douglas Kelly, *The Art of Medieval French Romance* (Madison: University of Wisconsin Press, 1992), for an account of the development of the genre as a whole, and the self-consciousness of the authors. A good introduction to the genre is Bernard O’Donoghue, *The Courtly Love Tradition* (Manchester: University of Manchester Press, 1982). A more detailed genealogy of the roots of romance within the classical tradition of love-poetry and the development of romance is Peter Allen, *The Art of Love: Amatory Fiction from Ovid to The Romance of the Rose* (Philadelphia: University of Pennsylvania Press, 1992).

quently written in the vernacular, and the audience was a mirror of the subject matter: courtly society. As such, much of the audience was from the fairly well-educated (if not always literate) nobility. The patrons of writers of romances were powerful, rich, and of the highest echelons of lay society. The authors of romances thus practiced their art for the lay elite of medieval society, in courts where the economy of patronage might reward talent and efforts. They wrote to foster the ideals and ambitions of their aristocratic audience, while presumably trying to satisfy their own artistic and professional desires.¹⁵ The creation of fictional human automata was a kind of interrogation by poets of the legitimacy of their own enterprise. As creators of imaginary, mimetic worlds, intended to surpass in splendor, wealth, wonder, and courtliness the world that the poets and their audiences inhabited, the fictional automata become an instrument of self-fashioning on the part of the poets.

Narrative Functions of Human Automata

Throughout the romances, automata are found at liminal spaces—thresholds, bridges, or tombs. Their functions are surveillance and discipline, which signal not only the liminal status of the automata themselves, but also the ways in which they enforce boundaries of epistemological legitimacy and morality. In several instances, as in *Eneas*, *Floire et Blancheflor*, and *Le roman d'Alexandre*, they guard a tomb.¹⁶ Similarly, in William of Malmesbury's account and in *Lancelot*, the automata are in an underground vault or palace.¹⁷ The placement of automata as guardians of the dead or in underground caverns accessible only through the magic arts reflects their ties to necromancy. Furthermore, by guarding spaces consecrated to the dead and enforcing the inviolability of tombs, they ensure that certain moral and religious values and rules are upheld—for example, the idea that the resting places of the dead should not

15. Kelly, *Medieval French Romance* (above, n. 14), p. 13. For more on the patronage of authors of romances, see Karl J. Holzknecht, *Literary Patronage in the Middle Ages* (Philadelphia: University of Pennsylvania Press, 1923). For an interesting and thoughtful account of the historical context of the development of romance as a genre, especially as compared to changes in the medieval religious landscape, see R. W. Southern, *The Making of the Middle Ages* (New Haven, Conn.: Yale University Press, 1953), pp. 219–258.

16. *Eneas* (above, n. 4), lines 7531–7724; *Floire et Blancheflor* (above, n. 5), lines 597–604; *Roman d'Alexandre* (above, n. 6), lines 7178–7183.

17. *Lancelot* (above, n. 9), vol. 1, pp. 249–250; William of Malmesbury, *De gestis regum* (above, n. 10), II, 169.

be desecrated, disrupted, or robbed.¹⁸ The metal guardians of tombs, castles, enchanted fortresses, and bridges point to a larger function that automata served within the narratives: the enforcement and discipline of behavior. Guarding a space is one kind of discipline, one in which moral or religious ideas and norms are enforced. Automata guard the resting-places of the dead, just as the two golden boys at the drawbridge in the *Roman d'Alexandre* and the two copper knights in *Lancelot's* Doloreuse Garde guard against intruders.¹⁹ The placement of automata at liminal spaces emphasizes the distinction between "inside" and "outside," as exemplified by the automata guarding Alardin's tent in *Perceval*, and delineate courtly from uncourtly; it also asserts their status as monsters, outside what they guard or enforce. They are neither noble nor churl, made by magic and art, lifelike in appearance and behavior but not alive.

Perhaps the most striking examples of automata enforcing moral, social, and aesthetic codes of behavior are the four figures in the *Chambre des Beautés* mentioned earlier. Courtiers are encouraged to correct their outward appearance by one of the metal maidens, making sure that their hair, brooches, and clothing are all properly fitted—thereby conforming to aesthetic standards and gaining the added benefits of self-confidence and the avoidance of mockery:

They would look at their reflection and immediately know of what was unpleasant in their dress; in no time they could put things to rights and arrange their apparel more attractively. Immediately, and without being deceived, young maidens could see if their mantle or cloak or wimple or brooch suited them. This was for good . . . for they were more sure and less anxiously because of it. People were hardly ever mocked or accused of behaving boorishly.²⁰

The second maiden holds her audience literally captive with acrobatic feats and conjuring, preventing them from leaving the chamber prematurely and offending their hosts:

All day long she entertained and leapt and gamboled and danced and capered on top of the pillar, so high up that it is a marvel that she did not fall. At frequent intervals she would sit down and catch four knives. She would perform

18. See *Eneas* (above, n. 4), lines 7531–7724, for a description of a metal archer. *Le roman d'Alexandre* (above, n. 6), contains descriptions of two copper youths guarding the sepulchre of the emir of Babylon: "They both held shields of gold that were very heavy and they exchanged blows with their iron pikes, like two champions they faced each other. After the authors of the enchantment had departed, nothing living was to penetrate the tomb" (lines 7176–7182).

19. *Roman d'Alexandre*, lines 3396–3400; *Lancelot* (above, n. 9), p. 249.

20. *Roman de Troie* (above, n. 1), lines 14681–14710.

a hundred different wonderful tricks seven or eight times a day. . . . She would conjure marvels on everything one could imagine—battles between bears and wild boars, gryphons, tigers, lions; goshawks and falcons and other birds in flight; the games that maidens and young girls play; meetings and ambushes, battles, treasons; ships sailing on the high seas; all the fishes of the ocean; battles of champions; grotesque horned men; flying snakes, hideous; demons and perilous monsters. . . . It is a marvel to behold, for none know what happens to the tricks after the performances. Whoever cast and conceived of the figure was knowledgeable of the arts of the heavens. . . . It is difficult for anyone to leave the Chamber while the image is conjuring tricks, as it stands on the pillar.²¹

One of the metal youths, “most carefully formed,” plays music

so sweetly that no one could listen to it or hear it and be in low spirits or be in pain. People there are not gripped by foolish ideas, unpleasant thoughts, or ridiculous desires. The music is of great benefit to the listeners, for they can talk loudly, and none can overhear. This agrees well with most of them, for they can speak of love-affairs and other secrets when they do not wish to be heard.²²

Through the aesthetically pleasing vehicle of music, the denizens of the chamber are disciplined against a lack of compassion and fellowship toward their fellow-inhabitants.

Lastly, the second male automaton

served the most valuable purpose: it would watch each person in the chamber and by means of signs, convey to them what they ought to do and what was most necessary for them: it would apprise them of these things without other people perceiving it. . . . What it showed was truly secret: none else could know it, not I nor anyone else other than the person it was meant for. . . . None could be in the chamber any longer than he ought to be; the figure could demonstrate well when it was time to leave, and when it was too soon, and when it was too late. . . . It capably prevented from being annoying, uncourtly, or rash all those who were in the chamber, and all who entered or left it: It was not possible to be foolish or uncouth or irresponsible because the figure, with great cunning, guarded all against uncourtly behavior.²³

In addition to watching the courtiers in the Alabaster Chamber, this figure

held in its hand a censer made from a single large topaz, clear and costly, with finely engraved chains woven with gold wire. The censer was filled with spirit

21. *Ibid.*, lines 14711–14758.

22. *Ibid.*, lines 14759–14804.

23. *Ibid.*, lines 14863–14905.

gums that are discussed in the book of Medicine. . . . The gums, once heated, give off a beautiful odor—under the sky there is no one could smell it and be deceitful or have foolish ideas. The smell has spiritual qualities, for there is no illness nor pain that is incurable, once you smell it.²⁴

Automata, in this instance, are defenders both of courts and of courtly behavior, simultaneously enforcing and enacting perfectly disciplined behavior in the moral and aesthetic realms. At the same time, these four automata are an analogue for the courtier, especially the courtier-poet: they are unobtrusive, servile, graceful creatures, effortlessly entertaining and educating their audience while also promoting and protecting intellectual, moral, aesthetic, and behavioral ideals.

Suspected Wonders: Automata of the “East”

The automata and the atmosphere of admiration, marvel, and suspicion surrounding them and their creators is echoed in references to the East, the locus of wonder and denigration. The introduction of the exotic, Eastern “other” not only acts as a narrative hook to captivate the audience but also conjures up images of necromancy, artisanal skill, technological advances, luxury, and moral and religious corruption. The idea of the East—in its incarnation of the Byzantine Empire, the Islamic world, or the ancient pagan world—as a place of marvels, and specifically automata, was not new in the twelfth century. According to the *Annals* of Einhard, in 807 Charlemagne had received from the “King of Persia” (Harun al-Rashid) a gift of a water clock adorned with metal horsemen and gilded birds that marked the passing of the hours.²⁵ Liudprand of Cremona, in his account of his embassy to Constantinople in 946, wrote of the Throne of Solomon at the palace of Magnaura: it featured gilded birds that sang, and gilded lions that roared and “beat the ground with their tails”; furthermore, the throne whizzed up to the ceiling with the emperor still seated upon it while Liudprand made his obeisance.²⁶ This association continues into the twelfth century. *Le voyage de Charlemagne* mentions two metal children atop the palace of the emperor of Constantinople. The romans d’antiq-

24. Ibid., lines 14906–14936.

25. Einhard, *Annals*, ed. A. Teulet, Société de l’Histoire de France, 2 vols. (Paris, 1840–43), vol. 1, p. 271.

26. Liudprand of Cremona, *The Embassy to Constantinople and Other Writings*, trans. John Julius Norwich (London: Everyman, 1993), p. 153. See also Gerard Brett, “The Automata in the Byzantine ‘Throne of Solomon,’” *Speculum* 29 (1954): 477–488.

uité *Eneas*, the *Roman de Thèbes*, and the *Roman de Troie* all deal with idealized visions of the ancient Greek East. *Le conte de Floire et Blancheflor* mentions two automata fashioned at the court of Floire's father, a Saracen ruler. *Le roman d'Alexandre* contains two copper youths who guard the tomb of the emir of Babylon with pikes and shields. And the First Continuation of Chrétien's *Perceval* contains two automata who guard the entrance to the tent of Alardin, an Eastern potentate.²⁷ The topography of wonder as located in the exotic, Eastern, "other" vis-à-vis Christian Europe is a common trope of the marvelous, and automata are an integral part of that topography.²⁸

In addition, at the same time that many of these works were being written, translators from the Latin West were beginning to translate works of philosophy, medicine, and science from the classical period and late antiquity, as well as some newer works by Muslim and Jewish scholars. While the contents of many of these works did not become translated into Latin, purged of their heretical and pagan ideas, and assimilated into a Christian intellectual framework until the thirteenth century, the Islamic world was increasingly seen as a repository of the knowledge of classical authors and philosophers. Thus the East was linked not only with wonder and the wisdom of the ancients, but also with paganism, heretical Christianity, and the Muslim infidel. The mention of many of the automata in these texts in the same breath as morally suspect forms of knowledge and an idealized, imagined vision of the East points again to their problematic nature and origins.

Necromancers, Philosophers, and Smiths

The metal people are never described in the texts as "automatons." They are most often denoted as a "figure," an "ymage" or "ymagete," or a "statue" of a precious metal. Sometimes they are described, as in *Lancelot do lac*, as metal people—a copper knight (*chevalier de cuivre*) or a copper damsel (*une damoisele de cuivre*).²⁹ The

27. *Voyage de Charlemagne* (above, n. 3), lines 351–361; *Floire et Blancheflor* (above, n. 5), lines 1848–1852; *Roman d'Alexandre* (above, n. 6), lines 7178–7183; *Perceval* (above, n. 8), vol. 3, lines 13352–13372.

28. Daston and Park, *Wonders* (above, n. 13), pp. 25–39. Huguette Legros examines the way in which the Orient was "orientalized," and the conflation of the Islamic world and the Byzantine Empire in the topography of wonder, especially with regard to technology. The power of the absolute rulers of the East (Caliph or Basileus) was symbolized by technology that emphasized power over nature. See Legros, "Connaissance" (above, n. 13), pp. 108–120.

29. *Lancelot* (above, n. 9), vol. 1, p. 249.

images themselves are frequently described in the artisanal language of smithing and metalworking: “molded” (*façonez*), “gilded” (*dorez*), and above all, “cast in metal” (*tresgetez*).

The terminology used to denote the fictional *creators* of these fictional automata, on the other hand, suggests a somewhat different, more complex picture of the type of knowledge needed to create them. While the created objects are described in terms that denote artisanal knowledge, their creators, paradoxically, are described in terms linking them to intellectual and theoretical knowledge. The people responsible for the automata are not artisans guarding the secrets of their trade, as were the makers of mechanical stage devices for the mystery plays of the fifteenth century. Rather, they are described in elevated terms as philosophers, poets, necromancers, and wise men fluent in the secrets of the heavens, who fashion the automata “par enchantement,” “par nigromance,” “par art,” or “par augure.” Their knowledge is often linked with study, counsel, the seven liberal arts, and “cumpas” (the knowledge of astronomy needed for reckoning the liturgical calendar).³⁰

The meanings of the words that describe the makers of metal people and their practices will help to clarify the overlapping spheres of magic and philosophy. Historical and etymological dictionaries of Old French give distinct definitions for words relating to magic, most of which came from Latin and were used for people suspected of practicing occult sciences.³¹ For example, *magie* came from the term *magus*, meaning priest, and then came to be identified in both the Greek and Latin traditions with wisdom, sorcery, and astrology,³² while *enchantement* can mean seduction, conjuring, singing, and the verbal act of casting a spell.³³ *Augure* refers to a priest who provides favorable

30. “Cumpas” is found in *Le voyage de Charlemagne*: both the dome atop the Emperor of Constantinople’s palace and the automatons on it are described as “fu fait par cumpas e serrate noblemen” (*Voyage de Charlemagne* [above, n. 3], line 348). The definition of *cumpas* is found in the *Dictionnaire historique de la langue française*, ed. Alain Rye, 2 vols. (Paris: Robert, 1992), vol. 1, p. 586 (hereafter cited as *Dictionnaire historique*).

31. Robert-Leon Wagner, “*Sorcier*” et “*Magicien*”: *Contribution à l’histoire du vocabulaire de la magie* (Paris: Droz, 1939), p. 133.

32. *Dictionnaire historique*, vol. 2, p. 1163. See also Frédéric Godefroy, ed., *Dictionnaire de l’ancienne langue française et tous ses dialectes du X^e au XV^e siècle*, 8 vols. (Geneva: Slatkine Reprints, 1982), vol. 5, p. 65 (hereafter cited as Godefroy, *Dictionnaire*). For Latin, see Franz Blatt et al., eds., *Novum glossarium mediae latinitatis, 350–1200* (Copenhagen: Munksgaard, 1957–69), p. 1108.

33. *Dictionnaire historique*, vol. 1, p. 687; Godefroy, *Dictionnaire*, vol. 3, p. 92; Gilles Ménage, ed., *Dictionnaire étymologique de la langue française*, 2 vols. (Geneva: Slatkine Reprints, 1973), vol. 1, p. 528.

omens from reading the signs of birds, or bird entrails;³⁴ *augurerie* can also be defined more generally as foretelling future events through divination, scrying, or consulting signs (including bird signs).³⁵ For the Latin form of the word *nigromance* or *ingremance*, one finds the definition to be the act of divining, either from animals or through contact with the dead, but it can also mean magic or sorcery more generally.³⁶

Art is defined in this period as having a number of rich, nuanced meanings. Initially coming from the Latin word *ars*, it meant the learned ability or faculty to do something. In this period it was primarily employed in French to denote concepts related to methods of learned knowledge (linked semantically to the word *connaissance*). From this root one also finds the sense of profession or *métier* in the word *artifex*, and the pejorative connotation with fraud in *artifice*.³⁷ *Artifice* also meant someone who worked as an artisan.³⁸ *Engin*, the antonym of *ars*, primarily meant “innate spirit” or “talent,” and is related to the Latin *ingenium*;³⁹ however, it also came to mean “ruse” or “trickery.” Both words, *engin* and *ingenium*, also denoted a man-made mechanical device, such as an automaton.

Both the Old French terms and their Latin antecedents have specific definitions correlated to a clearly defined set of practices. The differentiation in practice was matched by differentiation in the theory of magic. From the twelfth century through the fifteenth, some theoretical discussions of learned magic allowed for the possibility of difference between *ars magia*, the harnessing of occult forces to change the future or bring about certain events, and *scientia divinationis*, the wisdom of one versed in the tradition of reading signs or commentaries, and able to interpret their function in reality.⁴⁰

34. *Dictionnaire historique*, pp. 142–143.

35. *Old French–English Dictionary*, ed. Alan Hindley, Frederick W. Langley, and Brian J. Levy (Cambridge: Cambridge University Press, 2000), p. 54; Godefroy, *Dictionnaire*, vol. 1, p. 497.

36. Blatt, *Novum glossarium* (above, n. 32), p. 1165. The French follows the Latin: see Godefroy, *Dictionnaire*, vol. 5, p. 498.

37. *Dictionnaire historique*, vol. 1, p. 119; Godefroy, *Dictionnaire*, vol. 1, pp. 414–415.

38. Godefroy, *Dictionnaire*, vol. 1, p. 414.

39. *Dictionnaire historique*, vol. 1, p. 689; Ménage, *Dictionnaire étymologique* (above, n. 33), vol. 1, pp. 531–532; Godefroy, *Dictionnaire*, vol. 3, pp. 171–172; Charles DuFresne Du Cange, *Glossarium mediae et infimae latinitatis* (Niort: L. Favre, 1883–87), vol. 4, pp. 360–361. See also the OED for “engine.”

40. Wagner, “*Sorcier*” et “*Magicien*” (above, n. 31), p. 134. However, the theoretical discussion of magic in the twelfth through the fifteenth centuries did not elevate the status of practitioners in the long run. Wagner also has a typology of terms for practi-

Suspicion and condemnation accrued to practitioners of the former more than the latter, for fixing futures violated religious and moral norms. This conceptual distinction between reading signs of nature and the heavens and changing the future was often difficult to draw, and may be one of the reasons why the authors of the romances use terms relating to magic indiscriminately when discussing automata and their creators. The vocabulary used to describe the knowledge used to create the automata (*augure, enchantement, magie, necromance*) is no different from the vocabulary used to describe the method used by the emir of Babylon to choose his wife in *Floire et Blancheflor* (*necromance*), or the practices of Thessala, the cunning-woman and nurse in *Cligès*.⁴¹ These words may have a specific set of practices associated with them, but in these instances they signify a more general idea of morally ambiguous learning. The two theoretical categories of magical activity expressed in Latin do not map onto the terms used in twelfth-century French literature: necromancy is augury is enchantment is art.

To see this semantic network in action, let us examine a passage from one of the romances from this period, the *Roman de Thèbes* (c. 1150). The passage deals with Amphiras, one of the counselors to Adrastus, the king of the Greeks. Amphiras is a noble archbishop (“un arcevesque mout corteis”), a master of their laws (“maistre e lor lei”), and knowledgeable in all the secrets of the heavens (“del ciel saveit tot le secrei”). He is a wise man, and a valued member of the court of Adrastus. He could receive or interpret answers from the casting of lots (“il prent respons et giète sorz”), could make dead men live (“revivre fait homes morz”), and knew the language of the birds (“de toz oiseaus sot le latin”).⁴² The narrator assures the audience that there was not a better wizard in the entire world (“soz ciel n’aveit meillor devin”).⁴³ His magnificent war chariot had been fashioned by Vulcan

tioners of magic from the twelfth through the sixteenth centuries (pp. 133–141). While this distinction between *ars magia* and *scientia divinationis* is helpful when considering a much broader definition of magic, it is not entirely borne out in the texts under discussion: the authors are often unaware of the distinction, and theories and definitions of magic are often collapsed.

41. *Floire et Blancheflor* (above, n. 5), lines 1848–1852; Chrétien de Troyes, *Cligès*, ed. Marie-Claire Gérard-Zai (Paris: Livre de Poche, 1994).

42. I have translated *latin* as “language” here, which also ties into the theme that this knowledge is learned knowledge—i.e., knowledge that comes from familiarity with Latin—rather than idiomatic, or unlearned, knowledge. There is also a commonplace in medieval literature of referring to the language of birds as Latin.

43. Leopold Constans, ed., *Roman de Thèbes* (Paris: F. Didot, 1980), lines 2025–2038.

with great skill over a long period of time (“Vulcan le fist par grant porpens et a lui faire mist lonc tens”). By means of study and counsel, Vulcan put the moon and sun on the chariot, and cast in metal the entire cosmos by means of art and enchantment (“Par estuide et par grant conseil i mist la lune et le soleil et tresgita le firmament part art et par enchantement”). The nine celestial spheres, complete with the constellations, planets, and their movements were represented on the chariot. These models of the cosmos and of the terrestrial world were made so cleverly that they could prove instructive even to one ignorant of the seven arts (“Qu des set arz rien entendre iluec em puet assez aprendre”). Vulcan also depicted the battle between the Titans and the gods, with Jupiter, Mars, and Athena leading the charge. On the rear of the chariot he placed the seven liberal arts, each with its iconographic depiction: Grammar with her divisions, Dialectic with arguments, Rhetoric with judgments, Arithmetic holding an abacus, Music with the scale, Geometry holding a rod, and Astronomy an astrolabe. There were also two images (*ymages*) on the chariot cast in metal (*tresgitee*): one that sounded the horn for the charge of Adrasus’s army, and one that piped “clearer than a lute or viol.”⁴⁴

This ekphrastic passage, though a convention of the epic, vividly illustrates the association between the seven liberal arts and magic, between theoretical knowledge and craft knowledge and automata. In the first place, one sees Amphiras, the owner of the magnificent chariot, who is described as a holy man, an archbishop—yet he is also called a sorcerer, a soothsayer, a “devin.” He has the knowledge of the heavens, he can reanimate dead people, he can predict the future from the casting of lots, and he can read fortunes in the signs of birds. Learned and priestly, Amphiras figures in the *Roman de Thèbes* as an unequivocal agent of the good. His chariot is cast by Vulcan, the smithing-god, making explicit the concatenation of metalworking and “magic.” This link is also seen in the term *tresgeter*, which can, like its English counterpart, mean either the casting of objects in metal or the casting of spells and enchantments.⁴⁵ Vulcan undertook to make the chariot with much study, counsel, and time, and was so successful in his depiction of the cosmos that it served as a pedagogical tool to one who did not know the seven arts. Here we see the conflation of craft knowledge, associated with the automata, and learned, philosophical knowledge, linked with their

44. *Ibid.*, lines 4949–5006.

45. *Dictionnaire historique*, vol. 2, s.v. *tresgeter* (cf. English *cast*). *Tresgeter* and its related words can mean, in addition to “found” or “cast in metal,” “to throw or cast lots,” “to conjure,” and “enchantment.” See Godefroy, *Dictionnaire*, vol. 8, pp. 50–51.

creators: both types of knowledge coexist in the arena of magic, for they are needed in order to practice magic at the highest levels. Study in the seven liberal arts, philosophy, and the cosmos is necessary to practice both the *ars magia* and the *scientia divinationis*. Knowing the properties of stones, plants, and metals and how to manipulate them links sorcerers to artisans, while knowing how to read the heavens and devise enchantments links them to philosophers.⁴⁶

Dejà Vu: Mimesis and the Arts

The creation of lifelike people, birds, and other animals, especially in conjunction with possibly morally and intellectually questionable practices, brought to the fore tensions surrounding the possibility and the legitimacy of representing nature in art. Mimetic representation, located at the nexus of these two areas of overlap—theoretical and applied knowledge, and licit and illicit knowledge—could be seen as either glorifying God's creation or directly disobeying the injunction against graven images. Scriptural authority was mixed on this point. On one hand, the maker of idols is cursed in Deuteronomy as an abomination, as is the "work of the hands of artificers";⁴⁷ the Book of Wisdom explicitly condemns the making of graven images, stating that "no man can make a god like to himself";⁴⁸ the foundations of the Judeo-Christian-Islamic tradition rest explicitly on a single, *unrepresentable* deity. However, the Old Testament prohibition was not uniformly or universally applied throughout Christendom: for example, it was not included in the catechism with other commandments after the Synod of Paris in 825 under Louis the Pious, signifying its lesser importance as a tenet of Catholicism.⁴⁹

46. For an introduction to magic in the medieval period, and in the twelfth century in particular, see Richard Kieckhefer, *Magic in the Middle Ages* (Cambridge: Cambridge University Press, 1989), pp. 116–175; idem, *Forbidden Rites: A Necromancer's Manual of the Fifteenth Century* (University Park: Pennsylvania State University Press, 1997), pp. 1–21. The latter book deals mainly with the fifteenth century, but the introduction gives an excellent overview of learned magic and the rituals of religion and magic. See also Valerie Flint, *The Rise of Magic in Early Medieval Europe* (Princeton, N.J.: Princeton University Press, 1991), esp. pp. 87–253. For a discussion of medieval magic and its ancient roots, and the appearance of magic in medieval literature, see Wagner, "Sorcier" et "Magicien" (above, n. 31), pp. 46–78.

47. "Opus manuum artificum" (Deut. 27.15).

48. "Nemo enim sibi similem homo poterit deum fingere" (Wisd. 15.17).

49. Wladyslaw Tatarkiewicz, *History of Aesthetics*, vol. 2, *Medieval Aesthetics* (The Hague: Mouton, 1970), p. 98.

Complicating the religious and scriptural viewpoint, it was also said that God made Man in his image, as the *imago dei*, and the metaphor of God as the artist of the universe was a common one in the twelfth century.⁵⁰

The issue of mimetic representation was further complicated by the revived Neoplatonism of the late eleventh and early twelfth centuries, which placed an emphasis on the perfection of forms, and on the impossibility of an accurate representation of them through matter.⁵¹ If it was impossible ever to depict accurately a natural form through matter, was there harm in creating sculptures or paintings of nature? Artists made rapid advances in sculptural technique in the beginning of the twelfth century. Due to the psychological effect of statues on a viewer, they were seen as different from other forms of representational art.⁵² For several hundred years after the development of Christianity, the patristics did not value sculpture because it was tainted with the suspicion of paganism, and this association remained throughout later periods.⁵³ Thus when the medieval artist represented God's creation, he had to steer between two extremes: the golden calf of the Israelites, which mocked God, and the magnificent cherubim and other symbolic objects of the Tabernacle, which celebrated his glory.⁵⁴

The problems of mimetic representation and the relationship between theoretical and applied knowledge, and their relationship to one another, are discussed in Hugh of St. Victor's *Didascalicon*. The work was composed at Paris in the late 1120s at the newly founded School of St. Victor. The title of the book places it in the tradition of didascalical, or didactic, tradition, which is concerned with the method, subject, and purpose of study. It was intended to serve as a guide to students of varying ages and levels of education, teaching them what they should read, how they should read, and to what purpose, both in the arts and in Scripture. The *Didascalicon* is an attempt on the part of Hugh to select the areas of knowledge important to men, and to show that in their integrity these areas are cru-

50. Michael Camille, *The Gothic Idol* (Cambridge: Cambridge University Press, 1989), p. 34. See also G. B. Ladner, *Ad Imaginem Dei: The Image of Man in Medieval Art* (Latrobe, Pa.: Archabbey Press, 1965).

51. For more on this, see Edgar de Bruyne, *Études d'esthétique médiévale*, 3 vols. (Bruges: De Tempel, 1946), vol. 2, pp. 213–219.

52. For changing attitudes toward sculpture and the plastic arts, see *ibid.*, pp. 92–107.

53. *Ibid.*, pp. 93–94.

54. Camille, *Gothic Idol* (above, n. 50), p. 29.

cial to attaining spiritual and human perfection.⁵⁵ The book had an influence that was both “immediate and penetrating,” in the words of its modern editor, Jerome Taylor.⁵⁶ He states that more than one hundred manuscripts are extant from the twelfth to fifteenth centuries, in more than forty-five libraries throughout Europe.⁵⁷ In addition to being a practical manual for students, and thus indicative of the rise of cathedral schools and the intellectual climate of Paris, the work heralded a resurgence in the philosophy of aesthetics in the early twelfth century. After the ninth-century theologian and philosopher John Scot Eriugena, Hugh was the premier philosopher of aesthetics and Neoplatonism.⁵⁸

In asserting the importance of study to rehabilitate the earthly and spiritual self, Hugh conceived of a tripartite structure of things (*tribus rerum maneriis*).⁵⁹ The first category contains one thing, God: “That in which the essential being [*esse*] and ‘that by which it is’ [*id quod est*] are not separate; that is, in which cause and effect are not distinct from one another. . . . Such alone is the Progenitor and Artificer of nature.”⁶⁰ The second category, in contrast, encompasses that type of thing in which being and form are separate, and which comes into being from a principle distinct from itself, yet has no end; this is called nature.⁶¹ The third type of thing “consists of those which have both beginning and end and which come into being not

55. For a brief introduction to the place of Hugh of St. Victor in intellectual history and his philosophical scheme, see Patrice Sicard, *Hugues de Saint-Victor et son école: Introduction, choix de texte, traduction et commentaires* (Turnhout: Brepols, 1991); Roger Barron, *Science et sagesse chez Hugues de Saint-Victor* (Paris: Lethielleux, 1957); Jerome Taylor, *The Origin and Early Life of Hugh of St. Victor: An Evaluation of the Tradition* (South Bend, Ind.: Medieval Institute, University of Notre Dame, 1957).

56. Hugh of St. Victor, *Didascalicon*, ed. and trans. Jerome Taylor (New York: Columbia University Press, 1961), p. 4 of the Introduction.

57. *Ibid.*

58. De Bruyne, *Esthétique médiévale* (above, n. 51), vol. 2, p. 204. For more on the aesthetics of the Victorines, see *ibid.*, pp. 203–254 (for Hugh specifically, pp. 205–249). The medieval philosophy of aesthetics reached a peak in the twelfth and thirteenth centuries, due in part to an analysis of the arts and in part to a philosophical system based on Neoplatonism: see Tatarkiewicz, *Medieval Aesthetics* (above, n. 49), pp. 112–113.

59. Hugh of St. Victor, *Didascalicon*, ed. Charles Henry Buttmer (Washington, D.C.: Catholic University of America Press, 1939), p. 12 (hereafter cited as Hugh, *Didascalicon*).

60. *Ibid.*, p. 13: “in primo ordine id constitutum cui non est aliud esse, et id quod est, cuius causa et effectus diversa non sunt, quod non aliunde sed a semetipso subsistere habet, ut est solus naturae genitor et artifex.”

61. *Ibid.*

of their own power but as works of nature."⁶² Nature exists as an extrinsic, perpetual principle, which gives temporary existence to corporeal beings in the sublunar realm by means of an "artifacting fire."⁶³

In addition to the tripartite structure of things, Hugh assigns a tripartite structure to works (*de tribus operibus*), which map onto the three types of things: "Now indeed there are three works—the work of God, the work of nature, and the work of man, who imitates nature."⁶⁴ God creates *ex nihilo* that which did not exist before. Nature creates from the templates created by God, bringing "forth into actuality that which lay hidden."⁶⁵ Finally, "the work of the artificer is to bring together things disjoined or to disjoin those put together . . . for the earth cannot create the heaven, nor can man, who is unable to add even an inch to his height, bring forth the green herb."⁶⁶ Each of the three types of works springs from that which created it: God creates nature and its templates; nature creates all that exists in the sublunar realm; and man, brought into being by nature from the templates created by God, produces reproductions of natural forms. The artificer, man, can create only composites of forms—even that which is in his imagination is based on forms from nature, which are themselves from God and are thus twice-debased. Thus a builder gets his ideas from mountains, while bark, feathers, and scales all provide inspiration for human clothing.⁶⁷ Hugh calls this work "not nature but only imitative of nature; it is rightly called mechanical [*mechanicum*], that is to say, adulterate [*adulterinum*]."⁶⁸ From this it would seem that Hugh views all manner of human work as merely a copy—much the same, as Michael Camille has written, as we view glass

62. *Ibid.*

63. *Ibid.*

64. *Ibid.* This is an adaptation of Chalcidius's commentary on the *Timaeus*, with significant changes in the meaning of the source.

65. *Ibid.*

66. *Ibid.*

67. *Ibid.*

68. *Ibid.*, p. 16. Hugh associates "mechanical" with the Greek and Latin terms for "adulterer," one who defiles the marriage bed of another, rather than with the term for "machine," due to an error in reading the Greek. My gratitude goes to John Murdoch for bringing this to my attention. A similar point is found in *Didascalicon*, edited by Taylor (above, n. 56), p. 191, n. 64. Martin was a pupil of John Scot Eriugena and a tutor of Remigius of Auxerre; Hugh was familiar with his works, which are referenced throughout the *Didascalicon*. This association between mechanical and adulterate, or base, is also found in French: see Godefroy, *Dictionnaire*, vol. 5, p. 209.

flowers in light of real ones, with falseness and fraud inherent in their purpose and ontology.⁶⁹

Yet Hugh gives much more legitimacy to the mechanical arts than his predecessors did. Cassiodorus, Isidore of Seville, and Bede all mentioned the mechanical arts, but did not give them a separate category: they placed them instead under the general heading of mathematics.⁷⁰ In contrast, Hugh divides philosophy into four categories—theoretical, practical, logical, and mechanical. The division of the arts into four groups had first been seen in the work of Boethius, but had fallen out of vogue in the intervening centuries, when it became much more common to assign them to three categories.⁷¹ The seven mechanical arts, according to Hugh, are fabric making, armament, commerce, agriculture, hunting, medicine, and theatrics (which includes all types of entertainment).⁷² Art as an aesthetic concept is seen as distinct from production and closer to “skill.”⁷³ The mechanical arts purify the body for the study of the seven liberal arts, which in turn purify the mind for the study of theology, which then purifies the soul for God.⁷⁴ Thus the mechanical arts are an important step in purifying humankind’s postlapsarian condition, and restoring humanity’s divine likeness—“a likeness which to us is a form but to God is his nature.”⁷⁵ While human work is adulterate, the fact that Hugh includes it in his taxonomy of philosophy legitimates it to some extent. Furthermore, the fact that all man-made work is but a twice-removed copy of divine forms does not mean that the work of the artificer is necessarily to be demeaned. Because postlapsarian man has only his reason, he has had to devise for himself those things which other animals were granted through divine plan. Thus man is responsible for ingenious inventions: “Want . . . has devised all that you see most excellent in the

69. Camille, *Gothic Idol* (above, n. 50), p. 36.

70. Elspeth Whitney, “Paradise Restored: The Mechanical Arts from Antiquity through the Thirteenth Centuries,” *Transactions of the American Philosophical Society* 80 (1990): 1–149, esp. pp. 58–63. For an account of the placement of literature on trees of knowledge, see R. McKeon, “Poetry and Philosophy in the Twelfth Century: The Renaissance of Rhetoric,” *Modern Philology* 43 (1945–46): 217–234.

71. Whitney, “Paradise Restored” (above, n. 70), pp. 58–63.

72. Hugh, *Didascalicon*, pp. 38–39.

73. Tatarkiewicz, *Medieval Aesthetics* (above, n. 49), pp. 112–113.

74. Hugh, *Didascalicon*, pp. 23–47. The idea of a hierarchy among the arts is an innovation of Hugh’s. See Tatarkiewicz, *Medieval Aesthetics*, p. 113.

75. Hugh, *Didascalicon*, p. 23.

occupations of men. From this the infinite varieties of painting, weaving, carving [*sculpendi*], and founding [*fundendi*] have arisen, so that we look with wonder not at nature alone but at the artificer as well."⁷⁶

It is interesting that Hugh uses here the example of founding, the process by which a sculptor casts in metal, to make the point that human creation is not necessarily worthless. This example calls to mind the language used to describe the human automata as cast in metal (*tresgetez*). Casting is not creation *ex nihilo*, rather, it is a method of imprinting archetypes onto a preexisting material, similar to the manner in which God imprinted archetypes onto nature. It is important to remember, however, that the sculptor, the metal he manipulates, and the natural archetypes that are his inspiration did not exist before God created them.

Hugh again uses a metaphor of metalworking and the plastic arts when discussing the human mind's capacity to receive the imprint of all the archetypes it encounters. He draws a comparison with a coiner imprinting a figure onto metal: through this process, the metal, which is initially one thing, "begins to represent a different thing, not just on the surface, but from its own ability and its innate aptitude to do so."⁷⁷ A coin is no longer a lump of precious metal like any other, it is the power of the sovereign manifest. Thus the human brain, in receiving the imprints of natural archetypes in the course of maturation, transmogrifies from an unshaped, plastic material into the human intellect. Yet, Hugh writes, at the same moment that the coin, a lump of metal, becomes what it is meant to represent, it is also debased by virtue of being composed of preexisting forms. The same is true of the human mind: while the fully formed and trained human intellect of an adult is different from the pliable, merely receptive mind of an infant, it is still capable only of viewing the world through previously seen archetypes. The newly minted coin and the adult intellect are no longer the raw material from which they were made, yet they are not *sui generis* for they bear the imprints of the archetypes—the image of the sovereign and the natural world, respectively—that formed them. By that analogy, other works of the plastic arts are also characterized by the same dichotomy: they are creations that exist as separate from the materials they were made from and as what they are supposed to represent, but they are not original, nor are they taken to be original. The au-

76. *Ibid.*, p. 17.

77. *Ibid.*, pp. 5–6.

tomata in the romances are artificial marvels, metal people composed of preexisting materials and archetypes—yet they are not three-dimensional images of acrobats, musicians, or knights, they *are* acrobats or musicians or knights. Hugh uses the arts of sculpture and founding to legitimate the work of the artificer. Thus mimetic representation is taken to be morally acceptable, and in fact, unavoidable. There is no possibility of making something that does not already exist as a creation of nature from a divine archetype.

While knowledge of the mechanical arts and mimetic representation may be legitimate in Hugh's taxonomy of philosophy, the knowledge and use of magic is not, for both moral and theological reasons: "Magic is not accepted as a part of philosophy, but stands with a false claim outside it."⁷⁸ Hugh does not distinguish between *ars magia* and *scientia divinationis*. Rather, in his taxonomy there are eleven kinds of magic: *mantiké*, which contains necromancy, geomancy, hydromancy, aeromancy, and pyromancy; false mathematics, which is composed of soothsaying, augury, and horoscopy; fortune-telling; sorcery; and performing illusions.⁷⁹ Hugh had scriptural precedent for his condemnation of magic: the Old Testament contains several passages condemning the practitioners of divining (*divinationis*),⁸⁰ augury (*augurium*, *auguria*, *maleficus*, *incantator*, *divinos*),⁸¹ sorcery (*magos*),⁸² and all forms of enchantment.⁸³ This category of knowledge is forbidden.

Automata and Representation

The tensions surrounding mimetic representation, craft and theoretical knowledge, and knowledge of magic are reflected in the *Roman de Troie* and the *Roman de Thèbes* discussed previously. The making of the metal people in the romances is linked both to knowledge of

78. *Ibid.*, p. 132.

79. *Ibid.*

80. Num. 22.7: "maiores natu Madian habentes divinationis pretium in manibus."

81. Num. 23.23: "non est augurium in Iacob nec divinatio in Israhel temporibus suis"; Deut. 18.10: "nec inveniatur in te qui lustret filium suum aut filiam ducens per ignem aut qui ariolos sciscitetur et observet somnia atque auguria ne sit maleficus ne incantator ne pythones consulat ne divinos et quaerat a mortuis veritatem omnia enim haec abominatur Dominus et propter istiusmodi scelera delebit eos in introitu tuo."

82. Lev. 19.31.

83. Exod. 7.10–12: "sapientes et maleficos et fecerunt etiam ipsi per incantationes aegyptias et arcana quaedam similiter." For a longer account of Old Testament and early Christian injunctions against magic, see Flint, *Rise of Magic* (above, n. 46), pp. 18–21.

metalworking and to knowledge of the liberal arts and magic. The theoretical arts are the ideal and can be mastered only after the mastery of the less noble mechanical arts; however, the study of both is necessary to practice both *ars magia* and *scientia divinationis*, which are often regarded with suspicion, if not outright condemnation. The automata are mimetic representations of natural, and thereby divine, forms—yet the people responsible for the creation of the automata are grounded simultaneously in legitimate theoretical knowledge and illegitimate, morally corrupting knowledge.

It would be going too far to suggest that either Benoît de Sainte-Maure or the author of the *Roman de Thèbes* had been educated at the Abbey of St. Victor during Hugh's tenure there. However, it is very possible that, given the enormous immediate influence of the *Didascalicon* and its rapid assimilation into the intellectual community, these authors, writing two to three decades after its completion, were familiar at least in part with the ideas contained in Hugh's opus.⁸⁴ Furthermore, when one considers his example of the coin becoming what it represents, the boundary between the legitimate and laudable mimetic representation of a human form cast in metal, and the illegitimate and morally reprehensible creation of a metal person through illicit knowledge of magic, becomes difficult to pin down. This contested liminality is seen in the range of words used to describe both the manner by which the automata were created and the knowledge necessary to create them: necromancy, divination, smithing, and philosophy all come into play.

The language used to describe the human automata and their makers suggests that the authors of the romances themselves were concerned with the intellectual and moral validity of their own work. In Hugh's taxonomy, theatrics—or entertainment in all forms, including poetry—are part of the adulterate, yet important mechanical arts. As stated above, the tension that surrounds the metal coin surrounds other examples of the mechanical arts: the thing created, whether it is a coin or a poem, is clearly different from the material used to create it, yet it is also dependent on preexisting archetypes for its form. Romances were themselves often composites—retellings

84. For an account of the education and culture of writers of romances, see de Bruyne, *Esthétique médiévale* (above, n. 51), vol. 2, pp. 23–68; Tatarkiewicz, *Medieval Aesthetics* (above, n. 49), p. 116; Douglas Kelly, "The Arts of Poetry and Prose," in *Typologie des sources du moyen âge occidental* (Turnhout: Brepols, 1991), pp. 47–50; Kelly, *Art of Medieval French Romance* (above, n. 14), p. 32; Edmond Faral, *Les arts poétiques du XIIe et du XIIIe siècle: Recherches et documents sur la technique littéraire du moyen âge*, Bibliothèque de l'École des Hautes Études, 238 (Paris: Champion, 1924), pp. 99–103; Peter Dronke, *The Medieval Poet and His World* (Rome: Edizioni di Storia e Letteratura, 1984), esp. pp. 7–38.

of older tales, such as the *Aeneid* or the story of Charlemagne, picked apart and then stitched together to form tales that were “new” and yet undeniably created, at least in part, from preexisting material.⁸⁵

Authors of vernacular tales, especially the earliest romances, developed a paradigm of invention adapted from medieval Latin tradition, and applied this paradigm to source material from heterogeneous narrative sources, such as histories, myths, epic poems, and hagiographies.⁸⁶ This weaving together of different compositional elements, called *bel conjointure*, comprised invention, as defined by classical and Latin treatises on rhetoric and poetics, and historiography; combined, the two traditions “provided paradigms for composition that romancers used to treat the matter of their narratives.”⁸⁷ The trope of joining disparate parts together shows up frequently in romances, although not always in ways that have to do with language.⁸⁸ *Conjointure* refers to many different things: the literary sense of joining parts of stories together to weave a new text; the union of body and soul (and of male and female); architecture; carpentry; stonemasonry; and the mechanical arts.⁸⁹ As Hugh writes: “The work of the artificer is to bring together things disjoined or to disjoin those put together.”⁹⁰ The authors of the romances seem to be demonstrating a self-conscious preoccupation with the art and act of writing poetry. Not only were they engaged in manufacture, they were also engaging in mimetic representation, albeit in words rather than images.

Medieval treatises on poetry, which figured prominently in the emergence of romance in the mid-twelfth century, drew on the learned, ancient, particularly Roman tradition, which linked poetry to the liberal arts, especially grammar and rhetoric.⁹¹ Three things were needed to become a good poet: training (*ars*), ability (*ingenium*),

85. See Kelly, *Medieval French Romance* (above, n. 14), pp. 15–19.

86. *Ibid.*, p. xiii.

87. *Ibid.*, p. 13.

88. For example, see the description of fashioning and sealing the tombs in *Cligès* (above, n. 41), lines 6072–6078, and *Eneas* (above, n. 4), lines 7409–7718.

89. Kelly, *Medieval French Romance* (above, n. 14), p. 17.

90. Hugh, *Didascalicon*, p. 13. The phrases are “disgregata coniungere” and “coniuncta segregare.”

91. Faral, *Les arts poétiques* (above, n. 84), pp. 99–103; Ernst Robert Curtius, *European Literature and the Latin Middle Ages*, trans. Willard Trask (New York: Bollinger Foundation, 1953), pp. 481–485; de Bruyne, *Esthétique médiévale* (above, n. 51), vol. 2, pp. 14–49.

and practice (*exercitatio*), which consisted of studying and imitating set pieces from prescribed authors.⁹² The importance—the unavoidability—of imitating preexisting material was thus inscribed in the theory and practice of writing poetry. Marbod (c.1035–1123), the author of one of the first medieval handbooks on writing poetry, writes: “Since art was born of nature at the command of reason, so art endeavors to preserve the form of what was its origin. Thus whoever wishes to earn praise by writing, let him try to convey clearly sex, age, affect, and circumstances, as they really are.”⁹³ According to Marbod, the purpose of art is to preserve its origin, its archetype—i.e., nature—through imitation. Poets must endeavor to create their art by imitating and replicating the characteristics of nature and natural objects. There are two types of imitation of prior forms: imitating natural objects and people, and imitating preexisting works of literature.

The description of how Vulcan made Amphiras’s chariot in the *Roman de Thèbes* describes not only the skills needed to fashion the chariot and its automata, but also the skills needed to compose the poem itself. The vernacular poet of a roman antique needs to know mythology and the liberal arts. The vocabulary describing how Vulcan made the chariot—long study, counsel, and art—strikingly recalls how poets compose poetry: *inventio*, deliberation and study, eventually settling on the *san*, or message of the text; *dispositio*, the ordering of the *matière*, and various textual elements; and the *elocutio*, the enunciation of the texts.⁹⁴ The poet of the *Roman de Thèbes* is transferring the intervention of the gods onto a work of art, the creator of which is, via Vulcan, the poet.⁹⁵ The chariot and the poem can be seen to represent human ingenuity and mastery of knowledge. Although the chariot is destroyed in battle, the poem survives. Both the text and the chariot have a didactic function—to teach

92. Kelly, *Medieval French Romance* (above, n. 14), pp. 33–34; Tatarkiewicz, *Medieval Aesthetics* (above, n. 49), p. 117.

93. “Ars a natura, ratione vocante, profecta principii formam proprii retinere laborat. Ergo qui laudem sibi vult scribendo parare, sexus, aetates, affectus, conditiones sicut sunt in re, studeat distincta referre” (Marbod, *De ornamentis verborum*, ed. J. P. Migne, *Patrologia cursus completus, Series Latina* [Paris, 1862], p. 171, column 1692). Matthew of Vendôme (b. 1130) wrote an important later work on the art of poetry entitled *Ars versificatoria*: see Kelly, “Arts of Poetry and Prose” (above, n. 84), pp. 48–50.

94. See Kelly, *Medieval French Romance* (above, n. 14), pp. 38, 61.

95. Renate Blumenfeld-Kosinski, *Reading Myth: Classical Mythology and Its Interpretations in Medieval French Literature* (Stanford, Calif.: Stanford University Press, 1997), p. 25.

those who are ignorant.⁹⁶ The chariot teaches about the natural world, the seven liberal arts, mythology, and, by highlighting the figures of Pallas and Mars, about chivalry and warfare. The text itself instructs about chivalry, warfare, and ancient myths, and rests on the acquisition of knowledge of the liberal arts. By their presence on the chariot, the automata underline the skill of Vulcan, and by extension, the ancient philosophers: they embody the apotheosis of classical learning, as they represent the concatenation of philosophy, myth, the liberal arts, and natural knowledge. At the same time, they also remind the audience of the ingenuity of the poet, who, having mastered the necessary disciplines, can bring inanimate material—whether it is from the pages of history or the recesses of his mind—to life, thus enchanting and instructing the audience.

This idea of the unavoidability of imitating a prior form in human creation, and the anxiety over engaging in this type of representation, are both reflected in the texts themselves by the automata. The metal people, who are what they represent—guardians, acrobats, knights, musicians—embody mimesis in its most extreme form: they are copies from divine templates, formed of preexisting materials, and created through the careful application of theoretical and mechanical knowledge, which is described in unstable terms that connote both positive and negative moral values. The process of this representation, the making of mimetic art, is grounded in legitimate intellectual knowledge, though adulterate; and at the same time, it is tainted by a whiff of the demonic. What is the difference between knowing how to move an audience through rhetoric and the enchantment of an audience through the power of words? The fact that the three makers of the automata in the *Chambre des Beautés* are described by the author as *poets, wise men, and learned in necromancy* illustrates this very point. Benoît links himself as a poet to the creators of automata—creating marvels from divine archetypes that embody an ideal, by means of the careful study and mastery of both theoretical and mechanical knowledge, legitimate and illegitimate knowledge, while at the same time irrefutably signaling their adulterate nature.

96. Only the romans antiques were explicitly and self-consciously linked with a didactic tradition from their inception; this didascalical element is evident in many instances, but especially, and again, explicitly, in the episodes involving automata. As early as 1200, Jean Bodel in his *Chanson des saïnes* had identified the three subjects suitable for romance (or *estoire*): the matter of France, dealing with true matters; the matter of Bretagne, involving Arthurian legends and frivolous matters; and the matter of Rome, which was “de sens apendant” or “teaching wisdom” (Jean Bodel, *Chansons des Saïnes*, ed. Annette Brasseur [Geneva: Droz, 1989], lines 6–10).

The trope of the poet as necromancer was most clearly linked to Virgil. As John Webster Spargo has shown, the earliest mention of this link is in the *Policraticus* (c. 1159), in which John of Salisbury describes the bronze fly (an automaton) that Virgil cast to keep the flies out of Naples.⁹⁷ According to legend, Virgil was also the maker of the *Salvatio Romae*. He is presented in medieval writing specifically as a maker of automata, as well as a necromancer. Further legends about Virgil's magical powers are recounted by Alexander Neckham and Conrad of Querfurt in the last decade of the twelfth century. As a literary trope, Virgil-as-necromancer began to gather steam only by the second decade of the thirteenth century, sixty to seventy years after the *Roman de Troie* was completed.⁹⁸ Given that the subject matter of Benoît's romance is the siege of Troy, the "poets, wise teachers, well-versed in necromancy" seem likely to be an implicit reference to Virgil. The powerful and resonant connection between poetry and necromancy in twelfth-century literary and intellectual culture is seen in John of Salisbury, the *Roman de Troie*, and the trope of Virgil-as-necromancer.

The terms surrounding the metal people and their makers in twelfth-century Old French romances provide a complex picture of the classification of knowledge and the value of knowledge, both practical and moral. Uncertainty about the validity of mimetic representation, in both images and words, is reflected in the semantically distinct yet indiscriminately applied words used to describe the creation and creators of human automata, and by extension, the authors of romances. The value of mechanical knowledge, and its relationship to both practical knowledge, and theoretical knowledge is represented as having both positive and negative valences. Furthermore, the porous boundary between these morally legitimate intellectual and physical pursuits and morally unacceptable intellectual practices is exposed by the automata and their creators, both fictional and actual. By occupying this liminal space, they become a material means of traversing realms that need to be kept distinct for moral, intellectual, or religious purposes, and yet are clearly not discrete.

Acknowledgments

I would like to thank the organizers and participants of "The Rising Dawn," a conference on medieval alchemy sponsored by the Wellcome Unit for the History of Medicine and the History Depart-

97. Spargo, *Virgil the Necromancer* (above, n. 3), pp. 60–61; John of Salisbury, *Policraticus*, ed. C. C. J. Webb (Oxford: Clarendon Press, 1909), vol. 1, pp. 126, 132.

98. Spargo, *Virgil the Necromancer*, pp. 60–61.

ment at the University of East Anglia, Norwich, where the germ of this paper was first presented in March 2002. I would also like to thank the members of the Early Sciences Working Group at Harvard University for their helpful comments and observations. Katharine Park, Jan Ziolkowski, and Scott Lightsey read several drafts of this article and provided many helpful suggestions, references, and criticisms. Any errors or misconceptions that remain are, of course, my own.