

The Philosophical Background of Medieval Magic and Alchemy

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1. Introduction

Magic and alchemy were provocative themes during the Middle Ages. Magic views the world as an integral whole, which consists of spiritual and material forces. As these forces interact with each other, magic claims that it can provide the means in order to manipulate these forces and use them for the benefit or harm of humanity. Thus, magic is divided into many categories such as divination, astral magic, image magic, ritual magic, magic recipes, etc., all of which describe ways of recognizing and manipulating the aforementioned forces. Originally, in the Early Middle Ages, the works of St. Augustine and Isidore of Seville were responsible for equating magic with *maleficium*, a kind of magic that involved the intervention of demons. Hence, magic was associated with the pejorative term *demonic magic*, which aimed at distinguishing Christianity from pagan tenets and practices. However, as it will be shown in this paper, during the 12th century *natural magic* emerged, a kind of magic that manipulated the forces of nature so as to achieve its goals instead of using demonic aid. Despite the emergence of *magia naturalis*, as it was called, magic was most of the times subsumed under demonology and therefore was denounced as an act of apostasy from faith (Fanger and Klaasen 2006, 724-731; Coudert 2011, 25-43). On the other hand, alchemy appeared in Europe and specifically in Hellenistic Alexandria in the 3rd century CE. Afterwards, it passed in the Arabic world between the 7th and 8th centuries and hence to Medieval Europe in the 12th century. Alchemy had two goals: a) to transmute base metals into gold and b) to attain longevity through the *elixir vitae*. This elixir should be regarded as a catalyst that would accelerate the process of transmutation. In order to manufacture this elixir the alchemists performed the *Great Work/Magnum Opus*, according to which a metal was subjected to a three-stage procedure (*nigredo*, *albedo* and *rubedo*) with the aim of reducing the metal to its first matter and afterwards transmuting it into the desirable metal. Modern scholars do not have a unanimous opinion about the relation between alchemy and magic. In particular, Kieckhefer and Bailey consider alchemy as part of magic, whereas Newman and Principe support the contrary, posing

in this way a distinction between the disciplines. The first group of scholars associates alchemy with magic in terms of astrology and ritual procedures and the second, in turn, distinguishes alchemy as a bellwether of chemistry (Kieckhefer 1989, 133-139; Bailey 2007, 95-96; Principe and Newman 2001, 385-431). Nonetheless, alchemy raised suspicion and distrust mostly because of its erroneous claims in manufacturing genuine gold. However, the influx of Arabic translations after the 11th century changed the intellectual environment of Western Europe, resulting in a different attitude towards the occult sciences as well. In this paper, I intend to shed light upon two case studies in order to synthesize the philosophical background of the aforementioned occult disciplines. First, I will present a short selection of the most important occult books that were imported from the Arabs and concurrently I will depict how these books influenced the medieval attitude towards magic and alchemy. Second, I will show how these books led to an important epistemological shift and a “scientific” rehabilitation of both magic and alchemy, and I will specify the nature of this rehabilitation relating it to ancient Greek philosophical traditions. Finally, I will provide two historiographical examples, those of William of Auvergne and of Albertus Magnus, arguing that these scholars attempted to entrench an innovative perspective towards occult sciences¹, since their work combines and associates magic and alchemy with natural philosophy.

2. The influx of occult Arabic works into Medieval Europe

In this section, I will present a short selection of translated Arabic books that are considered to have had a strong impact on magic and alchemy in the High Middle Ages. In the 12th century the Arabic translations were overflowed into Western Europe and a massive amount of knowledge came under the scope of Latin scholars. As a result, the Arabic literature provided a strong impetus for the renewal and reconstruction of medieval “science”, in which magic as well as alchemy were involved. The aforementioned statement can be easily proved, since Dominic Gundissalinus’ *De divisione philosophiae* (circa 1150) included a subdivision of physics², included image magic³ and alchemy among the sciences, which were probably drawn from the *De ortu scientiarum* (10th century) of Al Farabi (Thorndike 1923, 78-80). Consequently, a great variety of books referring to magic were translated, an action which led to a positive redefinition of the notion of magic. In particular, before the Arabic translations, magic was harshly sentenced by the severe authoritative works of St. Augustine and Isidore of Seville. According to their dicta, the works of magic were a result of demonic

deception and therefore should be condemned as an act of apostasy from faith. This caused magic to be vulgarized and equated with *maleficium* in the minds of common people (Bailey 2007, 53-58).

With regard to magic books, those translated from Arabic altered the negative attitude towards magic and associated the art instead with philosophy and science. It should be noted that during the Middle Ages there was a debate involving the disciplines of science and art. In general, the medieval *Trivium* (Grammar, Logic and Rhetoric) and *Quadrivium* (Arithmetic, Geometry, Music and Astronomy) compiled the knowledge of that period, which was considered as superior to mechanical sciences (that is, the arts). The main argument was that the contemplative sciences were more essential and liberating for the soul in comparison with mechanical arts. The latter takes their name after the Greek word “μοιχεία”, which means adultery and suggests a corruption of the soul. Both alchemy and magic tried to promote themselves as legitimate sciences, but their practical and mechanical character led them to be considered more as arts than sciences (Whitney 1985, 124-128 and 153-154).

Proceeding now with our subject, one of the most influential books on magic was the *De radiis stellarum* (9th century), attributed to Al Kindi. The book cultivated the ground that separated magical astrology from Aristotelianism, thus making their reconciliation possible. It posited that words, characters and images could likely influence other material entities and objects via the powers of the stars. On the one hand this opinion contradicted the basic tenets of the Augustinian magical tradition and on the other it attained persuasive force, because it grounded speculation within the philosophical tradition (Fanger and Klaassen 2006, 716-717). Another book that combined magic with philosophy was the *De theoricis artium magicarum* (9th century), which was again attributed to Al Kindi. This book is intriguing as it seems to be the source from which Giles of Rome drew material in order to compile his *Errores philosophorum* (13th century) (Burnett, 2005, 383), which in turn indicates that magic was seriously involved in philosophy by that time. An additional work of analogous impact was *Introductorium in astronomiam* (9th century) by Abumashar, whose work is perhaps the most significant in the field of astrology, because it provided the main arguments that effectively mitigated the medieval resistance to the doctrine that the stars may impact beings of the sublunar world (Wedel 1919). Abumashar argued that the influence which came from the stars was contingent and not necessary, leaving in this way free space for the human will to act. Apart from this contribution, however, the *Introductorium* played

a decisive role in the acceptance and establishment of the Aristotelian cosmological model, both in the science and the theology of the period. Before finishing this short account, we are compelled to dwell on the case of Hermes Trismegistus. Whether considered as a god or as a mythological figure, Hermes was seen as the source of a huge amount of texts which associated him with magic, alchemy and the occult sciences in general. Now, considering magic, passages like *Kyranides*, *De lapidus veneris*, *De duodecim annulis*, *Liber mercurii hermetis* and many more were attributed to Hermes and were in great circulation among the scholars (Lucentini and Compagni 2006, 513-519). Despite the fact that the Hermetic texts were usually of a mystical nature and could be characterized as “dark” and dubious in their meaning, it cannot be overlooked that Hermes was held to be some kind of a sage and a bearer of a unique ancient knowledge. Given these facts, the theoretical Hermetic texts seemed to be valuable scripts of an old philosophy which had to be rediscovered and reevaluated, an effort which lasted up to the Renaissance.

Then with respect to alchemy books, the case was no different, for we encounter a great abundance of texts related to alchemy. No one has located any alchemical writings beyond the 12th century, the key period of alchemy. Before that time, all that could be traced were some texts which depicted a germinal stage of alchemy, mostly dealing with metallurgy, glass making, bell casting and colour making activities that are described in texts ranging from the 9th to 11th centuries. Such texts are *Compositiones ad tingenda musiva*, *Mappae clavicula*, *Schedula diversarum artium* and *De coloribus et artibus romanorum* (De Haage 2006, 22-23).

Officially, alchemy was introduced to the medieval Latin world in 1144, when Robertus Castrensis translated the notorious work *De compositione alchimiae*, in which Morienus, a Byzantine monk, introduced Khalid Ibn Yazid to the secrets of Alchemy (Moureau 2011, 56). Thereafter, a great variety of alchemical texts were transmitted to the medieval world via the Spanish peninsula, where knowledge of the Arabic language was at the disposal of many scholars. Perhaps the most famous work of Latin alchemy in that period was *Summa perfectionis magisterii* (13th century), which is attributed to Geber, under whose authority many alchemical texts were written. This work generated extra acknowledgement and credibility for alchemical ideas in the mind of any scholars that would read them. It should be noted that most of these writings were pseudonymous and probably compiled by Paulus de Taranto, a Franciscan monk (Principe 2013, 55). These pseudonymous works contained, among other things, alchemical recipes concerning the

transformation of matter and the fundamental sulphur-quicksilver theory, which was entrenched in a strong philosophical Democritean background. According to Democritean tradition, matter was composed of very small, yet distinct particles, which in turn formed the four known Pre-Socratic elements, which consequently formed superior species of life. This tradition⁴, discerned in the depths of alchemy, is not surprising since as far back as the Hellenistic period, there existed a thriving bibliography which related Democritus or more accurately Pseudo-Democritus within the discipline of alchemy. Another passage that was widely circulated was the *Turba philosophorum* (9th century), attributed to Jabir Ibn Hayyan. Therein, a philosophical assembly of nine Pre-Socratics and other distinguished philosophers like Aristotle and Plato discussed the theory of matter and other cosmological issues in terms of alchemy. However, in this assembly the ideas of the philosophers were presented in a distorted fashion, something which was done deliberately by the author, in order to provide a highly sophisticated status for alchemy, whilst each philosopher appears as a devotee of the art (Plessner 1954, 335). Moreover, philosophically important were also the books that combined astrology with alchemy. In general, during the Middle Ages it was conceded that the influence of the stars and of the planets was responsible for the generation of the metals in the bowels of the earth. Under this natural-philosophical framework, alchemy was associated with cosmological concepts, something which was perfectly depicted in the *De perfecto magisterio* (13th century) of Pseudo-Aristotle. In this book it was emphasized that each planet should be considered as a *Deckname*⁵ for each metal, consequently developing constant relations between the two parts. Thus, a cosmological alchemy was constructed, established on strong astrological foundations, where the qualities and the properties of a metal were susceptible to the position of the analogous planet to which the metal was linked (Newman 2013, 389). Lastly, in the field of alchemy, Hermes Trismegistus emerged as the legendary founder of the art. This title was initially given him by the Arabs and then later on transmitted to medieval philosophical traditions. It should be mentioned though, that it would be rather reckless to consider the alchemical *Hermetica* as purely philosophical texts, the authoritative shadow of Hermes conferred a status of wisdom to alchemy, which contained various philosophical connotations. Consequently, the most circulated hermetic text was *Tabula smaragdina* (published between the 6th and 8th centuries) is supposed to be written by the very Hermes himself and was found in his tomb engraved on an emerald tablet. The primary ideas were that all things come from one, the structure of the

microcosm depends on the macrocosm and that the notions of sun and moon must be held counterparts of those of the father and the mother (Brabner 2005,20).

These books delineated the early stage of the integration of philosophy with magic and alchemy. On the one hand, the result of such an integration was the advent of a new kind of magic, *magia naturalis*, which was based on Stoic, Neoplatonic and Aristotelian principles⁶. Natural objects were thought to have occult virtues in them, which were likely to be “activated” by the celestial influence deriving from the stars. On the other hand, alchemy was synthesized in terms of an Aristotelian philosophical paradigm, which in turn provided the appropriate arguments in order to justify the possibility of elemental transformation. The rise of magic and alchemy is thus necessarily entwined with the natural-philosophical doctrines inherited from Ancient Greek philosophy. An analysis of these will lay bare decisive elements for an in-depth understanding of the change in attitudes toward alchemy and magic.

3. The rehabilitation of magic and alchemy via natural philosophy

In this section I will show the nature of the rehabilitation that was brought by the influx of the translated books. Both magic and alchemy were associated with ancient Greek philosophical traditions, which led to a different perspective regarding their status and approval.

The most influential philosophical doctrine that can be distinguished in magic is that of cosmic sympathy, a notion which derived from Stoic philosophy. According to Stoics such as Chrysippus and Marcus Aurelius, nature can be identified with God, Logos, Reason and Fire, which all depict alternative narratives of the active principle in Stoic’s physics (White 2003, 125). This active principle acts upon matter with the aim of creating forms of life that are contained within the cosmos. However, this cosmos works in harmony and in a deterministic way mainly due to the fact that these diverse forms of life must be considered in fact to be a variation of the active principle which was mentioned before. As a result, all the entities that dwell in the cosmos are somehow “connected” through a common element, the tenor, whose manifestation depends on the complexity of the life form. Consequently, all beings operate together in universal cohesion in order to preserve the deterministic order. Ultimately, this would lead to a conflagration and destruction of the cosmos followed afterwards by a rebirth (Sellars 2006, 97-98). This procedure may repeat itself forever, whereas the spermatric principles that exist in the active principle are not destroyed and become the essential elements required to achieve recurrence. From the

analysis provided it is easy to understand that the Stoic cosmos is an interrelated one, in which everything communicates with and pertains to everything, for in every form of life a variation of the active principle exists, though in a different proportion. This is cosmic sympathy: a kind of a coherence that allows for interaction among the parts of the cosmos to maintain the universal harmony and deterministic order of the universe.

With regard to natural magic, the aforementioned notion of cosmic sympathy seems to be a fundamental theory. Cosmic sympathy tries to explain how magical operations could be successful through the manipulation of the occult virtues of beings. In turn, these occult virtues seem to be identical with the spermatic principles mentioned before, which proffer themselves as a means of connecting the living things of the cosmos. The medieval magus has to identify these virtues and activate them in order to accomplish his magical purposes. However, it should be mentioned that this kind of magus differs from a *maleficus*, who usually invokes demons to ensure the success of his deeds (Peters 1978, 68). Rather the former magus is supposed to unlock the secrets of nature in order to perform this kind of art. In this way, the medieval magus could easily explain why the eyes of an eagle are of benefit to the eyes of a human, since the occult virtues of the bird's eyes are a part of the cosmic sympathy that permeates the world. In addition, cosmic sympathy could be depicted on other occasions as well. The resemblance of form could be a criterion for a plant to be used for remedy purposes. For example, liver-shaped leaves were thought to be of benefit to the human liver (Kieckhefer, 1989, 13).

As we have already seen, natural magic presents itself as a licit and benevolent practice, something which initially must be attributed to Neoplatonism. That is to say, among the Neoplatonic doctrines someone may discern that of *theurgy*: a spiritual procedure that helps the subject to reach the One through illumination. According to Neoplatonists, illumination could be achieved either through philosophy or through theurgy, whereas the latter includes rituals aiming at the purification and at the preparation of the soul in order to reach the One. In fact, Iamblichus believed that theurgy was the proper answer for the soul, for in this way it does not remain attached to matter and achieves its illumination by ascending towards the One. In the philosophical tradition, this belief gives priority to theurgy over philosophy as a means of reaching the One (Shaw 1995, 47). Of course, theurgy introduces a practice full of magical connotations, nevertheless it is held to be a good kind of magic that does not include the interference of demons. As a matter of fact, this practice seems to puzzle St. Augustine, who,

whilst condemning theurgy as a malevolent magical practice, would also convey a more moderate attitude towards it in some other passages (Thorndike 1908, 50). Nevertheless, it must be admitted that theurgy is responsible for legitimizing the idea to medieval minds that not all kinds of magic are blameworthy and therefore need not be condemned as demonic practice.

In addition, Neoplatonism seems to have an influence on the exercise of image magic. Particularly, Iamblichus accepts the idea that material objects such as stones and herbs are likely to have a divine sign engraved upon them, the *synthema* as he calls it, which is thought to be a sign of the divine presence on the object (Shaw, 1995,48). This *synthema* allows for an easier and more direct contact with the divine, whilst also operating as a medium to develop an affinity to the sympathy of the Whole. The way in which these signs work must be further explicated. The One must be considered as a source from which light emanates and is cast upon all creation. As a result, all inferior entities found below it, bear a proportion of its emanation. The low ranking entities that are close to earth are more susceptible to corruption and decay because they are too far from the source, but still the emanation should not be considered as absent but rather as dim. Under this theory, we can understand the role of the *synthema*, which is more a medium through which we can achieve a better connection with the source and vanquish the threat of corruption and decay provided by the matter (Shaw 1995, 49). This Neoplatonic practice is extremely significant for astrological magic because it partially provides the appropriate arguments for the astrologers to justify the influence of the stars on the sublunar world.

Lastly, we come across the Philosopher, Aristotle, whose impact on medieval philosophy is tremendous. This impact extends to magic also, for Aristotle provides arguments which could make magic compatible with the knowledge of the times. Specifically, the magical interaction among beings could be explained via Aristotelian ontology, in which the intrinsic structure of an entity is a decisive role. For example, a herb of a cold quality could be of help in overcoming an illness of a hot quality, like a fever. The reason for such an interaction could be found in Aristotle's ontology, where all beings of the sublunar region are made by the four known Pre-Socratic elements, that is water, fire, air and earth. These elements, in turn, are characterized by a pair of qualities, which, when mixed, form an entity with strongly manifest elements and qualities (Ross 1995, 106-107). Given this kind of mechanism it is easy to imagine how the intrinsic structures of the beings cooperate in order to overcome a disease or to strengthen an occult virtue.

That being said, the most important contribution of Aristotle to magic is a philosophical background that it makes it possible to justify the stellar influence. In Aristotelian cosmology, everything begins from the Prime unmoved Mover, which sets the first heaven in motion and the celestial spheres that are contained within. This motion is transmitted to the sublunar world as well and is mainly responsible for the growth of life. Aristotle does not specify in detail how this kind of influence might form the cosmos of the earth. Still, the fact that the celestial bodies consist of a nobler element, *ether*, which is incorruptible and unchangeable compared to the four terrestrial ones, provides a legitimate argument for explaining the aforementioned influence (Grant 2007, 172). Perhaps it could be depicted as a “logical” influence deriving from the superior to the inferior forms of life.

Stoicism is one of the main philosophical movements that influenced the aforementioned occult art. In order to achieve alchemical transmutation, there is a need of a substratum which would be stable during the transmutation process, would allow the diverse elements to convert in the desired forms and would thereby justify the sulphur- quicksilver theory. This substratum, which is called *prima materia*, reminds us of the Stoic passive principle (plain and indefinite matter) which gets shaped by the active one, usually acknowledged as God or *technikon pyr* (Long 2003, 239). Furthermore, there is a vivid analogy between the Stoic conflagration and the stages of the alchemical *Magnum Opus*, where the effort of the alchemists to reduce base metals to *prima materia* by the aid of fire has much in common with the Stoic conflagration which is the cause for all beings to be relegated to the stage of mere matter. Stoic allusions might be brought into relief if we attempt to interpret the famous symbol of the snake, which is eating its own tail. Below this symbol stands an inscription saying “*hen to pan*”, that is, the whole or the one is everything. The meaning of this inscription is that matter must be seen as a unity, where the creative active principle submerges material beings into the state of *prima materia* through eternal circular recurrences (Principe 2013, 25-26). Another Stoic notion in alchemy is *pneuma*, which according to Chrysippus is the vector of reason, it has intelligence and it acts as the medium for universal coherence (Long 2003, 250-251). The alchemists believed that the *pneuma* of a metal contained the secret of the transmutation of one metal into another, and as a result, the alchemists struggled to capture the spirit of a metal during a distillation with the aim that in doing so they would have found the missing key for accomplishing alchemical transmutation. .

Another thinker that provides a philosophical background to alchemy is that of Plato, whose *Timaeus* contributes a variety of arguments which justify the transmutation process. It must be said that *Timaeus* is partially known during the Middle Ages through a translation made by Chalcidius in the 4th century AD, whereas in addition only the *Meno*, the *Phaedo* and the *Parmenides* are circulated among the scholars (Aertsen 2010, 77-78). This resulted in a depreciation of the Platonic doctrines during the Middle Ages in relation to those of Aristotle. Nevertheless, there is a strong case to be made for the possibility of an implicit Platonic influence on alchemy.

In the *Timaeus* we find a material theory which best suits the alchemical need for a substratum. Particularly, *Chora* is a place where no corruption occurs and it provides a reception *terra* for all things that have been generated (52a-b). *Chora* should not project itself through the things it receives, because then they would get distorted (50e), whereas in addition, the four known elements existing therein are not in perfect shape and they demand the *Demiurge's* contribution in order to become perfect entities. The Platonic *Chora* may be considered as the *prima materia* of the alchemists and the *Demiurge* as an alchemist who tries to extract or transmute forms by manipulating the prime matter. Congruently, an analogous reference presents the *Demiurge* as the constructor of the cosmic soul, whose successful attempt depends on consecutive mixtures, a procedure that alludes to alchemical recipes being performed in laboratories (Joly 1998, 282).

It is to Plato's successor, Aristotle, however, that one may ascribe the most profound impact on alchemy. As previously stated, alchemy was not a recognized art before the Arabic translation movement and therefore had not undergone an assimilation process which would have given given it the opportunity to absorb all the philosophical influences equally. In contrast, the Aristotelian impact was unmitigated, mostly because of the thriving scholasticism of that epoch. Scholasticism was developed in the Middle Ages after the 11th century. It was a form of dialectic reasoning, which mostly aimed at clarifying ancient texts in detail and at bridging any dogma or philosophical contradictions. A typical scholastic text contained questions and answers, in which at first was stated a question and then the answer of the opponents. Afterwards, a counterproposal was given and lastly the arguments of the opponents were disproved. After the foundation of the universities, scholasticism became the main method of teaching and of exercising critical thought in medieval Europe. Inevitably, it was quite natural for alchemy to draw upon Aristotle in order to display itself as a legitimate

art (Newman 2011, 314-315). Consequently, Aristotelianism provides a material theory for alchemy, much as Stoicism and Platonism does. Similarly, the Aristotelian matter plays the role of the alchemical *prima materia* and the form is the active principle that acts upon passive matter (Haage 2006,17-18). Yet, entelechy acting as an intrinsic mechanism impells beings to tend towards superior forms, something that suits alchemy by means of justifying the transformation of base metals into gold.

Moreover, Aristotle's *Meteorology* is the most famous text among the alchemists as it offers a generation theory of metals, which is established on a dual action of a hot and a moist principle reflecting the Arabic one of sulphur-mercury. Aristotle cites that two vapours are produced by the sun, a moist and a hot one that derives from earth. As soon as these vapours become enclosed in the depths of the earth, they become responsible for the generation of the minerals (Eichholz 1949, 141-146). In fact, the vaporous exhalation forms the fossils and the dry exhalation forms the metals, whereas each formation mentioned does not imply the absence of the other, but on the contrary, it should be regarded as an analogy, in which per exemplum the vaporous exhalation is quantifiably greater than the dry one and that is the reason a metal formed. But still, the fact that the dry element is in an latent state gives the opportunity to the alchemists to argue for the potentiality of a transformation in Aristotelian terms. Lastly, the Aristotelian element of *ether*, which is supposed to be incorruptible and unchangeable, inspires the finding of the *quinta essentia* by the alchemists (Schuett 1998, 61). Similarly, the alchemists assume that the beings of the sublunar world contain an analogous element with *ether* which could be extracted by distillation and thence used to produce the philosopher's stone. The Philosopher's stone or Stone of the Sages was considered as the *summum bonum* of alchemy. Of course, the "Philosopher's stone" was a cover name (Deckname) and it was a substance, the use of which would help the transmutation to be done faster and easier. Its preparation was a secret, often associated with the stages of the Great Work, that is, the laboratory process of transmutation (Principe 1998, 215-220). However, the Philosopher's stone was of greater use for a human, since it contributed to obtain longevity.

After considering the main strains of natural-philosophical thought constituting the background for magic and alchemy during the 13th Century, it becomes obvious that philosophy was used during that epoch as a means of legitimizing the occult arts, which were either newly imported, as in the case of alchemy, or reinvigorated, as in the case of magic. Magic, as well as

alchemy, promoted itself via a rhetorical language that portrayed nature as the main source responsible for the outcomes of the aforementioned occult arts. Still, this change may become more apparent if we examine the historiographical cases of William of Auvergne and Albertus Magnus.

4. The cases of William of Auvergne and Albertus Magnus

In the last section I will describe two historiographical exempla, which will show how this natural-philosophical rehabilitation is depicted in the works of William of Auvergne and Albertus Magnus, who both were scholars of the High Middle Ages. William of Auvergne (1180-1249), the bishop of Paris, is a scholar who shows a big interest in magic in terms of philosophy. William is the founder of the term *magia naturalis*, which concerns an innovative kind of magic linked to natural philosophy. He clearly distinguishes between demonic and natural magic, where the latter could be performed if a magus knows how to unveil and avail himself of these occult virtues. No doubt, William attempts to promote natural magic as a new branch of science, but yet he is wary not to exceed the limits of natural magic and come across accusations of being a *maleficus*.

From the beginning William does not hesitate to acknowledge *magia naturalis* as the eleventh part of philosophy and therefore accepts that not all kinds of magic are to be condemned. In fact, according to William, the overall rejection of magic could be ascribed to people's ignorance which derives from not having read and scrutinized the books referring to natural magic (Lang 2008, 25). In the *De universo* as well as in the *De legibus* he cites an abundance of magical operations linked to natural magic. In particular, something regarded as a marvellous phenomenon is the sudden generation of some animals such as frogs and worms, which seem to reproduce under ambiguous conditions. For William, in this case, it is quite obvious that there is no close contact between the cause and the effect induced, yet it is apparently undeniable that this magical operation is due to nature itself only and not to demons. Besides, the aforementioned action does not bear or imply any bad outcome so as to justify a demonic interference, something which provokes William's positive attitude towards natural magic. In the same line of thinking belongs the example with the masculine and feminine palms, where the two trees incline towards each other in order to reproduce. William proceeds with the enumeration of the occult virtues of other beings like herbs, gems and animals, where he affirms that the flesh of snakes has many renovating virtues, that the sapphire is of benefit to the eyes and that jasper has a repulsive virtue against snakes (Thorndike 1923, 362-363). Of

course, many more examples are cited by William, but still what is to be considered is that the occult virtues of these beings are in accordance with nature and when exposed they aim to interact on a natural basis excluding any demonic interference.

However, another notion which is of philosophical interest is that of sense of nature, a *sensus naturae* as he calls it. This sense of nature should be considered as a superior state of apprehension akin to prophecy, which works like the human instinct. In this way he explains how the sheep apprehends the presence of a wolf and dogs distinguish a burglar among other people, William speaks also of women that could sense their husband coming from two miles away (Thorndike 1923, 348). In light of the analysis presented so far, it is quite obvious that William asserts, even if indirectly, that the examples above involve the Stoic notion of sympathy. It seems that nature works as a whole, where a “common part” exists in each being and it is mainly responsible for the so called “sense of nature”. On the other hand it must be mentioned that William is probably not aware that this doctrine is attributed to the Stoics, given the fact that Stoic physics was not known in the Middle Ages. It is highly likely that William’s influence upon this subject might be an Arab source or a translated book of an unknown writer, a hypothesis that emerges from the fact that William enumerates many magical books that had been read by him, even if a part of them are unknown to us (Thorndike 1923, 353-354).

Before closing the case of William of Auvergne, there is an intriguing aspect in the way William explicates the interaction among beings. According to him, there are two modes of explaining how an object acts upon another, either by contrariety or by assimilation (Marrone, 2009,170). In the first case, one object attempts to eliminate the opposite virtue of the other object, whereas in the second, an active form is induced and impressed upon another and so the assimilation is accomplished. As an example of the first case, we could take an apple which falls on grassy ground and thence the stillness of the ground attempts to eliminate the opposite, that is, virtue of motion, whereas in the second case we could imagine how the virtue of heat is assimilated by an object touched. It is worth noticing that in both cases material contact is demanded in advance in order to justify the interaction between the objects. Now, here lies the problem with natural magic, since there is no material contact. To William this is not a paradox but an exception, and it is worth mentioning how he describes the interaction which occurs with natural magic. Describing how the sapphire could cure a disease he says that it accomplished its purpose *secundum totam naturam*, that is, *by the*

aid of its whole nature (Marrone, 2009, 173). Again, William uses Stoic rhetorical tools, even unknowingly, to adequately describe the operations of natural magic.

The second historiographical example is that of Albertus Magnus (1193-1280) whose works refer both to magic and to alchemy. In order to legitimize magic through philosophy, Albertus presents the Biblical Magi as philosophical personages. In *Enarrationes in Evangelium Matthei* (ca 1262) we have the first connection of magic with nature. He argues that the Magi know and conjecture things from the inevitable process of cause and effect in nature and in this way they have the ability to predict and produce marvelous things (caput II.1.61). Moreover, in *Commentarii in librum Danielis prophetae* (ca 1262) he clearly states that the Magi are masters who philosophize about the universe and they must be held to be astronomers who search the future in the stars (caput I.20). In the same way as William of Auvergne, Albertus argues for *magia naturalis*, a new kind of magic which draws its validity from nature. Likewise he gives an abundance of examples where herbs, animals and minerals are suitable for magical operations notably because of their occult virtues. As a result, he admits in *Vegetabilibus et plantis* (ca 1250) that there are several herbs which have divine properties and effects, like *betonica* which strengthens the ability of divination and *verbena* which was used for erotic purposes. Similarly, in the same work, Albertus explains the procedure through which plants gain their properties as a combination of five virtues, where the influence of the stars is included among them (V.ii.1). In the matter of occult virtues in animals, Albertus gives many examples in his work *De animalibus* (ca 1250), where several parts of them appear to be of wondrous properties. For example, the eyes of an eagle are of benefit to the human eyes and the skin of a lion might be used as a mean of protection.

In contrast with William of Auvergne, Albertus relates natural magic to astrology in order to explain and justify the “activation” of the occult virtues. Under this consideration, Albertus accepts Aristotelian cosmology and the mechanism through which the Prime Mover expands its influence upon the celestial bodies, which in their turn impact the sublunar world. In this fashion, Albertus provides a cosmos where the stars light up the virtues of the material beings of the sublunar world and therefore these become ideal for the operations of natural magic. Moreover, Albertus accepts natural magic which comes from seals or signs engraved on the surface of a stone or metal. This is the art of magical images, commonly known as talismans, where an image or a seal is engraved on the surface of a stone or a metal at a favorable

moment, when the celestial influence would be at its zenith. After this procedure, the engraved stone or metal could be suitably used so as to produce marvels and extraordinary spectacles (Rutkin 2013, 492-497).

Further philosophical implications may be detected in Albertus' views on alchemy. The work which represents his views upon the matter is called *De mineralibus* (circa 1260) and Albertus thinks of it more as a supplement to the Aristotelian corpus rather than a purely alchemical work. In it, Albertus associates alchemy with astrology as the alchemists declare that the precious stones gain their powers from the stars, whereas it is due to the influence of stars again that the seven known stones⁷ acquire their form (III.6.1). In another work, the *De causis et proprietatibus elementorum* (circa 1250), it is cited that the good alchemists work by a waxing moon, because it is then that purer metals are produced and the whole procedure is aided by stellar influences (I.7.2). Lastly, Albertus' philosophical alchemy culminates with an argument for the possibility of transmutation. According to Albertus the transmutation of metals is possible and could be explicated in terms of Aristotelianism. In particular, alchemy operates in such a way that it destroys a substance by removing its specific form and by using what is left it induces a new specific form in order to accomplish the transmutation (*De mineralibus*, III.9.1). Obviously, Albertus seems to perceive the Latin word *species* as specific form, which could be corrupted and replaced by a new specific form, a view taken from Avicenna and his *Epistola ad hasen regem* (10th to 11th centuries)

5. Conclusion and final thoughts

In conclusion, after the influx of the Arabic translations into Medieval Europe, both magic and alchemy were reformed and reconsidered as disciplines. The Arabic texts contained, in advance, a variety of Greek philosophical ideas and thus this literature became the vehicle by which traditional stereotypes about magic were challenged. As a result, magic began to become associated with nature and presented an aspect which could be regarded as scientific and philosophic. Thus, we can discern philosophical topics drawn from Stoicism, Neoplatonism and Aristotelianism, which all influenced the medieval notions of natural magic and that of occult virtues. On the other hand, alchemy was a newcomer in the medieval cosmos and thus claimed to become a *persona grata* among the sciences and the arts. In order to succeed, alchemy had to be established on a strong Aristotelian basis, whilst a hint of Stoic doctrines may also be recognized. Lastly, bearers of this new and innovative trend were William of Auvergne and Albertus Magnus, who both lived in the 13th century

and produced radical ideas in their works concerning the occult sciences. However, despite the fact that the occult sciences did not win any further validation, it is important to bear in mind that this course of actions worked as a bellwether for the reevaluation of the arts that took place in the next centuries.

Bibliography

- Aertsen, A., Jan. "Platonism." In *The Cambridge History of Medieval Philosophy, vol I*, ed. Robert Pasnau and Christina Van Dyke, 76-85. Cambridge: Cambridge University Press, 2010.
- Albertus, Magnus. *Opera omnia, ex editione lugdunensi, religiose castigata, et pro auctoritatibus ad fidem vulgatae versionis accuratiorumque patrologiae textuum revocata, auctaque B. Alberti vita ac Bibliographia suorum operum a PP. Quetif et Echard exaratis etiam revisa et locupletata cura et labore A. Borgnet*. 38 vols. Paris: 1890–99.
- Bailey, Michael, D.. *Magic and Superstition in Europe: A Concise History from Antiquity to the Present*. Lanham: Rowman and Littlefield Publishers, Inc, 2007.
- Brabner, Tod. "Alchemy." In *Medieval Science, Technology and Medicine: An Encyclopedia*. Edited by Thomas Glick, Steven J. Livesey, and Faith Wallis, 19-22. New York- London: Routledge, 2005.
- Burnett, Charles. "Arabic into Latin: the reception of Arabic Philosophy into Western Europe." In *The Cambridge Companion to Arabic Philosophy*, ed. Peter Adamson and Richard C. Taylor, 370-404. Cambridge: Cambridge University Press, 2005.
- Bury, R. G. (ed. and trans.). *Plato: Timaeus, Critias, Cleitophon, Menexenus, Epistles*. Cambridge, Mass.: Loeb Classical Library, 1960.
- Coudert, P., Allison. *Religion, Magic, and Science in Early Modern Europe and America*. Santa Barbara, California-Denver, Colorado-Oxford, England: Praeger, 2011.
- Eichholz, E., D.. "Aristotle's Theory of the Formation of Metals and Minerals." *The Classical Quarterly* 43/3-4 (1949): 141-146.
- Fanger, Claire, and Frank Klaassen. "Magic III: Middle Ages." In *Dictionary of Gnosis and Western Esotericism*, ed. Wouter J. Hanegraaff, 724-731. Leiden: Brill, 2006.
- Grant, Edward. *A History of Natural Philosophy: From the Ancient World to the Nineteenth Century*. New York: Cambridge University Press, 2007.

- Haage, D., Bernard. "Alchemy II: Antiquity- 12th Century." In *Dictionary of Gnosis and Western Esotericism*, ed. Wouter J. Hanegraaff, 16-34. Leiden: Brill, 2006.
- Joly, Bernard. "Platonismus/ Neoplatonismus." In *Alchemie: Lexicon einer hermetischen Wissenschaft*, ed. Claus Priesner und Karin Figala, 280-284. München: Verlag C. H. Beck, 1998.
- Kieckhefer, Richard. *Magic in the Middle Ages*. Cambridge: Cambridge University Press, 1989.
- Lang, Benedek. *Unlocked Books: Manuscripts of Learned Magic in the Medieval Libraries of Central Europe*. Pennsylvania: Pennsylvania University Press, 2008.
- Long, A., A. Trans. Stylianos Demopoulos and Myrto Dragona- Monahou. *Hellenestic Philosophy: Stoics, Epicureans, Sceptics*. Athens: MIET, 2003³. (In Greek)
- Lucentini, Paolo, and Vittoria Perrone Compagni. "Hermetic Literature II: Latin Middle Ages." In *Dictionary of Gnosis and Western Esotericism*, ed. Wouter J. Hanegraaff, 499-529. Leiden: Brill, 2006.
- Marrone, P., Steven. " Magic and the Physical World in the Thirteenth-Century Scholasticism." *Early Science and Medicine* 14 (2009): 158-185.
- Moureau, Sébastien. "Alchemy in the Latin World." In *Encyclopedia of Medieval Philosophy: Philosophy between 500-1500*, ed. Henrik Lagerlund, 56-60. Dordrecht, Heidelberg, London, New York: Springer, 2011.
- Newman, R., William. "What Have We Learned from the Recent Historiography of Alchemy ?." *Isis* 102/2 (2011): 313-321.
- Newman, R., William. "Medieval Alchemy." In *The Cambridge History of Science Volume 2: Medieval Science*, ed. David C. Lindberg and Michael H. Shank, 385-403. New York: The Cambridge University Press, 2013.
- Peters, Edward. *The Magician, the Witch and the Law*. Sussex: The Harvester Press, 1978.
- Plessner, M. "The Place of the Turba Philosophorum in the Development of Alchemy." *Isis* 45/4 (1954): 331-338.
- Principe, M., Lawrence, and William R. Newman. "Some Problems with the Historiography of Alchemy." In *Secrets of Nature: Astrology and Alchemy in Early Modern Europe*, ed. William R. Newman and Anthony Grafton, 385-431. Massachusetts: The MIT Press, 2001.

- Principe, M., Lawrence. "Lapis Philosophorum." Στο *Alchemie: Lexicon einer hermetischen Wissenschaft*, ed. Claus Priesner und Karin Figala, 215-220. München: Verlag C. H. Beck, 1998.
- Principe, M., Lawrence. *The Secrets of Alchemy*. Chicago: The University of Chicago Press, 2013.
- Ross, David. *Aristotle*. New York: Routledge, 1995⁶.
- Rutkin, H., Darrel. "Astrology and Magic." In *A Companion to Albert the Great: Theology, Philosophy and the Sciences*, ed. Irwen M., Resnick, 451-505. Leiden- Boston: Brill, 2013.
- Sellars, John. *Stoicism*. Durham: Acumen, 2010².
- Shaw, Gregory. *Theurgy and the Soul: The Neoplatonism of Iamblichus*. Pennsylvania: The Pennsylvania State University Press, 1995.
- Schütt, Hans- Werner. "Aristotelismus." In *Alchemie: Lexicon einer hermetischen Wissenschaft*, ed. Claus Priesner und Karin Figala, 59-61. München: Verlag C. H. Beck, 1998.
- Thorndike, Lynn. "The Attitude of Origen and Augustine toward Magic." *The Monist* 18/1 (1908): 46-66.
- Thorndike, Lynn. *A History of Magic and Experimental Science, vol.II*. New York: Columbia University Press, 1923.
- Wedel, Theodore, Otto. *Medieval Attitude Toward Astrology, Particularly in England*. New Haven: Yale University Press, 1919.
- Whitney, Elspeth. "The Mechanical Arts in the Context of Twelfth- and Thirteenth- Century Thought." PhD diss., New York University, 1985.
- White, J., Michael. "Stoic Natural Philosophy (Physics and Cosmology)." In *The Cambridge Companion to the Stoics*, ed. Brad Inwood, 124-152. New York: Cambridge University Press, 2003.
- Whitney, Elspeth. "The Mechanical Arts in the Context of Twelfth- and Thirteenth- Century Thought." PhD diss., New York University, 1985.

¹ The "occult sciences" include astrology, alchemy and natural magic and the term is initially introduced in the 16th century. The etymology of the word "occult" (Lat. Occultus = hidden) indicates that the aforementioned sciences aim at manipulating the occult virtues of natural objects and nature itself, as well, in order to attain a high understanding of the cosmos.

² Here the term "physics" is meant in an Aristotelian conception. Actually, Aristotle's *Physics* contains an inquiry into nature and a treatise on motion, both of which argue on motion, place, causation and time subjects. As a result, the Aristotelian *Physics* differs from the modern

notion, since the latter involves the study of matter, energy and the interaction between them.

³ Image magic involves signs or seals that are naturally or artificially (by the magicians) engraved on objects. Due to these signs or seals the objects are thought to receive a stronger influence by the stars, which means, in turn, that these objects could bring a greater result during a magical operation. The connection between the object and the stars is achieved in terms of sympathy, whereas an important precondition for the success of the magical operation is that the stars should be at their zenith so as to gain the best influence possible.

⁴ Democritus introduced the “atomic” theory, according to which, reality consists of atoms and void, where atoms should be regarded as the main particles that constitute the material world. Atoms are indivisible, infinite in number and vary in size and shape. As they move in the void, they collide or combine with each other, forming in this way material bodies.

⁵ “Decknamen” (German word) are cover names for alchemical terms which intend to keep the art secret from those who are not initiated in it. For example the two main ingredients of metals, that is sulphur and quicksilver, are often given by the “Decknamen” father-mother or sun-moon.

⁶ The Stoics see the world as a whole, where God, reason and nature are considered as aspects of the same thing. The world is subjected to causality, something which means that everything that happens has a purpose and fate seems to be of significant importance. The Stoics believe that cosmos would end with a conflagration and a new, identical one would be created, a procedure that repeats itself in eternity. The Neoplatonists, in turn, see the world as an emanation of the One. The One should be considered as the first principle of the cosmos, which is simple, ineffable and unknowable. From the One derives the Nous, then the world soul and lastly the corporeal world. In the latter there is corruption, which is due to the distance from the supreme One. Given the fact that humans live in the corporeal world, they are subjected to corruption, but still they can achieve salvation through contemplation, which is the mean to reach the One. Lastly, for Aristotle the world is divided into hyperlunar and sublunar, where in the first division the Unmoved Mover sets the celestial spheres in motion and this motion is transmitted to the sublunar world. The celestial spheres are created by ether, an incorruptible and eternal substance, whereas the material world is consisted of the four known Pre-Socratic elements. According to Aristotle, the world and its relations could be explained by the four causes: the material, the formal, the efficient and the final. The final cause shows that there is teleology in the world, which means that everything done has a purpose, even if it is not quite clear to us.

⁷ In alchemy, the seven Stones were supposed to be associated with the planets of our solar system. In particular, the Sun was associated with gold, the Moon with silver, Mercury with quicksilver, Venus with copper, Mars with iron, Jupiter with tin and Saturn with lead.