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Magic in the Seventeenth Century



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Related Topics

Astrology · Hermeticism · Occult sciences · Natural philosophy

Synonyms

Divination; Witchcraft

Introduction

Magic can be defined as the knowledge of the hidden powers in nature and the ability to manipulate these powers in order to produce desired changes. While during middle ages magic was limited to divination or fortune-telling, in the Renaissance we can see a flourishment of other types of magic, most of them of an interventionist nature. Authors like Marsilio Ficino, Cornelius Agrippa, Giambattista della Porta, or Francis Bacon took (natural) magic to be the most noble part of natural philosophy. The attitude towards magic changed again during the seventeenth century. The church attacked magic and decided that

all of it is demonic, even natural magic, which was based on natural knowledge. As a result, magic as a discipline lost its place among the several parts of philosophy. However, several of its practices and theories were integrated in the emerging natural and experimental philosophy. At a general level, these include the emphasis on experimentation, or the use of hidden qualities and active principles in explaining phenomena. At a particular level, several of the magical experiments and recipes were used, transformed, and re-enacted, both to produce the changes expected and to test and discover new hypotheses about the laws of nature.

A Historiographical Note

The role played by magic in the history of thought and its relation to science have been debated starting with the second half of the twentieth century. Brian Vickers distinguished three stages of historical research. In the first one, in which history of science was described as a narrative of progress, magic was dismissed as irrelevant. The second stage started with Lynn Thorndike's *History of Magic and Experimental Science*, published between 1923 and 1958, in eight volumes. This book did, according to Vickers, more than any other book in establishing the occult as a serious object of study. However, in this second stage, the contribution of magic to the scientific revolution was not emphasized by the historians

of mathematical and experimental sciences, but by the historians of philosophy and history of art, such as P.O. Kristeller, Eugenio Garin, Paolo Rossi, Frances Yates, Cesare Vasoli, or Paola Zambelli among others. Francis Yates is of particular importance, because the third and last stage appeared as a reaction to her thesis. For Yates, magic and the occult tradition "prepared the way for the emergence of science" (Yates 1968). In what Vickers took to be the third stage, we can find both those who agreed with Yates that magic had a formative influence on the birth of modern science (P.M. Rattansi, A.G. Debus, P.J. French, etc.) and those who were reluctant to her arguments in favor of a smooth continuity between magic and science or who even saw the latter as opposed to the former (M.B. Hesse, E. Rosen, P. Rossi, etc.) (Vickers 1984).

John Henry explained this different attitude towards magic as the result of a conception forged during the eighteenth century, in the sense that historians mistook the leftovers of magic as the whole tradition, and that it was these left overs that were usually criticized and seen as not being part of the history of science. Magic was a diverse set of arts, and during the Renaissance and early modern period, some aspects were incorporated into the body of natural philosophy, as an alternative to scholasticism, while other were rejected. It was these aspects that Henry called the leftovers of the magic tradition, and which are now still rejected as nonscientific, occult, and with no contribution to the history of science (Henry 2008). The last decades saw a continuation of the discussion regarding the contribution of magic to science. The extent of this contribution and the relation between magic and science are still a matter of debate among scholars of early modern philosophy and science.

Ancient and Mediaeval Heritage

The origins of magic can be traced back at least to the fifth century BC. Magi were Zoroastrian priests of Persia who were practicing astrology, medicine, and in general, any activity which was based on the knowledge of the occult or hidden powers. Starting from the fifth century BC, there are testimonies of their influences on the Mediterranean cultures. Unfortunately, these testimonies are not very detailed. Given that in the Greek culture the magi were foreigners with exotic skills, the term "magic" acquired negative connotations, being seen as sinister and threatening. Furthermore, in the Christian culture, because these practices were pagan in origin, magic itself was considered demonic, and its practice was prohibited by the church (Kieckhefer 2016). In seventh century, Isidore of Sevilla (ca. 560–636) catalogues the different types of magic, a classification that will survive throughout the Middle Ages. Magic, broadly defined as divination or the art of fortune-telling, was divided into: geomancy, hydromancy, aeromancy, and pyromancy (divination by the four elements: earth, water, air, and fire, respectively). It was William of Auvergne (ca. 1180–1249) who proposed the distinction between natural and demonic magic, accepted throughout the early modern period (see section "Natural and Demonic Magic" below). During the sixteenth and seventeenth century, magic will go through several transformations: while the sixteenth century saw a revival of magic and an attempt to restore it as the main part of natural philosophy as it had been for the Persian magi, the seventeenth century witnessed its condemnation and decline.

Magic in the Early Modern Period

Towards the end of the Middle Ages, the concept of magic started to comprise not only divination, but also some other types of interventionist approaches. This shift is relevant because, while divination itself does not interfere with the course of events, but can only predict them, other types of magic manipulate nature in order to obtain the desired effect. This is the case not only with conjuring demons to oblige them to perform certain acts, but also with regard to medical healing, fascination or the evil eye, etc. It is precisely this operative aspect that lead historians to conclude that magic is one of the sources of experimental science and technology. In this conception, the

world is not seen as a deterministic universe anymore, but as a continuous interaction between different active forces, which can be changed by natural causes if one knows the relation between causes and their effects. Astrology and divination switched from being synonymous with magic to being conceived either as branches of magic or sometimes as separate disciplines. As a whole, magic was concerned with any type of manipulation, from healing to optics, or to constructing machines.

Magical theories emerged as a replacement of the predominant Aristotelian philosophy, when the latter started to fail in providing answers. The finding of America with its cosmological and botanical and zoological impact, the astronomical discoveries, and the spread of infectious diseases created issues which could not be answered within an Aristotelian-Ptolemaic-Galenic framework. In order to provide answers to these issues, authors turned to occult qualities, action at a distance, ancient sources different from Aristotle and Galen, and the Hermetic corpus.

Classifications of Magic

Natural and Demonic Magic

While demonic magic meant conjuring demons and obliging them to perform a certain act, natural magic was based on the forces of nature even if hidden to the eye, such as the occult power of a plant to cure a certain disease. However, the borders between the two are not clear-cut. Healers were many times accused that even if the cure itself had been natural, the knowledge of it would have been given by a demon, which would reduce the act itself to demonic magic. We can thus conclude that the distinction did not rest on the cause of a certain action, but on its ultimate source: experience or demons. In a strict sense, only God can be the author of something supernatural, namely, the miracles. Everything else, even involving the help of demons is natural, since they are part of the nature created by God. The main difference is that demons have a greater knowledge compared with humans. In this way, demonic magic, opposed to natural, is not supernatural.

In the fifteenth and sixteenth centuries, we can observe that several authors started to use the concept of natural magic in order to describe a more applied natural philosophy with clear references to the Persian Magi. Natural magic was, for authors such as Marsilio Ficino (1433–1499), Cornelius Agrippa (1486–1535), Giambattista della Porta (1535?–1615), the transformation of nature based on the knowledge of natural causes. Most of these authors adjusted their magical theories to Aristotelian philosophy, prevalent at the time, even if influence coming from the Stoics, the hermetic tradition, kabbalah, and above all Neoplatonism also had a great impact. Towards the end of the sixteenth and beginning of the seventeenth century, magical theories start to replace the Aristotelian-Scholastic vision of nature.

Demonic magic presupposed the conjuring of evil spirits, and even if the ceremonies were in principal very different, one can find some similarities in the procedures (drawing chalk circles, pronouncing incantations and the names of the spirits, fasting and praying) and the employment of a specific apparatus (candles, scepters, holy water, swords, wands, etc.). Necromancy, which presupposed the help of a dead person, can be seen as part of demonic magic, and the rituals presupposed the use of skulls, corpses, or parts of them, graveyard's earth, or just objects pertaining to the dead person.

This same distinction between natural and demonic is illustrated by John Henry in the distinction between greater and lesser magicians. Greater magicians are those who have discovered by experience the operations of the occult qualities and they know how to make use of them. Lesser magicians do not have this knowledge, but they can use two substitutes: either sorcery or semeiology (symbolic magic). The first is the conjuring of a spiritual being -witchcraft (conjuring of demons), theurgy (conjuring of good angels), necromancy (conjuring of the spirits of the dead), etc. – the second relies upon the power of words, signs, or other symbols - numerology, spellbinding, incantations, etc. (Henry 2008). This latter branch is closely related to the theory of correspondences or signatura rerum (see section "Occult Qualities and Active Powers"

below). The main difference between greater and lesser magicians resides thus in the origin of their knowledge: greater magicians acquire their knowledge of what is hidden through experimenting and hard work, while the lesser use shortcuts, either employing demons or identifying the signs that reveal the occult qualities.

Learned and Popular Magic

Learned treatises on magic, either critical or favorable, influenced the popular conceptions of magic. However, it also worked the other way around. Popular notions, stories and tales, and the practice of magic influenced the treatises, either theological, philosophical, or legal. Of course, learned magic was founded on a more systematic set of beliefs and had its roots mostly in the Aristotelian and Neo-Platonic philosophy (see section "Magical Theories" below). Echoes of these theories can be found in popular magic together with other, ad hoc, and sometimes inconsistent explanations and beliefs. The most common activities in popular magic were fortunetelling, healing, finding lost objects or treasures, discovering a thief or a criminal, etc. Magical rings and amulets made by cunning men and cunning women were used to win at cards, escape arrest, win a lawsuit, to be protected in battles or against sickness, to put out fire, or avoid drunkenness, etc. (Thomas 1973).

Other Classifications of Magic

In his Spiritual and Demonic Magic, D.P. Walker distinguishes between subjective and transitive magic. Subjective magic works upon the subject itself, while transitive magic works upon the surroundings. Transitive magic aims at modifying the emotions of people, by altering their imaginations in various (and sometimes definitive) ways (Walker 1958). I.P. Couliano changed and refined this classification. For him, general magic is either intersubjective, when the pneumatic structure of the manipulator and the patient are similar (this means the interaction between the animal spirits of the manipulator and the patient), and transsubjective, when the manipulator is working upon beings of a lower order, or at least when the interaction is not at the level of pneumatic

matter (like such as the effects of the animal spirits of man on the spirits of a plant). The first kind, intersubjective magic, includes intrasubjective magic, when the manipulator is at the same time the patient, this is to say when he works upon his own mind or body (Couliano 1987).

While the aforementioned distinction is based on the type of interaction between object and subject, Keith Thomas distinguishes between three types of magic, according to the type of power it employs: natural, celestial, and ceremonial. Natural magic exploits the occult properties of the elemental world, celestial involves the influence of the stars, and ceremonial magic is defined as an appeal for aid to spiritual beings (Thomas 1973).

Magical Theories

Occult Qualities and Active Powers

Magic itself was a practical or operative discipline, based on several theories, sometimes opposed or contradictory. Brian Copenhaver argued that previous to Agrippa's De occulta philosophia (published 1533, but circulating in manuscript since 1510), the theoretical side of magic was weak because the beliefs of the ancient Neo-Platonists were not yet couched in the form of a coherent system (Copenhaver 2008). During the Renaissance, authors like Marsilio Ficino, Giordano Bruno (1548-1600), or Giovanni Pico della Mirandola (1463-1494) developed philosophical conceptions of magic which combined elements of Aristotelianism and Neo-Platonism. For Agrippa, the world is composed of the four elements, with their four qualities, hot, cold, dry, and moist. These give rise to the secondary qualities, the sources of the visible processes, such as softening and hardening, attracting and repelling, and so on. Secondary qualities also produce tertiary qualities, wonderous, but manifest to the senses. Differently from them, bodies also have occult qualities, which result from their form, as opposed to the manifest ones, which are the effects of matter. Because they do not depend on matter, these qualities can produce strange effects that are out of place or proportion. The forms giving rise to occult qualities were of celestial

origin: the stars, following God's will, impress signs on the earthly objects (Copenhaver 2008).

But this is not the only way in which occult qualities were seen. During the seventeenth century, the sense of "occult" changed. For many authors, occult qualities were simply hidden from the senses, but possible to discover with the use of experiments and trials. While for someone like Thomas Aquinas the power of the magnet to attract iron was occult in the sense of supernatural, because of its being nonsensible and not manifest as the four primary qualities, for William Gilbert (1544–1603) it became occult in the sense of not manifest, but suitable to be investigated and measured. If "occult" means that the given quality cannot be reduced to the four primary qualities, hot, cold, moist, and dry, then the seventeenthcentury philosophers considered modern made it clear that the superiority of the new science consists in studying and accommodating occult qualities (Hutchinson 1982).

Some scholars argued that mechanical philosophy with its emphasis on size, shape, and motion of the corpuscles, replaced and eliminated occult qualities, opposing in this way the magical thinking of the Renaissance. Other scholars claimed that if "occult" means hidden to the senses, the opposite of manifest, mechanical explanations are themselves occult, and there is a continuity that can be traced among the defenders of occult qualities and the mechanical philosophers. Descartes, for example, explicitly claimed that there is no distinction between manifest and occult qualities and all can be explained in mechanical terms.

It has been claimed that a fundamental distinction between mechanical philosophy and occult science lies in the idea that for the former matter is inert and motion is external to it, while for the latter matter is active and motion intrinsic. Change, for the radical mechanical philosopher, can be explained by the rearrangement of the particles, while the magic theory consists in active occult powers which could be manipulated so as to change the world. In magical theory, matter is described as alive, sensitive; it has appetition, perception, and desire. This is in fact something that several philosophers appealed to in their explanations of nature. Robert Boyle (1627–1691) assumed the existence of principles of energy, power, force and life in all bodies; Walter Charlton (1619–1707) followed Pierre Gassendi (1592–1655) in ascribing self-motion to the atoms; Francis Glisson (1597–1677) attributed perception and self-motion to matter; and Isaac Newton (1642–1727) stated that there are active principles in matter as well as a subtle spirit by means of which bodies communicate at a distance (Henry 1986).

Sympathy and Antipathy

By the middle of the sixteenth century, sympathy was in use in different contexts: the tradition of later Platonic thought, in particular related to magic, medical and Galenic writings, books of secrets in the Plinian tradition and Stoic moral philosophy (Moyer 2015). Sympathy (or one of its synonymous terms, such as attraction, friendship, harmony, affinity, and love) was used in order to explain action at a distance, in particular, magnetism, contagion, gravity, and other forces. During the seventeenth century, natural philosophers still disputed whether sympathy and antipathy were natural or supernatural forces. There were some who claimed that, even if invisible, the powers of sympathy and antipathy were to be explained in physical and material terms, using principles of Aristotelian natural philosophy. But others, critical of magic in general, were seeing them as occult supernatural qualities, with the devil as their ultimate source of knowledge.

Christia Mercer shows that seventeenthcentury authors such as Jan Baptista van Helmont (1580–1644), Sylvester Rattray or Jacob Heinrich Gangloff offered detailed descriptions of the effects of sympathy, and their fundamental claims are common: (1) they all mix particular Stoic and Paracelsian ideas to explain sympathy; (2) they agree that the greater the similitude, the greater the affinity between certain creatures; (3) they consider that the ultimate cause of sympathy is a divine spirit which permeates the entire universe (Mercer 2015). Mercer further argues that Leibniz's idea of preestablished harmony is universal sympathy pushed to its limits. All created substances correspond perfectly and each body receives impressions from all the other. In this way, sympathy finds a place in eighteenth century metaphysics.

One of the most prominent examples of the magical work of sympathy is the weapon salve or the sympathetic powder, discussed by several authors, others, Francis among (1561-1626),Kenelm Digby (1603-1665),Robert Fludd (1574–1637). In 1662, a collection containing treatises on this topic was published, Theatrum sympatheticum auctum, with writings by, among others, Kenelm Digby, Laurentius Strauss (1633-1687),Rudolf Goclenius (1572–1628), Jan Baptista Van Helmont, Robert Fludd, Athanasius Kircher (1602–1680), Daniel Sennert (1572–1637), and Girolamo Fraccastoro (1476/8-1553). These authors claimed that in order to cure a wound, one should apply an ointment on the weapon which provoked it, cover the wound with a bandage, and the wound itself will be cured. The explanation was the sympathy between the weapon and the wound, and the idea that after the wounding they are still in contact through invisible corpuscularian effluvia, in the same way in which a magnet and a piece of iron were in contact. While the explanation was the same for these authors, differences appeared regarding the exact recipe and other details of the curing. What is relevant is the fact that this shows that the ideas of sympathy and antipathy survived the emergence of mechanical philosophy in the seventeenth century and they were compatible with a corpuscularian view on matter.

Not only were sympathy and antipathy still discussed in the seventeenth century and explained in terms of emanation of corpuscles, but some authors replaced them with other terms, less connected with the occult tradition: Robert Hooke (1635–1703) mentions congruity and incongruity between bodies, while Isaac Newton explains chemical phenomena in terms of sociability and unsociability between bodies (Henry 2008).

Correspondences and the Signatura Rerum Theory Celestial intelligences impress signs on the terrestrial objects. Each planet has a series of objects which can be used by the magician to bring forth the power or influence of that planet and use it in order to change nature. The seven planets had their corresponding day of the week, animals, plants, and metals. For example, the sun correspondents were Sunday, the lion, the sunflower, and gold. Regarding animals and plants, given that they had a great variety, each planet could have more correspondents. These powers could also be used in magical artifacts, such as rings, amulets, potions, unguents, etc.

Moreover, all these things were in a correspondence with the human body, conceived as a miniuniverse (microcosm). According macrocosm-microcosm theory, each part of the universe has its correspondent within the human body, and herbs have a secret signature that makes them suitable for curing the disease specific for a particular part of the body, its correspondence. This theory can go further, and certain herbs can only be gathered during a certain time of the year, depending on the influences of the planets, or a specific time of the day, and the use of the respective medicine must follow similar rules. The extent of this theory is different for each author, since some accept certain correspondences but reject others, and so on.

One of the most common examples is the chestnut. Once open, the chestnut has the shape very similar to the one of human brain. Since nature (or God) does nothing in vain, the shape of the chestnut must have been created in this way for a certain purpose: hence, it is in a relation of correspondence with the human brain. As a result, various authors recommended chestnut against headaches, mental disorders, or just in order to improve thinking. In the same way, according to Paracelsus, the plant *syderica* (vervain) has the shape of a snake on each of its leaves, and thus it offers protection against poison.

This system of beliefs is relevant also because the unsuccess of a cure can be easily accounted for, without giving up the system altogether: the effect was not produced because some of the rules were not respected carefully enough. When the rules are followed, then the effect must necessarily occur.

Borders Between Magic and Other Disciplines

In what follows, I will trace the relation between magic and three main disciplines: (1) natural philosophy, which absorbed parts of natural magic while rejecting others; (2) religion, which criticized magic as demonic even though there was a striking similarity between the two approaches; and finally (3) the other occult sciences, such as astrology and alchemy. In the next section, I will come back to the topic of the decline of magic in the seventeenth century.

Magic and Natural Philosophy

One of the most prominent authors who tried to secure a place for natural magic as a branch of natural philosophy is Francis Bacon. For him, natural magic is the highest level of operative natural philosophy (Weeks 2007). Bacon is following a tradition, that of Marsilius Ficino, Pico Mirandola, Cornelius Agrippa, Giambattista della Porta among others. What is particular to Bacon, and in this respect, he is closest to Della Porta and is the interest in the discovery of causes and the application of knowledge (Rusu 2013). Bacon's and Della Porta's experiments and recipes are a series of topics, including agriculture, metallurgy, optics, preservation of food, distillations, and other chemical processes. Moreover, their books dealing with natural magic look similar to the books of recipes and to the experiments performed later on by the members of the Royal Society and the other academies of knowledge in early modern Europe. Both authors take "occult" in the sense of hidden and assume that when the vulgar thinks that certain phenomena are miraculous or supernatural, they just do not have the knowledge of the (hidden) causes of the respective phenomena.

If we compare seventeenth-century natural philosophy with Renaissance magic through some intermediary steps, such as Della Porta and Bacon, we can notice a continuity between the magical practices and the emerging experimental science, not only in the theories put forward by early modern philosophers (as discussed in section "Magical Theories"), but also in their experimental practices. Newton's optical experiments can be traced back to Della Porta's natural magic,

and Gabriel Plattes' agricultural experiments have their roots in Bacon and through him in Della Porta. Early modern chemistry is based on alchemical recipes and mineralogy as are Robert Boyle's experiments with the air pump based on the pneumatic tradition. These are just a few examples to illustrate the continuity and the way in which natural and experimental philosophy in the second part of the seventeenth century made use of the practical recipes and experiments of magic, by replicating, expanding, and sometimes rejecting them.

Magic and Religion

Prima facie, the Christian faith with its belief in transubstantiation and the other sacraments, its belief in the power of ceremonies, relics, or the sign of the cross does not seem very distant from magical beliefs, and in fact this is precisely what the Protestants have accused the Catholics of. For the Catholics, the saints still had supernatural powers after their deaths. As a result, objects related to them, such as relics, images of saints, ecclesiastical talismans, and amulets, had the power to cure diseases, protect pregnant women and their babies, protect people from fire or other calamities, etc. The sign of the cross was powerful in protecting against evil spirits as holy water was powerful in purifying and even in performing exorcisms. Also of high importance were the ceremonies. The mass itself was considered having magical power. The formula used for the transubstantiation, defined as an "instrumental cause" by the theologians, who had analyzed in detail this miracle, was for common people the proof that the pronunciation of words in a ritualistic manner could effect changes in material objects (Thomas 1973). For many, the formula of consecration was similar to a charm, and thus it could justify the use of magical charms. Other ceremonies also acquired much more significance than initially intended by the Church: for instance, the idea that baptism can purify any living creature led to baptism of animals and reinforced the belief in exorcism. Moreover, the church itself organized processions, masses to bless new buildings, to pray for a big crop, or for rain. While encouraging the repetition of prayers, priests blurred the distinction between prayer and charm, since repetition is crucial for spells and charms.

Because of these similarities, the fight of the Church against magical procedures took the shape of a radical accusation of magic. All these practices were considered as demonic - if something was not performed by a priest and in strict religious content, then its source must have been diabolic. Moreover, even if Protestantism accused the Catholic church of using magic itself, and if Protestantism abolished all the rituals of the Catholic church, which represented the ecclesiastical counter-magic, it seems that in practice, the Reformation did not change much the attitude towards magic or witchcraft. On the contrary, in the protestant countries, given that people did not have the aid of saints and the consolation of confession, appeal to healers and cunning men and women might have become even more customary than before and in comparison with the Catholic countries.

Another relation between magic and religion can be found in the attitude towards demons. Demonology was not relevant only in respect to religion. On the contrary, this aspect of magic was initially kept within the realms of natural philosophy by some of its main defenders. Henry More (1614–1687), Joseph Glanvill (1636–1680), or Robert Boyle considered it important to study demons, witchcraft, and ghosts as part of experimental philosophy, their main motivation being to save natural philosophy from the attack of materialism in claiming that at least some phenomena can only be explained through immaterial principles or beings (Henry 2008).

Magic and the Other Occult Sciences

As mentioned earlier, in the first centuries of Christianity, magic was synonymous with divination, and this close relationship between magic and astrology or other types of divination will remain until the end of the modern period. Practitioners of one of these arts were in many cases practitioners of the other too. Moreover, the systems of beliefs in one practice offered justification for the other one: the theory of correspondences so important in magical healing was based on the astrological theory of heavenly influences; magic

and alchemy shared a common belief in the activity of matter and the idea of transmutation.

During the seventeenth century, astrology had a fate similar to that of magic: certain aspects (in particular the personal divination) were rejected, but other aspects continued to be part of natural philosophy, such as the influence of the moon upon tides or of the sun upon the change of season, or the prognostics of weather. Moreover, Newton and some of his followers saw the comets as God's way to readjust our solar system, which is not far from the idea that comets were signs of great changes or God's way of punishing people for their sins (Schaffer 1987). The same can be said about alchemy: the transmutation of lesser metals into gold became less and less relevant for the new generation of natural philosophers, but chemical processes such as distillation and fermentation continued to be a central part of chymistry and later chemistry.

Magic and Witch Trials

The relation between magic and witchcraft is difficult to grasp, being dependent on the one hand upon the distinction between natural (white) and demonic (black) magic, and on the other upon the distinctions made both by the church and the legal system. In general, a witch was someone who was mysteriously harming others – what was called "maleficium" - provoking diseases and sometimes even death. There were some other, lesser, activities, such as harming or killing farm animals, preventing cows from giving milk, preventing other domestic operations such as making butter, cheese, or beer, manipulating the weather, or frustrating sexual relations. These operations were performed either by physical contact, touching the victim or emanating effluvia, and then the victim was "fascinated" (enchanted or bewitched by the transmission of physical entities), or by pronouncing a curse or malediction, in which case the victim was "forespoken" (enchanted or bewitched by words). What was common to all such activities was the fact that the source was the devil, with whom the witch (mostly women) had made a pact. Whether or not the maleficium was harming anyone, more important was this pact with the devil and the demonic rituals associated with it: sacrifices in the case of men, and sexual intercourse in the case of women.

The seventeenth century saw a great increase in witchcraft accusations and death penalty for this offence, what is commonly known as the "witchcraze." Not only the number of books published on this topic increased, but a new profession appeared, that of witch hunter (for a more historical account of witch trials, see Thomas 1973 and Mandrou 1968; for a more theoretical account, see Ankarloo and Clark 2002, Briggs 1996, Clark 1999, Larner 1984).

Decline of Magic

The sixteenth century and the beginning of the seventeenth saw a flourishment of magic, both in practice and theory. Influential authors made efforts to clean magic from what they conceived to be superstition and make room for it as part of the practical disciplines of natural philosophy. By the end of the seventeenth century, however, the term has almost disappeared, unless used in a pejorative and critical way. To some extent the two parts of magic, natural and demonic, were taken over by other disciplines. Demonic magic was absorbed in discussions about witchcraft, which continues to be condemned both by the church and by the laic authorities. The fate of natural magic, however, is different. Its miraculous side continues to be part of the Catholic religion, while its conception as the transformation of nature based on the knowledge of causes found its way into the natural history and the experimental philosophy of the seventeenth and eighteenth century.

Keith Thomas argued that by 1700 there was no distinction between religion and magic. Religion outlived its magical competitors, even though in this process religion itself changed: particular providence, in the sense of individual miracles, became synonymous with superstition, since it was considered that God himself obeyed natural laws (Thomas 1973). This is to say that natural theology did not provide a context for the development of magical theories. However, Thomas's claim of the disappearance of magic has been disputed, at least in what has to do with its universality. While this might have been

the case for a small elite, for the people at large the world was still a universe with powers distributed amongst its diverse beings, which could be manipulated by certain persons (Fletcher and Stevenson 1985).

Brian Copenhaver claimed that another cause of the decline of magic during the seventeenth century can be found in the new mechanical philosophy. Instead of claiming that the power of a certain substance to bring about an effect is due to the celestial origin and the immaterial form of that power, that is, its occult quality, the new mechanical philosophers opted for a corpuscularian explanation. The size, shape, and structure of the minute particles of the objects are proved to be enough to explain their effects. Moreover, a similar explanation was given for the perplexing action at a distance: there is a transfer of subtle matter between two bodies, the effluvia. The advantages of these explanations in comparison with the magical occult qualities were that, even though also invisible to the eye, an explanation in terms of the structure of the minute particles seems to make the entities concrete and intelligible, and it becomes possible to make analogies with visible objects (Copenhaver 2008). The use and development of the microscope, which made it possible to see minute structures invisible to the naked eye, enforced these theories to the detriment of the theories based on occult qualities. In addition, the mechanist philosophy led to the collapse of the microcosm-macrocosm theory, which was the basis for astrology, chiromancy, alchemy, physiognomy, astral magic, and other related practices.

John Henry argued that during the seventeenth century magic was fragmented, mainly because of the harsh criticism coming from the church. The church has always accused magic of being demonic, including natural magic. Magic and demonology were thus synonymous for theologians. Philosophers saved certain aspects of natural magic and incorporated them in natural philosophy, leaving aside symbolic magic, astrology, the chrysopoeic (transformation into gold) aspects of alchemy, etc. As a result, Henry argues, Bacon, who wrote in the beginning of the century could place natural magic within his classification

of disciplines and discuss its validity. However, Boyle or Newton, even though drawing upon the magic tradition to provide them with both matter theories and methodological justifications for using occult explanations in their natural philosophies, could not mention magic in a positive manner. There are two aspects of this separation that are worth mentioning: one is that depending on the discipline, this process is different, and it cannot be generalized; the second is that the separation did not happen at once, but over a long period of time (Henry 2008).

Cross-References

- ► Action at a Distance in Early Modern Natural Philosophy
- ▶ Books of Secrets
- ► Chymistry (Alchemy/Chemistry)
- **▶** Contagion
- ▶ Demons and the Mind
- ▶ Disease
- ► Early Modern Astrology: Practices and Concepts
- ► Effluvia
- ► Emotions and Early Modern Science
- ► Emotions, Passions and Mind in Early Modern Philosophy: an introduction
- ► Fate in Early Modern History: Concepts and Ideas
- ► Images in Early modern natural history
- ► Laws of Nature
- ► Madness, and Mental Pathology
- **▶** Miracles
- **▶** Monsters
- ► Natural and Artificial
- ► Natural Magic and Curiosity in Early Modern Philosophy: An Introduction
- ▶ Recipes
- ► Secrecy vs. Openness of Knowledge
- **▶** Spirit
- ▶ Sympathy
- ▶ Women in Medicine

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