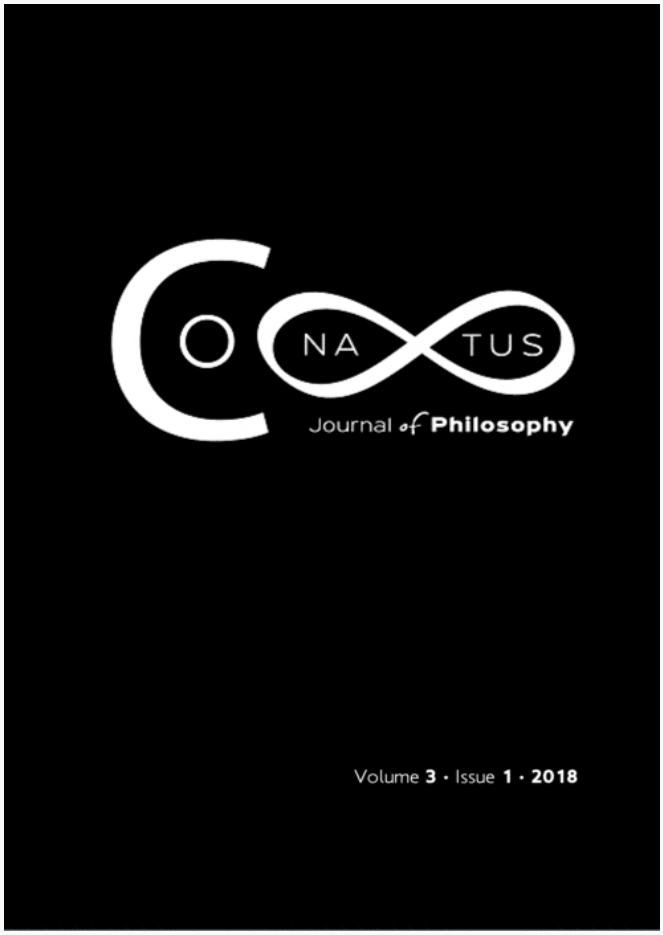
**Conatus - Journal of Philosophy**

Vol 3, No 1 (2018)

Conatus - Journal of Philosophy




# Alchemy and Creation in the Work of Albertus Magnus

*Athanasios Rinotas*

doi: 10.12681/conatus.16104



**To cite this article:**

Rinotas, A. (2019). Alchemy and Creation in the Work of Albertus Magnus. *Conatus - Journal of Philosophy*, *3*(1), 63–74. https://doi.org/10.12681/conatus.16104

A. Rinotas/*Conatus* 3, no. 1 (2018): 63-74
DOI: http://dx.doi.org/10.12681/conatus.16104

# Alchemy and Creation in the Work of Albertus Magnus

**Athanasios Rinotas**
*Katholieke Universiteit Leuven, Belgium*
*E-mail address*: thrinotas@yahoo.gr
*ORCID ID:* http://orcid.org/0000-0002-5988-9487

**Abstract**

*Albertus Magnus' alchemy is a subject that has attracted the attention of scholars since the early decades of the 20th century. Yet, the research that has been conducted this far is characterised by its non philosophical character. As a matter of fact, the previous studies approached Albertus' alchemy either in terms of history of science or of intellectual history. In this paper, I focus on Albertus' definition of alchemical transmutation that is found in his De mineralibus and I analyze it in terms of his theory of creation and of his theory of matter. Therefore, I show whether a re-creation of a metal is in accordance with Albertus' philosophy and congruently, I bring forth the Aristotle Graecus and the Aristotle Latinus that are found as background in his alchemical theory of transmutation. Ultimately, this paper aims at showing that the aforementioned theory is not an arbitrary statement from Albertus' part, but the result of a serious philosophical endeavour.*

**Key-words**: *alchemy; theory of matter; creation; transmutation; Albertus Magnus*

## I. Introduction

Albertus Magnus (ca 1193-1280) was an eminent philosophical personage of the 13th century, whose writings included many diverse fields such as philosophy, theology, zoology, botany etc. As a result, his prowess was acknowledged and highly exalted by posterity and therefore the appellation *doctor universalis* was justly bestowed upon him. However, Albertus demonstrated an innovative attitude towards knowledge as he delved into fringe areas of thought, such as alchemy, magic and astrology, each of which fostered quite a respectable proliferation of pseudo works – mostly between the 15th and 16th

centuries – that bore his name.[1] The above facts portray Albertus Magnus as a notorious and rather enigmatic thinker, provided that one may find in his work the 'legitimate' *scientiae* entwined with the 'illegitimate' *artes occultae*, therefore the veil of obscurity must first be lifted in order to fathom his thought.

With respect to this paper, I have to admit that it owes its inspiration to William Newman and his work about the fervent alchemical debate that broke out during the 13th century.[2] In that debate, Albertus had promulgated the theory that an alchemical transmutation was possible by reducing a metal to its prime matter and inducing a new specific form. Following this line of thinking, this paper intends to complement Newman's paper by shedding light on the relation between Albertus' theory of alchemical transmutation and his philosophy. In order to do so, in the first part of my paper I give an historical account of the debate, which culminates in depicting and adducing Albertus' alchemical excerpts from his *De mineralibus* that shows his view upon the matter. Consequently, I comment on these excerpts in terms of creation and of his theory of matter. In the second part, I show how and why Albertus denies an alchemical *creatio ex nihilo* and afterwards, I adduce the basic elements of Albertus's theory of creation, whereas in the last part, I explicate how he justifies such a transmutation. Finally, in terms of methodology, I mostly follow the inductive method, for the scrutiny of specific Albertinian excerpts will allow us to articulate general inferences.

## II. Historical account of the debate

It was in February of 1144 when the Medieval Latin West encountered an alchemical work for the first time. Robert of Chester translated the *De compositione alchimiae* from Arabic, a work which deals with the initiation of Khalid Ibn Yazid into the secrets of alchemy by the Byzantine monk Morienus.[3] Afterwards,

---

[1] For more on the subject see Pearl Kibre, "Alchemical Writings ascribed to Albertus Magnus", *Speculum* 17 (1942): 499-518; Pearl Kibre, "An Alchemical Tract attributed to Albertus Magnus", *Isis* 35 (1944): 303-316; Pearl Kibre, "Albertus Magnus, De Occultis Nature", *Osiris* 13 (1958): 157-183; Pearl Kibre, "Further Manuscripts Containing Alchemical Tracts attributed to Albertus Magnus", *Speculum* 34 (1959): 238-247; Pearl Kibre, "The Alkimia Minor Ascribed to Albertus Magnus", *Isis* 32 (1940): 267-300; Peter Grund, "ffor to make Azure as Albert biddes: Medieval English Alchemical Writings in the Pseudo-Albertan Tradition", *Ambix* 53, no. 1 (2006): 21-42 and Peter Grund, "Textual Alchemy: The Transformation of Pseudo-Albertus Magnus's *Semita Recta* into the *Mirror of lights*", *Ambix* 56, no. 3 (2009): 202-225.

[2] With respect to the debate see William Newman, "Technology and Alchemical Debate in the Late Middle Ages", *Isis* 80, no. 3 (1989): 423-445, and William R. Newman, *Promethean Ambitions: Alchemy and the Quest to Perfect Nature* (Chicago and London: The University of Chicago Press, 2004), 34-76.

[3] Lawrence M. Principe, *The Secrets of Alchemy* (Chicago: The University of Chicago Press, 2013), 51-52.

a great deal of alchemical translations followed, all of which contributed in a decisive way to the spread of the art. This proliferation seemed to have had a significant impact on the reconsideration of the place of alchemy within the very scheme of classification of the medieval sciences. In particular, during the 13th century, alchemy was recognised as a mechanical art by a variety of scholars such as Vincent of Beauvais (1190-1264), Thomas Aquinas (1225-1274) and Roger Bacon (ca 1214-1292). The first, in his *Speculum naturale,* regarded alchemy as a practical science, which should be studied in reference to mineralogy.[4] Likewise, Thomas classified alchemy with medicine and moral philosophy under the label of 'operative' sciences, whereas in other parts of his work he subordinated alchemy, agriculture and medicine to physics under the label of 'mechanical' arts.[5] Finally, Roger Bacon envisioned alchemy as a crucial part of his *scientia experimentalis*, which could bring about moral purification and prolongation of human life, thus alchemy could turn out to be a valuable weapon in the imminent fight against the advent of the Antichrist.[6]

No matter how promising alchemy's reception may have seemed, it never really basked in the warm embrace of a university agenda. The reasons for such stagnation are too many to relate, but one may dwell on a couple whose impact was the most important. At first, one should take into account the *Didascalicon* of Hugh of Saint Victor (1096-1141), a text whose authoritative power exerted significant influence on the way the medieval scholars conceived the notion of mechanical arts. According to the *Didascalicon,* the word 'mechanical' derived from the Greek word μοιχεία which means 'adultery' and thus the word 'mechanical' was coloured with pejorative connotations ever since.[7] Therefore, it is now easier to see how difficult it was for alchemy to overcome the obstacles of authority and demolish its barriers which held strong for at least a couple of centuries. The second factor has to do with the intellectual environment in which alchemy underwent the first steps of its development. Apart from the alchemical translations, the influx of the Arabic texts endowed the Latin West with a large number of magical and astrological texts which shared much common ground with several alchemical doctrines. As a result, it did not take long for alchemy to get attached to "illicit" kinds of knowledge, which in turn were characterised as

[4] Lynn Thorndike, *A History of Magic and Experimental Science, vol.II* (New York: Columbia University Press, 1923), 471.

[5] Newman, "Technology and Alchemical Debate in the Late Middle Ages", 426.

[6] W. Newman, "An Overview of Roger Bacon's Alchemy", in *Roger Bacon and the Sciences: Commemorative Essays*, ed. Jeremiah Hackett (Leiden: Brill, 1997), 317-336.

[7] Elspeth Whitney, "The Mechanical Arts in the Context of Twelfth- and Thirteenth-Century Thought" (PhD diss., New York University, 1985), 124-128 and 153-154.

heretical by the Church.[8] Alchemy's instant reaction was to go 'underground' and adopt a more clandestine identity in order to protect itself from any future papal decrees and threats deriving from the Church.[9]

Yet, even if alchemy did not succeed in acquiring a university status, it managed to monopolize the interest of the scholarly community through a fervent debate on alchemical transmutation which lasted until the 14th century. All started in 1200 when Alfred of Sareshal added the Avicennian *De congelatione et conglutinatione lapidum* in the end of the Latin translation of Aristotle's *Metereologica*.[10] Consequently, the *De congelatione* was passed as an authentic Aristotelian text which contained a rich arsenal of arguments against the notion of alchemical transmutation and soon enough the Avicennian text became the 'gospel' of the adversaries of alchemy. Among others, the *De congelatione* comprised two basic doctrines which promulgated the impossibility of alchemical transmutation. According to these doctrines a transmutation was not possible due to two reasons: a) nature is superior to art and therefore the latter cannot surpass the former and b) the true characteristics of the metal which determine its species cannot be known since they subsist beneath the level of the senses. As a result, the alchemists cannot manipulate something that they do not actually fathom.[11]

The aforementioned text was circulated under the expression *Sciant artifices*, which was the incipient script of the text. It was in that debate that Albertus Magnus took part and articulated his opinion on the matter in his *De mineralibus*, which was written approximately in 1260. In the ninth chapter of the third Book of the *De mineralibus*, Albertus describes his theory of transmutation, according to which:

> "On the basis of all the foregoing arguments, we are now able to consider the truth of the statement which some ascribe to Aristotle, although in truth it was made by Avicenna...And for this reason, he himself adds that 'specific forms' are not transmuted, unless perhaps they are first reduced to prime matter – the matter of the metals – and then with the help of art, developed into the specific form of the metal they

[8] Michael D. Bailey, *Magic and Superstition in Europe: A Concise History from Antiquity to the Present* (Lanham: Rowman and Littlefield Publishers, 2007), 116-119.

[9] In the 14th century the Church adopted a more aggressive stance towards alchemy. The Pope John XXII promulgated in 1317 his decretal *Spondent quas non exhibent*, in which he denounced alchemy for promising things it cannot deliver. The stance of the Church culminated in Nicholas Eymerich and his *Contra alchymistas* (1396), in which we meet a severe opposition against alchemy too [William Newman, "Medieval Alchemy", in *The Cambridge History of Science Volume 2: Medieval Science*, ed. David C. Lindberg and Michael H. Shank (New York: The Cambridge University Press, 2013), 397].

[10] James K. Otte, "The Life and Writings of Alfredus Anglicus", *Viator* 3 (1972): 283.

[11] Newman, "Technology and Alchemical Debate in the Late Middle Ages", 427-428.

want."[12]

As one may deduce, Albertus argues in favour of the alchemical transmutation and the obvious question is whether the statement above is in agreement with his philosophical theory of matter and of creation. Therefore, I will deal with these two subjects in the following chapters.

## III. Negative transmutation: Avoiding a *creatio ex nihilo*

Before I proceed with the analysis of the excerpt above, two facts should be born in mind: a) Aristotle did not write anything on alchemy. However, during Albertus' time one may take into account the pseudo-Aristotelian *Secretum secretorum* whose influence and circulation were more than apparent.[13] Therefore, b) there was an overall conviction that Aristotle is actually likely to have dealt with alchemy and, in order to justify such a conviction, Albertus drew heavily on Aristotle Graecus and Aristotle Latinus, that is, the *Liber de causis*.

In the very beginning, Albertus asserts that 'the specific forms of the metals are not transmuted', a statement which implies that perhaps he wanted to avoid problems which are connected with a *de facto creatio ex nihilo* via alchemy. In particular, Albertus found himself in a similar position when he was commenting on the second Book of the *Setences* of Peter Lombard (ca 1096-1160) and he was dealing with the question of 'whether demons can induce new substantial forms in transmuted bodies'. This question was the result of a passage from the *Exodus* according to which Aaron and Moses were found in a contest against the Magi of Pharaoh. The latter transmuted their wooden staffs into serpents with the aid of demonic magical arts and, therefore, one could claim that demons could be regarded as creators, as well. Albertus tackled this question by stressing that a transmutation of that kind was illusory and not substantial. Consequently, he used the *Sciant artifices* in order to justify the demonic performance as an act of art. Particularly, he adduced:

> "Likewise, art does not transmute a substantial form into [another substantial] form, because Aristotle says in Meteorology IV that "the ar-

[12] Albertus Magnus, *The Book of Minerals*, trans. Dorothy Wyckoff (Oxford: Clarendon Press, 1967), 177-178: Albertus Magnus, *De mineralibus*, ed. by A. Borgnet, lib. III, caput 9, tr.1: "Haec enim est sententia Avicennae, quam dicit esse Hastem philosophi praecipui in naturis et in mathematicis: tamen Avicenna in Alchimia sua dicit, quod contradictionem eorum qui in alchimicis de permutatione metallorum contradixerunt, invenit: propter quod et ipse subjungit, quod non permutantur species, nisi forte in primam materiam et in materiam metallorum reducantur, et sic juvamine artis deducantur in speciem metalli quod voluerunt."

[13] Steven Williams, "The Pseudo-Aristotelian *Secret of Secrets* as a Didactic Text", in *What Nature Does Not Teach: Didactic Literature in the Medieval and Early-Modern Periods*, ed. Juanita Feros Ruys (Turnhout: Brepols Publishers, 2008), 53.

> tificers of alchemy should know that species cannot be transmuted"; therefore demons cannot [transmute them], because they work only by means of art."[14]

From the excerpt above it becomes obvious that Albertus managed to avoid the problem of demonic creation by reducing the act of transmutation to alchemy and therefore to art. As a result, demons cannot be regarded as creators since their acts cannot be seen under the category of genuine creation. Nevertheless, let us now precede with Albertus' doctrine of creation, so as to understand more fully the doctrine of alchemical transmutation that will follow.

According to Albertus and his *Liber de causis et processu universitatis*:

> "The first in all things is "a being" which is necessary ex nihilo, since it presupposes nothing conceptually prior to it. And for this reason, in all things in which it is, it is necessary that it come to be through creation. For, what comes to be ex nihilo comes to be through creation."[15]

Up to this point, Albertus has provided us with the first thing created by God which is 'a being', a notion that is often equated to the notion of abstract matter.[16] However, in the past years Thérèse Bonin has convincingly showed that Albertus refers to the first created thing either as 'being' or as 'intelligence' and therefore this first created thing was regarded by Albertus as the 'concept' of being taken by itself.[17] Apart from this notion, however, Albertus realised that the term "intelligence" did not only designate a 'concept' but also a celestial intelligence provided that it was the first and most perfect recipient of created being.[18] This last interpretation is of great value to us, since it can be applied to Albertus' alchemical transmutation and its influences by the celestial bodies.

This short account on Albertus' theory of creation helps us follow his theory of the production of metals, since the last interpretation of intelligence seems to

---

[14] Albertus Magnus, *Commentarii in II Sententiarum*, ed. A. Borgnet, dist. VII, F, art. VIII: "Item, Ars non transmutat a forma substantiali in formam: quia dicit Aristoteles in IV Meteororum: Sciant artifices alchimiae species transmutari non posse: ergo nec daemones, quia ipsi non operantur nisi per modum artis."

[15] Isabelle Moulin and David Twetten, "Causality and Emanation in Albert", in *A Companion to Albert the Great: Theology, Philosophy and the Sciences*, ed. Irven M. Resnick (Leiden-Boston: Brill, 2013), 703.

[16] For a thorough description of 'being' as the 'first created' look: Térèse Bonin, *Creation as Emanation: The Origin of Diversity in Albert the Great's On the Causes and Procession of the Universe* (Indiana: University of Notre Dame Press, 2001), 40-51.

[17] Térèse Bonin, "Albert's De Causis and the Creation of Being", in *A Companion to Albert the Great: Theology, Philosophy and the Sciences*, ed. Irven M. Resnick (Leiden-Boston: Brill, 2013), 692-693.

[18] Ibid., 694.

be reiterated in the latter. In the third book of his *De mineralibus* Albertus states:

> "So undoubtedly there is a formative power in nature, poured into the stars of heaven, and this [power] guides towards a specific form the heat that digests the material of metals. For as we have said elsewhere, this heat has its right direction and formative power from the Moving Intelligence, and its efficacy from the light and heat emanating from the light starry sphere and from the power that separates things that are alike from things that are different, [that is] the power of Fire."[19]

Now, in order to understand the creation of metals, we must examine two profound notions, that of *vis formativa* and of *lumen*. In respect to the formative power, Albertus says that it should be seen as 'an artificer in the artifact' since it carries and conveys all the necessary information for the metal to be constructed. This formative power consists of three other powers, which are that of the mover of the spheres, that of the moved spheres themselves and that of the elements.[20] However, this formative power is directed towards the metals by a light emanating from the Moving Intelligence. In this point, Albertus again draws from the *Liber de causis* and Aristotle Latinus so as to portray a sort of creation as emanation. In particular, in Albertus' metaphysics, *lumen* is deemed as an emanative factor that secures unity and communication among the intelligences, the celestial spheres and the natural sub-lunar world. For example, it is due to the emanation of *lumen* that the First Intelligence understands itself and constitutes the Second intelligence and, by following this line of thinking, one may grasp how the levels and different grades of intelligences are formed and determined.[21]

In conclusion to this chapter, one may say that we were able to follow how Albertus avoided, even implicitly, connecting the notion of transmutation to that of *creatio ex nihilo*, whereas we also saw how the creation of metals was linked to basic notions and doctrines of the theory of creation of Albertus Magnus. Consequently, the next thing to examine is the possibility of the transmutation of metals and its accordance with Albertus' philosophy.

---

[19] Albertus Magnus, *The Book of Minerals*, 166-167; Albertus Magnus, *De mineralibus*, ed. A. Borgnet, lib. III, caput 5, tr.1: "...ita procul dubio virtus formativa in natura est et stellis et coelo influxa, quae ad speciem dirigit calidum digerens materiam metallic: sicut enim et in aliis dictum est, calidum hoc habet rectitudinem et virtutem formalem ex intellectu movente et efficaciam ex virtute luminis et calidi quod causatur ex lumine stellarum et orbis, et virtute segregandi homogenia ab eterogeniis per virtutem ignis."

[20] Adam Takahasi, "Nature, Formative Power and Intellect in the Natural Philosophy of Albert the Great", *Early Science and Medicine* 13 (2008): 456-458.

[21] Moulin and Twetten, 700-702.

## IV. Positive transmutation: Justifying a 're-creation' of metals

Finally, we are now able to go into the theory of transmutation of Albertus Magnus, who clearly states that a transmutation may occur "unless perhaps they (metals) are first reduced to prime matter – the matter of the metals – and then with the help of art, developed into the specific form of the metal they want". In the first place, one may notice that Albertus is somehow reluctant to admit the certainty of the alchemical process of transmutation and this has mostly to do with the inefficiency of art. Albertus accepts that heat is the key element not only to reduce a metal to its prime matter but also to transmute it into another one, but still he thinks that art may fall short in regards to the prerequisite heat. Therefore he stresses:

> "And these powers are the operations of intelligences which do not make mistakes – unless by some accident, for instance because of the uneven qualities of the material. But in the art of alchemy there is nothing of this, but only the miserable assistance of skill and fire."[22]

Yet, despite Albertus' cautious stance towards alchemy, he provides us with enough data throughout his corpus to allow us to synthesize Aristotle alchemicus, an alchemical theory of transmutation which is entrenched in Aristotelian doctrines. First of all, it is in the *De mineralibus* again that one may find Albertus' positive affirmation of the possibility of transmutation, which relies on the Aristotelian elemental theory that exists in the *De generatione et corruptio*.[23] According to his words:

> "We know from what has been determined in the science of Generation and Corruption, that among [things] having a common property in their material, powers and potentialities, the transmutation of anyone into another is easy...Therefore, it happens that the materials that are closest to the elements are transmuted into each other; and since such transmutation of the elements occurs, the metals must be capable of being transmuted into each other. And thus it happens that the production of metals is cyclical, from each other. Experience shows that this

[22] Albertus Magnus, *The Book of Minerals*, 17; Albertus Magnus, *De mineralibus*, ed. by A. Borgnet, lib. I, caput 3, tr. 1: "...et illae virtutes sunt intelligentiarum operations, quae non errant nisi per accidens, ex inaequalitate scilicet materiae. In arte autem nihil est horum , sed potius mendicata suffragia ingenii et ignis."

[23] The elemental theory of Aristotle rendered itself as the basis of the sulphur-mercury metallic theory of alchemy. According to it all metals are propounds of proportions between sulphur and mercury, which in turn stem from the four Aristotelian elements. For more see: Jost Weyer, "Die Alchemie im lateinischen Mittelalter", *Chemie in unserer Zeit* 1 (1989): 16-23.

> is the case, both in operations of nature and in techniques of art. As to natural processes, I have learned, by what I have seen with my own eyes, that a vein flowing from a single source was in one part gold, and in another silver having a stony calx mixed with it."[24]

However, in order to perform a transmutation, one needs to reduce a metal to its prime matter and, therefore, a new problem emerges which has to do with the metaphysics of the transmutation. To clarify this, one must investigate whether there is any link to Albertus' theory of matter[25], since one still needs to justify how a new form of a metal could occur. By delving into Albertus' *Physics*, one may find satisfactory evidence that supports the possibility of transmutation and of the emergence of another form.[26] In reference to the theory of matter of Albertus, matter should be regarded as a composition of privations, which are aptitudes for forms, beginnings of forms or imperfect forms. The notion of privation and its application to the alchemical theory of transmutation can be better conceived if we explain it in terms of a 'flowing form'. As we have already said, matter is a composite of privations, which are in turn imperfect or potential forms. Now, it is due to privation that matter renders itself capable of acquiring and gaining an actual form, since privation pre-contains, in a sense, the desired form. So, in terms of motion and flowing form, when something is becoming white, it must in some sense be already in a way white during the process of becoming white.[27] Likewise, during an alchemical transmutation, when a metal is reduced to its prime matter, it is due to privation and its aptitude for forms that a new metal may be formed or rather generated. Moreover, this account of privation secures in a way the fact, that during the procedure of transmutation,

---

[24] Albertus Magnus, *The Book of Minerals*, 200; Albertus Magnus, *De mineralibus*, ed. by A. Borgnet, lib. III, caput 6, tr.2: "Contingit igitur materias proximas elementorum ad invicem transmutari, quae transmutata necesse est ipsa ad invicem esse transmutabilia. Per hunc igitur modum contingit circularem esse ex se invicem metallorum generationem. Probant hoc autem experta tam in naturae operibus quam in artis solertia. In naturae enim operibus visu proprio didici, quod ab una origine vena fluens in quadam parte aurum fuit purum, et in alia parte argentum habens sibi admixtam calcem lapideam."

[25] For a general account on the subject of medieval matter see Robert P. Multhauf, "The Science of Matter", in *Science in the Middle Ages*, ed. David C. Lindberg (Chicago: The University of Chicago Press, 1978), 369-390. For Albertus Magnus' theory of Matter (general introduction from all his works) see Paul Hossfeld, "Erste Materie und Materie im allgemeinen in den Werken des albertus Magnus", in *Albertus Magnus – Doctor Universalis 1280/1980*, ed. Gerbert Meyer and Albert Zimmermann (Mainz: Mathias Gruenewald Verlag, 1980), 205-234.

[26] Albertus conflates the Latin 'species' with that of 'forma'. Such a conflation is permissible within the realms of Aristotelian philosophy, even though it raises great problems in terms of relation between species and genus.

[27] David Twetten, Steven Baldner, and Steven C. Snyder, "Albert's Physics", in *A Companion to Albert the Great: Theology, Philosophy and the Sciences*, ed. Irven M. Resnick (Leiden-Boston: Brill, 2013), 176.

the imperfect forms of the metals exist in the matter and, therefore, we don't have an *ex nihilo creatio*. Going one step further, there is also another element in Albertus' theory of matter that allows the formation of a new metal. This is the 'form of corporeity' that enables matter to be quantified and divided.[28] Congruently, in another work of Albertus, the *De caelo*, the 'form of corporeity' is used so as to explicate the corruption of the terrestrial bodies in comparison to the immortality of the celestial ones.

Given the above, it seems that a sort of compatibility between the alchemical theory of transmutation and that of matter is accomplished. Yet, a transmutation cannot occur unless formative power is bestowed upon the new metal. In this point, we have a major problem, since formative power was a crucial element in the creation of metals, which namely derived from the First Intelligence. So, is it possible to 'capture' somehow this formative power and truly bestow a new form during the transmutation? Of course, Albertus was fully aware of this deficiency and, probably, of the difficulty of 'capturing' this formative power and, ultimately, it is perhaps due to this very reason that he had articulated his distrust of the efficiency of art. Nonetheless, Albertus provides us with an alternative solution to this problem by stating that the alchemists are performing their work during a crescent moon, because it is then that purer metals and stones are produced and the whole process is aided by the virtues of the celestial spheres.[29] Inevitably, Albertus links alchemy to astrology, for only then is the influence of the formative power possible.

## V. Conclusion

As soon as alchemy entered the Latin West, it triggered a series of contradictions which veiled its practice and reception. On the one hand, alchemy met with the enthusiasm of eminent scholars and, on the other, the scorn and pejoration of others. Likewise, alchemy never gained university status, but yet it became the topic of a fervent debate. This contradictory factor may be seen in the alchemy of Albertus Magnus, as well. As we saw on the one hand, he articulates his cautiousness towards the effectiveness of alchemy and, on the other, he affirms the possibility of the transmutation of metals through a sort of generation. Yet, his theory of alchemical transmutation does not seem to be the result of an arbitrary act, since many elements of Aristotle Graecus and Aristotle Latinus are mixed in order to bring about an 'Aristotle alchemicus'. This 'Aristotle alchemicus', in turn, is in accordance with Albertus' doctrines of creation and his theory of matter, provided that elements of these doctrines are applied to, entwined with

[28] Ibid., 179.

[29] Albert the Great, *On the Causes of the Properties of the Elements*, trans. Irven M. Resnick (Milwaukee: Marquette University Press, 2010), 67.

and, perhaps, implied in his alchemical theory. In particular, Albertus' emanative doctrine of creation plays a crucial role in the transmutation of metals, whereas the notion of privation and that of a 'form of corporeity' supply us with the appropriate tools for the re-generation and re-emergence of a metal.

Nonetheless, this paper should be regarded only as the fresh start of a large topic and surely there is much still to be done if one wants to reach any tangible and profound inferences. For instance, there are still many primary sources from Albertus' corpus to be examined, whereas one must also take into consideration his Arabic sources. Yet, despite the brevity of the account in this matter, I sincerely hope that the ideas conveyed in this paper will become the springboard to a future research.

## References

Albertus Magnus. *De mineralibus*. Edited by A. Borgnet. Paris, 1890.

Albertus Magnus. *Commentarii in II Sententiarum*. Edited by A. Borgnet. Paris, 1894.

Albertus Magnus. *The Book of Minerals*. Translated by Dorothy Wyckoff. Oxford: Oxford University Press, 1967.

Albert the Great. *On the Causes of the Properties of the Elements*. Translated by Irven M. Resnick. Milwaukee: Marquette University Press, 2010.

Bailey, Michael, D. *Magic and Superstition in Europe: A Concise History from Antiquity to the Present*. Lanham: Rowman and Littlefield Publishers, 2007.

Bonin, Tırèse. *Creation as Emanation: The Origin of Diversity in Albert the Great's On the Causes and Procession of the Universe*. Indiana: University of Notre Dame Press, 2001.

Grund, Peter. "ffor to make Azure as Albert biddes: Medieval English Alchemical Writings in the Pseudo-Albertan Tradition". *Ambix* 53, no. 1 (2006): 21-42.

Grund, Peter. "Textual Alchemy: The Transformation of Pseudo-Albertus Magnus's *Semita Recta* into the *Mirror of lights*". *Ambix* 56, no. 3 (2009): 202-225.

Hossfeld, Paul. "Erste Materie und Materie im allgemeinen in den Werken des Albertus Magnus". In *Albertus Magnus – Doctor Universalis 1280/1980*, edited by Gerbert Meyer and Albert Zimmermann, 205-234. Mainz: Mathias Gruenewald Verlag, 1980.

Kibre, Pearl. "The Alkimia Minor Ascribed to Albertus Magnus". *Isis* 32 (1940): 267-300.

Kibre, Pearl. "Albertus Magnus on Alchemy". In *Albertus Magnus and the Sciences: Commemorative Essays 1980*, ed. James A. Weisheipl, 187-202. Toronto: Pontifical Institute of Mediaeval Studies, 1980.

Kibre, Pearl. "Alchemical Writings ascribed to Albertus Magnus". *Speculum* 17 (1942): 499-518.

Kibre, Pearl. "An Alchemical Tract attributed to Albertus Magnus". *Isis* 35 (1944): 303-316.

Kibre, Pearl. "Albertus Magnus, De Occultis Naturae". *Osiris* 13 (1958): 157-183.

Moulin, Isabelle and David Twetten. "Causality and Emanation in Albert". In *A Companion to Albert the Great: Theology, Philosophy and the Sciences*, edited by Irven M. Resnick, 694-724. Leiden-Boston: Brill, 2013.

Multhauf, Robert. "The Science of Matter". In *Science in the Middle Ages*, edited by David C. Lindberg, 369-390. Chicago: Chicago University Press, 1978.

Newman, William. "Technology and Alchemical Debate in the Late Middle Ages". *Isis* 80, no. 3 (1989): 423-445.

Newman, William. "An Overview of Roger Bacon's Alchemy". In *Roger Bacon and the Sciences: Commemorative Essays*, edited by Jeremiah Hackett, 317-336. Leiden: Brill, 1997.

Newman, R., William. *Promethean Ambitions: Alchemy and the Quest to Perfect Nature*. Chicago and London: The University of Chicago Press, 2004.

Newman, R., William. "Medieval Alchemy". In *The Cambridge History of Science Volume 2: Medieval Science*, edited by David C. Lindberg and Michael H. Shank, 385-403. New York: The Cambridge University Press, 2013.

Otte, K. James. "The Life and Writings of Alfredus Anglicus". *Viator* 3 (1972): 275-291.

Principe, M., Lawrence. *The Secrets of Alchemy*. Chicago: The University of Chicago Press, 2013.

Takahashi, Adam. "Nature, Formative Power and Intellect in the Natural Philosophy of Albert the Great". *Early Science and Medicine* 13 (2008): 451-481.

Thorndike, Lynn. *A History of Magic and Experimental Science*, vol. II. New York: Columbia University Press, 1923.

Twetten, David et al. "Albert's Physics". In *A Companion to Albert the Great: Theology, Philosophy and the Sciences*, edited by Irven M. Resnick, 173-220. Leiden-Boston: Brill, 2013.

Weyer, Jost. "Die Alchemie im lateinischen Mittelalter". *Chemie in unserer Zeit* 1 (1989): 16-23.

Whitney, Elspeth. "The Mechanical Arts in the Context of Twelfth- and Thirteenth- Century Thought". PhD diss., New York University, 1985.

Williams, Steven, "The Pseudo-Aristotelian *Secret of Secrets* as a Didactic Text", in *What Nature Does Not Teach: Didactic Literature in the Medieval and Early-Modern Periods*, edited by Juanita Feros Ruys, 41-58. Turnhout: Brepols Publishers, 2008.