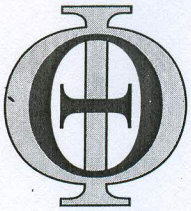

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Science at the Service of Philosophical Dispute: George of Trebizond on Nature

George of Trebizond (Georgius Trapezuntius, 1396-1472) is well appreciated for his translations, commentaries and treatises on philosophy, rhetoric and science. While there is a good deal of scholarship on Byzantine scholars in the Italian Renaissance, the topic of their contribution to philosophy of nature and science has not to date been thoroughly addressed. This paper purports to fill this lacuna. On the basis of major evidence, I will attempt to show the way Trapezuntius treated mathematics and physical sciences in order to serve his philosophical aims in the mid 15th century. Moreover, i will suggest possible byzantine sources for his astronomical corpus.

The translation of Aristotle's Libri Naturales and Claudius Ptolemy's Almagest

Around the year 1440, despite the fact that during that period he was mainly occupied with rhetoric, Trapezuntius' interest in physical sciences was probably strengthened, as he started translating and commenting Aristotle into Latin, an endeavor that lasted a few years and ended up with *Libri Naturales,*[1] the complete corpus of which was published in 1455.[2] Trapezuntius' main sources were Aquinas, Averroes, John Philoponus, Aegidius Romanus and Themistius.[3] It is worth noticing, at this point, that in the translation of Aristotle's *Meteoroligica,* he referred to the low quality of the existing translations of the works of Aristotle, based for their most on Arabic translations, which in turn contained many errors. Furthermore, Trapezuntius was completely dissatisfied with the medieval translations of William of Moerbecke (1215-1286) who, due to his methodology, reduced the value of the original texts.[4]

Trapezuntius was also unhappy with the fact that only a few scholars were engaged with physics. He firmly believed that a boost in science could only come through

[1] John Monfasani, *Collectanea Trapezuntiana, Texts, Documents and Bibliographies of George of Trebizond.* (Binghamton, New York, 1984), 142-143.

[2] Eugenio Garin, *Aristotelismo Veneto e Scienza Moderna* (Roma – Padova, 1981), 10. ; John Monfasani, *George of Trebizond: A Biography and a Study of his Rhetoric and Logic* (Leidenl, 1976), 176.

[3] Monfasani, *George of Trebizond*, 55-60. ; Monfasani, *Collectanea*, 603. ; Luca Bianchi, "Continuity and change in the Aristotelian tradition", in *The Cambridge Companion to Renaissance Philosophy*, ed. James Hankins (Cambridge, 2007), 61.

[4] Monfasani, *Collectanea Trapezuntiana*, 107. ; Pieter Beullens, "Aristotle, his Translators, and the Formation of Ichthyologic Nomenclature", in *Science Translated, Latin and Vernacular translations of Scientific Treatises in Medieval Europe*, eds. Michele Goyens, Michèle Goyens, Pieter de Leemans, An Smets (Leuven, 2008), 110-112, 121-122.

the careful study of Aristotle's original texts.[5] He was so confident about the quality of his work on Aristotle and its usefulness, so that he composes a congratulatory letter that allegedly Aristotle himself sent to Trapezuntius from the Elysian Fields in order to express his gratitude to the Cretan scholar![6]

A few years later (1451), commissioned by Pope Nicholas V, Trapezuntius translated Claudius Ptolemy's *Almagest (Μαθηματικὴ Σύνταξις)*. However, at the end of the same year, not only did Trapezuntius deliver the translation of Ptolemy's work, but also he published a lengthy commentary, which he almost immediately considered his opus magnum. His commentary is the largest work on mathematics in the 15th century, apart from Regiomontanus' writings.[7] Ptolemy became Trapezuntius' second nature. But what encouraged him to focus on physics and mathematical astronomy?

Around the year 1430, Trapezuntius studied in Venice Proclus' *Hypotiposis Astronomicarum Positionum* (*Ὑποτύπωσις Ἀστρονομικῶν Ὑποθέσεων)*.[8] In this work, Proclus attempted to present and analyze the theories of Hipparchus and Claudius Ptolemy, trying to compromise their disagreements. Proclus was not sure that his remarks were accurate, because he found it extremely difficult to understand the content of their books.[9]

In the preface of the second part of his commentary on the *Almagest*, Trapezuntius, though admitting measure unfamiliarity with mathematical astronomy, declared that it was easy for him to trace plenty of errors in the previous attempts to translate and comment the *Almagest*. The source of the misunderstanding was Theon of Alexandria (335-405). Theon wished to beat the preceding commentators of Ptolemy by commenting on the difficult passages of the text that were usually omitted. However, he was not accurate with the texts. He often erased passages adding his own views, thereby considerably changing the original text. As a result his readers were rather deceived.[10]

Trapezuntius noticed that Theon's commentary was full of errors which were reproduced accordingly in the literary tradition of all those Latin-speaking authors who followed him, whose work, in turn, bore the marks of misunderstanding even of Theon himself! According to Trapezuntius, Theon was not capable of conceiving the semicircular movements of celestial bodies considering all movements to be circular. He also misinterpreted the astronomical tables, leading to fallacies found in the works of Thabit ben Qurra (9th century), Geber (Jabir ibn Aflah, 11-12th centuries) and Leo Iudaeus (Levi Ben

[5] Monfasani, *Collectanea Trapezuntiana*, 142, 268. ; Monfasani, *George of Trebizond,* 61.

[6] Monfasani, *Collectanea Trapezuntiana,* 146.

[7] Monfasani, *Collectanea Trapezuntiana,* 672. ; Olaf Pedersen, *A Survey of the Almagest* (New York, 2010), 19-22.

[8] Monfasani, *Collectanea Trapezuntiana,* 685. ; Lynn Thorndike, *History of Magic and Experimental Science* (New York, 1953), 343.

[9] Thomas Little Heath, A *History of Greek Mathematics: II. From Aristarchus to Diophantus* (New York, 2006), 536-537. ; Otto E. Neugebauer, *A history of ancient mathematical astronomy* (New York, 1975), 236, 633, 907, 1036.

[10] David Pingree, "An illustrated Greek astronomical manuscript: Commentary of Theon of Alexandria on the 'Handy tables' and scholia and other writings of Ptolemy concerning them," *Journal of Warburg Courtauld Institute* 45 (1982), 185-192. ; Anne Tihon, "Notes sur l'astronomie grecque au Ve siècle de notre ère (Marinus de Naplouse – un commentaire au 'Petit commentaire' de Théon)," *Janus* 63.1-3. (1976), 167-184. ; Anne Tihon, "Théon d'Alexandrie et les 'Tables faciles' de Ptolémée," *Archives Internationales d'Histoire des Sciences* 35 (1985), 106-123. ; Anne Tihon, "Le livre V retrouvé du 'Commentaire à l'Almageste' de Théon d'Alexandrie," *Antiquité Classique* 56 (1987), 201-218. ; Gerald J. Toomer, "Theon of Alexandria," in *Dictionary of Scientific Biography* 13, ed. C. Coulston Gillispie (New York, 1970-1980), 321-325.

Gerson, 1288-1294). Based for the most part on Theon and Proclus, Thabit had attempted to refute crucial points of Ptolemy's theory.[11] Geber had written a harsh critique of the *Almagest* in Arabic (*De Astronomia o Flores ex Almagesto)*, which was translated in Latin by Gerard of Cremona in 1175.[12] Finally, Levi Ben Gerson had tried to correct Ptolemy's astronomical tables, but posited a ninth sphere and attributed precession to a "lag" of the ninth sphere. Trapezuntius refuted Hipparchus' and Levi's Ben Gerson position that the heavens moved only from east to west.[13] In fact Trapezuntius accused Theon of misunderstanding Ptolemy's beliefs, thereby leading scientists in mistakes about the size of the celestial bodies and their distances.[14] Trapezuntius decided to restitute Ptolemy's reputation against critique by suggesting that critique should in fact be turned against Theon's work.[15] It is worth noticing how amazed Trapezuntius felt at the fact that all of these previous scholars had carefully studied Theon but not Ptolemy.[16]

Similar remarks were made by Trapezuntius a few years later. Noticeably, in 1460-1462, during his conflict with Bessarion, he dedicated his commentary to the eminent Venetian citizen Iacobus Antonius Marcellus aspiring to get his help.[17] In his prologue, Trapezuntius blamed once more the Arabs for misunderstanding Ptolemy. Their errors had been abundantly reproduced, while Ptolemy's work remained in the dark instead of being brought into the light and studied. Trapezuntius was confident that his work would correct old mistakes and contribute to the enrichment of cosmological thought. He also admitted that his effort to translate Aristotle's *Libri Naturales* had the same purpose. He hence concluded by saying that all scholars ought to follow Aristotle and Ptolemy if they wanted to avoid error. However, he did not resign of his freedom to judge Ptolemy, if he found it necessary[18]

Trapezuntius' work on Ptolemy, combined with his astrological corpus, gave him the reputation of an expert in mathematics.[19] After the translation of the *Almagest*, Trapezuntius also translated and commented Pseudo Ptolemy's *Centiloquium* and wrote *De Antisciis* and *Cur his temporibus astrologum iudicia plerumque fallant.*[20]

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[11] Francis J. Carmody, *Astronomical Works of Thabit b. Qurra* (Berkeley, 1960), 151. ; Otto Neugebauer, "Thabit ben Qurra 'On the Solar Year' and 'On the Motion of the Eigth Sphere' Translation and Commentary", *Proceedings of the American Philosophical Society* 106 (1962), 264-299.

[12] F. J. Carmody, *Arabic Astronomical and Astological Sciences in Latin Translation* (Berkeley, 1956), 163-164. ; Richard P. Lorch, "The Astronomy of Jabir ibn Aflah," *Centaurus* 19 (1975), 85-107.

[13] Monfasani, *Collectanea,* 678, 696.

[14] Bernard R. Goldstein, "The Astronomical Tables of Levi Ben Gerson," *Transactions of the Connecticut Academy of Arts and Sciences, New Haven 45* (1974), 1-285. ; Bernard R. Goldstein, *The Astronomy of Levi Ben Gerson (1288-1344)* (Berlin, 1985). ; Bernard R. Goldstein, "The Physical Astronomy of Levi ben Gerson", *Perspectives on Science 5* (1997), 1-30.

[15] Dino John Geanakoplos, *Constantinople and the West: essays on the late Byzantine (Palaeologan) and Italian Renaissances and the Byzantine and Roman churches* (Madison, 1989), 57. ; Monfasani, *Collectanea Trapezuntiana,* 322.

[16] Monfasani, *Collectanea Trapezuntiana,* 323, 679.

[17] Margaret L. King, *The Death of the Child Valerio Marcello* (Chicago, 1994), 28.

[18] Monfasani, *Collectanea Trapezuntiana,* 250.

[19] Eugene Franklin Rice, *The Prefatory Epistles of Jacques Lefevre d' Etaples and Related Texts* (New York – London, 1972), 27.

[20] Monfasani, *George of Trebizond*, 118-119. ; Monfasani, *Collectanea Trapezuntiana*, 99-100, 689-697, 750-751. ; Lynn Thorndike, Pearl Kibre, *A Catalogue of Incipits of Mediaeval Scientific Writings in Latin* (Cambridge, 1963), 649, 966.

Pseudo Ptolemy's *Centiloquium* was first translated in Latin in the 12th century and Trapezuntius knew these previous translations, as he admitted in the Preface to king Alphonsus for his translation of Pseudo Ptolemy's work.[21] *Centiloquium* became influential in the Latin West, especially for medical practitioners.[22] The treatise contains astrological aphorisms pertaining almost on every aspect of human life. The author uses simple astronomy and mathematics so that the readers achieve a better understanding of universe and nature.[23] In the preface to Alphonsus for the commentary on *Centiloquium*, Trapezuntius asserted that while the length of the original text is short, its utility is noticeable.[24] Trapezuntius relied on Aristotle so that he proves that in the sublunar world things are complicated enough, because everything is composite and under astral influence. The composition of elements and the four qualities (heat, cold, moisture, and dryness) affect human soul, which, according to Trapezuntius, is organic, while intellect is not affected from external factors because, is not organic.[25] But Trapezuntius added that a certain kind of *fantasia* is organic. *Fantasia*, a faculty between the intellect and the senses which works in association with the intellect, is considered as inferior to intellect because it is contigent on sensory data. But human intellect is not capable of thinking without *fantasmata*. As a result, even intellect is subjected to astral influence *non per se, tamen per fantasia ipsum.* The only way to resist astral influence is to give predominance to reason (*ratio*). On the contrary, all others human activities besides reason are determined by the stars. Trapezuntius asserted that the study of his commentary could be useful for those who prefer to foresee instead of suffer.[26]

Trapezuntius, in his commentary of the *Centiloquium,* supported that the skilful should know the nature of the stars and their effects so that be prepared for the future events. Such a man would be able even to manipulate the future, a statement that proves, according to Trapezuntius, that there is not absolute astral determinism.[27] Moreover Trapezuntius argued that men should know the natural differences and mixtures of the stars, which are determined by the qualities of heat and cold.[28] It is worth mention that Trapezuntius ascribed the generation and corruption of elements and natural forms to celestial influence. The disposition of matter is dependent on astral movements and the zodi-

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[21] Monfasani, *Collectanea Trapezuntiana*, 98.

[22] Jeremiah Hackett, "Roger Bacon on Astronomy – Astrology: The Sources of the Scientia Experimentalis", in *Roger Bacon and the Sciences, Commemorative Essays*, ed. Jeremiah Hackett (Leiden, 1997), 175-198.

[23] Richard Lemay (1978), "Origin and Success of the *Kitab Thamara* of Abu Jafar ibn Yusuf ibn Ibrahim: From the Tenth to the Seventeenth Century in the World of Islam and the Latin West", in *Proceedings of the First International Symposium for the History of Arabic Science, April 5–12, 1976* (Aleppo, 1978), Vol. 2, 91–107. ; Shlomo Sela, *Abraham Ibn Ezra and the Rise of Medieval Hebrew Science* (Leiden, 2003), 299-305. ; Jim Tester, *A History of Western Astrology* (Suffolk, 1987), 152-156.

[24] Monfasani, *Collectanea Trapezuntiana*, 99.

[25] Aquinas, *ST*, I. Q.85a.6. ; Menachem Marc Kellner, *Maimonides on Judaism and the Jewish people* (New York, 1991), 13-14.

[26] Monfasani, *Collectanea Trapezuntiana*, 99-100.

[27] *Georgii Trapezuntii in Claudi Ptolomoei centum Aphorismos Commentarius, eiusdem de Antisciis, in quorum rationem fata sua rejicit, item ab eodem, Cur astrologorum iudicia plerumque fallant. Nunc primum omnia in lucem edita. Additus est dialogus Ioannis Pontani, in quo disputatur, quatenus credendum sit astrologiae* (Coloniae, 1544), aph.V.

[28] *Georgii Trapezuntii in Claudi Ptolomoei centum Aphorismos Commentarius*, aph.VII.

ac signs.[29] In aphorism XIV Trapezuntius, prompted by Pseudo-Ptolemy's reference to possible mistakes of the astrologers when they come to judgments before consideration, held that imagination is purely organic.[30] In the continuing aphorisms Trapezuntius discussed astral effects on medicine and the role of the planets and the fixed stars in human benevolence or calamities. In order to strengthen his comments and give them a philosophical apparatus, Trapezuntius occasionally mentioned Porphyry, Aristotle and Ptolemy. In addition he associated certain aphorisms with his personal adventures, especially his dismissal from the curia after 1451, which he attempted to explain as the outcome of astrological phenomena.[31]

Aphorism XLVIII is the starting point of the *De Antisciis*. Pseudo-Ptolemy supported that a planet occasionally exercise its influence in that part of the heaven wherein he had no essential dignity. Trapezuntius commented that the reader of the aphorism, in order to apprehend it, ought to calculate the antiscia, whose influence on astral and earthly events is critical. Antiscia is the shadow of a planet based on a line of reference. Trapezuntius blamed Greek authors because they omitted antiscia from their texts, despite Ptolemy's arguments and critique. Trapezuntius described himself as an expert on antiscia and he promised to revise faulty beliefs.[32]

In aphorism LXXXI Pseudo-Ptolemy described seven manners through which the times of the events of things are discovered. Despite his insistence in astrology, Trapezuntius suggested that we must ask ourselves about them and not adopt them as soon as we read them.[33] Despite his commitment to astrology and prophecy, Trapezuntius did not hesitate to express his critical attitude towards absolute astrological determinism. Trapezuntius, in aphorism LXXXVI, attempted to correct the text. He supported that Pseudo – Ptolemy did not refer to the Moon as the fountain of natural power, but of *vegetatium physicum*.[34] Furthermore Trapezuntius seemed to agree with the *Centiloquium* that the lunar month consist of twenty eight days, two hours, and about eighteen minutes, a rather odd duration according to the measurements of ancient and medieval astronomers, who usually support that the duration of a lunar month is 27 or 29 days.[35] Trapezuntius, in a locus classicus for him, blamed the previous Ptolemy's translators and commentators that they distorted the meaning of the text. Trapezuntius corrected their mistakes and enriched the text with his comments, which were based on Greek and Arabic tradition.[36]

De Antisciis is an original treatise, which completed Trapezuntius' earlier works on astronomy and astrology. As i mentioned earlier, Trapezuntius attempted to exemplify and correct aphorism LXXVIII, which refers to antiscia. In the treatise Trapezuntius presented a short biographical sketch of him and his horoscope so that he proves the accuracy of his calculations concerning the antiscia.[37]

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[29] *Georgii Trapezuntii in Claudi Ptolomoei centum Aphorismos Commentarius*, aph.IX.

[30] *Georgii Trapezuntii in Claudi Ptolomoei centum Aphorismos Commentarius*, aph.XIV. ; Aristoteles, *De anima*, 412b5-6.

[31] *Georgii Trapezuntii in Claudi Ptolomoei centum Aphorismos Commentarius*, aph.LVIII.

[32] *Georgii Trapezuntii in Claudi Ptolomoei centum Aphorismos Commentarius,* aph.XLVIII.

[33] *Georgii Trapezuntii in Claudi Ptolomoei centum Aphorismos Commentarius,* aph.LXXXI.

[34] *Georgii Trapezuntii in Claudi Ptolomoei centum Aphorismos Commentarius,* aph.LXXXVI.

[35] *Georgii Trapezuntii in Claudi Ptolomoei centum Aphorismos Commentarius,* aph.LXXXVII.

[36] *Georgii Trapezuntii in Claudi Ptolomoei centum Aphorismos Commentarius,* aph.LXXXVIII.

[37] *Georgii Trapezuntii de Antisciis, in quorum rationem fata sua rejicit,* L-L3.

The same time Trapezuntius also wrote the *Cur his temporibus astrologum iudicia plerumque fallant,* a short treatise in which he explained the reasons that lead astrologers to err. First of all, they calculate falsely the velocity and the position of the stars. Trapezuntius claimed that Ptolemy in the *Almagest* and him, in his comments on the *Almagest*, had proved these errors.[38] According to Trapezuntius there are two motions of the universe: *Alterum ab ortu ad occasum , alterum ab occasu ad ortum*. As in previous works of him, Trapezuntius criticizes Levi Ben Gerson, who misunderstanded and misinterpreted Ptolemy and other ancient astronomers.[39] Trapezuntius rejected Hipparchus' and Levi Ben Gerson's position that the heavens move only from east to west, while the contrary eastward motion is caused by their *tarditas*. Trapezuntius defended Ptolemaic astronomy, according to which a planet has a westward diurnal motion and an eastward proper motion. Arab astronomers, based on Aristotle's arguments, refuted Ptolemy and claimed that the one of these motions is violent. Trapezuntius, once more, defended Ptolemy against the Arabs, especially Al-Bitruji who introduced the theory of the *tarditas*.[40] In addition Trapezuntius refuted Hipparchus' theory of the ninth sphere, although certain commentators of Ptolemy's works also invoked a ninth sphere, to provide the eastward motion.[41] Trapezuntius claimed that the stars within the eigth sphere move also eastward.[42] According to Ptolemy the eight fixed sphere carries the stars. Moreover Trapezuntius distanced himself from most of the medieval, Christian, Arab and Persian, astronomers, who introduced up to eleven spheres so that they explaine heavenly motion. Medieval astronomers had proved the inconsistencies of the Ptolemaic model, but Trapezuntius did not follow them. He persisted to defend Ptolemy.[43] In a rather technical and scientific vocabulary, Trapezuntius recapitulated Ptolemy's main arguments on movement so that he proves that the distortion of Ptolemy's astronomy is the main cause of astrologers' and astronomers' errs.[44] *Cur his temporibus astrologum iudicia plerumque fallant,* besides being a systematic defence of Ptolemy's auctoritas, is by far the most concrete and scientific treatise of Trapezuntius astrological corpus, because his arguments are based on astronomy and not on proverbs or legends.

The Comparatio Philosophorum Platonis et Aristotelis

A few years later, namely in 1458, Trapezuntius attacked fervidly Plato and the Platonists. *Comparatio Philosophorum Platonis et Aristotelis* was the first book written in Latin that referred to the controversy between Plato and Aristotle, a highly debated issue

[38] *Georgii Trapezuntii Cur astrologorum iudicia plerumque fallant* , L5.

[39] *Georgii Trapezuntii Cur astrologorum iudicia plerumque fallant* , L5.

[40] Abū Isḥāk Nūr al-Dīn (al-Biṭrūjī), *De motibus coelorum* (Berkeley, 1952). ; James Lattis, *Between Copernicus and Galileo: Christoph Clavius and the collapse of Ptolemaic cosmology* (Chicago, 1994), 111-112. ; Jose Luis Mancha, "Al-Bitruji's theory of the motion of the fixed stars", *Studies in Medieval Astronomy and Optics*, ed. Jose Luis Mancha (Aldershot, 2006), 143-182. ; Anton Pannekoek, *A history of astronomy* (New York, 1989), 170.

[41] Lattis, *Between*, 164.

[42] Monfasani, *Collectanea Trapezuntiana,* 696.

[43] Anthony Grafton, Glenn W. Most, Salvatore Settis, *The Classical Tradition* (Cambridge, Mass., 2010), 90-94. ; Edward Grant, *Planets, stars and orbs: the medieval cosmos, 1200-1687* (Cambridge, 1996), 315-323. ; David C. Lindberg, *The beginnings of Western science: the European scientific tradition in philosophical, religious, and institutional context, 600 B.C. to A.D. 1450* (Chicago, 1992), 245-307.

[44] *Georgii Trapezuntii, Cur astrologorum iudicia plerumque fallant* , M4.

among the Greek speaking scholars of the 14th and 15th centuries.[45] Trapezuntius' criticism referred, among other subjects, to physics and mathematics. Trapezuntius reproduced mainly previous scholastic commentaries, such as Paul's of Venice. According to Trapezuntius, Aristotle is by far superior to Plato. The latter did not study nature systematically.[46] Aristotle, however, contributed in the reevaluation of physics and mathematics, setting the foundations of the sciences.[47] Trapezuntius wondered how Plato, mainly in *Timaeus*, was able to form three-dimensional bodies from surfaces, while surface has no altitude. In addition, how do lines, which lack width, build a surface? A monad cannot produce a body because it has not the ability to multiply numbers. But the mathematicians proved that each body has an altitude. According to Plato, a body is constituted by surfaces, which lack altitude. Furthermore, surfaces, which have width, are constituted by lines, which in turn lack width and have only length. Plato's geometry is founded on faulty arguments, because he attempts to create beings from non-beings, altitude and width from non-altitude and non-width.[48] Trapezuntius seems to project on Plato the basic principles of the so-called Pythagorean mathematics, while most of his arguments are drawn from Aristotle.[49] Despite Trapezuntius' criticism, Grosseteste, Cusanus and architects like Leon Battista Alberti followed, more or less, the Platonic arguments.[50]

Plato does not understand that the mathematicians and the physical scientists follow different methods. In nature, surfaces and lines are not separated from matter, while mathematicians consider them independently so that they preserve the incorruptibility of matter, where, on the contrary, form is subjected to corruption.[51] Trapezuntius adopted the Aristotelian arguments, which he drew mainly from *De Caelo and Physica*.[52] Also numerous medieval commentaria and treatises, such as those of Gerbert d' Aurillac, could have been Trapezuntius' sources.[53]

Trapezuntius claimed that Aristotle, as a kind of prophet, receives divine inspiration and applies it to form, an exemplary scientific method, whereas Plato does not use any method in his works. Consequently, his views are distantly presented. Trapezuntius compared Plato to an uneducated peasant and asked rhetorically why people admire someone like Plato, who did not teach anything about nature or humans. Plato does not provide science with anything, whereas Aristotle develops every scientific field in the proper way and according to its needs. On the contrary, Plato, like the chicken which

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[45] Paul Oscar Kristeller, "Byzantine and Western Platonism in the Fifteenth Century," in *Renaissance Concepts of Man and other Essays,* ed. Paul Oscar Kristeller (New York, 1972), 86-109. ; Monfasani, *George of Trebizond,* 201. ; John Monfasani, "Marsilio Ficino and the Plato-Aristotle Controversy," in *Marsilio Ficino: His Theology, His Philosphy, His Legacy*, ed. Michael J. B. Allen et al. (Leiden, 2002), 179-202.

[46] Georgius Trapezuntius, *Comparationes Philosophorum Aristotelis et Platonis A Georgio Trapezuntio Viro Clarissimo* (Unveranderter Nachdruck – Frankfurt a. M., 1965), f. B1r.

[47] Trapezuntius, *Comparationes*, f. B1r.

[48] Trapezuntius, *Comparationes*, f. B2v.

[49] Arist. *Metaph.* 996a14-17, 1028b16-21.

[50] John Hendrix, *Platonic architectonics: platonic philosophies and the visual arts* (New York, 2004), 70-71. ; John Hendrix, *Architecture as Cosmology: Lincoln Cathedral and English Gothic Architecture* (New York, 2011), 145.

[51] Trapezuntius, *Comparationes*, f. B2v.

[52] Arist. *Cael.* 299a 2-11, 299b 25-31. ; *Ph.*193b-194a.

[53] Anna Somfai, "The Brussels Gloss", in *Scientia in margine: études sur les marginalia dans les manuscrits scientifiques du moyen âge à la renaissance*, eds. Danielle Jacquart, Charles S. F. Burnett (Geneve, 2005), 166-168.

root about the soil, confuses mathematics because he uses numbers as witnesses without thorough investigation. Plato is forced to constantly incline to puzzles and myths so that he covers his ignorance. He acts like the cuttlefish, whereas Aristotle resembles the clear river.[54] Numenius, the Neo- Pythagorean philosopher of the 2nd century AD, was a probable Trapezuntius' source because he used the analogy of the cuttlefish so that he ridicules Arcesilaus. The passage lies in Eusebius' *Praeparatio Evangelica*, which Trapezuntius translated in Latin. Atticus, a philosopher of the Middle Academy, on the contrary, used the same analogy against Aristotle.[55]

It is also important to notice that the byzantine polymath Theodorus Metochites used the same analogy in his *Stoicheiosis Astronomike,* a work that probably Trapezuntius had read when he started to study astronomy and mathematics.[56] If so, we are able to trace a possible Trapezuntius' source. Metochites, although he was not an opponent of Plato, he composed a lengthy and well documented paraphrase of Aristotle's *Libri Naturales*, which Trapezuntius also translated and commented. Metochites studied Ptolemy and ancient astronomers, included Theon, Apollonius, Serenus and others. In his two astronomical treatises, namely *Προεισαγωγή εἰς τήν τοῦ Πτολεμαίου Σύνταξιν* and *Στοιχείωσις ἐπί τῇ ἀστρονομικῇ ἐπιστήμῃ,* Metochites attempted to purify astronomy from its Arabic and Persian influences. Trapezuntius empathized Metochites' concerns. Metochites felt proud because he was able to predict solar and lunar eclipses, as also Trapezuntius claimed in his works. According to Metochites astronomy could promote man's understanding of God's will, while astrology undermines free will. Under the influence of the Platonic *Epinomis,* Metochites considered astronomy as the apex of theoretical reason, because astronomy deals with incorruptabilia.[57] It is obvious that Metochites arguments lies around those of Trapezuntius, who predominantly in his treatise *Cur his temporibus astrologum iudicia plerumque fallant* supported the primacy of astronomy over astrology and its usefulness for the achievement of happiness via prediction. There can't be any kind of serious astrology without proper scientific knowledge of astronomy.

In the sixth book of the *Comparatio Philosophorum Platonis et Aristotelis,* the comparison of the two philosophers is centered upon mathematics. Trapezuntius projected the early modern distinction between mathematics and physical sciences to the 4th century BC, committing a serious mistake. In the opening passage, he called Plato once again uneducated in mathematics and physical sciences.[58] According to Trapezuntius, mathematics is the science of quantity, which in turn is divided into two self-contained elements: *"Verum quoniam quantitate bipartite, divisa et altera parte, aut et in se absoluta et ad aliud considerate, aut ad aliud tantum"*[59], as Aristotle suggested.[60] Mathematics is subdivided into arithmetic, geometry, harmonics and astronomy. It is also well

[54] Trapezuntius, *Comparationes*, f. B5v.

[55] Eusebius, *Praeparatio Evangelica*, 14.6.4-6. ; Charles H. Kahn, *Pythagoras and the Pythagoreans: A brief history* (Indianapolis, 2001), 120. ; Charles C. Schmitt, "Aristotle as a Cuttlefish, the Origin and Development of a Renaissance Image", *Studies in the Renaissance* 12 (1965), 60-72.

[56] Borje Bydén, *Theodore Metochites' Stoicheiosis astronomike and the study of natural philosophy and mathematics in early Palaiologan Byzantium*. (Goteborg, 2003), 68.

[57] Κωνσταντίνος Ν. Σάθας, *Μεσαιωνική Βιβλιοθήκη* I (Βενετία: 1872), πδ΄-ριη΄.

[58] Trapezuntius, *Comparationes*, f. B5r.

[59] Trapezuntius, *Comparationes*, f. B5r.

[60] Arist. *Metaph.* 1020a7-9.

perceived that Trapezuntius criticized heavily Plato, but at the same time, he divided mathematics according to the Platonic way.[61] Trapezuntius claimed that Plato is an ardent mathematician, but he lacks the ability to prove his views.[62] Anyone who, as Plato does, calls the numbers and the cubes squares, anyone who supports the idea that square or cubic space would be doubled, anyone who argues that he knows the quadrature of the circle and the inscription of epicycles according to the proportion of the diameter between triple circumferences, is a fraud. Plato is thought of as a mathematician, but he is not worth the title, because he does not use demonstrations.[63]

The Platonic system is similar to that of the Ceretani, an ancient Gallic tribe. In other words, the system of the Ceretani is about the eloquent words or the beautiful form without any stress over the content and the strict logic behind all the ideas presented. As a result, the orator who uses the method of the Ceretani gives the impression that he is a savant, while he is ignorant.[64] Trapezuntius claimed that Plato is the chief figure of the art of the Ceretani. Plato uses his eloquence to claim that he is expert in almost every subject, despite the fact that his knowledge is superfluous. For instance, Plato considers bodies to be composed from surfaces and lines because he thinks of them as undivided.[65]

Once again, Trapezuntius blamed unfairly Plato, who, according to Aristotle, accepted division and composition and used it in his system.[66] The obscurity of Platonic philosophy was a common topos in Renaissance. Furthermore, Cardinal Bessarion admitted that Plato wrote in a perplexed manner in order that his readers use their rational faculties and cultivate them.[67]

However, Trapezuntius held the view that Aristotle follows the proper scientific method. He studied the demonstrative syllogisms and arrived hence to the definitions.[68] In addition, he approached every scientific field in the proper correct way. For example, Aristotle never studies physics under the spectrum of mathematics and logic avoiding crucial mistakes. The Aristotelian mathematics is characterized by a great order in describing, demonstrating and concluding the problems in such a way that even geometry, if it were possible for it to read and write, would have chosen and used the Aristotelian system.[69]

However, Trapezuntius refrained from mentioning that Aristotle usually considers mathematics inferior to physics.[70] Furthermore, Trapezuntius claimed that Claudius Ptolemy, the most successful astronomer of all times, followed Aristotle's scientific method and vocabulary so that he was able to define the proportions of the diameters of the eccentrics and the epicycles.[71]

In this particular point, Trapezuntius is either unfair or ignorant: it is well known that Ptolemy shared with Plato the common belief in the existence of a kind of mathematical

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[61] Pl. *R.*, 525a ff.

[62] Trapezuntius, *Comparationes*, f. B6v.

[63] Trapezuntius, *Comparationes*, f. B6v.

[64] Trapezuntius, *Comparationes*, f. B6v.

[65] Trapezuntius, *Comparationes*, f. B6r.

[66] Arist. *Metaph.* 1019a 4.

[67] James Hankins, *Plato in the Italian Renaissance* (Leiden, 1990), v.1, 255-257.

[68] Arist. *Apr.* 24a 10-11. ; Trapezuntius, *Comparationes*, f. B6r-7v.

[69] Trapezuntius, *Comparationes*, f. B7v.

[70] Arist. *Metaph.* 1026a 18-32.

[71] Trapezuntius, *Comparationes*, f. B7v.

harmony behind chaos in the universe. Moreover, Ptolemy, when he introduced the eccentrics, deviated from Aristotle who held the view that the Earth is the centre of all the celestial movements.[72] As a conclusion, Trapezuntius supported the idea that certain valuable ideas of Plato were in fact Socratic, whose daemon was extraordinary and unique.[73]

The Trapezuntius – Bessarion controversy included also nature.[74] Georgios Gemistos Pletho in his *De differentiis* held the view that nature does not deliberate.[75] Bessarion claimed that Aristotle in fact supported that art and nature reflect deliberation.[76] Trapezuntius replied that although nature has purpose, it does not deliberate.[77] Bessarion composed in response the *De natura et arte* and wrote a letter to Theodore Gaza.[78] Trapezuntius openly opposed Bessarion in a rather lengthy letter to the cardinal (28/8/1469), in which Trapezuntius defended his views.[79]

Furthermore, in that letter, Trapezuntius criticized Bessarion's views on mathematics. Notably, Bessarion translated a passage from Plato's *Epinomis*. There Plato claimed that every diagram and system of number, and every combination of harmony, and the agreement of the revolution of the stars must be made manifest as one through all to him who learns in the proper way, and will made manifest if, as we say, a man learns aright by keeping his gaze on unity.[80] Earlier in the text Plato presented a single unifying scheme of proportion running through geometrical figures and proportions, arithmetical proportions, corresponding to square, line and cubes and the relations of the stars.[81]

Trapezuntius remarked that Bessarion misinterpreted the passage, which is highly doubtful. Instead Trapezuntius supported that every geometrical demonstration, order and combination of harmony must be made manifest to him whom learns in the proper way in every revolution of the stars.[82]

Trapezuntius blamed Bessarion that he did not know that Plato called numbers and harmonies *systema* and *systasin*, which are synonymous in Greek. Bessarion did not understand that number is more abstract than harmony and ratio than system. As a result Bessarion's conclusion distorted nature. Trapezuntius also accused Bessarion that he did not render the Greek terminology in Latin in the proper way, leading scholars to errors.[83]

Consequently, Trapezuntius turned to the universe and presented his views on heat, in direct influence of the Aristotelian philosophy, as presented in the *Meteorologica*. Ac-

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[72] Ptol. *Alm.* v.1, 2, 208.

[73] Trapezuntius, *Comparationes*, f. B7r.

[74] Edward P. Mahoney, «Aristotle and Some Late Medieval and Renaissance Philosophers », in *The Impact of Aristotelianism in Modern Philosophy, Studies in Philosophy and the History of Philosophy 39*, ed. Riccardo Pozzo (Washington, 2004), 14-19. ; Jean Cristophe Saladin, *La Bataille du Grec a la Renaissance* (Paris, 2004), 72.

[75] Georgios Gemistos, *"De Differentiis Platonicae atque Aristotelicae disciplinae,"* in *Patrologia Graeca*, ed. Jacques Paul Migne (Paris: 1866) CLX, 910D.

[76] Ludwig Mohler, *Kardinal Bessarion als Theologe, Humanist, und Staatsmann*, (Aalen, Paderborn, 1923-1942), v. III, 88-90.

[77] Mohler, *Kardinal Bessarion,* 102-106.

[78] John Monfasani[2], "Inediti di Bessarione e Teodoro Gaza," in *Byzantine Scholars in Renaissance Italy: Cardinal Bessarion and Other Emigres*, ed. John Monfasani (Hampshire, 1995), 241-243.

[79] Monfasani, *Collectanea Trapezuntiana,* 162-164.

[80] Pl. *Epin.* 1925.

[81] Pl. *Epin,* 1925.

[82] Monfasani, *Collectanea Trapezuntiana,* 173.

[83] Monfasani, *Collectanea Trapezuntiana,* 173-174.

cording to Trapezuntius, the superlunary bodies are in constant motion. As a result, the sun approaches and distances itself from earth, causing the succession of seasons, heat and cold, day and night, winds and rain, thunders and lightings. Motion is also the cause of the generation and corruption of the elements, namely fire, air and water.[84] According to Aristotle, all simple bodies are in constant motion.[85] Conversely, Plato gladly adopted the view that the sun is burning because it is hot.[86] Aristotle replied that heat is not self-generated in bodies, but is the result of friction. Trapezuntius criticised the Platonists who mocked Aristotle's explanation. In addition, he tried to prove the absurdity of the Platonists' position that the sun is a priori hot. If the sun was hot per se, its rays would have burned everything by contact, just as fire does. But the fact is that during winter, when the sun is closer to earth, the rays of the sun do not cause any rise in temperature. Quite the opposite, heat rises during summer, when the sun is afar.[87] Trapezuntius' arguments are based on Ptolemaic astronomy.

Trapezuntius explained this contradiction using Aristotelian physics. According to Aristotle, when rays of light reach material bodies, they shiver.[88] As a result, heat becomes the result of the friction of the shivered rays with the bodies; this is an argument attributed to Heraclitus. Trapezuntius added that the inhabitants of the Equatorial circle are black and the temperature there is high. In their region, the rays of the sun are shivered intensely because of the angle of incidence. Furthermore, Trapezuntius claimed that humans light fire resorting to mirrors. He also supported that sometimes humans are able to reflect the light of the sun without producing fire, while it is not possible not to produce fire from fire. The Platonists were naive as they held the view that heat is a proper quality of the sun. In other words, they attempted to explain the phenomenon metaphysically and not physically. If the sun was burning, as the Platonists claimed, everything would have arisen from fire and not from the sun, because anything inheres in the cause and not in the effect (*in causa....quam in causato*). But, according to Trapezuntius, this is absurd. It is worth mentioning that Trapezuntius abstained from a rational explanation of his argument.[89]

Moreover, the argument of the Platonists that the elements, namely air and fire, are moving by nature in circular orbits, just as the heavenly bodies, is naive and ridiculous. Trapezuntius rejected this argument and adopted the Aristotelian view, as presented in: the movement of air and fire is unnatural.[90] The natural bodies do not extend to different directions, but to a certain one, except for where there is a blockade. The movement of air and fire is by nature straight and linear, moving upwards. Consequently, any circular movement of air and fire is unnatural and caused by a blockade. Trapezuntius held that natural movement is unique. Nonetheless, unnatural movements could also have been unique because of the existence of more than one element.[91] Trapezuntius felt proud to proclaim that he proved, by his own arguments, the absurdity of the Platonists without

[84] Trapezuntius, *Comparationes*, f.B2r.

[85] Arist. *Cael.* 300a20.

[86] Pl. *Cra.* 413b3-5.

[87] Trapezuntius, *Comparationes*, f.B3v.

[88] Arist. *Mete.*340a 26-32

[89] Trapezuntius, *Comparationes*, f.B3r.

[90] Arist. *Cael.*269a 13-15.

[91] Trapezuntius, *Comparationes*, f.3r.

resorting to the Aristotelian texts. He expressed his annoyance for the fact that his contemporaries studied intensively the Platonic texts and admired Plato. Any unbiased reader of the Platonic texts is capable of understanding that they are deficient. Only the works of Aristotle give the necessary information on the philosophy of nature. In an extravagant reference, Trapezuntius called Plato 'insane' because he did not follow any scientific method in his texts and abstained from the search for the causes.[92]

Furthermore, Trapezuntius focused on the highly disputable issue of the immortality of the soul, which he connected not only with metaphysics, but also with physics. Trapezuntius confronted common sense and held the view that Aristotle was by far superior to Plato even in psychology. He suggested that Platonic theory of the soul is not original. He claimed that Plato reproduced Homer, the Orphics and the Pythagoreans.[93] As a result, Trapezuntius wondered why Plato is considered to be a philosopher while he did not teach anything original. In addition, his texts are written in an obscure manner. He confused mathematics with theology and nature. Conversely, Aristotle always rigorously proved his arguments and cited his sources so that he did not confuse his readers. He also followed different scientific methods in approaching physics and metaphysics, hence setting the foundations of science. Aristotle is compared to the clear and calm river. Trapezuntius exhorted his readers to study the Aristotelian corpus so that they learn about nature.[94]

Moreover, Plato asserts that the universe is not created by God, but comes to being from uncreated matter that rules the universe. Plato does not accept *creatio ex nihilo*, as did Aristotle,[95] a view opposite to the Christian teachings. Trapezuntius' arguments were drawn from his reading of *Timaeus* (69b) and *Critias* (111b, 114e). Bessarion replied that Plato and not Aristotle believed in *creatio ex nihilo*.[96] Consequently, according to Trapezuntius, Plato was not pious and prudent because he thought of matter as God, an argument that Bessarion refuted resorting to *Philebus*.[97]

Bessarion replied a few years later. In his *In Calumniatorem Platonis* Bessarion accused Trapezuntius that he distorted the philosophy of Aristotle. Bessarion also summarized the Platonic mathematics, focusing in their role in the preparation of the intellect so that humans recollect divine things.[98] He also supported Plato's opinions on the resolution of the elements into plane and linear figures.[99] To Aristotle's and Trapezuntius' objections of how Plato was able to form three-dimensional bodies from surfaces, while surface has no altitude, Bessarion suggested that the Pythagoreans and Plato proposed natural and not mathematical figures. According to Bessarion, the Pythagoreans and Plato probably argued that the principles of natural things are not geometrical figures. In addition astronomical models do not really exist in heavens. Astronomers tried to save the phenomena. Plato may have followed the same method when he elaborat-

[92] Trapezuntius, *Comparationes*, f.B4v.

[93] Trapezuntius, *Comparationes*, f.B4r. ; Procl. *Theol.Plat.* I.ch.5, 25, 24-26, 9.

[94] Trapezuntius, *Comparationes*, f. B4r-5v.

[95] Trapezuntius, *Comparationes*, II.5.

[96] Bessarion, *In Calumniatorem*, III.13, in Mohler, *Kardinal Bessarion*, 212-218 .

[97] Bessarion, *In Calumniatorem*, II.6, in Mohler, *Kardinal Bessarion*, 120.

[98] Andre Goddu, *Copernicus and the Aristotelian tradition: education, reading, and philosophy in Copernicus's path to heliocentrism* (Leiden, 2010), 223. ; Bessarion, *In Calumniatorem*, II.8, in Mohler, *Kardinal Bessarion*, 160-161.

[99] Goddu, *Copernicus*, 223. ; Bessarion, *In Calumniatorem*, II.11, in Mohler, *Kardinal Bessarion*, 199, 201.

ed plane figures.[100] Moreover Bessarion supported that the abstractness of mathematics strengthen the arguments in favor of the immortality of the soul, a key doctrine of Platonic philosophy. Mathematics is the path to the apprehension of divine things. But in chapter XII Bessarion added that mathematics, while it is the most worthy and suitable study for free men because it prepares the mind for higher things and for the common good of the community, does not lead humans to the divine. Experience has proved that even adept mathematicians were not in a privileged position rather than common men in reaching the divine.[101] It is worth mention that Bessarion, between 1431 and 1433, studied mathematics under Pletho.[102]

The causes of the controversy

But the crucial question remains: why did Trapezuntius launch such an attack on Plato? During his lifetime, Trapezuntius studied Plato; in fact, he started his philosophical career as a Platonist. Trapezuntius translated more of Plato into Latin than anyone else before Ficino.[103] In addition, he promoted in parallel with Comparatio Philosophorum Platonis et Aristotelis his translation of the Leges, Parmenides and Epinomis.[104] Several times, Plato claimed that, along with dialectics, mathematics is the path to truth.[105] He also suggested that the philosopher-king ought to study mathematics for ten years so that his soul moves towards the truth.[106] Moreover, in Timaeus, Plato expressed his admiration for astronomy, which he subjected to mathematics instead of physics. Also, the Platonic myth of Er enriched the astronomical thought with its connotations.[107] Trapezuntius' obsession with astronomy is well-known as well; although Trapezuntius' ignorance remains an easy and convenient answer, i think that is not the right one. Trapezuntius was blamed several times for mistakes and inconsistencies in his works; but we are obliged to admit that his bad reputation as a scholar is, for the most part, the result of his temperament. His translations were thoroughly studied by philosophers like Cusanus, Ficino and Pico della Mirandola. Noticeably, his translation of the Almagest and its commentary marked the scientific thought in the 15th and 16th century, obliging Tycho Brahe to use it and admit the excellent quality of Trapezuntius' work, as Kepler mentioned.[108]

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[100] Goddu, *Copernicus*, 223-224. ; Bessarion, *In Calumniatorem*, II.12, in Mohler, *Kardinal Bessarion*, 203-207.

[101] Bessarion, *In Calumniatorem*, II.8, in Mohler, *Kardinal Bessarion*, 209-212 ; Goddu, *Copernicus*, 224.

[102] Hankins, *Plato*, 218.

[103] Hankins, *Plato*, 180.

[104] Geanakoplos, *Constantinople and the West*, 55. ; Felix Gilbert, "The Venetian Constitution in Florentine Political Thought", in *Florentine Studies*, ed. Nicolai Rubenstein (Evanston, 1968), 463-500. ; Monfasani, *George of Trebizond,* 73, 102, 167-168. ; John Monfasani, « Nicholas of Cusa, the Byzantines, and the Greek Language », in *Nicolaus Cusanus zwischen Deutschland und Italien*, ed. Martin Thurner (Berlin, 2002), 220-221. ; Vasileios Syros, « Between Chimera and Charybdis: Byzantine and Post-Byzantine Views on the Political Organization of the Italian City-States", *Journal of Early Modern History 14* (2010), 473-477.

[105] Pl. *Phlb.* 59a-c. ; Pl. *R.* 521d-525a.

[106] Pl. *R.* 522c-531d, 537c.

[107] Pl. *R.* 616c4-617d1. ; Vassilios Kalfas, *"O Mithos toy Hros kai I Platoniki Politeia",* in *Filosofia kai Epistimi stin Arxaia Ellada,* ed.Vassilios Kalfas (Athens, 2005), 71-91. ; Geoffrey Ernest Richard Lloyd, *Methods and Problems in Greek Science* (Cambridge, 1991), 333-351.

[108] Monfasani, *Collectanea Trapezuntiana,* 672, 750.

The solution to our problem probably lies in humbler causes: Trapezuntius admitted that he changed his attitude towards Plato after reading *Gorgias*. In that dialogue, Plato held the view that rhetoric is a useless art which serves flattering instead of virtue. Trapezuntius saw in rhetoric a great chance to build a career in Italy[109] and probably believed that a translation of *Gorgias* would have been catastrophic for his plans. Yet, while his interest in rhetoric went back to early 1420's he admitted that he read *Gorgias* for the first time in Italy in 1430 and felt offended by it.[110] Furthermore, Trapezuntius blamed Plato for accusing the four liberators of Greece, namely Miltiades, Themistocles, Pericles and Cimon of being orators. As a result, the Platonic text was considered to be dangerous for the audience because it was able to challenge the moral of the Greeks who were threatened by the Turks![111] On the contrary Bessarion claimed that Plato was right, because the four "liberators" failed to encourage virtue and as a result led down their city to the mob.[112] Moreover, Trapezuntius studied passionately prophetic, chiliastic and apocalyptic texts, which, after he converted to Catholicism,[113] led him to suspect the Platonists, among them Georgius Gemistos and Bessarion. He thought of them, or it was useful for his agenda to think of them as such, to be servants of the antichrist and prepared for the second coming of the Christ.[114] Trapezuntius omitted to mention that Bessarion admired Aristotle as much as Plato and defended his work. Bessarion also suggested that Aristotle is superior in physics and Plato in metaphysics.[115]

Therefore, when Pope Nicholas V considered the critique of Iacobus Cremonensis on Trapezuntius' translation and commentary of the *Almagest*, he expressed his dissatisfaction about Trapezuntius' works. The latter assumed he was the victim of a conspiracy, whose leading figure was Cardinal Bessarion. When Bessarion lent the manuscript of the *Almagest* to Pope Nicholas V, he advised Trapezuntius to remain faithful to Theon's commentary.[116] After Trapezuntius' dismissal from the papal service, Bessarion sent him a letter. He wrote that he expected a more severe punishment for Trapezuntius. It is for this reason that Bessarion encouraged Theodore Gaza to retranslate Aristotle's *Libri Naturales*, especially *Problemata*, with a view that condemns Trapezuntius' work.[117] Bessa-

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[109] Lawrence Green, "The Reception of Aristotle's *Rhetoric* in the Renaissance", in *Peripatetic Rhetoric After Aristotle*, eds. William W. Fortenbaugh, David C. Mirhady (New Brunswik, 1994), 320-328. ; Wayne Rebhorn, *Renaissance Debates on Rhetoric* (Ithaca NY, 2000), 27.

[110] Trapezuntius, *Comparationes*, f.O6r.

[111] Hankins, *Plato*, 168-170. ; Monfasani, *George of Trebizond,* 18-19. ; Peter Schulz, « George Gemistos Plethon (ca. 1360-1454), George of Trebizond (1396-1472), and Cardinal Bessarion (1403-1472) : The Controversy between Platonists and Aristotelians in the Fifteenth Century », in *Philosophers of the Renaissance*, ed. Paul Richard Blum (Washington, 2010), 27. ; Trapezuntius, Comparationes, f. O6v-P2r.

[112] Mohler, *Kardinal Bessarion*, 544-552

[113] Monfasani, *George of Trebizond,* 21.

[114] Monfasani, *George of Trebizond,* 159. ; Robert Black, *Benedetto Accolti and the Florentine Renaissance* (Cambridge, 1985), 229-230, 233, 237. ; John Monfasani, "Platonic Paganism in the Fifteenth Century," in *Byzantine Scholars in Renaissance Italy: Cardinal Bessarion and Other Emigres*, ed. John Monfasani (Hampshire, 1995), 46-61.

[115] Charles H. Lohr, « Metaphysics », in *The Cambridge History of Renaissance Philosophy*, eds. Charles B. Schmitt, Quentin Skinner (Cambridge, 1988), 562-566. ; Monfasani, *George of Trebizond,* 160. ; Mohler, *Kardinal Bessarion,* v. III, 511-513.

[116] Monfasani, *Collectanea Trapezuntiana*, 322.

[117] John Monfasani, "The Pseudo-Aristotelian *Problemata* and Aristotle's *De Animalibus* in the Renaissance", in *Natural Particulars: Nature and the Disciplines in Renaissance Europe*, eds. Anthony Grafton, Nancy Siraisi (Cambridge, Mass., 1999), 205-247. ; John Monfasani, "George of Trebizond's Critique of Theodore Gaza's

rion and other critics focused mainly on the commentary of the *Almagest*. There weren't any complaints about the quality of the translation of the *Almagest* in itself.[118] Trapezuntius attempted to defend his work and composed the *Adversus Theodorum Gazam in perversionem Problematum Aristotelis a quondam Theodoro Gage editam et problematice Aristotelis philosophie protectio* (1456). Not only did the conflict have scholarly undertones, it is clear that it also had personal ones, despite the fact that until early 1450s Bessarion was one of Trapezuntius' patrons.[119] Trapezuntius' first conflict with Bessarion was on matters of faith.[120] This controversy marked the beginning of their conflict.

Bessarion was mindful of Trapezuntius' sour behavior and wanted to see him punished for this. He wanted to defame Trapezuntius' translation and commentary in the *Almagest.* Looking around for the right person for this undertaking took him almost ten years – something that proves Trapezuntius' high expertise and value on the field. In 1460, Bessarion traveled to Vienna, where he met Georg von Peurbach (1423-1461. He proposed him to undertake the composition of an *Epitome* of the *Almagest (Epytoma in Almagesti Ptolemei),* which, according to their ambition, would substitute Trapezuntius' work. Peurbach accepted the task with pleasure.[121]

Peurbach's intended to produce a comprehensible text that would restore Theon's reputation, which had suffered a fatal blow from Trapezuntius' work. But Peurbach died the next year. His work was incomplete and, according to his wish, the task was taken up by his beloved pupil Johannes Muller von Konigsberg or Regiomontanus (1436-1476), who, although of little experience, he had worked with Peurbach in the correction of astronomical tables and planets' position. Regiomontanus had a serious disadvantage: he was not fluent in Greek at times, let alone the fact that the language Ptolemy used was difficult anyway.[122] Regiomontanus stayed close to Bessarion as his protégé from 1461 to 1465.[123]

Translation of the Aristotelian Problemata", in *Aristotle's Problemata in Different Times and Tongues*, eds. Pieter de Leemans, Michele Goyens (Leuven, 2006), 275-294. ; Jolanda Ventura, "Translating, Commenting, Retranslating: Some Considerations on the Latin Translations of the Pseudo-Aristotelian *Problemata* and their Readers", in *Science Translated, Latin and Vernacular translations of Scientific Treatises in Medieval Europe*, eds. Michele Goyens, Michèle Goyens, Pieter de Leemans, An Smets (Leuven, 2008), 127.

[118] Monfasani, *George of Trebizond,* 104-113.

[119] Monfasani, *George of Trebizond,* 49.

[120] Monfasani, *George of Trebizond,* 90-91.

[121] Eric John Aiton, "Peurbach's 'Theoricae novae planetarum'," Osiris 2.3 (1987), 4-43. ; Ad Meskens, *Travelling Mathematics – The Fate of Diophantos' Arithmetic* (Basel, 2010), 135-138. ; Noel M. Swerdlow, *"Introduction"*, in *Ancient Astronomy and Celestial Divination*, ed. Noel M. Swerdlow (Cambridge, Mass., 1999), 1-40. ; Michael Shank, "Regiomontanus on Ptolemy, Physical Orbs, and Astronomical Fictionalism: Goldsteinian Themes in the 'Defense of Theon against George of Trebizond,'" *Perspectives on Science* 10 (2003), 182-183.

[122] Andrei Belyi, "Regiomontanus and his place in the history of science. On the occasion of the 500th anniversary of his death," *Fiz.-Mat. Spis. Bulgar. Akad. Nauk* 2.53.1 (1977), 50-60. ; James Evans, *The History and Practice of Ancient Astronomy* (Oxford, 1998), 400-401. ; John Lewis Heilborn, *The Sun in the Church: Cathedrals as Solar Observatories* (Cambridge, Mass., 2001), 6-7. ; David Lindberg, *The Beginnings of Western Science: The European Scientific Tradition in Philosophical, Religious, and Institutional Context, Prehistory to A.D. 1450* (Chicago, 2008), 162-163. ; Jack Repcheck, *Copernicus' Secret* (New York, 2008), 17. ; Michael Shank, "The Classical Scientific Tradition in Fifteenth- Century Vienna," in *Tradition, Transmission, Transformation, Proceedings of two conferences on pre-modern science held at the University of Oclahoma*, ed. F. Ragep et al. (Leiden, 1996), 115-129. ; Michael Shank, "Regiomontanus and homocentric astronomy," *Journal for the History of Astronomy* 29.2 (1998), 129. ; Shank, "Regiomontanus on Ptolemy", 182-183.

[123] James Steven Byrne, "A Humanist History of Mathematics? Regiomontanus's Padua Oration in Context," *Journal of the History of Ideas* 67.1 (2006), 41-61. ; Helmuth Grössing, "Regiomontanus und

Yet, despite the deficiency, not only did Regiomontanus continue the work on the *Epitome*, but he also started writing a brand new work: *Defensio Theonis contra Trapezuntium*. The title needed no elaboration; Bessarion had eventually found his man. In order to accomplish his goal, Regiomontanus borrowed Theon's commentary from Bessarion's library.[124] He probably consulted Iacobus Cremonensis commentary as well. In any event, Peurbach and Regiomontanus were prejudiced; after their arrival to Italy, they had refused to use Trapezuntius' translation and commentary insisting instead on the old Latin translation which was proved erroneous. Regiomontanus' poor knowledge of Greek notwithstanding, it is not difficult to see how they missed the point. Zinner believed that Regiomontanus finally read Trapezuntius' works just before he left to Hungary, around 1465.[125] Unfortunately, the *Epitome* was published in 1462. The *Epitome* is not just a summary of Ptolemy's work; it also contains Regiomontanus' comments and opinions. He tried as well to correct Ptolemy's theory about the Moon, inspiring a few years later the young Copernicus.[126] Trapezuntius could not hide his contempt.

Regiomontanus always threatened that he would have completed and published his *Defensio Theonis contra Trapezuntius*. The work was still incomplete as Regiomontanus left Hungary for Nurberg (1471), but he finally died in Rome on 6 July 1476. According to rumors, he died from intoxication by Trapezuntius' sons in a desperate attempt to defend their father's reputation. Just before his sudden death, Regiomontanus had declared that he plans to publish his *Defensio Theonis contra Trapezuntium*, in the hope of exposing Trapezuntius' erroneous beliefs to a larger audience.[127] In the meantime, Bessarion wary of the delay of Regiomontanus assigned the attack on Trapezuntius to Nicollo Perotti (1429-1480), who wrote the *Refutatio Deliramentorum Georgii Trapezuntii* (1471).[128] However, this effort was also not adequate for Bessarion's expectations. Trapezuntius' works were still studied.[129]

Hankins suggested another, least possible, answer for Trapezuntius' aversion for Plato and the Platonists; that Trapezuntius followed in the footsteps of other Byzantine scholars who converted to Catholicism and praised scholastic Aristotle. Trapezuntius preferred the scholastic Aristotle instead of the theology of Saint Gregory Palamas. According to Hankins, Trapezuntius identified the Byzantine church with Platonism, although Hankins himself admitted the inaccuracy of this view[130], which is based on false

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Italien. Zum Problem der Wissenschaftsauffassung des Humanismus," in *Regiomontanus studies,* ed. Gunther Hamann (Vienna: 1980), 223-241. ; Rudolf Mett, *Regiomontanus in Italien*, (Vienna, 1989).

[124] Monfasani, *Collectanea Trapezuntiana*, 673.

[125] Menso Folkerts, "Regiomontanus' Role in the Transmission and Transformation of Greek Mathematics," in *Tradition, Transmission, Transformation*, ed. F. Jamil Ragep et al. (Leiden, 1996), 110-111. ; Ernst Zinner, *Leben und Wircken des Joh. Muller von Konigsberg gennant Regiomontanus* (Osnabruck, 1968), 76-137.

[126] Shank, "Regiomontanus and homocentric astronomy", 157-166. ; Shank, "Regiomontanus", 179-207.

[127] Geanakoplos, *Constantinople and the West*, 57-58, 76. ; Heilborn, *The Sun in the Church,* 7. ; King, *The Death of the Child Valerio Marcello*, 165-206. ; Rudolf Mett, *Regiomontanus: Wegbereiter des neuen Weltbildes* (Leipzig, 1996), 62-72. ; Felix Schmeidler, *Joanni Regiomontani opera collectanea* (Osnabruck, 1972), 533.

[128] John Monfasani, "Il Perotti e la Controversia tra Platonici ed Aristotelici" in *Byzantine Scholars in Renaissance Italy: Cardinal Bessarion and Other Emigres,* ed. John Monfasani (Hampshire, 1995), 195-207.

[129] Elizabeth Einsestein, *The Printing Press as an Agent of Change: Communications and cultural transformations in early-modern Europe* (Cambridge, 1979), 464. ; John Monfasani, "A tale of two books: Bessarion's In Calumniatorem Platonis and George of Trebizond's Comparatio Philosophorum Platonis et Aristotelis," *Renaissance Studies* 22.1 (2008), 1-15.

[130] Hankins, *Plato*, 170-171, 193-195.

and inadequate reading of Byzantine philosophy and theology. If Trapezuntius identified Platonism with Hesychasm, his knowledge of philosophy and theology, when he converted to Catholicism, was probably superficial. But it is highly doubtful to support such an argument for the mature Trapezuntius of the mid 1450's. Moreover, Trapezuntius translated Plato even after the *Comparatio Philosophorum Aristotelis et Platonis*. He did not refuse to translate *Parmenides,* under the commission of Cusanus (1458-1459), although in the preface he criticized Plato and Socrates.[131]

Conclusion

Trapezuntius' hostility against Plato and the Renaissance Platonists, especially the Greek speaking, was chiefly the outcome of personal adventures and ambitions rather than of a solid philosophical endeavor or chiliastic delusion. Philosophy, physical sciences, mathematics, prophecy and chiliasm were means for Trapezuntius' goals: recognition, appreciation, glory and offices.[132] Although his motives were humble, his industriousness and knowledge of ancient, byzantine and medieval sources gave him the opportunity to give a boost in science and philosophy during the 15th century. Scholars who fled from Greece to Italy before or short after the fall of Constantinople contributed, from theirs part, not only to humanities but also to mathematics, physics, astronomy and astrology. It is worth mention that Copernicus owned and read Bessarion's *In Calumniatorem Platonis,* a work that introduced him not only to Bessarion's views, but also to Plato's, Aristotle's and Trapezuntius'.[133]

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[131] Hankins, *Plato*, 184-186.

[132] Anna Akasoy, "Die Adaption byzantinischen Wissens am Osmanenhof", in *Wissen in der Krise: Institutionen des Wissens im gesellschaftlichen Wandel*, eds. Carsten Kretschmann, Peter Scholz (Berlin, 2004), 50-51. ; Hankins, *Plato*, 167. ; James Hankins, "Renaissance Crusaders, Humanist Crusade Literature in the Age of Mehmed II", in *Humanism and Platonism in the Italian Renaissance, v.1 Humanism*, ed. James Hankins (Roma, 2003), 306-333. ; Tijana Krstic, *Contested Conversions to Islam: Narratives of Religious Change in the Early Modern Ottoman Empire* (Stanford, 2011), 62-63, 75.

[133] Goddu, *Copernicus*, 220-225.

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