

Introducing Aristotelian Logic in Seventeenth Century China^{*}

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【Abstract】The translation into Chinese of Aristotelian logic by Francisco Furtado and Li Zhizao in the Seventeenth century constitutes one of the most ambitious projects in the encounter between Europe and China, which deserves more scholarly attention not only from the point of view of intellectual history, but also because of the philosophical questions that their translation raises. Through a careful reading of the Chinese and Latin texts, this study examines the relevance of logic, or dialectics, for Chinese culture, or in other words, the question of its universality.

Chinese philosophy has traditionally developed along a method of knowledge based on moral intuition, while Scholasticism in the West was founded on dialectics (or logic), and thus, the encounter of the two traditions in the Seventeenth century China was full of promises, but also needed to overcome many difficulties. The Portuguese Jesuit Francisco Furtado (Fu Fanji 傅汎濟, 1589 - 1653) started a fruitful collaboration with the Chinese literatus Li Zhizao 李之藻 (1571-1630). In 1628, they had already produced *Huan you quan* 寰有詮 (Explanation on the Universal Being), which is based on the Coimbra commentary on the *De coelo* (1592). However, a

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more ambitious project was the translation of Aristotelian logic. According to Li Zhizao's son, Li Cibi 李次彪 (dates unknown), the translation of *De coelo* was undertaken as a preparation for translating the more abstract terminology of Aristotelian logic.¹⁾ Starting in 1628, Furtado and Li worked together on the 1611 edition of the Coimbra commentary on Aristotelian logic (*In universam dialecticam*, 1606).²⁾ However, they could not complete the project since Li had to go to Beijing in 1630 to work on the calendar reform, and died there a few months later. *Mingli tan* 名理探 (Investigation of the Patterns of Names) was published in 1636, six years after Li's death.³⁾

In universam dialecticam Aristotelis (The Whole Dialectics of Aristotle; Coimbra, 1606) consists in the commentaries of Porphyry's *Isagoge* and of six works of Aristotle (*Categories*, *On Interpretation*, *Prior Analytics*, *Posterior Analytics*, *Topics*, and *Sophistical Refutations*). Before entering the heart of dialectics, students are presented with a thorough introduction which represents somehow an independent work, except for a few mentions of *Analytics* and *Topics* touching upon the central issue of teaching. When Sebastião Couto (1567-1639) edited the last manual of the Coimbra series, which had started in 1592 with the publication of the commentary on *Physica*, he was certainly aware of the existence of other textbooks on dialectics, especially those by fellow Jesuits, like *Introductio in dialecticam Aristotelis* (Rome, 1561) by Francisco de Toledo (1532-1596) and *Institutionum dialecticarum* (Lisbon, 1564) by Pedro da Fonseca (1528-1599) who had taught at Coimbra; both works provided detailed definitions and

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- 1) See the Preface to *Mingli tan* by Li Cibi, dated 1639: 蓋《寰有詮》詳論四行天體諸義，皆有形聲可晰。其於中西文言，稍易融會，故特先之，以暢其所欲言。而此則推論名理，迫人開通明悟，洞徹事非虛實，然後繇因性以達夫超性。凡人從事諸學諸藝，必梯是為嚆矢，以啟其倪，斯命之曰《名理探》云；傅汎际，5-6.
 - 2) On the copy of the edition of 1611 of Cologne in the Beitang collection (now at National Library of China, Beijing), there are handwritten annotations from Furtado and Li.
 - 3) For the background of the translations of the Coimbra commentaries in China, see Meynard (2017).

scopes for dialectics. But unlike those two works, the Introduction by Couto goes much beyond the scope of dialectics, and presents a general overview of all the arts. Mario Carvalho has pointed out that Couto's Introduction may be read in counterpoint to Manuel de Góis' parallel text to *Physics*,⁴⁾ as if the first Coimbra manual (1592) and the last one (1606) formed an inclusion which placed the intellectual enterprise of the Coimbra commentaries at the level of the entire human knowledge. We shall provide here an analysis of the content of Introduction of the Coimbra commentary in relation to *Mingli tan*, and explains how the terms and ideas fit with Chinese culture, or on the contrary challenge her. The Chinese text is made of ten sections which correspond to the *proemium* and to six questions, while Question 4 is split into three sections in the Chinese text, and the appendix of Coimbra constitutes an independent section, as the table below shows.⁵⁾

Proemium- Artes à quibus & quo tempore inventae sint		1- 愛知學原始
Quaestio 1- Utrum ars probè definiatur à Philosophis?		2- 藝之總義
Quaestio 2- An artium divisio rectè se habeat?		3- 諸藝之析
Quaestio 3- Quem ordinem inter se artes obtineant?		4- 諸藝之序
Quaestio 4- Utrum dialectica sit verè & proprièque scientia, & ab aliis distincta?	Articul.3- Dialectica docentem esse verè & proprièque scientiam, & à caeteris distinctam concluditur	5- 名理推自爲一學否
	Articul.4- Dialecticam docentem esse partem Philosophiae ex dictis sequi	
	Articul.2- Dialecticae in docentem & utentem partitio explicatur	
		6- 用名理探之規爲一藝否
		7- 名理探兼有明用二義
Quaestio 5- Quodnam sit adaequatum Dialecticae subiectum?		8- 名理探向界
Quaestio 6- Sitne Dialectica ad alias disciplinas capessendas necessaria, an non?		9- 欲通諸學先須知名理探
Appendix- In qua logicae partitiones breviter explicantur		10- 名理探屬分有幾

4) See Carvalho (2018), 38.

5) We shall follow the ten sections of the Chinese, but for sake of clarity and brevity, we may not always strictly follow the scholastic order (*obiectiones*, *expositio*, *solutiones*) of each section.

1. First Chinese Biography of Aristotle

The Coimbra *proemium* consists of an historical account of the invention of arts in ancient time (*Artes à quibus & quo tempore inventa sint*), presenting the schools of the pre-Socratics, Platonists, Stoics and Peripatetics, but *Mingli tan* does not mention the diversity of schools in ancient Greece. Though this diversity can find a parallel in the One Hundred Schools of ancient China before the Qin and the Han dynasties, our two authors seem to have preferred presenting a scholarly unity around the Peripatetic school, like Confucianism being in China the unique official school sponsored by the emperor since the Han dynasty.

Coimbra presents the life of Aristotle in a few lines only: son of Nicomachus, born in the city of Stagira in Macedonia in 381 BC, at 17 years old he listened to the lectures of Socrates (*sic*) for three years, attended Plato's Gymnasium for around twenty years, and after his return from Macedonia, taught in the Lyceum; he was called the Peripatetic because he walked while teaching. Out of those sketchy biographical elements, *Mingli tan* apparently picked up his birth in 381 BC, but it used other materials to provide the first Chinese biography of Aristotle as representing the beginning of Philosophy (*aizhixue yuanshi* 愛知學原始). Matteo Ricci (1552-1610), the pioneer of the Jesuit mission, had not mentioned Aristotle's name, which apparently is recorded for the first time in the *Lingyan lishao* 靈言蠡勺 (1623) as Yalisiduo 亞利十多.⁶⁾ In the *Huan you quan*, Furtado and Li mention many times the names of Aristotle as Yalisiduotele 亞利十多特勒 but often abbreviated as Yali 亞利. However, no biography was provided. After the publication of *Huan you quan*, Furtado and Li continued with the translation of *In universam dialecticam*, and they may have thought important to present the life of Aristotle. As Vincent Shen 沈清松 (1949-2018) said:

6) See Meynard (2015).

The migration of a Western philosopher's works to China cannot occur without also introducing the philosopher as a person. The Chinese would not accept the idea that one can read a philosophical text without referring to the person of the author. Here we see the deep influence of Mencius, who said, "Can we go without knowing an author when we sing his poems and read his books? This is why we should discuss his times, which is the way to befriend an author in the past." This saying suggests that, when one reads a book, one should know the person of the author and his time.⁷⁾

We do not know the direct source for this Chinese life of Aristotle, but the stories mentioned originate from ancient writers like Plutarch and Pliny. The only anecdote told by Coimbra is that Plato would notice the presence or absence of Aristotle, calling him the reader (*anagnōstis*) and the philosopher of truth. In the Chinese biography, two points stand out. First, he is described as an official thinker, recognized by his king. However, Aristotle's forced escape from Athens to the city of Chalcis on the island of Euboea does not fit well in the life of an official thinker, and the Chinese text has instead:

後欲更窮宇內名理，遠詣耦百亞島，及嘉爾際德城。

Later he wanted to investigate further the names and principles of the cosmos, and he went afar, to the island of Euboea, reaching the city of Chalcis.

Aristotle is presented alike Confucius, as moving between places (Athens, Macedonia, Chalcis) to search truth and disseminate his teaching. Second, Aristotle is christianized, or at least, he holds a belief in God. Accordingly, while he investigated the seven tides at Euripus, his last words were a prayer addressed to the Creator (*zaowuzhu* 造物主):

亞利欲究其故，殫力窮思，經年不倦。老而有疾，且亟，猶懇切祈於造物主曰：“萬所以然之最初所以然，幸憐而啓我，”乃卒。

7) See Shen (2012), 2, and 沈清松 (2010), 77.

Aristotle wanted to investigate the cause, and he strove to investigate, for years not becoming weary. However, he contracted an illness in old age, and he became anxious, praying very earnestly to the Creator: “The very first cause of the myriad of things, take pity and reveal me the truth!” Then he died.⁸⁾

In front of the Creator and Origin of all, Aristotle recognizes the weakness of human intellect. This Christianization of Aristotle’s death impresses the idea that he had recognized God as the ultimate source of truth. In narrating the story of his religious death, Furtado and Li wanted certainly to remind the Chinese readers that philosophy should ultimately lead to God. The Christianization of the Philosopher, as he was known, had already started in the Middle-Ages in Europe, and it takes a special significance in China.

2. Practical art in search for Chinese craftsmen

After Aristotle’s biography follows a close translation of six questions, or *Quaestionum prooemialium* (8-70 in double column). The first question raised by Coimbra is: Whether art has been correctly defined by the philosophers? (*Utrum ars probe definiatur à philosophis?*) There are three articles, the first being “From where the art has been given to human being” (*Unde homini ars venerit*). Coimbra locates the specificity of human being in reason which allows for human habitus (unlike animals which rely on natural instincts); along the time, human habitus guided by reason develops into an art. Coimbra refers to Aristotle to explain the central role of experience, quoting Chapter 1, Book 1 of *Metaphysics*: “Arts and science are born out of experience” (*experientiā, artes & scientias peperisse*). In this passage,

8) Translation: Shen (2012), 3.

Aristotle does not clearly distinguish art (*technē*) from science (*epistēmē*), but Coimbra's choice of having art and not science as the overarching category signals the emphasis on human practice shaped by habitus and founded on reason. As Mario Carvalho comments, "Couto reinforced the role played by experience and the teacher's knowledge and method in education. Rather enthusiastically, the underlying conviction was that the human being's aptitude for learning would, after all, be as certain as the mathematical rule of the triangle."⁹) This section refers only to the general meaning (*zongyi* 總義) of arts, and only in chapter 6 (corresponding to Coimbra's Question 4) *Mingli tan* discusses the restrictive meaning of art, as distinct from science (*xue* 學).

Coimbra's Second Article consists in a systematic discussion of the concept of art, which is defined as "a collection of many comprehensions about a single thing for some end useful to life" (*collectio multarum de una re comprehensionum ad finem aliquem utilem vitae*).¹⁰) Also, Coimbra defines comprehensions as speculative habitus oriented towards the truth. Therefore, the Chinese definition is split into five elements: (1) habitus, or *xishu* 習熟, (2) collection of many, or *kuoyouxuduo* 括有多許, (3) directed towards truth, or *qisuoxiangzhen* 其所向必真, (4) one single object, or *biyi* 必一, (5) useful to man, or *bizhiyiyuren* 必致益於人. As Coimbra reminds, there are three different realms for Aristotle: the most extended consisting of the practical and intellectual arts; the middle realm of the practical arts; and finally the most restricted realm of the productive arts. This is to say, the arts discussed here are speculative (*ming* 明), practical (*yong* 用) and productive

9) Carvalho (2018), 68.

10) Interestingly, Coimbra mentions in passing the teaching of the Stoics, as found in Cicero, but does not explain that their definition of art is indebted to Zeno's own definition (system of percepts exercised together toward some end useful in life). In Cicero's *Rhetorica ad Herennium*, material or sense perceptions (*perceptiones*) were already changed into precepts (*praeceptiones*); see Gilbert (1960), 69. The Coimbra term of *comprehensiones* give to art a strong basis in the human intellect.

(*waigong* 外功), and therefore corresponding habitus are formed at those three levels.

Finally, Article 3 consists in putting the above definition to the test, by raising three objections which are later refuted. The first objection attributes to supernatural beings perfect art, which is instantaneous in the case of God who does not make deduction (*tuilun* 推論), and in the case of angels with one single habitus and not three, so that point (2) in the definition seems incorrect. Coimbra refutes those two points. First, it intends to discuss only human arts, and second, concerning God and angels, their knowledge is formally unitary, but objectively it includes many elements which are necessarily connected.

The second objection rejects the inclusion of (3) in the definition, because arts consider also possibilities and opinions (*liangkezhishuo* 兩可之說), like deliberations in ethics; the definition above is too restrictive and should include also things related to the probable. Coimbra admits that art considers opinions, possibilities, probabilities, but only as objects, and it may even deliberate about circumstances, but art itself is true and does not allow for uncertainty.

The third objection rejects the inclusion of (5) in the definition, which is too restrictive since it does not take into account practical arts like witchcraft, regardless of the moral judgement on them; also, according to *Nicomachean Ethics* VI.3, two practical habitus (prudence and arts) seem to be established without the need of speculative habitus (intellect, wisdom, knowledge). Coimbra admits that evil arts share something of the essential cause of an art, yet they must be excluded on two accounts: first, according to the Stoics, human arts fit human nature which is good, and second, they come ultimately from God, so on both ground, arts are useful to human being. The first account mentioned here is of special relevance since *Mingli tan* expresses that “because all the arts belong to what is beneficial to human mind, they are categorized as beneficial to the persons” (以爲皆屬有

益人心，有益人身之類). The fitness of arts with human mind (or human goodness) constitutes an important point of contact with Confucianism. However, this moral dimension of the arts come quite late in the definition, in the fifth and last place, while a Confucian would have had human mind (or human goodness) in the forefront of the definition, even before the dimension of truth.

An important insight of *Mingli tan* is to choose *yi* 藝 to translate the notion of art. This choice seems indeed a better choice than Giulio Aleni (1582-1649)'s translation as *ke* 科 in *Xixue fan* 西學凡 (*Introduction to Western Learning*, 1623). In ancient Chinese, *ke* had the meaning of class or bureau, but *yi* expresses more adequately the idea of practice, especially in connection with the traditional Six Arts (*liu yi* 六藝). Even though *Mingli tan* changes and subverts the traditional meaning of *yi* into something much more intellectual, reflecting the rational emphasis of the West, yet it expresses a strong focus on practice, common with Confucianism. Indeed, the most salient insight of Aristotle on human reason is that it does not come from innate ideas like in Plato, but it is shaped by practice, and this is very important for logical thinking which needs an adequate training. As I have argued elsewhere the didactic nature of all the Coimbra commentaries, and especially the one on dialectics, is crucial, and constituted therefore a great challenge in China, resulting in some kind of failure.¹¹⁾ Dialectics does not attempt to inculcate any kind of positive knowledge, but proposes exercises to train our thinking according to basic rules. Dialectics deals with thought actions, and thus the mind needs to be trained to perform correct actions in relation to this domain.¹²⁾ If one recognizes the nature of the Coimbra

11) See Meynard (2019).

12) Joachim Kurtz points out the difficulty of reading *Mingli Tan*: "... it is hard to imagine any reader being able to grasp its finer points without the sustained help of a dedicated and versatile instructor"; Kurtz (2011), 58. In fact, we should argue that *Mingli Tan* is not meant to be read as a theoretical book only, but as proposing exercises of different difficulties.

commentary and *Mingli Tan* as text books based on logical exercises, he will understand it is unnecessary to go through all the proposed exercises, and may skip some of them without losing any positive knowledge on logic. By correctly working through *Mingli Tan*, the student may acquire a correct evaluation of his own strengths and limitations. Some authors have argued that it was due to the work's inherent difficulty, replete with an abundance of neologisms, that *Mingli Tan* failed to exert influence in China.¹³⁾ Without completely discarding this opinion, we should point out that perhaps the main reason for the very limited influence it exerted was precisely its nature as a textbook, and the lack of institutional support to use it, that is, a school with a curriculum and a teacher of logic supervising students to do the exercises by themselves.

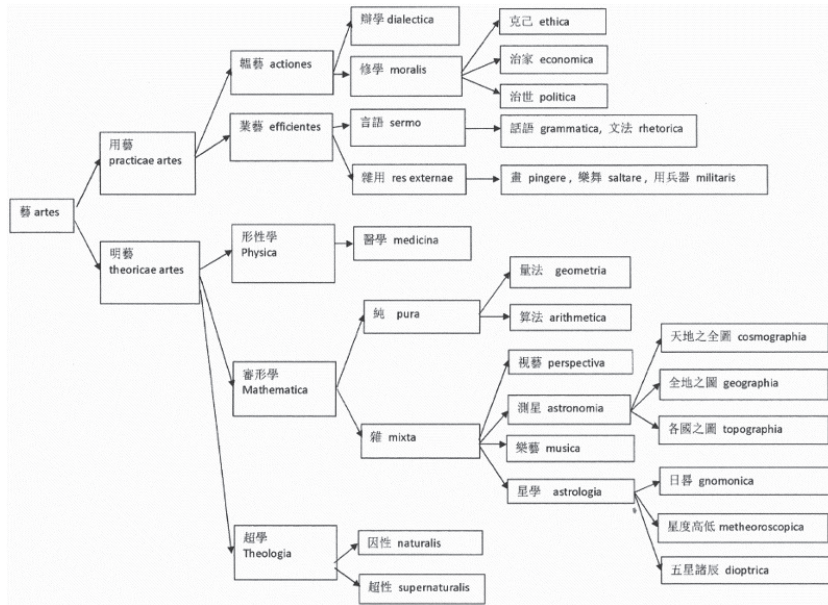
3. Charting all human knowledge but without China

In Question 2, Coimbra presents three different kinds of distribution for arts, according to their objects, being either real objects or objects of language (Article 1), according to their finality, being practical or contemplative (Article 2), according to their dignity (Article 3). Coimbra deals briefly with the first distribution, and devotes much more space to the second distribution that we present below in the form of a chart, with the Latin and Chinese names:¹⁴⁾

Even a dedicated and versatile instructor could only fail to train the student if he limits himself to explanations of the text to his student. On the contrary, when the Coimbra commentary and *Mingli Tan* propose a question, the student should not rush to read the answer, or to have the instructor explain it to him, but he should do the exercise by himself, and then only check the answer or get help from the instructor. Only this way can he be trained in logic in an artful way.

13) Kurtz (2011), 64.

14) Source: Meynard (2017), 85.



Scholars who have investigated *Mingli tan* have noticed that the overall structure is indebted to the education system of the Middle-Ages, with the practical arts corresponding roughly to the *Trivium* and the speculative arts to the *Quadrivium*, however it is often overlooked that it includes extensions which are typical of the Renaissance. In comparison with the medieval *Trivium* which deals only with words (logic, grammar, rhetoric), the practical arts are rearranged and expanded, with one section concerning actions themselves (logic and ethics) and another section, productive results (rhetoric, music, etc.). Here dialectics (*bianxue* 辯學) is considered as a practical art (*yongyi* 用藝) in that it directs the operations of the intellect (*functiones intellectus dirigit*), but as shown on the chart above, it is the only practical art, with ethics or moral science (*xiuxue* 修學), to be called *xue* (*scientia*).¹⁵ Below, we shall discuss further this particular status of dialectics, being both

15) Concerning the term of moral science, see Meynard (2013), 151-154.

a practical arts and a science. Concerning the *Quadrivium* (*liangfa* 量法 [*geometria*], *suafa* 算法 [*arithmetic*], *yueyi* 樂藝 [*musica*], *xingyi* 星藝 [*astrologia*]), are added the graphic arts (*shiyi* 視藝 [*perspectiva*]) as a fifth branch of knowledge typical of Renaissance, and astrology and astronomy are distinguished, with the latter including *topographia* (*hua geguo zhi tu* 畫各國之圖), also a new academic discipline developed during Renaissance, and frequently practiced by the Jesuits in China.

In the division of human knowledge according to the status (*suoju* 所居 [*gradus*]), besides the seven liberal arts, are also mentioned the seven practical arts (*shili zhi yi* 事力之藝 [*serviles artes*]), which include agriculture, hunting, military, surgery, textile and navigation. Quite revealing are some remarks found in *Mingli tan* but absent in Coimbra about military as being especially important, as well as the use of weapons (*bingqi* 兵器). Practical arts were an integral part of the Jesuit missionary activities in China, and were used also by Chinese literati like Xu Guangqi 徐光啓 (1562-1633) to promote practical studies (*shixue* 實學), especially agriculture and military. The craft in making weapons was part of the overall human knowledge, and the Jesuits taught it to the Chinese who needed it to defend themselves against foreign invaders from the North, though this raises some questions of moral theology.

What is striking is that dialectics is presented as an art, or *yi*, developed by human intellect. This is to impose a distance from the conceptualism of Plato and the essentialism of Scholasticism and to return to a more original form of Aristotelianism, in which dialectics is conceived first as a *technē*.¹⁶⁾ *Mingli tan* stresses the experimental dimension of the arts being born out of trials (*jingshi* 經試), and also its practical effects on knowledge which can

16) As Coimbra and *Mingli Tan* remind us, Aristotle defines *technē* only in the narrow sense of productive art (*ars effeciva*, or *waigong* 外功), like rhetoric which produces speeches. However, the Aristotelian tradition extended the notion of *technē* to non-productive arts, like logic. See *In universam dialecticam* (1611), Quaestio I, Articulus II, 11.

be progressively corrected by developing the correct habitus. *Mingli Tan* warns us that dialectics, like the other arts, can hardly be mastered in one's lifetime (*feiyirenzhinian zhisuoji* 非一人之年之所及). We should also notice the systematicity of this classification of knowledge, which apparently does not make any effort to adapt to the Chinese classification between classics, history, masters and collections (*jingshiziji* 經史子集). Therefore, a Chinese reader may be puzzled by the status and relevance of Chinese knowledge within this foreign system, and *Mingli tan's* silence may be interpreted as dismissive of the Chinese tradition.¹⁷⁾

4. Pole position of logic and implicit challenge to Confucianism

Question 3 deals with the mutual relationship between the arts (*Quem ordinem inter se artes obtineant*), according to three orders, first of invention (*ordo inventionis*), second of teaching (*tradendi*), and finally of dignity (*dignitatis*). The order of invention follows the different needs in human history, and it is rendered in Chinese as “order of origins” (*zhaoxu* 肇序). In the *De ordine*, Saint Augustine holds that sermonal arts (related to external and internal languages) were established in this order: grammar, history, dialectics, rhetoric and poetic; only later the speculative arts followed. Cicero had held a similar view in the *De Oratore*, linking the development of arts to leisure life (*otium*). Therefore, according to both Saint Augustine and Cicero, mathematics, classified as a theoretical art, was invented quite late, but this seems to contradict Plato who, in *Philebus* 56, had considered the

17) As Kurtz says, Li and Furtado may be blamed “for their failure to provide any hint as to how the functions and methods attributed to European logic could be related to Chinese thought, texts, or argumentative practices” [Kurtz (2011), 65].

“science of numbers” being the first. Coimbra solves the difficulty saying: “Plato wants to say nothing else that there is something mathematical in all sciences, at least the analogy and the similitude without which they could not stand, obviously number, measure, and proportion” (22). Coimbra recognizes mathematics as being present from the very beginning of human knowledge, but this does not make it an art properly established, so it is argued that dialectics was indeed invented before mathematics.

Concerning the second order, by teaching, it is called in Chinese “order of learning” (*xuexu* 學序), as if *Mingli tan* adopted here the point of view of a Chinese learner instead of the point of view of a Western teacher instructing a Chinese.¹⁸⁾ Coimbra refers to the preface of their commentary on *Physica* (*proemio Physicorum*): first to teach the two speculative sciences of mathematics and physics, followed by practical science (ethics), and ending with speculative science (metaphysics). Coimbra argues indeed that learning mathematics does not require experience, and quotes Aristotle saying in the *Nicomachean Ethics* VI.8 that even a child can become a mathematician.¹⁹⁾ Compared to physics, ethics need more experience and should be taught later, but metaphysics should be taught even later since it considers things very hidden and remote from senses. Theology should be taught the last because the human mind ascends progressively to the highest knowledge and to the intelligence of divine things.

Reflecting on the position of dialectics in the order of teaching, Coimbra assigns to it a foundational role, being the first art to be taught, just after grammar, arguing that it is “a mode and instrument for learning by which

18) This change of perspective is quite significative, especially if we bear in mind the importance of teaching for Couto; see Casalini (2019a).

19) The Jesuit astronomer Christopher Clavius (1538-1612) had pushed for inserting mathematics within the curriculum at Collegio Romano. When Clavius’ disciple João Delgado (c.1553-1612) returned Portugal, he became teacher of mathematics at Coimbra from 1586 to 1589, and later some Portuguese Jesuits incorporated mathematical demonstrations in the course of logic, like Manuel Rodrigues (1573-?) in 1606; see Mota (2019).

all the other arts are established, and thus it needs to be impressed first on the soul of the learners” (24). Coimbra especially contends that logic should be taught before rhetoric, because “it provides the discourse with other logical things (*caeterae consequentes res*) to explain afterwards the meaning.” *Mingli tan* makes explicit the elements necessary to study rhetoric: *jieshi* 解釋 (*definitio*), *poxi* 剖析 (*divisio*), and *tuilun* 推論 (*argumentatio*).

According to the third order, by dignity (*ordo dignitatis & praeellentiae*) or *guixu* 貴序, speculative arts are arranged from superior to inferior objects: immaterial substances for metaphysics, material substances for physics, quantity for mathematics. Come next practical arts, not established for themselves, but for an extrinsic end, and the first practical art by dignity is ethics. Both Coimbra and *Mingli tan* admit the relatively low rank of dialectics, being placed below metaphysics, physics and mathematics. Yet it is argued that within the practical arts, logic is higher in dignity than ethics, on two accounts. First, ethics deal with the will, while dialectics deal with the intellect; and second, as said in the Chinese text:

從所循之規而論，名理推之本務，在辨明悟所推或有之謬，故其辯論，皆明顯而確定者；若修身治世之學，其務惟在習俗風化，一切當然之事，而不暇推究於其所以然者；夫推究義理而明顯其所以然固貴於徒循事迹而不究其義理之原者，則名理推必貴於修身治世之學矣。

Regarding the rules to follow, the duty promoted by dialectics is to discern what the intellect deducts, whether there is mistake, so that the discussion is clear and certain. Regarding the study of personal cultivation and worldly management, the duty is on moral and manners, on all things which ought to be done, without the need to deduct and search for their causes. Deducting and searching for principles and clarifying the causes is more valuable than following traces without searching for the origin of their principles, and therefore dialectics is more valuable than the study of personal cultivation and worldly management.

In the following chapter in Chinese (and the corresponding question in Latin), a similar comparison is made: “The duty of morality is not to

investigate what are the reasons for the functioning of the will, but only to lead the functioning of the will to follow the right path” (比如凡修學之所務, 不在測論愛德之用性情若何, 惟在引制其用, 軌于中正). In the context of Confucianism, such passages would cause great difficulties because the Western Learning (*Xixue* 西學) places dialectics, a discipline unheard in China, above personal cultivation and worldly management, which stand at the center of Confucianism. Also, Confucianism did not consider logical deductions as relevant for ethics, and on the contrary advocates moral intuitionism and the return to the original mind.²⁰ Even if Coimbra concedes that speculative sciences stand above dialectics in dignity, yet it is argued that dialectics being the gateway for all human knowledge is the first course to be taught after grammar.

We should here remember that the supremacy of dialectics over the scholastic curriculum was criticized by Humanists since Petrarch (1303-1374) who considered that he himself had wasted too much time on it. The education reformer Erasmus (1466-1536) attempted to establish a competing curriculum designed to facilitate the quick and efficient learning of dialectics. Peter Ramus (1515-1572) published two treatises against dialectics, based on Aristotle's *Organon*.²¹ However, Jesuit education attempted to combine Scholasticism with Humanism. The course on dialectics was quite robust, but did not enter into specialized discussions. Still the Coimbra commentary reached more than one thousand three hundred pages in the 1611 edition of Cologne, enough to occupy most of the time of a first-year philosophy student, and despite the critics of the Humanists, it was exclusively about Aristotelian logic and nothing else, as mandated by Jesuit Constitutions.

20) Even in the context of Western tradition, the passage quoted above is controversial as Cristiano Casalini remarks: “The classical maxim of *vir bonus* is overturned by the Conimbricences: only an education made by persevering in theoretical exercises—empirical in method—can generate morality in the young student.” Casalini (2016), 130.

21) See Casalini (2016), 17.

In China, only after the works on the soul (*Lingyan lishao*) and on natural philosophy (*Huan you quan*) were published, did *Mingli tan* eventually appear, but it was still the necessary foundation of the entire system. Yet attributing this exalted rank to *Mingli tan* goes against the Chinese tradition in which *mingli* 名理 refers only to the school of “names and principles,” a marginal school established in the Jin 晉 dynasty and attached to the miscellaneous studies (*zaxue* 雜學).²²⁾

5. Introducing new criteria in China: dialectics as science and philosophy

Question 4 is: “Whether dialectics is truly and properly a science, distinct from the others?” In Article 1, Coimbra explains first that dialectics has a broader scope than logic since the former includes opinions, while the latter has a more restrictive scope, dealing only with certainties. However, Coimbra admits that the two words are commonly used without much difference, and indeed Fonseca and Toledo use the terms interchangeably, as Jennifer Ashworth notices.²³⁾ *Mingli tan* has here the Chinese transliteration for logic as *luoriqie* 絡日伽, and dialectics as *diyaledijia* 第亞勒第加.

As explained above, dialectics is considered as a practical art, and Article 2 divides it into two branches: theoretical dialectics, which establishes abstract rules (*dialectica docens*, *shemingbianzhigui* 設明辨之規 or *shegui* 設規), and applied dialectics, which uses abstract rules in concrete domains (*dialectica utens*, *xunyishezhihui* 循已設之規 or *yonggui* 用規). This division is explained in terms of a double finality for dialectics: theoretical dialectics attends to the immediate goal (*finis proximus*, *jinxiangjie* 近向界), prescribing

22) See Zhang (2016), 119-120.

23) See Ashworth (2019), 99.

the method and norms of discovery, while applied dialectics to a remote goal (*finis remotus et mediatius*, *yuanxiangjie* 遠向界), putting its own discoveries to the service of our reasoning faculties. Following Coimbra, *Mingli tan* illustrates the difference with the example of a painter who first conceives rules in his mind (immediate goal), and then applies them (remote goal).

Here there is a discrepancy between the Chinese and the Latin: the following discussion on the theoretical and applied dialectics in Article 2 of Coimbra is reported to the next chapter in *Mingli tan*. It seems that Furtado and Li wanted for sake of clarity to introduce first the notions of science and philosophy, and this chapter of *Mingli tan* corresponds mostly to Articles 3 (dialectics as science) and 4 (dialectics as philosophy).

Coimbra's Article 3 first defines three meanings for science: an extended meaning for any cognition, including probable things (that is the *Topics*); a restrictive meaning for speculative sciences; and an intermediary meaning for things known as certain through deduction. Coimbra rejects the extended meaning and retains only the two others. The discussion whether dialectics is a science refers only to theoretical, not applied dialectics, and Coimbra presents two opinions. According to the first opinion, dialectics is not a science, as it was affirmed by Themistius (c.317-c.390), Alexander of Aphrodisias (third century), Ammonius (c.440-c.520), Philoponus (c.490-c.570), and "many recent commentators." Two points are given in support. First, it is absurd to constitute dialectics as a science when its analytic part (the demonstrative part taught in the *Analytics*) is already called a science; on the contrary, it is necessary to distinguish between operation and tool; dialectics being a tool, it cannot be a science. Second, every science considers things certain and perpetual, but dialectics pursues appearance of truth and prescribes a mode of discussion based on probabilities. Before refuting the two points above, Coimbra presents a set of assertions or considerations in support of theoretical dialectics as a science.

First, dialectics is based on demonstration; second, it reaches certainty; third, no other science can exist without dialectics. More specifically, Coimbra refutes the first point: the analytic, or theoretical, part of dialectics (the *Analytics*) constitutes indeed a science, but not as it would be taught simultaneously with the other sciences; in fact, it needs to be placed before them, and also, dialectics is not about providing tools for the other sciences, but about making tools. Coimbra rejects the second point according to which theoretical dialectics does not deal with certain and eternal matters: though dialectics is sometimes used about probable matters, yet its principles are infallible. Without saying it, Coimbra is here taking some distance from Aristotle's view of dialectics as a tool (*organon*), and, in fact, it embraces the Stoic view of dialectics as science. It is possible to affirm that the Jesuit promotion of dialectics and ethics as sciences is going beyond Aristotle's intent, and it is more in line with Aquinas and Scholasticism.

The second opinion, supported by Albert the Great (c.1200-1280), holds that dialectics is a science but indistinct from the others. The first supporting point is that dialectics has not a specific subject-matter, but opens the way for all things towards the principles of methods. Second, according to Plato in the *Phaedrus*, dialectics belongs to the contemplation of things, and thus it has nothing distinct. In refuting this opinion, Coimbra presents some general considerations. According to the first one (*prima assertio*, 35), dialectics does have a proper object which is different from the other sciences, and therefore it has its own specific operations and habitus. Second, dialectics necessarily teach other sciences. Third, dialectics is a distinctive science: same as ethics is the science which controls actions and desires in view of happy life, dialectics controls the operations of the intellect in view of the truth. More specifically, Coimbra refutes the two points of the second opinion on the ground that dialectics judges the true and the false, and thus it has a share with the contemplative sciences, with Cicero calling it "the greatest of all the arts and their light" (*artium*

maximam & omnium lucem, 37). Art and science are not distinguished according to their object, but to the degree of certainty: only theoretical dialectics (*docens*) which establishes certain and eternal principles through demonstration can be called a science, while applied dialectics (*utens*) dealing with probable things is called an art, but not a science.

After the discussion about science, Coimbra brings a related question on dialectics whether it is part of philosophy. It defines philosophy according to Aristotle's *Metaphysics*, as "the cognition of things, as they are, that is, through their causes" (*cognitio rerum, ut sunt, id est, per causas*), and therefore it argues that theoretical dialectics should be considered part of philosophy since it knows a thing through its causes, by demonstration. Coimbra brings a second argument: since ethics which deals only with the operations of the will is considered by all a part of philosophy, dialectics which deal with the operations of the intellect should be a fortiori included in philosophy. We have already discussed above the relationship between dialectics and ethics.

While the notion of arts was quite close to the Chinese *yi*, as we have discussed previously, the concepts of science and philosophy do not have immediate equivalents in China. *Mingli tan* translates *scientia* as *xue* 學. *Xue* and *yi* are well chosen in that both have the meaning of practice, inherent to art and science. However, the term *xue* does not have the Aristotelian meaning of certainty through demonstration and of eternal truths, and therefore, *Mingli tan* transforms or subverts the Chinese concept of *xue* for expressing something very different. Concerning philosophy, it should be noticed that it is the first time that the term is translated in China according to its etymology (*philo-sophia*), as *aizhixue* 愛知學. In his *Xixue* 西學 (*Western Learning*, 1615), Alfonso Vagnone (1566-1640) had translated philosophy as "the investigation of things and the full comprehension of their underlying principles" (*gewu qiongli* 格物窮理), and in *Xixue fan*, Aleni as the "class of principles" (*like* 理科) and the "studies of the principles" (*lixue*

理學),²⁴⁾ The choice here of *zhi* 知 in *aizhi* 愛知 by *Mingli tan* is quite apt, since *zhi* 知 as a basic human faculty has a wider meaning than *zhi* 智. This is also true in Buddhism where *zhi* 知 represents the ordinary conceptual knowledge, while *zhi* 智 has the more rarefied meaning of non-conceptual knowledge. However, Furtado and Li were not entirely satisfied with *aizhi*, and they added *xue*, to express philosophy as being a science.

6. Intellective habitus and Chinese practice

This chapter of *Mingli tan* continues the translation of Article 2 of Question 4 on the relationship between the two branches of dialectics, theoretical and practical (*docens/utens*). Everyone admits that within dialectics there are two different functions (*duo actus*), a precept-rule for building up a mode of discourse (*praeceptum & regula extruendi aliquem disserendi modus*), and the concrete building-up itself (*ipsa modi extructio*). However, two difficulties arise, the first being that dialectics as a whole can be said to be both applied and theoretical, but does it mean that one part is applied and the other theoretical? The second difficulty brought by many recent commentators (*plerique ex Recentioribus*) is that not only the acts are different, but also the habitus seem to be different, scientific (*scientificus seu collectio habituum unam scientiam constituentium*) or opinative (*opinativus seu multarum opinionum conglobatio*), but the habitus cannot be at the same time science and opinion. *Mingli tan* explains those two difficulties as corresponding to two opposite opinions. According to the first opinion, even though there are two acts (establishing rules and using them), yet there is only one habitus and only one science, encompassing the two branches of theoretical and applied dialectics. The opposite opinion holds that there are

24)) See 梅謙立 (2007).

two habitus, and therefore the two branches constitute in fact two distinct sciences, and *Mingli tan* illustrates with the example of physics which needs to be established with two habitus.

About the first difficulty (i.e., the first opinion in *Mingli tan*), Coimbra clarifies that dialectics is theoretical, and yet it does it through the mode of art. Similarly, *Mingli tan* explains that applied dialectics deals only with “the special meanings of things” (*teyi* 特義) and not with “the general meanings” (*zongyi* 總義), and since applied dialectics is not demonstrative, therefore it is not a science. Concerning the second difficulty, about the habitus, Coimbra proposes the solution brought by Fonseca in his *Metaphysics*, which Coimbra confirms as follows: “The opinative habitus supplies its subject-matter to the scientific habitus which impresses its form upon it, and both concur in forming one single practice” (32-33). In other words, the higher level of the scientific habitus impresses its form on the lower level of opinative habitus. Similarly, *Mingli tan* argues that there are different practical habitus according to different external arts, but inside the thinking mind, the practical and speculative habitus are the same, one in essence (*zhiyi* 質義), but different in form (*moyi* 模義), so that the speculative habitus does not add anything, while the practical habitus adds new things.

Strongly opposed to Plato’s theory of reminiscence, Couto holds that the habitus, even speculative, are all acquired by oneself. Neither the act nor its habitus comes in human beings by nature, but through learning. This emphasis on the training of the mind finds support in Confucianism. Even though some of his disciples attributed to Confucius some knowledge infused at birth, he himself denied this, and on the contrary emphasized the role of learning. The question of the transmission of the *Dao* from master to disciple is obviously central, but often mediated through the reading of canonical texts, and the reading methods like Zhu Xi’s *Dushufa* 讀書法 can be seen as sharing some similarities to the rules of this “art of the inner spirit” (*neilingzhiyi* 內靈之藝) mentioned by *Mingli tan*.

7. Dialectics as both speculative and practical, and Chinese *ti-yong*

In Article 5 of Question 4, Coimbra argues that, even though dialectics has two branches, theoretical and applied, as a whole it is not speculative, but only practical. However, *Mingli tan* is taking a different stance as the title signals: “Dialectics is both speculative and practical” (名理探兼有明用二義). Coimbra expresses the two conflicting opinions: dialectics as speculative or practical, and lists four points to support the first opinion, but *Mingli tan* gives only the first two: (1) “Since a science is speculative in the sense that it considers the nature and attributes of its own subject-matter, and since dialectics considers the mode of discourse and investigates its attributes, thus it is speculative” (在講究其性其情, 41); (2) “For a science to be considered practical, it must direct some practice. Since dialectics does not control any practice and is busy with directing the actions of the intellect which are not practices..., thus it is not practical” (名理學本用, 不在會成, 惟在析暢, 則為明學而已, 41).

Following Fonseca and Suarez, Coimbra supports, in fact, the second opinion (dialectics as purely practical) on two grounds: (1) Dialectics has for main goal an operation, and therefore it is practical; (2) According to the first chapter of the second book of Aristotle’s *Metaphysics*, the subject-matter of a practical science needs to meet two conditions. First, the thing should be contingent, and second, the principle of realizing the thing should be in the craftsman not in nature... Division, definition, and argumentation do not exist necessarily but are made by the dialectician who is their craftsman (Coimbra, 44). This means that, as a theoretical (*docens*) science (Met.II.c.3.q.1.sec.7) dialectics is practical, meaning not contemplative nor speculative (Met.II.c.3.q.2.sec.4). Though dialectics is not a speculative science like mathematics, natural philosophy, or metaphysics, nevertheless, considering its “*modus sciendi*,” it is not completely alien to those sciences.²⁵⁾

In contrast, *Mingli tan* advances a mixed thesis as a third option, i.e., dialectics as being both practical and speculative, stressing that making dialectics purely speculative or purely practical are two extreme positions which reflect a partial understanding (*yipianzhishuo* 一偏之說). *Mingli tan* has quite a lengthy discussion to advance some supporting arguments, notably that there are not two habitus, but “only one simple habitus which connects all” (總以一純習熟貫之). Also, the thing, the rule and the subject (所論、所循、所向) of dialectics are both speculative and practical.

As Mario Carvalho states, Fonseca and Couto’s stance of dialectics as purely practical was “controversial.”²⁶⁾ When Furtado studied philosophy at Coimbra around 1612-1614, he may have known about this controversial matter, or his philosophy teacher may have explained it.²⁷⁾ Even if Furtado discarded the formulation of Fonseca and Couto on this point, his position of dialectics as being both speculative and practical in *Mingli tan* is not in complete opposition with them. Also, Furtado may have made more explicit the dual nature of dialectics as both practical and speculative because of the context of Chinese intellectual tradition. Indeed, Song Confucianism distinguishes things according to their essence (*ti*) and their function (*yong*), and it is possible to approximate the double status of dialectics as speculative and practical according to the Chinese *ti-yong* structure. In Song Confucianism, *ti* and *yong* do not exist separately, and *Mingli tan*’s stance on dialectics as being at the same time speculative (*ming*) and practical (*yong*) makes indeed more sense in China.

25) I thank Mario Carvalho for his explanations here.

26) See Carvalho (2019).

27) According to Mario Carvalho, the teachers of the course of dialectics were Álvaro Tavares (for the years 1610/14), born 1579; Pedro da Rocha (1611/15), born 1580, died 1653; Francisco de Vasconcelos (1612/16), b. 1581, d. 1622.

8. Subject-matter of dialectics and its three tools

Coimbra deals in Question 5 about the subject-matter of dialectics. Article 1 defines the subject-matter of any art in general, as complete (*totalis* 有全) or partial (*partialis* 有分), important (*praecipuum* 有要) or secondary (*minus praecipuum* 有次), then follows a discussion on the three conditions for the attribution of a subject-matter: (1) its unicity like mobile for physics; (2) all the parts and proprieties discussed in this art being referred to this unique thing; (3) a clear distinction from the other arts. Therefore, the knowledge of any art is not randomly arranged, but through mutual connections. Besides those three conditions, Coimbra mentions other conditions advocated by John Scotus Eriugena (c.815-c.877), but Coimbra follows the Spanish Jesuit Luis de Molina (1535-1600), considering those extra conditions as unnecessary. *Mingli tan* leaves this aside, and it moves to the next article.

Article 2 discusses three opinions about the subject-matter of dialectics: (1) language (*voces*); (2) beings of reason (*ens rationis*, or *sichengzhiyou* 思成之有);²⁸⁾ (3) any rational tool for knowing (*aliquid instrumentum sciendi*), but *Mingli tan* skips the first opinion about language, and explains the second opinion about the beings of reason, with three supporting arguments which are finally rejected with three arguments. The third opinion (*tertia opinio*) defines the subject-matter of dialectics as the three basic operations of the intellect described in Aristotle's works: simple cognition of things (*simplex rerum cognitio* 直通) in the *Categories*, composition-division (*compositio et divisio* 斷通) in the *De Interpretatione*, and rational discourse (*discursum* 推通) in his other works.

After having rejected the three opinions above, Coimbra in Article 3 presents the correct definition (or *zhenglun* 正論) of the subject-matter of dialectics according to the ancient philosophers, Duns Scotus, Albert the

28) The concept of beings of reason is very important in Jesuit philosophy and was especially discussed by Suarez in his *Metaphysics*.

Great, and Francisco de Toledo, as a “mode of discourse” (*modus disserendi*), with its three basic tools of division, definition and argumentation (*divisio* 剖析, *definitio* 解釋, *argumentatio* 推通). Supporting arguments are given, and a series of objections are discussed in Article 3, and then rejected in Article 4.

9. Necessity of dialectics for all sciences

Question 6: “Is dialectics necessary to undertake the other disciplines?” Coimbra gives in Article 1 the arguments on both sides. On the negative side (*fei* 非), there are five arguments. First, historically, many nations like the Egyptians or the Hebrews developed mathematics without dialectics. In its refutation, Coimbra recognizes the achievements obtained without dialectics, but argues that those civilizations would have been even better with dialectics. *Mingli tan* does not mention China, but this suggests that, if China had developed dialectics, it would have been even better off. The second negative argument is that each discipline has developed its own mode of discourse, but this is rejected because the mode of argumentation used by those disciplines is not established by themselves but by dialectics alone. The third negative argument is that people are unable to tackle dialectics until late in age, at least thirty years old according to Plato, but this is rejected since dialectics should be first studied due to its usefulness, and even Plato in his teaching of mathematics was using dialectical argumentations. The fourth negative argument is that it is a contradiction to make a tool (dialectics) a science, but this is rejected because dialectics itself follows an order, from simple cognition to judgement, and from judgement to demonstration. Fifth, the numerous rules of dialectics are harmful, like teaching rules for walking, but this is rejected: the rules themselves are not harmful, but can be badly used. On the positive side (*shi*

是), it is argued that it is impossible to reach any truth without dialectics. Many have declared that dialectics is the scale of truth (*libra veritati*, or *wanyizhisiheng* 萬藝之司衡), the sun of human mind (*humanae mentis sol*, or *lingjiezhiriguang* 靈界之日光), the eye of reason (*rationis oculus*, or *mingwuzhiyanmu* 明悟之眼目), etc.

After having given the two sides, Coimbra in Article 2 mentions first three considerations (*tria advertanda*), but *Mingli tan* has only the first two (*yizhi erduan* 宜知二端). First, the necessity of dialectics is not absolute (*simpliciter*), but in view of something else (*ex suppositione*). Second, the necessity does not concern natural (*naturalis* 性成之名理探) but only acquired dialectics (*artificialis* 學成之名理探). Coimbra draws two conclusions: first, acquired dialectics is necessary in view of other sciences, for them to avoid mistakes; second, natural dialectics is a necessary efficient cause in all the sciences, and dialectics is necessary not only for natural sciences but also for theology, providing quotes from Origen (c.185-c.253) and Clement of Alexandria (150-215) in support.

Finally, in the Appendix to the Introduction, Coimbra discusses three main divisions. The first by Averroes (1126-1198) distinguishes universals (*disserendi formae nullius materiae habito*; *gong* 公) and particulars (*disserendi formae variis materiis*; *si* 司). The second division is based on the three functions of the intellect, but Coimbra adopts the third division, by Boethius (c.477-c.524), according to a three-fold (*trifaria*) mode of discourse: division, definition, and argumentation. Similarly, *Mingli tan* briefly presents the different sections in the last section of his first *juan*.

Conclusion

Coimbra's Introduction to the dialectics course is very pedagogical and systematic. First it defines art, and explains how dialectics can be considered

an art, and its relationship with the other arts; then it defines science and shows that theoretical dialectics (*docens dialectica*) can be considered as a science, explaining its relationship with speculative sciences. Then, it discusses the subject-matter and its necessity for the other sciences. In this Introduction, Couto has left aside many elements, especially in the history of dialectics. Nothing is said about Stoic logic, and there is no presentation of the important developments made during the Middle Ages, a field which was largely discredited during the Renaissance due to the harsh critics of the Humanists. But as the title indicates, the Coimbra commentary intends only to present Aristotelian logic, and apparently the students of philosophy in Jesuit Colleges were presented only with Aristotelian logic. The American scholar John Doyle has praised the work as “an excellent and well unified production,” but still noticed “its often cryptic style.”²⁹⁾ Indeed, the explanations by Couto lack a precise analysis of the authors mentioned, so quotes are often drawn out of their context only to advance an argument.

The first *juan* of *Mingli tan* is a close rendering of the Latin text of the Introduction. Not all is translated, but around a fourth of it. The Chinese text follows closely the flow of argumentation, presenting most of the objections, the intermediate considerations, and the refutations one by one. Though *Mingli tan* uses here and there some Confucian concepts, there is no real effort to engage into a deeper harmonization with Confucianism as we can see in the works of Ricci, Aleni, and Vagnone. Only once we have noticed a discrepancy: while Coimbra argues that dialectics as a whole is only practical, *Mingli tan* argues that it is both speculative and practical (*ming-yong* 明用), and as we have suggested, this was probably influenced by the *ti-yong* 體用 framework of Song Confucianism.

By emphasizing the foundational role of dialectics in human knowledge, *Mingli tan* was implicitly challenging Confucianism which has not paid the same degree of attention to rational argumentation, but had consciously

29) Doyle (2001), 17.

developed into another direction. Though *Mingli tan* did not influence Chinese philosophy at that time, yet it prepared the way for the encounter with modern Western philosophy in Twentieth century. Dialectics seems indeed quite new in China, yet we have stressed the centrality of practice in both traditions, and suggested further that, while the West had developed practical tools for logical reasoning, China had developed practical tools for understanding oneself through the reading of classical texts, so that it could be said that both traditions aim towards truth and authenticity through different practices which may after all not be so alien to each other.

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