

**Encyclopaedias, Encyclopaedisms and Their Non-Reception by Ottomans  
in the 19th and Early 20th Centuries**

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Encyclopaedias, Encyclopaedisms and Their Non-Reception by Ottomans in the 19th and  
Early 20th Centuries

Ansiklopediler, Ansiklopedizmler ve 19 ve 20. Yüzyılda Osmanlılar Tarafından  
Alımlanmaları(?)

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History of encyclopaedias is a very contradictory issue in academic literature. Many historians treat all compilations throughout the history, without sorting them, as encyclopaedias. On the other hand, for recent thirty years, there are some works which were written as opposed to above-mentioned approach by some historians. According to them, encyclopaedias firstly emerged at the end of the 17th century as dictionaries of arts and sciences.

In the Ottoman historiography, all compilations are treated, in a similar way, as encyclopaedias. Moreover, especially the compilers in 19th and early 20th centuries who transferred knowledge from the West are called as encyclopaedists. According to these historians, Ottoman so-called encyclopaedists were influenced by 18th century French encyclopaedists.

The first part of the thesis examines the history of encyclopaedias in the West and specially dwells on French and British encyclopaedists in line with the approach that encyclopaedias firstly emerged at the end of the 17th century as dictionaries of arts and sciences. The second part treats the history of Ottoman tradition of encyclopaedic compilation and also criticizes some academic works that were written on Ottoman science.

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Ansiklopedilerin tarihi akademik literatürde oldukça tartışmalı bir konudur. Bir çok tarihçi derleme türleri arasında bir ayrıma gitmeksizin ansiklopedilerin tarihini Antik Yunan ve Roma'dan başlatır. Yaklaşık son 30 yıldır konu hakkında yazılan metinlerde ise bu yaklaşımın tersine ansiklopedileri 17. yüzyıl sonlarında "bilimler ve sanatlar sözlüğü" başlığı altında ortaya çıkan özel bir derleme türü olarak ele alan bir yaklaşım söz konusu.

Osmanlı tarih yazıcılığında, yukarıda sözü edilen ilk yaklaşımla uyumlu olarak, derleme türleri arasında bir ayrıma gidilmeksizin tüm derlemeler ansiklopedi başlığı altında incelenmiştir ve özellikle 19 ve 20. yüzyıllarda batıdan bilgi transferi yapan bir takım derlemecilerin 18. yüzyıl ansiklopedistleriyle benzer bir iş yaptıkları ileri sürülmüştür. Bu tez ansiklopedileri özel bir derleme türü olarak ele alan yaklaşımı benimseyerek Fransız ve İngiliz ansiklopedileri ve ansiklopedistlerini sonrasında Osmanlı derlemelerini ve sözde Osmanlı ansiklopedistlerini incelenmektedir. Bunu yaparken hem Avrupa hem de Osmanlı ansiklopedi tarihi hakkında geçmişte yapılan bir takım çalışmalar eleştirilmektedir.

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## INTRODUCTION

Knowledge is the subject mainly of an epistemological and morphological problematization. Classification, sorting and categorization of knowledge are problems like the knowledge itself throughout the history. Classifications of knowledge, even “scientific ones”, have always featured arbitrariness, which is varied in accordance with the interest field of its owner. Borges in his oft-quoted fictional Chinese encyclopaedia from his essay, “Analytical Language of John Wilkins” sorts animals as: (a) belonging to the emperor, (b) embalmed, (c) tame, (d) sucking pigs, (e) sirens, (f) fabulous, (g) stray dogs, (h) included in the present classification, (i) frenzied, (j) innumerable, (k) drawn with a very fine camelhair brush, (l) et cetera, (m) having just broken the water pitcher and (n) that from a long way off look like flies. There are various interpretations on this classification, but the point is here that, impossibility of the classification of knowledge and even “scientific” classifications have above-mentioned arbitrariness. In his other work, “Library of Babel” he describes an eternally existing library, there are all books and their translations into every language, correct and incorrect book catalogues and so on. The multitude of books and the muddle of knowledge, make some people believe the existence of a “total book” which is the perfect compilation inclusive of all knowledge. It can be read as a satire of encyclopaedias that have a discourse; containing all knowledge. In the *Life and Opinions of Tristram Shandy Gentleman*, Laurence Sterne mentions an encyclopaedia, Tristra Paedia, which was written by Father of Tristram, Walter Shandy, it refers to the complexity of learning something from an encyclopaedia. Indeed, in an alphabetical encyclopaedia, there are unrelated articles, which are tandemly-ordered; the only relation between them is closeness of their letters. Here are three points emphasized: the variable structure of the classifications of knowledge, impossibility of a perfect compilation (total book), and impossibility of learning something from an encyclopaedia.

General encyclopaedias, the impossible projects, emerged firstly at the end of the 17<sup>th</sup> and at the early 18<sup>th</sup> centuries as dictionaries of arts and sciences. “Today most readers probably go to encyclopaedias for biographical and historical, rather than for scientific information. In the 1700s, the reverse was the case, the works that assumed the title of encyclopaedia were dictionaries of arts and sciences, and these excluded historical and

biographical material.”<sup>1</sup> The first chapter of the thesis is on the historical process of compilations and the various usages of the word, encyclopaedia, throughout the ages.

The history of compilations in Islam, like the West, goes back a long way. Scholars compiled knowledge and classified it in line with some principles based on religious doctrines and thoughts of Ancient philosophers. Scholars in the Ottoman Empire, took over the Muslim scholars’ tradition of compilation, and classified knowledge in line with their former classifications. On the other hand, especially 19<sup>th</sup> century onwards, members of Ottoman intelligentsia were impressed by Western ideas, particularly in sense of political thought and also in a broad intellectual sense. Therefore, Ottoman tradition of encyclopaedic compilation underwent a change at least in its content. The second chapter of the thesis will deal with this alteration. The main concern is, whether there was an influence of Western encyclopaedists of the 18<sup>th</sup> century on Ottoman intelligentsia. Some Ottoman historians argue that some members of Ottoman intelligentsia were influenced by encyclopaedists and they compiled some works like their European colleagues. This thesis is a critical of this argument. Historian Johann Strauss shows a vivid picture of Istanbul’s printing culture in the 19<sup>th</sup> and 20<sup>th</sup> centuries as a multicultural and multilingual capital of the Empire.<sup>2</sup> However this thesis only deals with Ottoman/Turk intelligentsia because of the writer’s linguistic inability.

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<sup>1</sup> Richard Yeo, *Encyclopaedic Visions: Scientific Dictionaries and Enlightenment Culture* (Cambridge University Press, 2001), 14-15

<sup>2</sup> See, Johann Strauss, “Who Read What in the Ottoman Empire (19<sup>th</sup> and 20<sup>th</sup> Centuries)?”, *Middle Eastern Literatures* 6, no.1 (2003): 39-76.



## CHAPTER I

### “What the Ancients Know Are”

Some historians consider the work of Pliny the Elder (23 AD - 79 AD) *Naturalis Historiæ* (*Natural History*, 77 AD) as the first major encyclopaedia or encyclopaedic text.<sup>3</sup> According to this viewpoint, the *Natural History* of Pliny, today, is the only surviving example of a recognized literary genre in Rome. Lost encyclopaedias of Cato, Varro and Celsus are the other examples of the genre. The main concern of this chapter is whether encyclopaedia is a specific genre in that period or not. Were the above-mentioned authors conscious of writing in the same genre? Is it possible to talk about Pliny’s encyclopaedism? Why did the historians call Pliny’s work an “encyclopaedia”? Is it related to its comprehensiveness or because of its authority as a reference book in various subjects on subsequent ages? Or, is it an anachronic reading of the *Natural History* by its modern readers?

Between 70-76 AD, Pliny was procurator of several provinces including Hispania Tarraconensis, Africa, and probably both Gallia Narbonensis and Belgica. One could assume that he was very busy with administrative works to write a comprehensive reference book, but according to his nephew Pliny the Younger, he studied very hard to complete his job. Out of his official duties, he devoted all of his time to investigation of knowledge:

“When you consider the extent of his reading and writing I wonder if you feel that he could never have been a public official or a member of emperor’s council, but, on the other hand, now that you know about his application, that he should have achieved more? In fact, his official duties put every possible obstacle in his path; and yet there was nothing

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<sup>3</sup> For this approach, see Robert L. Collison, *Encyclopaedias: Their History Throughout the Ages* (New York: Hafner Publishing Company, 1964), 25-27. Mary Beagon, *Roman Nature: The Thought of Pliny the Elder* (Oxford University Press, USA, 1992). Gian Biagio Conte, “The Inventory of the World: Form of Nature and the Encyclopaedic Project in the Work of Pliny the Elder,” in *Genres and Readers*, trans. G. W. Most, Baltimore, Md. (The John Hopkins University Press, 1994), 67-104. Trevor Murphy, *Pliny the Elder’s Natural History, The Empire in the Encyclopaedia*, (USA: Oxford University Press, 2004).

that his energy could not surmount.”<sup>4</sup> (The Letters of the Younger Pliny, VI, 18)

Pliny the Younger’s letter six is the only source about Pliny the Elder’s biography. Young Pliny wrote the letter to Tacitus to provide information for his *Historiæ*. Young Pliny makes up two components in his narrative, the underlying *fabula* (or story) and the vehicular *discourse* (or plot, or discursive arrangement of events).<sup>5</sup> It is difficult to distinguish between these components clearly. Eco claims that, Younger Pliny was aware of that Tacitus could give immortality to his uncle Pliny the Elder by representing him as a scientific hero. Indeed, his description gives an impression that Pliny the Elder was a hero of science. Therefore, treating with suspicion the letter of Young Pliny is better to see a clearer picture of Pliny the Elder. There is no information regarding how Tacitus received and interpreted the letter of Pliny because of the fact that, the first part of his *Historiæ* includes the period until 70 AD and its second part is lost.

Pliny the Elder read or had slaves to read and scribes to take notes for him.<sup>6</sup> Robert Fowler criticizes Pliny by stating that “the sprawling farrago of a man who had his slaves read source books to him in his bathtub is perhaps not the best place in which to find the Platonic idea of the encyclopaedia.”<sup>7</sup>

### **a. Natural History of Pliny: Meaning, Shape and Content**

The word *natura* is the translation of the Greek word *physis* into Latin. “*Physis* meant the ‘nature of a thing’ and was applied equally to Greek drama as to animals and plants.”<sup>8</sup> In fact, a proper translation of the word into Latin was very hard, nevertheless Roman scholars, in general, did already know Greek. Apart from “the nature of a thing”, *physis* and *natura* meant also “the nature of the world”.<sup>9</sup> It seems that, Pliny used both meanings of the word;

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<sup>4</sup> John F. Healy, “Introduction,” in *Pliny The Elder, Natural History: A Selection*, trans. John F. Healy (England: Penguin Books, 1991), XII.

<sup>5</sup> Umberto Eco, “A Portrait of the Elder as a Young Pliny,” in *The Limits of Interpretation* (Indiana University Press, 1991), 124.

<sup>6</sup> Trevor Murphy, *Pliny the Elder’s Natural History, The Empire in the Encyclopaedia*, Oxford University Press, USA, 2004, 3.

<sup>7</sup> Robert L. Fowler, “Encyclopaedias: Definitions and Theoretical Problems,” in *Pre-Modern Encyclopaedic Texts*, ed. Peter Binkley, (Brill, 1997), 8.

<sup>8</sup> Roger French, *Ancient Natural History* (London: Routledge, 1994), 4.

<sup>9</sup> *Ibid.*, 4.

“For it is difficult to give a new look to things that are old hat, an air of authority to what is novel, lustre to what is ‘passé’, light to the obscure, acceptability to things that arouse aversion, credibility to matters open to question- and indeed to give to all things Nature, and to Nature herself, all her intrinsic qualities.”<sup>10</sup> (pref 15)

As for the word *historia*, it was used as “inquiry” or “research” by Herodotus. According to John Healy, Pliny the Elder used the word in the same meaning.<sup>11</sup> In this point, one may ask that if the *Natural History* of Pliny reflects an “inquiry of nature”. The answer is probably no. In Pliny’s time, research was an uncritical and imitative activity; texts based on reading and note taking by authors without scientific evaluation. In the preface, Pliny claims that, “To these I have added very many facts that my predecessors did not know or that I have subsequently discovered from my own personal experience.”<sup>12</sup> (pref 17) But indeed, Pliny’s *Natural History* owes its comprehensiveness to former literary texts rather than empirical observations. “Instead of experimenting on or analyzing what was under his nose, Pliny collated and repeated the descriptions of earlier writers.”<sup>13</sup> In the same part of the preface (pref 17), he writes that, “in the words of, Domitius Piso, we need works of reference not books.” The owner of this words, impetuously, believes many “old wives’ tales” and enshrines them in his work.<sup>14</sup>

Pliny’s *Natural History* consists of thirty-seven books in which he dwells on various subjects respectively; cosmography, astronomy, meteorology, geography, ethnography, anthropology, zoology, man, inventions, botany, medicine, pharmacology, magic, metallurgy, mineralogy and fine arts.<sup>15</sup> The logic of classification is based on “contrasts” and “antitheses”.<sup>16</sup> *Prima facie*, it gives an impression that the work has a well-organized structure. However, it is very confusing to read comprehensibly. Because of this, Fowler claims that, the organization of his data is probably the sloppiest in the history of bookmaking.<sup>17</sup>

Indeed, Pliny classifies things arbitrarily. For example, he sorts animals by their

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<sup>10</sup> Pliny the Elder, *Natural History: A Selection*, trans. John F. Healy (Penguin Books, England, 1991), 4. Trevor Murphy translate the same part as: “and indeed to give to everything its nature and to nature all her own possessions.” Trevor Murphy, *o cit.*, 33

<sup>11</sup> John F. Healy, “Introduction”, in Pliny The Elder, *o cit.*, xvii.

<sup>12</sup> *Ibid.*, 5.

<sup>13</sup> Trevor Murphy, *o cit.*, 5.

<sup>14</sup> Robert L. Collison, *Encyclopaedias: Their History Throughout the Ages* (New York: Hafner Publishing Company, 1964), 25.

<sup>15</sup> *Ibid.*, 25. For table of contents, see Pliny the Elder, *o cit.*

<sup>16</sup> Trevor Murphy, *o cit.*, 30.

<sup>17</sup> Robert L. Fowler, *o cit.*, 8.

size and nobility. Hence, elephant is the chart-topping among them. The biggest enemy of elephant, that is antithetical of it, is serpent. The eternal war between elephant and serpent bring the chapter to its close.<sup>18</sup> This kind of digressions is the characteristic of Pliny's compilation. Trevor Murphy gives a concrete example to Pliny's "digressions"; "a section dealing with tribes that possess remarkable powers like the evil eye or immunities to snake-bite or fire is interrupted by a note on the astonishing toe of King Pyrrhus of Epirus"<sup>19</sup>;

"Not far from the city of Rome, in the territory of the Falisci, there are a few families called the Hirpi, who, at the annual sacrifice to Apollo on Mount Soracte, walk over a pile of charred logs and are not burned. For this reason, by a perpetual decree of the Senate, they have exemption from military service and all other public duties. Some people are born with bodily parts that possess special properties; for example, King Pyrrhus' big toe on his right foot cured an inflamed spleen by touch. The story is told that, when he was cremated his big toe would not burn along with the rest of his body; it was put in a chest in a temple."<sup>20</sup>

Due to a naive connotation, the subject "tribes" or "tribes and their immunities" was interrupted.

In other place, he describes fish but not only as animal, but also as portent, as commodity, as food, as medicine, in short, fish and their importance to the Romans.<sup>21</sup>

Overall, Pliny's *Natural History* has a very intricate structure. It is hard to read because of its simplistic and random contrasts, analogies, digressions and antithetics.

## **b. Lost Encyclopaedias**

In 1850, Otto Jahn wrote an article entitled "Über Römische Encyclopädien" in which he claims that Cato's *Ad filium*, Varro's *Disciplinae Libri IX* and Celsus' *Artes* are the first examples of encyclopaedic genre in ancient times. According to him, they were all dealt with a recognized canon of subjects in their works. Jahn's article influenced the later academic works such as Heinrich Jordan's collection of the fragments of Cato (1860), as

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<sup>18</sup> Trevor Muphy, *o cit.*, 30.

<sup>19</sup> *Ibid.*, 31

<sup>20</sup> Pliny the Elder, *o cit.*, 77- 78.

<sup>21</sup> *Ibid.*, 7.

well as Friedrich Marx's collection of the fragments of Celsus. These works were based on the assumption that, the texts of Cato, Varro and Celsus followed the curriculum of basic education that students in Rome would follow before more specialized study.<sup>22</sup>

Let's begin with the earliest example, namely the work of Cato the Elder (234 BC - 149 BC). Its title is a subject of an academic debate, as it appears in three different forms which are *Ad Filium*, *Epistula ad Marcus Filium*, *Praecepta ad Marcum*. It makes difficult to determine the sort of the work, whether it is a treatise, a letter, a list of aphorisms or a combination of the three.<sup>23</sup> Moreover, A.S. Gratwick points out that Cato's one book in *Ad Filium* was on agriculture, another on medicine, another book on warfare; while these have little to do with basic education.<sup>24</sup> Cato gathered unrelated topics together, therefore, Gratwick ascertains that, *Ad Filium* was certainly unsystematic and eclectic and quirky and that Cato himself probably did not edit them together.<sup>25</sup> There is no evidence to argue that, Cato arranged his topics to make an encyclopaedia.

Ritschl, in his article on Varro's *Disciplinae*, writes that Varro's work became a canonical text in the Middle Ages.<sup>26</sup> Ritschl reconstructed number and identity of the disciplines Varro discussed as grammar, dialectic, rhetoric, geometry, arithmetic, astrology, music, medicine, and architecture - in that order.<sup>27</sup> However, Ilsetraut Hadot objects to him by suggesting that the existing texts do not provide enough information to determine the structure of Varro's work.<sup>28</sup> It is only possible to say that, Varro's *Disciplinae* dwells on several disciplines; but it still is very hard to put forward an idea about its structure, order and content. Moreover, it seems that, the work influenced the authors of the Middle Ages, although there is an important difference between them. Church Fathers' texts hierarchically started with religious and divine things, however, in Varro's work, religious issues were parts of the text but not the most important one. It also reflects the difference of divine things' importance between the time of Varro and of Church Fathers. Varro's treatises later were grouped as *trivium* (grammar, logic, rhetoric) and *quadrivium* (geometry, arithmetic, astronomy, music) excluding music, medicine and architecture.<sup>29</sup>

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<sup>22</sup> Aude Doody, "Pliny's Natural History: Enkuklios Paideia and the Ancient Encyclopaedia," *Journal of History of Ideas* 70, no. 1 (2009), 6.

<sup>23</sup> *Ibid.*, 7.

<sup>24</sup> Robert L. Fowler, *o cit.*, 16.

<sup>25</sup> Aude Doody, *o cit.*, 6.

<sup>26</sup> *Ibid.*, 5-6

<sup>27</sup> *Ibid.*, 6.

<sup>28</sup> *Ibid.*, 7

<sup>29</sup> Richard Yeo, *Encyclopaedic Visions... o cit.*, 6.

Aulus Cornelius Celsus (25 BC - 50 AD) was a Roman Patrician of the first century. His work *Artes* consisted of six books. Four of these treated the same subjects with Cato's work. Differently from Cato, he also treated philosophy and jurisprudence. There is no evidence to suggest that, Celsus associated these disciplines in the same book. In his only surviving treatment *Medicinae*, there are two references in the first five books of *Artes* which were about agriculture. Celsus opens the book with what looks like a link: "Just as agriculture gives nourishment to the body, so medicine gives health to the sick."<sup>30</sup> It seems that, *Medicinae* is the following section of agriculture. On the other hand, Columella (AD 4 - AD 70) refers to Celsus' agriculture but he does not make reference to the wider context of *Artes*. It may be due to the book production technologies of the era. Discrete sections of large books were not always produced as in entirety. Or it is related with *Artes*, as it is said, was not a unified book.

Quintilian (AD 35 - AD 100) correlates between Cato, Varro, Celsus and Cicero. Otto Jahn, pursuant to Quintilian's work, sees a strong relation among these authors. In his *Institutio Oratoria* in which he tries to create his own educational tradition, Quintilian uses their names to defend his own ideal education system. They were all authoritative authors among Roman intellectuals. They were all polymathic figures who possess all knowledge hence they are archetypes for the content of Quintilian's education system. Quintilian's emphasis, here, is on the person who knows everything, not the book that contains everything.<sup>31</sup>

Pliny and others did not write in a self-aware genre of encyclopaedias. Aude Doody ascertains that, "If any of these texts are encyclopaedias, it is because of their reception history, rather than because they belong to a shared ancient category of writing."<sup>32</sup>

Majority of authors take Pliny's *Natural History* and other so-called encyclopaedias from their context and redeploy them in their own narrative.<sup>33</sup> This is completely a teleological approach. When Pliny wrote his text, he did not elaborate it on his own "encyclopaedism". He, mostly, wanted to write a text in which he writes everything he knows. One of the crucial points is a sentence of Pliny in his preface which raises anachronistic expectations of the modern authors:

"First and foremost I must deal with subjects that are part of what the Greeks term

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<sup>30</sup> Aude Doody, *o cit.*, 9-10.

<sup>31</sup> *Ibid.*, 9.

<sup>32</sup> *Ibid.*, 4.

<sup>33</sup> *Ibid.*, 2.

an “enkuklios paideia”, but which are unknown or have been rendered obscure by scholarship.”<sup>34</sup>

Pliny did not use here “enkuklios paideia” to reflect the encyclopaedic nature of his project.<sup>35</sup> This point brings the issue to one of the most contradictory discussions in the corpus of history of encyclopaedias and of the word *encyclopaedia*.

### c. Enkuklios Paideia and Encyclopaedia

There is an extensive corpus on the meaning of *enkuklios paideia* but this writing dealt with, mostly, the first usage of the single word *encyclopaedia*.

Henri I. Marrou claims in his *History of Education in Antiquity* that “the word “encyclopaedia” evokes a picture of universal knowledge, and however elastic it may have been, “enkuklios paideia” never claimed to embrace the integrity of human knowledge”<sup>36</sup>. The well accepted meaning of the word in Hellenistic Greek is general education which is “produce a type of complete man, versed in all the disciplines”<sup>37</sup>. However, there is no precise list about a fixed content of *enkuklios paideia*. Definitions of ideal basic education vary with comprehension of the authors. In Pliny’s *Natural History*, the situation is the same, he writes according to his ideal of what a man ought to know by the end of general education. However, his aim, unsurprisingly, did not go beyond a discourse.

On the other hand, there was a solitary piece of evidence with regard to the usage of the compound form of the word *encyclopaedia* in ancient times. Many historians attribute the coinage of the single word *encyclopaedia* to Quintilian. It is due to a false reading of Quintilian’s printed texts’ editors in the 15<sup>th</sup> and 16<sup>th</sup> centuries. In 1966, Henningsen lists the complete editions of the texts before the year 1514. “Of these 2 leave a blank, 6 print a two-word expression, and the remaining 23 print one word, of various forms.”<sup>38</sup> It seems that, the first editors of Quintilian, probably, “neologise” the single word; “they either tried to reproduce what they found in their manuscripts or put in the word as they knew it from

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<sup>34</sup> Pliny the Elder, *o cit.*, 4.

<sup>35</sup> Aude Doody, *o cit.*, 11.

<sup>36</sup> Cited in, *ibid.*, 11.

<sup>37</sup> Umberto Eco, *Interpretation and Overinterpretation* (New York: Cambridge University Press, 1992), 149.

<sup>38</sup> Robert L. Fowler, *o cit.*, 28-29.

contemporary discussions”<sup>39</sup>. Robert Fowler evokes some usages of the word in the 15<sup>th</sup> century by referring to several authors. He reaches to a conclusion that “all the evidence points to the invention of the word in humanistic circles in the wake of the discovery of the ancient treatises”<sup>40</sup>.

#### **d. Last Words on Ancient Compilations**

Historians of the encyclopaedia accepted Pliny the Elder as the first encyclopaedist for his attempts in his *Natural History* to compile all human knowledge. Holders of this opinion omit that the difference between philosophical impulses towards complete knowledge and the production of an encyclopaedic book.<sup>41</sup> The opinion that the ancient authors Pliny, Cato, Varro and Celsus wrote in the same genre is not a good way to understand the relations amongst them.

It is impossible to find an encyclopaedia as a single book in ancient times notwithstanding; the notion of *omne scibile* (everything knowable) was present. The first serious philosophical analysis of the *omne scibile* may be ascribed to Aristotle, however, the similar notion was stated by Plato but without clarity, cogency, or diligence.<sup>42</sup> Aristotle wrote on rhetoric, poetics, logic, physics, ethics, biology, politics, history, ethnology, psychology, and metaphysics. These were not randomly selected disciplines. All of the subjects may be seen as aspects of three “sciences” into which the *Academia* divided knowledge as physics, ethics, and logic.<sup>43</sup> Greeks in all periods preferred to write handbooks of each subjects and disciplines. In spite of that, Romans gathered the knowledge in miscellaneas.

Modern historians of encyclopaedias make analogies between the ancient and the modern compilations. However, seeking different features of them is a better way to understand the historical process of knowledge. Richard Yeo, rightfully, points out that “the encyclopaedia, as a self-aware genre, is also closely linked with the emergence of modernity, with assumptions about the public character of information and the desirability

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<sup>39</sup> *Ibid.*, 29.

<sup>40</sup> *Ibid.*

<sup>41</sup> Aude Doody, *o cit.*, 2.

<sup>42</sup> Robert L. Fowler, *o cit.*, 19.

<sup>43</sup> *Ibid.*, 19.



of free intellectual and political exchange that became a distinctive feature of the European Enlightenment”<sup>44</sup>.

### **e. General Characteristics of Encyclopaedic Works in Middle Ages**

Medieval men’s outlook on the nature was shaped by their heritage of ancient, especially Aristotelian science and by their Christian world-view.<sup>45</sup> According to the latter, God created the world *ex nihilo*. This world is a reflection of the other world. Christ is the incarnation of the God in the world. “If God were another person like ourselves, we might suppose that his being able to know everything means that we ourselves may in principle know everything, that is, that we are potentially omniscient.”<sup>46</sup> However, God’s knowledge is different from ours. According to William of Ockham, when we know something, we are in one mental state, and when we know the opposite of it we are in another. “Not so for God, for whom to know is not to be in a certain state.”<sup>47</sup> God knows everything but in a different manner, he is the creator and also the source of all knowledge. Human knowledge requires his illumination. Because of this axiomatic approach, epistemology was not one of the main topics of the medieval philosophy. The problem of knowledge, mostly, was an organizational problem (morphological) rather than the epistemological one. There is nothing in vain within the nature and everything has a purpose. It means that all knowledge is potentially available to man and there is nothing unexplainable in a natural system conceived as “an ordered whole, bound together by purposes”<sup>48</sup>. God has two books: The nature and the Bible. Understanding the world (the nature) makes possible to understand the meaning of the “Scripture” (the Bible). By this means, it discloses the other world and the spiritual meaning. These ideas legitimated the scientific research and also influenced shape and content of the medieval pre-encyclopaedic texts.

Medieval encyclopaedic works begin with God, since “God belongs first in all

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<sup>44</sup> Richard Yeo, *o cit.*, XII.

<sup>45</sup> Faith Wallis; *Structure and Philosophy in Medieval Encyclopedias*, M.A. Thesis, Department of History, McGill University, September 1974, 2.

<sup>46</sup> John North, “The Art of Knowing Everything”, in *Pre-Modern Encyclopaedic Texts*, ed. Peter Binkley (Brill, 1997), 189.

<sup>47</sup> *Ibid.*, 190.

<sup>48</sup> Faith Wallis, *o cit.*, 2.

situations”<sup>49</sup>. “Many of them use a hexameral scheme, based on the six days creation, in treating the natural sciences, just as in the Biblical commentary.”<sup>50</sup> Rabanus Maurus in the 9<sup>th</sup> century established hexameral order as the standard structure for encyclopaedic work, when he reorganised Isidore of Seville’s *Etymologiae* according to a hexameral scheme.<sup>51</sup> A hexameral survey of the natural world inevitably stresses the creator’s hand and image as they appear in his creatures.<sup>52</sup> When treating non-theological subjects, they tend to perceive natural phenomena allegorically as well as physically. When they treat a spiritual truth they use allegories in the nature for strong expression. In addition, when treating natural world, they regard it as the work of God. 13<sup>th</sup> century onwards, allegorical interpretations could not predominate, since Aristotelian books on the physical sciences were returned to Western Europe and incorporated into its philosophical thought.<sup>53</sup> Some of the encyclopaedic texts were entitled as *specula* (mirrors) or *speculum* (mirror) which was a very common metaphor in the Middle Ages<sup>54</sup> and was also used by Ancients.<sup>55</sup> “People do not see themselves in the mirror but something which is held up for them.”<sup>56</sup> It gives an ideal for life and it is helpful for spiritual maturation. They look to the mirror to learn something true about the religious and the temporal. Therefore, the mirror possesses a didactic function. Some of the compilations’ titles include the word universal. According to John North, “universal has a function in such a way as to sanction the use of the word ‘all’ not just ‘some’.”<sup>57</sup> It enlarges the scope of discourse but not the content.

“In the middle ages like ancient times, encyclopaedic works continued to conceive the knowledge they collected as worth committing to memory.”<sup>58</sup> The faculty of memory has the highest status among the faculties of human mind. Thomas Aquinas, for example, was revered more for his capacious memory than for his power of reasoning.<sup>59</sup> Bernardo

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<sup>49</sup> John North, “Encyclopaedias and the Art of Knowing Everything”; in *Pre-Modern Encyclopaedic Texts*, ed. Peter Binkley, (Brill, 1997), 197.

<sup>50</sup> Nadia Margolis, “Encyclopaedias”, in *Handbook of Medieval Studies: Terms, Methods, Trends*, 3 volumes, 2010, p 1767-1774.

<sup>51</sup> Peter Binkley, “Preachers’ Responses to Thirteenth-Century Encyclopaedism”, in *Pre-Modern Encyclopaedic Texts*, ed. Peter Binkley (Brill, 1997), 79.

<sup>52</sup> *Ibid.*, 79.

<sup>53</sup> Francis J. Witty, “Medieval encyclopaedias: A Librarian’s View”, *The Journal of Library History* 14, no. 3 (1979): 283.

<sup>54</sup> Robert L. Fowler, *o cit.*, 23.

<sup>55</sup> Ernst Robert Curtius, *European Literature and Latin Middle Age* (Princeton University Press, USA, 1991), 336.

<sup>56</sup> Edith A. Van Den Goorbegh, *Light Shining Through A Veil* (Peeters Publishers, 2000), 218.

<sup>57</sup> John North, *o cit.*, 187.

<sup>58</sup> Richard Yeo, *o cit.*, 79.

<sup>59</sup> *Ibid.*, 79.

Gui writes after Thomas Aquinas' death that "His memory was extremely rich and retentive: whatever he had once read and grasped he never forgot."<sup>60</sup> Books were not seen as more effective, or more trustworthy containers of knowledge, than the memory.<sup>61</sup> On the other hand, some authors give new advices, namely new methodologies, about "art of memory" in the Middle Ages. Hugh of St. Victor, for example, implies that, unlike ancients, students are not capable of retaining what they have learned. Thus, he gives some advices in his *Didascalicon*:

"Concerning memory I do not think one should fail to say here that just as aptitude investigates and discovers through analysis (*divido, divisio*), so memory retains through gathering (*collectio*). The things which we have analysed in the course of learning and which we must commit to memory, we ought, therefore, to gather."<sup>62</sup>

The analysis (*divido*) refers to expounding a text by way of dividing it. It also makes easy to remember it. *Divisio* has a background in ancient times' rhetoric and logic whilst his notion of *collectio* has not.<sup>63</sup> Hugh of St. Victor uses it as a summary or an abstract. Kimberley Rivers summarizes the advice of Hugh of St. Victor as "the diligent student or teacher will analyze or divide the text in order to discern universal and particular ideas and to indicate their order and relationship". "He will then summarize (or collect) the main points of these discoveries and store them in his memory."<sup>64</sup> However, it is not clear that how one retains collections in memory. The process of division and collection also describes the job of a medieval compiler.<sup>65</sup> They collect, arrange and transmit old knowledge rather than new findings.<sup>66</sup> But, how?

Clive S. Lewis, the author of the *Chronicles of Narnia*, puts forward that: "At his most characteristic, medieval man was not a dreamer nor a wanderer. He was an organizer, a codifier, a builder of systems. He wanted a place for everything and everything in the right place. Distinction, definition and tabulation were his delight... There was nothing which medieval people liked better, or did better, than sorting out and tidying up."<sup>67</sup>

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<sup>60</sup> Mary Carruthers, *The Book of Memory: A Study of Memory in Medieval Culture* (UK: Cambridge University Press, 2006), 3.

<sup>61</sup> Richard Yeo, *o cit.*, 79.

<sup>62</sup> Cited in, Kimberley Rivers, "Memory, Division And The Organisation Of Knowledge", in *Pre-Modern Encyclopaedic Texts*, ed. Peter Binkley, (Brill, 1997), 149.

<sup>63</sup> *Ibid.*, 150-151.

<sup>64</sup> *Ibid.*, 152.

<sup>65</sup> *Ibid.*, 157.

<sup>66</sup> Richard Yeo, *o cit.*, 6.

<sup>67</sup> C. S. Lewis, *The Discarded Image: An Introduction to Medieval and Renaissance Literature* (UK: Cambridge University Press, 2000), 10.

Indeed, compiler of the medieval era was a classifier of knowledge rather than an inventor or a discoverer. In this point, it is important to emphasize that, encyclopaedic works were not the major locus for classification of knowledge; it went on in far more elaborate ways in philosophical texts.<sup>68</sup> “Seven liberal arts” is a very common term used by many compilers. Cassiodorus is the first user of the “seven liberal arts” among Christian writers. Apart from this, medieval writers used several schemes which were attributed to Hugh of Saint Victor, Albertus Magnus. There were many schemes other than these. Domenicus Bandicus (1335-1418), for example, divides his book *Fons Memorabilium Universi*, into five parts to reflect the five wounds of the Christ. Apart from this, Ulisse Aldrovandi arranges birds, in his *Ornithologiae* according to their nobility, granting the eagle the highest position. Schemes of knowledge based on virtue in terms of Christian morality; the reckoning of high moral sense is a precondition for higher knowledge. “The embellishment of this christian position reached its height in the late medieval period with variations on the concept of a “tree of wisdom” (*arbor sapientiae*) that displayed the passage to wisdom through the seven liberal arts and the seven ages of man”<sup>69</sup>. In this kind of schemes, Aristotle’s distinction between the theoretical and the practical has a great influence as from 13<sup>th</sup> century. These are the general features of the philosophy of knowledge and encyclopaedic works in the Middle Ages. For a better understanding, the next part deals with prominent encyclopaedic works of the era.

## **f. Encyclopaedic Works or Miscellaneas?**

Martianus Capella’s (early 5<sup>th</sup> century) *De Nuptiis Philologiae et Mercurii* (*Marriage of Philology and Mercury*) embraces the seven liberal arts in a compendious form.<sup>70</sup> *De Nuptiis* is an elaborate allegory written in a strange mixture of prose and verse in the manner of Menippean satire.<sup>71</sup> Capella’s compendium was a very important source for the standard curriculum of academic learning in the Middle Ages. The seven liberal arts were

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<sup>68</sup> Richard Yeo, *Encyclopaedic Visions... o cit.*, 22.

<sup>69</sup> *Ibid.*, 23.

<sup>70</sup> William H. Stahl, “To a Better Understanding of Martianus Capella”, *Speculum* 40, no. 1, (1965): 102-115.

<sup>71</sup> *Ibid.*, 103. See also Robert L. Collison, *Encyclopaedias: Their History Throughout the Ages*, (New York: Hafner Publishing Company, 1964), 27. for a detailed analysis of the title and content, see Joel C. Relihan, “Martianus Capella, the Good Teacher”, *Pacific Coast Philology* 22, no. 1/2 (Nov., 1987): 59-70.

divided into two categories as *trivium* and *quadrivium* in the education system of the Middle Ages. *Trivium* (grammar, logic and rhetoric) was preparatory for *quadrivium* comprising the subjects, arithmetic, geometry, music and astronomy. Capella dwells on the seven liberal arts, yet not in the form of *trivium* and *quadrivium*. In the first two books of *De Nuptiis*, he treats the nuptial of the Mercury and the Philology. Remaining seven books were devoted to the seven liberal arts. In the book, the seven liberal arts were bridal gifts from the heaven given by the Mercury to his new wife Philology. The gifts are Grammar (an old woman with a knife for excising children's grammatical errors), Dialectic, Rhetoric (a tall woman with a dress decorated with figures of speech and armed in a fashion to harm adversaries), Geometry, Arithmetic, Astronomy and (musical) Harmony.<sup>72</sup> In *De Nuptiis*, he indicates the limits of learning and the difference between information and wisdom. According to Relihan, it is not an encyclopaedia but a Menippean satire which is a *parody* of encyclopaedic knowledge<sup>73</sup>.

Boethius (480-about 524) was not a compiler but he, implicitly, influenced compilations by his philosophy and by his insistence on the fundamental importance of arithmetic, music, Euclid's geometry and astronomy as the basis of all learning.<sup>74</sup> Cassiodorus (about 490-about 583) who was probably influenced by Boethius, "proposed a reading program in his *Institutiones Divinarum et Secularium Litterarum* to his monks, gathering sacred letters and secular ones and built an educational course for the micro society of monks, who needed to find their way in a library in search of the books they needed to improve their knowledge of *sacra pagina*"<sup>75</sup>. It is an educational text for monks including divine topics such as the Holy Scripture and commentaries, fathers of the church, information about the monasteries of the Vivarium and Castellum and so on.<sup>76</sup> The second book *Institutiones Secularium Litterarum* contains the seven liberal arts. However, Cassiodorus wrote his book, as mentioned above, for "the instruction of his simple and unpolished brothers"<sup>77</sup> rather than compiling "all knowledge".

Isidore of Seville (about 560-636) has a very central place amongst the medieval

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<sup>72</sup> Joel C. Relihan, "Martianus Capella, the Good Teacher", *Pacific Coast Philology* 22, no. 1/2 (Nov., 1987): 59-70.

<sup>73</sup> *Ibid.*, 59.

<sup>74</sup> Robert L. Collison, *Encyclopaedias: Their History Throughout the Ages*, (New York: Hafner Publishing Company, 1964), 28.

<sup>75</sup> Bernard Ribemont, "On the Definition of an Encyclopaedic Genre in the Middle Ages", in *Pre-Modern Encyclopaedic Texts*, ed. Peter Binkley, (Brill, 1997), 49.

<sup>76</sup> For the list see, Robert L. Collison, *o cit.*, 29.

<sup>77</sup> *Ibid.*, 29.

compilers because of his endeavor in his work *Etymologiae* “to re-establish the link with the authorities of Antiquity, with the poets, the philosophers, both pagan and christian, unified in the way of set forth, illustrated, and justified his etymological method”<sup>78</sup>. He has a great influence on the subsequent ages. Because of these, some historians of encyclopaedia regard him as the first Christian encyclopaedist.<sup>79</sup> Isidore emphasizes the importance of etymology: “For so long as you see the origin of a noun, the quicker you understand its force”<sup>80</sup>. Hence, Francis Witty draws attention to the point by stating: “Such a precedent it is not surprising to find nominalism strong among medieval philosophers.”<sup>81</sup> *Etymologiae* consists of twenty books in which there are various irrelevant topics such as the Bible, heaven, heavenly hierarchy, the church and heresies, liberal arts, an etymological dictionary, food, furniture, warfare, public games and so on. He presents knowledge and information on various subjects in a broad sense. Francis Witty points out that “throughout the text over seventy authors are cited, although this does not necessarily mean that Isidore owned texts of all these writers, or that he had even read them through, for there were “reader’s digests” of Livy *et al.* and collections of pertinent quotations from great writers.”<sup>82</sup> The work also includes a list of books’ titles and also a list of all the chapter headings (*capitula*).

*De Rerum Naturis (On the Nature of Things)* of Hrabanus Maurus (about 776 - 856) contains many plagiarisms (in modern sense) from Isidore. In older times, it was often considered an honor that some other scholars borrowed passages, or another composer used a theme from another one’s composition.<sup>83</sup> Chapters begin with a text of Isidore, followed by an allegorical or mystical explanation.<sup>84</sup> His approach is completely theological. The work started with God, the trinity and angels. He used hexameral *ordo rerum*.

Michael Twomey says that, *De Rerum Proprietatibus* (about 1225) of Bartholomaeus Anglicus is the most popular “encyclopaedia” in its own time.<sup>85</sup> It begins

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<sup>78</sup> Bernard Ribemont, “On the Definition of an Encyclopaedic Genre in the Middle Ages”, in *Pre-Modern Encyclopaedic Texts*, ed. Peter Binkley, (Brill, 1997), 50.

<sup>79</sup> For this viewpoint, see *ibid.*, 49. Robert L. Collison, *o cit.*, 33

<sup>80</sup> Francis J. Witty, “Medieval encyclopaedias: A Librarian’s View”, *The Journal of Library History* 14, no. 3 (1979): 274- 296.

<sup>81</sup> *Ibid.*, 278.

<sup>82</sup> *Ibid.*

<sup>83</sup> *Ibid.*, 281.

<sup>84</sup> Robert L. Collison, *o cit.*, 37.

<sup>85</sup> Michael W. Twomey, “Medieval Encyclopaedias,” in *Medieval Christian Literary Imagery*, ed. R. E. Kaske, (University of Toronto Press, Scholarly Publishing Division, 1988), 182-215.

with God and angels, apart from this, Bartholomaeus dwells on etymology, and a concise moralization from it, Aristotelian cosmology, man, astronomy, elements, geography, natural history and so on. He uses occasionally alphabetical order in the lists of plants, localities *et cetera*, though it does not go beyond the first letter.<sup>86</sup>

The largest of all medieval encyclopaedias is *Speculum Maius* (about 1256-1259) of Vincent of Beauvais which consists of four books, respectively, *Speculum Naturale*, *Speculum Doctrinale*, *Speculum Historiale*, *Speculum Morale*. The first book *Speculum Naturale* begins with the six days of creation and their works. The second book includes secular subjects of Isidore's encyclopaedia and embraces also theology and monasticism. In the *Speculum Historiale* he dwells on Augustine's division of the ages of the world and information on great authors. The last book *Speculum Morale* is no longer attributed to Vincent. It contains large extracts from the *Summa* of Thomas Aquinas and writings of an anonymous 14<sup>th</sup> century author.<sup>87</sup>

Medieval compilations have various titles such as *speculum*, *de rerum naturis*, *institutiones*, *etymologiae*, *summa*, "*summa brevis*, *compilare*, *compilatio*, *compendium*"<sup>88</sup>. But they are different from each other in terms of content and shape. They were also written for different reasons. There are over 250 works entitled as *speculum* which include various information and knowledge about divine and secular things. The title *etymologiae* is related to their method to understand and to interpret the Scriptures. However, understanding the origin of words was not enough. That is the reason why they strived to understand matters of fact in their entirety. *De Rerum Naturis*, for example, was a very common title. But their structure and order differ remarkably. Many of them treat the nature as mentioned in the Bible. "If a medieval "encyclopaedist" wanted to describe the structure of heavens, he did not give a lecture in astronomy, nor a philosophical lesson in cosmology, he only transmitted what was necessary to the reader for a prescribed aim: to read the hidden messages of the Bible, to be a well educated prince etc."<sup>89</sup> or, they deal with the nature to interpret the Scriptures. In this respect, it is hard to identify them with the works of Pagans. The works titled *institutiones* -such as the works of Hrabanus Maurus, A. Neckham, Thomas of Cantimpré *et cetera*- were generally written for the education of monks. Medieval compilations do not include the word encyclopaedia in their title.

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<sup>86</sup> Francis J. Witty, *o cit.*, 290.

<sup>87</sup> *Ibid.*, 288.

<sup>88</sup> Bernard Ribemont, *o cit.*, 59.

<sup>89</sup> *Ibid.*, 51

After all, encyclopaedic works of Christian culture, from Isidore's *Etymologiae* to the compendia of liberal arts by early scholastics such as Peter Abelard and Hugh of Saint Victor and to the *Speculum Maius* of Vincent of Beauvais, shared the mission of conserving and cultivating the best of knowledge, both divine and human.<sup>90</sup>

### **g. From Renaissance to 18<sup>th</sup> Century**

The word encyclopaedia in title of a work, firstly, emerged in 1559 in Paul Scalich's compilation, entitled *Encyclopaedia, seu Orbis Disciplinarum, tam sacrum quam profanarum, Epistemon (Encyclopaedia; or Knowledge of the World of Disciplines, Not Only Sacred but Profane)*. The last neo-scholastic encyclopaedic work, Johann Heinrich Alsted's *Encyclopaedia, septem tomis distincta* (1630) is another example that includes the word encyclopaedia in its title. His work, actually, was a treatment of the Bible, but only in the most superficial and pedantic sense.<sup>91</sup> He defined "a day" as "when the sun shines". He wrote that a week is an interval of seven days and he proved it with citations from the Bible.<sup>92</sup> Alsted considered disciplines in three ways- (i) universal as their principles are general, (ii) common as their principles are similar and (iii) singular as they are unique.<sup>93</sup> He wrote his work "on the assumption that the world would soon end, and that the stock of knowledge should be gathered together as part of a communal accounting for human endeavors since the loss of Eden"<sup>94</sup>. In that period the word *encyclopaedy* came to mean the course of learning. Thomas Blount (1618-1679), for example, defined the word as follows: "comprehends all liberal sciences; an art that comprehends all others, perfection of all knowledge".<sup>95</sup> Hobbes defined *encyclopaedia* as "the whole of learning" while Furetière defined it as the "chain of sciences". According to him, the word is archaic and used only in humorous writing. By the 18<sup>th</sup> century, the word referred to the range of subjects an educated person should pursue, not a piece of work.

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<sup>90</sup> Richard Yeo, *o cit.*, 6.

<sup>91</sup> Jonathan Sheehan, "From Philology to Fossils: The Biblical Encyclopaedia in Early Modern Europe," *Journal of History of Ideas* 64, no. 1, (2003): 41- 60.

<sup>92</sup> *Ibid.*, 45.

<sup>93</sup> Donald R. Kelley, "The Problem of Knowledge and the Concept of Discipline," in *History and the Disciplines* (The University of Rochester Press, 1997), 16.

<sup>94</sup> Richard Yeo, *o cit.*, 3.

<sup>95</sup> Cited in, *ibid.*, 7.



The 15<sup>th</sup> century onwards, there was a huge increase in the number of printed books. The pupil of Alsted, Comenius, in 1641, had a trip to London. He was surprised by the great deal of books which was more than those at the Frankfurt book fair. His education at the University of Herborn and his observations about multitude of books and growing knowledge brought his mind to abbreviate the current knowledge for people lost in a sea of books. In 1651 he published his *A Patterne of Universall Knowledge*. His ideal was gathering essentials of knowledge in a reduced form. In the same vein, Pierre Bayle complained that he did not have all books to consult while he was writing his *Dictionnaire*. Leibniz, in 1680, exclaimed “that horrible mass of books which keeps on growing so that eventually the disorder will become nearly insurmountable, and it would then be a disgrace rather than an honor to be an author<sup>96</sup>”. However, the problem was not only the multitude of books but also the massive increase of knowledge by virtue of the new empirical approach and of cumulative and open-ended character of empirical knowledge. In 1680, Leibniz wrote a letter to Louis XIV regarding the progression of arts and sciences. He complained of the horrible mass of books and offered a solution: “King could arrange for the quintessence of the best books’ to be extracted and to add to them the observations, not yet recorded, of the best experts<sup>97</sup>”. He also recommended that the academies must be empowered to stop the publication of bad books. Leibniz never gave up on the idea of a universal encyclopaedia.<sup>98</sup> He insisted on systematic order of knowledge. Multitude of books and explosion of knowledge prompted scholars to get the knowledge under control. Western philosophers became aware that the knowledge of humanity could not keep in any individual memory. Thus, memory could not take prominence over reason anymore. They looked for a way to collect the knowledge for retaining as printed documents not for facilitating the work of memory to store all of it. Francis Bacon, for example, took a dim view of mnemonic techniques. He was in favor of recording all current and future data in printed books. Bacon, in his letter, advised to the Earl of Rutland that “If your Lordship tells me that these things will be too many to remember, I answer I had rather you trusted your note-book than your memory”.<sup>99</sup> In the next years of his life, even Leibniz wrote that the multitude of books served to preserve the greater part of our knowledge.

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<sup>96</sup> Cited in, *ibid.*, 87.

<sup>97</sup> *Ibid.*, 94- 95.

<sup>98</sup> Umberto Eco, “From Leibniz to the Encyclopédie,” in *The Search for the Perfect Language*, (Blackwell, 1995), 278.

<sup>99</sup> Richard Yeo, “Loose Notes and Capacious Memory: Robert Boyle’s Note-Taking and its Rationale,” *Intellectual History Review* 20, no. 3 (2010): 335-354.

On the other hand, traditional patronage relations were changed due to the printing-press capitalism, or, in other words, due to the commercialization of knowledge. By this means, knowledge was circulated more freely and thereby became accessible to anyone regardless of their social class. It is important to pause at and point out the case that except for certain capitals of Europe, it was impossible to find all kinds of literature. The 17<sup>th</sup> century onwards, books were, under the pioneering of English booksellers, begun to publish by way of subscription. Subscribers paid money, especially for large books, before their publication. Subsequently, subscribers' list printed at the front page of the books. Thus, it brought prestige to the subscribers. In general, the lists were printed in an alphabetical order, yet there still were also some exceptional implementations for prestigious names. In the list of John Harris' *Lexicon*, for example, the Earl of Burlington and the Bishop of Ely took the topmost position<sup>100</sup>. Sometimes, prestigious names those paid more for edition of high quality royal paper were written in a Gothic typeface. Accordingly, this made easy the publication of expensive books and journals. The subscription brought together the serialization of works. Thus, parts of large books, such as encyclopaedias, were sold serialized as weekly or monthly. All these things, relatively, liberalized the pens of authors.

"Since the Renaissance, Western philosophy has been dominated by the problem of knowledge (episteme, scientia, cognitio, science, connaissance, scienza, Wissenschaft, Erkenntnis, etc.)."<sup>101</sup> It emerged as Cartesian cogito, the Lockean way of ideas, Kantian critique of pure reason.<sup>102</sup> But, the concern of this part is, mainly, another way of the problematization of knowledge: Classification, especially Bacon's classification of knowledge because of its great influence on the scientific dictionaries.

Gregor Reisch (about 1467-1525), prior to Bacon, classified knowledge, substantially, in line with the theories of Galen (129-217) in his *Margarita Philosophica* (about 1503-1504).<sup>103</sup> *Sensus communis* (common sense) and *imaginativa* are located in the first ventricle of brain, *cogitativa* and *aestimativa* in the middle, and *memorativa* in the posterior one.<sup>104</sup> He placed disciplines under these faculties of human mind. He also

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<sup>100</sup> Richard Yeo, *Encyclopaedic Visions... o cit.*, 47.

<sup>101</sup> Donald R. Kelley, *o cit.*, 13- 29.

<sup>102</sup> *Ibid.*, 13.

<sup>103</sup> For a detailed investigation, see Grazia Tonelli Olivieri, "Gallen and Francis Bacon: Faculties of the Soul and the Classification of Knowledge," in *The Shapes of Knowledge from the Renaissance to the Enlightenment*, ed. Donald Kelley and Richard Popkin (Kluwer Academic Publishers, 1991), 61- 81.

<sup>104</sup> *Ibid.*, 68.

attempted to summarize arts and sciences which were current in a university curriculum. However, he matched the progress through sciences with the stages of life like his medieval predecessors.

Francis Bacon (1561-1626) made practical analysis of the structure of all knowledge in his *Advancement of Learning* and *Novum Organum* which he meant, in the title of the latter, to replace the old *Organon* of Aristotle.<sup>105</sup> Bacon was the first philosopher who classified all arts and sciences (not only the content of university curriculum) according to three faculties of the soul (memory, imagination, reason) which were located, according to the Galenic-Nemesian tradition, in three ventricles of the brain.<sup>106</sup> Faculties of memory, imagination and reason controlled respectively, the subjects of history, poetry and philosophy. Bacon also made a distinction between the natural philosophy and the natural history. Natural philosophy located under faculty of reason, included all mathematical and physical sciences. Natural history was located under memory. “He called for a search of nature itself, arguing that the old books were insufficient as guides to natural knowledge, but the new knowledge collected about nature had to be recorded in new books, only more of them now than ever before.”<sup>107</sup> He believes that, change and progress are the constant features of the empirical and experimental sciences. Bacon also criticized the tree metaphor in “tree of wisdom”. According to him, unless the “map”, the tree implies a centre. He arranged a “map of knowledge” rather than a tree of wisdom. Encyclopaedists of the Enlightenment were impressed by Bacon’s classification of knowledge, and used various maps of knowledge as the preliminary part of their works rather than a systematical arrangement. Thus, they could use a concomitantly alphabetical order and a system of classification of knowledge.

Richard Yeo puts forward the possibility of a link between encyclopaedias and commonplace books<sup>108</sup> by giving a reference to Joan Marie Lechner’s *Renaissance Concepts of Commonplaces* (1962). Commonplace was a tradition of ancients and was widely used by the Renaissance elite for recording quotations on various subjects from the classical and Christian authors<sup>109</sup> Humanists made much of retaining Greek and Latin

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<sup>105</sup> Robert L. Fowler, *o cit.*, 7.

<sup>106</sup> Grazia Tonelli Olivieri, *o cit.*, 71.

<sup>107</sup> Richard Yeo, *Encyclopaedic Visions... o cit.*, 89.

<sup>108</sup> The word “commonplace” used as “common-place” by the 19<sup>th</sup> century. The usage of the word as “commonplace” is its modern form.

<sup>109</sup> Richard Yeo, “Ephraim Chambers’s Cyclopaedia and the Tradition of Commonplaces,” *Journal of the History of Ideas* 57, no. 1, (1996): 157-175.

literature in their note-books; a practice used formerly by the medieval authors and became systematical in the 16<sup>th</sup> century. They compiled commonplace books for writing and, mostly, for rhetorical training. “Scholars copied data out in their commonplace book, kept handy for the purpose, grouping them under appropriate headings to facilitate later retrieval and use, notably in composing prose of their own.”<sup>110</sup> Quotations from Classical authors embellished expressions in speeches which were recommended by Erasmus and others. The word commonplace was the name of practice setting a group of themes under one head. Kept notebooks for this practice were “commonplace books”<sup>111</sup>. Erasmus’ *De Copia* is a good example of rhetorical guides in which he recommends on method of collecting words and passages about various subjects, and storing extracts from books. As from the late 17<sup>th</sup> century, there were some extended and printed commonplace books. Moréri’s *Le grand Dictionnaire historique* (1674), for example, was composed like a commonplace book though ranged in alphabetical order. In the preface of its English translation, it was considered as “Universal Common-place-Book”.<sup>112</sup> Bayle’s *Dictionnaire Historique et Critique* was a response to errors of Moréri. He used his own commonplace book to write his *Dictionnaire*. Pierre Bayle (1647-1706) wanted to compile a dictionary, which includes errors and mistakes of other works. Anthony Grafton points out Bayle’s aim that “anything the reader learned elsewhere and did not find contradicted in Bayle would be true”.<sup>113</sup> Works deriving from commonplace books were historical and biographical and not scientific. However, some commonplace books of students and scholars at English universities in the late sixteenth century included knowledge of geography and navigation.<sup>114</sup> Jean Bodin’s *Universae Naturae Theatrum* (1530- 1596), for example, was written on natural philosophy which were derived from his own commonplace book.

There were some differences between commonplace books and encyclopaedias. Their size is obvious. Moreover, commonplace books considered knowledge as a stable thing derived from books. Encyclopaedias, in contrast, condensed key terms, concepts and theories from unmanageable cycle of ever-increasing-information.<sup>115</sup> Commonplace books

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<sup>110</sup> Ann Blair, “Humanist Methods in Natural Philosophy: The Commonplace Book”, *Journal of History of Ideas* 53, no: 4, (1992): 541- 551.

<sup>111</sup> Cited in, Richard Yeo, “Ephraim Chambers’s Cyclopaedia and the Tradition of Commonplaces”, *o cit.*, 158.

<sup>112</sup> Cited in, Richard Yeo, *Encyclopaedic Visions... o cit.*, 107.

<sup>113</sup> Anthony, Grafton, *Footnote: A Curious History* (Harvard University Press, 1997), 193.

<sup>114</sup> Yeo, Richard, *Encyclopaedic Visions... o cit.*, 108.

<sup>115</sup> *Ibid.*, 106.

had systematical order or sometimes in unsystematic form despite alphabetical order of the 18<sup>th</sup> century encyclopaedias. Many authors used their commonplace books to compose comprehensive works. Encyclopaedists, maybe, benefited from commonplace books and they were influenced by method of commonplace as a note-taking practice.

## **h. Scientific Dictionaries**

About 1700, there were three prominent types of compilations; language dictionaries, historical dictionaries, and dictionaries of arts and sciences. Historical dictionaries are, in general, misinterpreted by readers and scholars of modern-day. Many historians regard historical dictionaries as the ancestors of modern encyclopaedias. Moréri's *Le Grand Dictionnaire Historique* (1674), for example, was considered the first alphabetical encyclopaedia by Foucault.<sup>116</sup> Moréri's dictionary, mainly focused on historical and biographical articles and also included geographical and genealogical information, a list of names and places, lives of famous people. He used the alphabetical order instead of the systematical one, thanks to its unscientific content and also thanks to its character falling without the scope of formal academic studies. According to Yeo, "Foucault has the wrong man: it was Furetière, not Moréri, who did the most radical thing: In his *Dictionnaire Universel* (1690), Furetière established alphabetical order as a way of conveying summaries of the arts and sciences rather than just biographical and historical information."<sup>117</sup> Indeed, alphabetical order was, already, used in some compilations and in library catalogues such as *Suda* in tenth century in Byzantium or Callimachus' *Pinakes* (around 305– around 240 BC). Usage of the alphabetical system in scientific compilations is a modern phenomena, implies a critical break which is the most prominent feature of scientific dictionaries of Enlightenment. It allows further additions without inserting them into an existing system. Thus, it makes easy to add knowledge of new findings and also made accessible content of encyclopaedias to wider group of people. Furetière was a member of Académie Française, when his plan surfaced, his work was seen as a rival, the Académie charged him with plagiarism. His publishing permission was revoked and he

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<sup>116</sup> Michel Foucault, *The Order of Things*, (Vintage Books, 1971), 45.

<sup>117</sup> Richard Yeo, *Encyclopaedic Visions... o cit.*, 18.

was expelled in 1685.<sup>118</sup> His work was published under the name of *Dictionnaire Universel des Arts et Sciences* in 1690 which is the first general encyclopaedia. Furetière arranged his work, as stated above, alphabetically but not systematical. He described things (not only words), principles and theories concerning the arts and sciences.<sup>119</sup> Bayle points out the importance of agreed definitions of terms as a basis for communication in the unsigned preface of Furetière's dictionary which was published two years after his death. As for John Harris's *Lexicon Technicum, or an Universal English Dictionary of Arts and Sciences*, it is the first alphabetical dictionary of arts and sciences in English.<sup>120</sup> Harris was a cleric graduated from Cambridge and worked as the secretary of the Royal Society in 1710. His relations with the high elite and the great support of Newton for his lexicon gave respectability to this new genre in learned circles.<sup>121</sup> Harris's Lexicon was the first example of an encyclopaedia drawing directly on the advice and help of experts.<sup>122</sup> The usage of line-drawings and diagrams, and its bibliography were the other distinctive features of his work. Among the early examples of dictionaries of arts and sciences, Chambers' *Cyclopaedia* has a particular importance for history of encyclopaedias. Hence, it deserves a subtitle, *per se*, in this thesis.

### **i. Best Book in the Universe**

In the 17<sup>th</sup> century, members of the Royal Society sought a way to improve natural knowledge and for this purpose, established a "Mechanicall Committee". The main aim of the committee was recording of practical knowledge which could not be found in books. In the same vein, "Compagnie des Arts et Métiers" was founded in 1693 which was, later, absorbed into "Académie Royale des Sciences". The members planned to write an encyclopaedia of arts and crafts. Their aim was, like the English equivalent, preserving craft skills in written form. Yet another aim of these foundations was forming a terminology for crafts. This was, completely, the idea of Bacon. He complains of, in both

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<sup>118</sup> See *ibid.*, 45. and also, see Robert L. Collison, *Encyclopaedias: Their History Throughout the Ages*, (New York: Hafner Publishing Company, 1964), 92- 93.

<sup>119</sup> *Ibid.*, 94.

<sup>120</sup> James M. Wells, *Circle of Knowledge: Encyclopaedias Past and Present* (Chicago Newberry Library, 1968), 6.

<sup>121</sup> Richard Yeo, *Encyclopaedic Visions... o cit.*, 13.

<sup>122</sup> Robert L. Collison, *Encyclopaedias... o cit.*, 99.

the *Advancement of Learning*, and *Novum Organum*, loose usage of the terms of arts and sciences and he points out the importance of forming a standardized terminology for making easier the communication of artisans and scholars. Hence, improvement of arts and sciences would become easier. In this sense, dictionaries of arts and sciences were the inheritors of this Baconian idea.<sup>123</sup> Ephraim Chambers, in a similar vein, emphasize the importance of the generally accepted usage of terminology for improvement in *Cyclopaedia*. Frontispiece of *Cyclopaedia* summarizes the changing ideas on science.<sup>124</sup> The engraving refers to Raphael's work *School of Athens* (1509- 1510) which was the work of Sébastien Leclerc called as *L'Académie des sciences et des beaux-arts*. Frontispiece of *Cyclopaedia* is a copy of Leclerc's work which was engraved by John Sturt. In the work, all the people are doing something practical; observing, measuring, experimenting, calculating and so on and so forth. There is a theology library which is the only place that includes books but there is no reader. In Raphael's work, Plato and Aristotle hold their books, *Timaeus* and the *Ethics*. Pythagoras and Euclid demonstrate geometrical arguments by using books and Diogenes reads a manuscript. All the philosophers are defined with their masterpieces. Yeo emphasizes the contrast between *School of Athens* and frontispiece of *Cyclopaedia*: "In the engraving, the relegation of books to an unused library is a derogatory allusion to their role in scholastic learning, and also to the related, positive, injunction from Baconians to study the great book of Nature rather than the little books of men".<sup>125</sup>

On the title page of *Cyclopaedia*, there is a significant phrase: "The whole intended as a Course of Ancient and Modern Learning." Incidentally, Chambers praises the moderns because of their intense inquiry, observation and experimentation and he also has respect for Ancients. However, by taking into consideration his choice of frontispiece, it seems that, he is in favor of the moderns. The phrase, *Cyclopaedia*, refers to the well-accepted meaning of *enkyklios paedia* in Ancient Greek. Moreover, in the entry of "Encyclopaedia", his first definition is very close to the other definition of the term: "the circle, or chain, of all sciences."<sup>126</sup> He also defines the term as "knowledge of the seven liberal arts, and possession of all sciences."<sup>127</sup> In the title page, he also declares his work as cyclopaedia or as a universal dictionary of arts and sciences. In other words, Chambers, in an indirect

<sup>123</sup> Richard Yeo, *Encyclopaedic Visions... o cit.*, 147.

<sup>124</sup> See; Figure 1 and Figure 2

<sup>125</sup> Richard Yeo, "Ephraim Chambers's Cyclopaedia and the Tradition of Commonplaces", *o cit.*, 120.

<sup>126</sup> Richard Yeo, *Encyclopaedic Visions... o cit.*, 139.

<sup>127</sup> *Ibid.*

manner, sees his work as an encyclopaedia.

Chambers declared himself a humble compiler in the Latin epitaph on his tomb<sup>128</sup> in Westminster Abbey despite his challenging statement for *Cyclopaedia* “best book in the universe”. Indeed, he was a humble man who was not sociable neither a club-going man in London circles nor an active member of Republic of Letters.<sup>129</sup> He was also not a well-educated person; his family sent their eldest son Nathaniel to Oxford, however in following years, they could not afford to send Ephraim to one of the best universities. Henceforth, he went to London and worked in various jobs, and later, he became the apprentice of a map and globe maker and also a bookseller, John Senex. One can observe a tendency of Chambers; romanticizing his autodidact career, and his achievements. However, his long working years with publisher and bookseller Senex made possible to pass his time with books. This explains how Chambers accessed to such a wide range of books in the process of writing his *magnum opus*.

On the other hand, the multitude of books was a problem for Chambers like above-mentioned philosophers Leibniz and Pierre Bayle. It is the reason why compilers such as Furetière, Harris, and Chambers attempted to abbreviate all knowledge existing in their time. In one sense, it is the scientific dictionaries’ *raison d’être*. In *Cyclopaedia*’s entry of “books” there is a section entitled “multitude of books” in which Chambers deals with problems arising from the vast bulk of knowledge; number of books were growing because of increasing scope of inquiry.<sup>130</sup> A summary of the universal knowledge allows gathering the essentials of the scientific knowledge. Books, such as *Cyclopaedia*, make possible to manage the universal knowledge in an accessible form by way of defining words and terms.

For manageable knowledge, Chambers emphasizes the importance of systematization of knowledge; however, by the publication of *Cyclopaedia*, classification of sciences was not a primary concern of scientific dictionaries.<sup>131</sup> He uses a diagram to show relations of sciences and the usage of diagram distinguishes his book from works of Furetière and of Harris. Chambers, unlike Harris, shows relations of disciplines with each other by using a diagram which legitimates his discourse that *Cyclopaedia* was more than a lexicon. On the other hand, despite the organization of knowledge that he used, it was not

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<sup>128</sup> For the translation into English, see Richard Yeo, *ibid*.

<sup>129</sup> *Ibid.*, 36.

<sup>130</sup> Richard Yeo, “A Solution to the Multitude of Books: Ephraim Chambers’s *Cyclopaedia* as “The Best Book in the Universe”,” *Journal of the History of Ideas* 64, no. 1, (2003): 65.

<sup>131</sup> Richard Yeo, “Reading Encyclopaedias: Science and Organization of Knowledge in British Dictionaries of Arts and Sciences,” *Isis*. 82, no: 1, (1991): 27.



one of his central aims. In *Cyclopaedia*, he says that the classification was made in a wholly arbitrary manner. According to Chambers, classifications were not yet well fixed. Moreover, he refused the idea that scientific progress depends on sophisticated classification. “He was not enthusiastic about the enclosure of knowledge in various categories, preferring that its common field to be left for free cultivation”<sup>132</sup>.

Chambers’ classification of knowledge resembles Porphyrian tree but he did not show his classification as a tree festooned with arts and sciences but as a diagram. His diagram based probably on Johann Alsted’s *Encyclopaedia, septem tomis distinct*, but Chambers did not only repeat Alsted; rather, he offered another way of showing the various subjects.<sup>133</sup> Incidentally, schemes of classifications were common from antiquity to Rome, from the Middle Ages to the Renaissance in various ways but mostly in philosophical texts. Chambers’ and other encyclopaedists’ usage of classification in scientific dictionaries made more public the philosophical debates.<sup>134</sup> In *Cyclopaedia*, Chambers categorized knowledge as natural and scientific, and as artificial and technical. Then he made subdivisions by method of dichotomies of the Ramist kind.<sup>135</sup> After the first categories, scientific knowledge was divided into as the sensible and the rational.<sup>136</sup> Knowledge acquired for technical purposes was classed as either internal (logic) or more frequently as external, such as all the arts and crafts but also the sciences.<sup>137</sup> Albeit he showed various arts and sciences in his chart, he did not clearly explain their links to and relations with each other; neither did he describe genealogy of various sciences nor was there an explanation about origins and connections of sciences. In the preface of *Encyclopédie*, d’Alembert dwells upon, comprehensively, the origins and connections of sciences -one of the main differences between them. Apart from the chart of knowledge, Chambers also used cross-references to show the links between various parts of knowledge and of terms related to each other. The cross-references that Chambers used to link various terms were very innovative and later praised by d’Alembert. Chambers wanted to write his work in a continuing manner that can be read from beginning to end. By using a map of knowledge and cross references, he could provide a continued discourse. Alphabetical arrangement

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<sup>132</sup> *Ibid.*, 28.

<sup>133</sup> Thanks to Richard Yeo for correspondence on Chambers’ classification through e-mail.

<sup>134</sup> Richard Yeo, “Reading Encyclopaedias: Science and Organization of Knowledge in British Dictionaries of Arts and Sciences”, *o cit.*, 27.

<sup>135</sup> Richard Yeo, *Encyclopaedic Visions... o cit.*, 133.

<sup>136</sup> For example, Meteorology (sensible), Geometry (rational)

<sup>137</sup> *Ibid.*, 134-135.

provides convenience for adding new information to later editions and makes easier to find the word or term that one searches for. Chambers believed that alphabetical ordering led to accidental discoveries of knowledge.<sup>138</sup> A number of things is consecutively and randomly arranged, and therefore, one may discover relations coincidentally between two unrelated words or terms.

On the other hand, he emphasizes the importance of common meaning of words and terms. According to Chambers, ever-increasing inquiries and results of such inquiries and emerging words and terms led to conflicts and misunderstandings. Therefore, he focused on language and terminology by referring to John Locke.

Chambers, like Harris, was influenced by Locke's theory of language. However, he did not only summarize the ideas of Locke but also he gives a rationale for the dictionary by using Lockean view.<sup>139</sup> In *Cyclopaedia*, one of the longest entries is "knowledge" in which he summarizes the ideas of Locke regarding the issue included various comparisons and contrasts between the ideas that constitute knowledge. Moreover, the entries "term", "word", and "definition" are widely written by acknowledging the ideas of Locke. Chambers argues, by referring to Locke, that "if all ideas should have a particular name, names would increase endless, therefore, many words act as a general term by abstraction"<sup>140</sup>. It is difficult to use one word to mean precisely the same idea. On the other hand, words are only markers for ideas in the minds; they were not signs of things in the world. All words have a secret reference known by only the person who uses them as well as they have conventional meanings. Because of this approach, Chambers was sensitive with the problem of usage. Apart from variable usage of words, acquired foreign words are another problem regarding the definition issue. Chambers was troubled with the dynamic life of language. According to him, the superfluous words in English should be removed as well as the French and Italian terms in the several arts where they have Latin and Greek ones.<sup>141</sup> After this kind of purification, scientific dictionaries could be reduced to reasonable dimensions. Chambers was not alone with his proposition. Jonathan Swift, for example, in his "A Proposal for Correcting, Improving and Ascertaining the English Tongue", offered similar things. He wanted to expunge technical Latin words and slang words from the language, and offered to authorize an Academy which would complete the

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<sup>138</sup> *Ibid.*, 141.

<sup>139</sup> *Ibid.*, 158.

<sup>140</sup> *Ibid.*, 159.

<sup>141</sup> *Ibid.*, 160.

purification of language.<sup>142</sup> It seems that, swiftly growing knowledge and occurrence of numerous words and terms disturbed many authors as Latin is losing its universality. They evaluated alterations, impetuously, as disruption. Managing knowledge and well-accepted meaning of words and terms were more important than inventing and discovering, for them. Scientific dictionaries were, partly, the results of these anxieties. They probably think that, this was a compulsory thing to ensure the continuity of progression of knowledge in following years. Otherwise, people could not understand each other because of multiple meanings of words and terms, and unmanageable knowledge would cause to a chaos.

Chambers distinguished between the scientific and the historical modes of writing. According to him, the first mode was not appropriate for his work, since, in this mode of writing, authors only demonstrate concepts and the reasoning behind them. He also did not write about details of time and place like the historical mode. In *Cyclopaedia*, he explains or relates discoveries and doctrines that established by others in more abstract manner.<sup>143</sup>

Chambers was also a defender of Newtonian philosophy as well as being in line with Lockean ideas regarding the usage of words and terms. He treats Newtonianism as a system that sought a unified approach to all areas of knowledge.<sup>144</sup> According to Chambers, there was three main sects in his time; namely, Cartesians, Peripatetics and Newtonians.<sup>145</sup> He attempted to describe these sects. Aristotelian philosophy was treated in terms of natural philosophy. In the entry of Aristotelians, he counted the most crucial terms of this sect; principle, element, form, quality, accident, sympathy. Principles of Peripateticism (Aristotelian Philosophy) were, mostly, false and impertinent. However, the main problematic in his mind was Cartesians rather than Aristotelians. He complains of Newton's natural philosophy was not well accepted in Europe. He writes that Cartesianism, Huygenianism and Leibnitzianism still remained in possession. Harris, like Chambers, was a supporter of Newton but he did not do this through declaring the exact superiority of Newtonianism. Chambers defended Newtonian philosophy against other sects, especially again Cartesianism, but in a superficial investigation rather than a detailed reasoning. He emphasized four issues in Newtonian philosophy respectively; mathematical treatment of physical bodies, rules of reasoning, matter theory and his contributions to modern corpuscular philosophy, and lastly principle of gravitation and its impact on laws of

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<sup>142</sup> *Ibid.*, 160.

<sup>143</sup> *Ibid.*, 161.

<sup>144</sup> *Ibid.*, 162.

<sup>145</sup> Further discussion on Chambers' thought about this three sects, see *ibid.*, 162-167.

motion.<sup>146</sup> Moreover, in the related entries, he writes by referring to Newton such as, optic, vacuum, vortex, attraction *et cetera*. Even in the entries that he mentions view of other philosophers, he was still in favor of Newton. In the entry of attraction, for example, he mentions Gassendi, Descartes, Halley and writes the criticisms of Newton then he turns to support Newton. If a reader follows the cross-references of Chambers in which he gives advices to the reader about related articles, the reader draws a conclusion that Newton is the only authority in natural philosophy.

*Cyclopaedia* is a compilation that explains words and terms of arts and sciences in an alphabetical order and also has a classification of knowledge. In sense of mode of writing and issues related to philosophy of language, it is in line with the Lockean ideas. *Cyclopaedia* is not a neutral source in the field of natural philosophy. It reflects a tendency that favored the affirmative side of Newtonian philosophy in any debate regarding tge natural philosophy. This philosophical tendency would, mostly, influence the *Encyclopédie* of Diderot.

## **j. *Encyclopédie***

In 1745, a consortium of four publishers, André-François Le Breton, Michel-Antoine David, Laurent Durand, and Antoine Claude Briasson who thought to make a translation of Chambers' *Cyclopaedia* into French, launched the project of the *Encyclopédie* and charged the abbé Jean-Paul de Gua de Malves as the chief editor.<sup>147</sup> After two years, Gua de Malves, found the editorship tedious, resigned in 1747; and the publishers decided to give the editorial burden to Diderot and d'Alembert under the title of co-editors. Even though they began the project as a translation of *Cyclopaedia*, they made a waster work in comparison with the Chambers'; an encyclopaedia of seventeen folio volumes against Chambers' *Cyclopaedia* of two folio volumes. When the last volumes were published in September 1765, Diderot wrote: "The great and cursed work is finished." Indeed, all contributors faced exile, jail, and censorship in the writing process because of their ideas.

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<sup>146</sup> *Ibid.*, 164.

<sup>147</sup> Frank A. Kafker, "The Recruitment of the Encyclopaedists"; *Eighteenth-Century Studies* 6, no. 4 (1973): 452-461.

Censorship carried out in two ways; censor, and self-censorship.<sup>148</sup> They also faced with bans by reason of the fact that they did not write and not add articles about religion to the *Encyclopédie*. There were 140 persons contributed to the *Encyclopédie*, fifteen of them served as official censors in various branches.<sup>149</sup> First two volumes were passed without any change by the royal censors; but in 1752, the Council of State (Conseil d'état du Roi) declared the work disturbing in sense of politics and religion. Hence, Louis XV suspended the publication of the work. New censors were charged and they began from the third volume to examine all articles regarding impiety. In 1756, a commission was appointed by the Parliament of Paris to examine all articles of all volumes. It seems that, interventions were not very influential; because, some censored articles were remained untouched after the publication. As a matter of fact, it is difficult to determine the interventions of the censors, except some specific articles, due to lack of primary sources.

Self-censorship was in force in three ways. Firstly, it operated as changing articles or removing some criticisms and comments, especially in economic and political matters.<sup>150</sup> Secondly, encyclopaedists did not write what they really think about some issues. Thirdly, the self-censorship came from an unexpected man, Le Breton. He was the printer and the chief bookseller of the *Encyclopédie* and also a very honorable, very rich and very capable businessman according to the report of the police, who distrusted publishers.<sup>151</sup> He censored more than forty articles in the last ten volumes with the other publisher of the print house, Louis Claude Brullé. Le Breton rewrote some articles to give them opposite meaning or weakened them or removed them entirely. He, especially, censored articles which included scorning expressions on history, beliefs, theologians of Catholicism, and also removed politically seditious texts.<sup>152</sup> The reason of his self-censorship can be explained with his aims; he did not want to get in trouble with the King and with the Church and he was striving to protect his business income. Censorship in all its ways weakened the *Encyclopédie*. However the censors did not edit the articles concerning fine arts, technology and science.<sup>153</sup>

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<sup>148</sup> For a detailed work about the censorship in the *Encyclopédie*, see Douglas H. Gordon and Norman L. Torrey, *The Censoring of the Diderot's Encyclopédie and the Re-Established Text* (New York: Columbia University Press, 1947).

<sup>149</sup> Frank A. Kafker, *The Encyclopaedists as a group* (The Voltaire Foundation Oxford, 1996), 87.

<sup>150</sup> For Quesnay's situation, for example, see *ibid.*, 90.

<sup>151</sup> Frank A. Kafker and Serena L. Kafker, *The Encyclopaedists as Individuals* (The Voltaire Foundation Oxford, 1988), 195-196.

<sup>152</sup> Frank A. Kafker, *The Encyclopaedists as a group... o cit.*, 94.

<sup>153</sup> *Ibid.*, 100

In the *Encyclopédie*, there was no entry about religion or current political issues but on the other hand one can still follow the ideas of encyclopaedists about religion and politics through some articles. This attitude was intentional. d’Alembert wrote an *avertissement* for the third volume of the *Encyclopédie* and he stated that:

“One will find in this work... neither the life of the Saints... nor the genealogy of noble houses, but the genealogy of sciences, more precious for those who can think... not the conquerors who laid waste of the earth, but the immortal geniuses who have enlightened it... for this *Encyclopédie* owes everything to talents, nothing to titles, everything to the history of the human mind, and nothing to the vanity of men.”<sup>154</sup>

They left out from the work historical persons, great kings, famous battles, Church Fathers, favourite saints, or historical essays.<sup>155</sup> This attitude also included an idea on historical progress. d’Alembert and Diderot both thought that the drivers of the historical progress are intellectuals and philosophers. d’Alembert thought that the history is the triumph of the civilization and civilization is the work of men of letters.<sup>156</sup> All great men in the history were philosophers. In “Discours Préliminaire”, he claims that the history follows a great trajectory from the philosophers of the Renaissance to the philosophers of the Enlightenment -the most significant development in the history of the world.<sup>157</sup> In the same vein, Diderot attributes a great role to the philosophers in the history of mankind.

Encyclopaedists were, mostly, atheists who refused religious doctrines and attacked the Jesuits. In the entry of “atomisme”, d’Alembert denied that body’s parts were created by an intelligent creator.<sup>158</sup> In the same vein, Diderot, in the entry of “man”, used his own definition instead of the description of the Bible: “A sentient, thinking, intelligent being, moving freely over the earth. He is above all other animals and exercises dominion all of them; gregarious in his habits, he has invented various arts and sciences, and has virtuous and vices peculiar to his species. He has appointed rulers and made law for himself, *et cetera*.”<sup>159</sup>

In his accounts of Epicurean philosophy, and of the 18<sup>th</sup> century followers of

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<sup>154</sup> Cited in Philipp Blom, *Enlightening the World* (New York: Palgrave Macmillan, 2005), 140.

<sup>155</sup> *Ibid.*, 144.

<sup>156</sup> Robert Darnton, *The Great Cat Massacre And Other Episodes In French Cultural History* (New York: Penguin Books, 1985), 199-200.

<sup>157</sup> See, Robert Darnton, *The Great Cat Massacre And Other Episodes In French Cultural History* (New York: Penguin Books, 1985), 193 and also, see Jonathan Israel, *Enlightenment Contested* (New York: Oxford University Press, 2006), 846.

<sup>158</sup> Jonathan Israel, *ibid.*, 848.

<sup>159</sup> Paul Hazard, *European Thought in the Eighteenth Century* (London: Hollis & Carter; 1954), 208.

Spinoza, Diderot attempted to weaken the faith.<sup>160</sup> There are also some provocative and scandalous statements on Jesuits in the *Encyclopédie*. In an unsigned article, they defined theologians as agitator. d’Alembert, in his letter to Gabriel Cramer, admitted that some articles were written to antagonize and ridicule the Jesuits.<sup>161</sup> Moreover, they also wrote some dared and affirmative articles about atheists. In the entry of “intolérance”, Diderot wrote that, an unbeliever has an undisputable right to protection by his sovereign. In another article “superstition”, Jaucourt defined atheists as peaceful citizens whose ideas do not injure the people’s customs and laws.<sup>162</sup> The *Encyclopédie* included mostly irreligious and atheist ideas, but there was no consensus. Voltaire, for example, expressed his deistic ideas in the entry of “Idole”. He considered Epictetus and Marcus Aurelius as the great men who believed in a single, boundless and everlasting God.<sup>163</sup>

For the political issues, the same non-uniformity among the ideas of contributors was present throughout the *Encyclopédie*. They were mostly in favor of reforming the monarchy (Old Regime) rather than its destruction. According to Jaucourt, republic is suitable only for small territories such as Venice. Encyclopaedists thought that monarchy is a wise form of government for a large state yet they did not affirm all kinds of monarchy. They favored limited monarchy rather than the absolute one. d’Holbach, in the entry of “représentans”, argues that the monarch should be an intermediary among assemblies composed of the clergy, the aristocracy, and the other property holders.<sup>164</sup> They also approved enlightened absolute monarch (despote éclairé). Jaucourt made a distinction between the despot and the enlightened one. In the entry of “monarchie absolue”, he argues that enlightened despots must obey the laws of the kingdom and serve the general welfare.<sup>165</sup> Throughout the *Encyclopédie*, they were in favor of reforming the French monarchy hence they did not play an active role in the Revolution. On the other hand, it can be partly explained with their age since most of them were in their sixties or more but it is also related with their political tendency that they sought evolution, not revolution.<sup>166</sup>

Congruent with their political and economic ideas, encyclopaedists respected crafts who were defined as graceful men and women belong to clean and sunny environments,<sup>167</sup>

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<sup>160</sup> Frank A. Kafker, *The Encyclopaedists as a group... op. cit.*, 65-66.

<sup>161</sup> Jonathan Israel, *op. cit.*, 848.

<sup>162</sup> Frank A. Kafker, *The Encyclopaedists as a group... op. cit.*, 67.

<sup>163</sup> *Ibid.*, 68

<sup>164</sup> *Ibid.*, 70

<sup>165</sup> *Ibid.*, 70

<sup>166</sup> Philipp Blom, *op. cit.*, 143.

<sup>167</sup> *Ibid.*, 144.

and merchants who were rendered as valuable citizens deserve respect.<sup>168</sup> Unsurprisingly, financiers were regarded as greedy parasites.<sup>169</sup> Incidentally, Diderot also had some ideas based on racial dogmas, and nonsensical ideas. In the entry of “humaine, espèce”, he claims that “all ugly people are crude, superstitious, and stupid”. People of Yeço (Yangzu, a province of China) were “fat, brutal, without morals & without arts, with short and fat bodies and long unkempt hair”. “Egyptians were tall but their women short”. Peoples of Europe were “the most beautiful & the best proportioned” on earth. “Negroes have little intelligence.” “People of Judea resemble the Turks.”<sup>170</sup>

Economic ideas were primarily based on the physiocratic theory of François Quesnay, who was a contributor to the *Encyclopédie*. Physiocrats favoured total economic liberalism. In this sense, *Encyclopédie* included the ideas of Étienne-François Turgot who rejected the idea of regulation. In physiocratic theory, economic wealth bases on agricultural production and land ownership. They underestimated the importance of industrial revolution. Diderot’s economic ideas were close to Physiocrats but he also gave a place to the ideas of François-Louis Veron Duverger De Farbonnais (1722-1800) who had an opposing-view to total economic liberalism.

In the *Encyclopédie*, one can find, mostly, the epistemological ideas of its editors, logic of the classification of knowledge, and current knowledge and information of the era rather than political, religious, and economic issues. Robert Darnton rightly points out that “in fact, the supreme text of the Enlightenment can look surprisingly disappointing to anyone who consults it with the expectation of finding the ideological roots of modernity.”<sup>171</sup> At first glance, the *Encyclopédie* seems as a text in which there are definitions of thousands of words and terms ordered arbitrarily and a map of knowledge and chain of cross-references also included. Moreover, it contains the “Discours Préliminaire” of d’Alembert which is one of the most influential manifestations of the French Enlightenment. “Discours Préliminaire” is not a text justifying the political revolution but it mainly reflects intellectual revolution during the 18<sup>th</sup> century.<sup>172</sup> d’Alembert himself was a genius in mathematics, astronomy, and in dynamics. At the age

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<sup>168</sup> Frank A. Kafker, *The Encyclopaedists as a group... op. cit.*, 71-72.

<sup>169</sup> *Ibid.*, 72.

<sup>170</sup> The entry of “Humaine, Espèce” is cited in Philipp Blom, *op. cit.*, 150.

<sup>171</sup> Robert Darnton, *The Great Cat Massacre And Other Episodes In French Cultural History* (New York: Penguin Books, 1985), 185.

<sup>172</sup> Richard N. Schwab; “Translator’s Introduction,” in Jean Le Rond d’Alembert, *Preliminary Discourse to the Encyclopaedia of Diderot* (Chicago: The University of Chicago Press, 1995), XI.



of twenty-six he published his *Treatise on Dynamics* which was a milestone in Newtonian mechanics. In the “Discours Préliminaire” one can observe the great influence of Newton on d’Alembert which will be examined later.

d’Alembert wrote the text in an unprecedented manner that he regarded himself as the voice of all men of letters. This is related to the above-mentioned idea of him that the men of letters are the lone warriors in the struggle of civilization.<sup>173</sup> This view of history can be seen in the entry of “Gens de Lettres” written by Voltaire; he claims, in the same vein, that “history advanced through the perfection of the arts and sciences; the arts and sciences improved through the efforts of men of letters; and men of letters provided the motive force for the whole process by functioning as *philosophes*”<sup>174</sup>. It also reflects an awareness of the members of the Republic of Letters in the 17<sup>th</sup> and early 18<sup>th</sup> centuries that they were forces in the world and they were the driving forces of the progress of humanity.<sup>175</sup> Therefore, they served, actively, a social function rather than isolating themselves. The *Encyclopédie* with its so-called universal discourse is partly the result of this philosophy of history; the historical role that they provided themselves with.

“Discours Preliminaire” mainly explains the logic of tree of knowledge that they used. He presents relations and connections of the arts and sciences. Meanwhile, he discusses the genesis of knowledge within individual minds and then he treats development of the knowledge within society.<sup>176</sup> In short, morphological picture of knowledge, epistemological ideas and historical view constituted three strata of the text. d’Alembert explains his epistemological ideas in Lockean way of thinking; all knowledge derives from sensation and reflection. Ideation begins with senses rather than innate ideas. Oddly enough, then, he passes on to explain how individuals formed societies. He explains the situation of pre-social man in nature with Hobbesian ideas rather than with Lockean natural law.<sup>177</sup> He claims along the same line that once people established the society they questioned root of their new morality. It must come from spiritual world which taught them justice and injustice. Lastly, after dwelling on the notions of mind and body and their imperfection, they arrive in the perfect concept: God. It is really an odd argumentation. Robert Darnton points out that d’Alembert uses Lockean way of thinking to arrive the

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<sup>173</sup> Robert Darnton, *op. cit.*, 200-201.

<sup>174</sup> *Ibid.*, 202.

<sup>175</sup> Richard N. Schwab, *op. cit.*, XII.

<sup>176</sup> Robert Darnton, *op. cit.*, 195.

<sup>177</sup> *Ibid.*, 196

Cartesian God.<sup>178</sup> Richard N. Schwab, similarly, interprets that the “Discours Préliminaire” composed of rationalist spirit of Descartes, and the empiricism of Locke and Newton.<sup>179</sup> d’Alembert considered Descartes as a hero because he established his philosophy on systematic doubt and independent human reasoning rather than on authority.<sup>180</sup> According to him, absolute principles or truths could be true if they are deductible, judicable, and explainable. In d’Alembert’s thought, sensation replaced the *a priori* idea of Descartes as the basis of all truth. *Philosophes* could build a unified system of knowledge based on evidence.<sup>181</sup> The principles of any discipline could be discovered through the analysis of sensations. In other words, d’Alembert uses the method of empiricism to arrive the Cartesian truths. d’Alembert considered the scientific method of Newton as the supreme method which combines the rationalism and empiricism -starting with sense evidences, analyzing objects and problems and then arriving in laws and principles. d’Alembert was mainly concerned with definitions and principles. In this sense, he was closer to Descartes.<sup>182</sup> According to d’Alembert, Newton was the perfect modern philosopher not only because of his discovery of fundamental law of the solar system but also because of his restriction of philosophy to the observed phenomena.<sup>183</sup> Finally, he praises Locke who reduced knowledge to sensation and reflection, thus he eliminated extraterrestrial truths from the world of learning.<sup>184</sup> After the treatment of these epistemological ideas d’Alembert dwells mainly on morphological arguments. Firstly, he writes on metaphysical account of the genealogy of ideas in the isolated mind. Then he, weirdly, turns to develop the philosophical history of the genesis of the arts and sciences. According to him, certain ideas come from social experience of primitive man. The ideas of right and wrong established the earliest arts and sciences.<sup>185</sup> Then, he goes on to explain their development in a hypothetical chronology.<sup>186</sup> Thus he constitutes the tree of knowledge in his discourse. Diderot and d’Alembert used Bacon’s classification of knowledge in the *Encyclopédie*. Bacon classified knowledge according to the three faculties of human mind: memory, reason and imagination. Diderot and d’Alembert changed it in some ways but not in the

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<sup>178</sup> *Ibid.*, 196

<sup>179</sup> Richard N. Schwab, *op. cit.*, XXXII.

<sup>180</sup> *Ibid.*, XXXII.

<sup>181</sup> *Ibid.*, XXXIII.

<sup>182</sup> *Ibid.*, XXXIV.

<sup>183</sup> Robert Darnton, *op. cit.*, 200.

<sup>184</sup> *Ibid.*, 200.

<sup>185</sup> Richard N. Schwab, *op. cit.*, XLI.

<sup>186</sup> Robert Darnton, *op. cit.*, 198. Richard N. Schwab calls Darnton’s “hypothetical chronology of development” as “a loosely historical context.” see Richard N. Schwab, *op. cit.*, XLI.

main principles. They, unlike Bacon, ranked physico-mathematical sciences in their diagram. Moreover, they received natural theology equal with revealed theology.<sup>187</sup> Bacon constitutes another tree of knowledge for divine learning. In the *Encyclopédie*, it was treated under the “reason” entitled as “knowledge of God”. d’Alembert praises Bacon as the mentor of modern intellectual times and as a proponent of experimentation. He was the progenitor of philosophy who restricted reason to the study of natural phenomena. But the influence of Bacon on *Encyclopédie* was not as great as the pronouncements of the editors.<sup>188</sup>

In the article of “Encyclopédie” Diderot defines the encyclopaedia as;

“The goal of an encyclopaedia is to assemble all the knowledge scattered on the surface of the earth, to demonstrate the general system to the people whom we live, and to transmit it to the people who will come after us, so that the work of centuries past is not useless to the centuries which follow, that our descendants, by becoming more learned, may become more virtuous and happier, and that we do not die without having merited being part of the human race.”<sup>189</sup>

Here, three stages of their task were defined; gathering knowledge, revealing the general system of knowledge, and transmitting the knowledge to their contemporaries, and to the future generations.<sup>190</sup> Another place, he attempted to legitimate the existence of the encyclopaedia in a weird manner. In *Diatribes de Mille Annis Apocalypticis* (1627), Johann Heinrich Alsted predicted the coming of the Christ in 1694.<sup>191</sup> Thus, Alsted wrote his *Encyclopaedia Septem Tomis Distincta*, as mentioned above on the assumption that the world soon end. Diderot, similarly but in more secular way, claims that “if all the books in the world were swallowed up in an earthquake, the *Dictionnaire* were the sole survivor, nothing essential would be lost, human knowledge would remain unimpaired.”<sup>192</sup>

In our day, arranging an encyclopaedia in an alphabetical order does not seem as a novelty or a revolutionary thing for a reader. But in the 18<sup>th</sup> century, it was a novelty to arrange arts and sciences in alphabetical order, it was a revolutionary act which functioned as a new organizing force.<sup>193</sup> However, Diderot and d’Alembert preferred to use a map of

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<sup>187</sup> Robert Darnton, *op. cit.*, 199.

<sup>188</sup> Richard N. Schwab, *op. cit.*, XXXIII.

<sup>189</sup> Cited in Philipp Blom, *op. cit.*, 139.

<sup>190</sup> Christine Clark Evans, “Language Theory and Empirical Method in Diderot’s *Encyclopédie*,” *Romanic Review* 83, no.2 (1992): 178.

<sup>191</sup> Richard Yeo, *Encyclopaedic Visions... op. cit.*, 3.

<sup>192</sup> Paul Hazard, *op. cit.*, 204.

<sup>193</sup> Cynthia J. Koepp, “The Alphabetical Order: Work in Diderot’s *Encyclopédie*,” in *Work in France:*

knowledge alongside of the alphabetical order. This reflects his inclination to write in a continued discourse. At this point, it is useful to stop and point out the importance of the map as a metaphor. Diderot and d'Alembert classified knowledge like previous compilers but they used a "map of knowledge" instead of a "tree of knowledge" of Raymond Lulle, or Peter Ramus. Their classification is based, mostly, as mentioned above, on classification of Francis Bacon. The usage of this classification is also related to their differentiation between dictionary and encyclopaedie. d'Alembert's definition of encyclopaedie, clearly, reflects their point of view:

"A kind of world map which is to show the principal countries, their position and their mutual dependence, the road that leads directly from one to the other. This road is often cut by a thousand obstacles, which are known in each country only to the inhabitants or to travelers, and which cannot be represented except in individual, highly detailed maps. These individual maps will be the different articles of the *Encyclopédie* and the tree or systematic chart will be its world map."<sup>194</sup>

Encyclopaedists, unlike the previous compilers were completely aware of the arbitrariness of all orderings. They did not attempt to fix the knowledge because they were aware that the knowledge of their era would become obsolete in the future. Alongside of the map of knowledge, cross-reference (renvois) was another tool which ensures the continued discourse. As a chain, cross-references connected every link and they supported and broadened a subject.<sup>195</sup> Thus, readers comprehend the organization of knowledge by themselves.<sup>196</sup> Diderot calls the chain of cross-references the most important part of the encyclopaedic order which denotes encyclopaedic unity and epistemological totality.<sup>197</sup>

Apart from these morphological ideas, Diderot dwells on epistemological issues, and on usage of language. In the article "Encyclopédie", he puts forward his own epistemological ideas alongside the system of knowledge. According to Diderot, ideas are derived from observation, reflection, and experimentation.<sup>198</sup> He entirely agreed with d'Alembert that all knowledge comes through the senses but he also emphasizes, equally, the importance of adequate interpretation of phenomena, perceptions, and impressions in

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*Representations, Meaning, Organizations, and Practise*, ed. Steve Laurence Kaplan and Cynthia J. Koeppe (Cornell University Press, 1986), 228-257.

<sup>194</sup> Robert Darnton, *op. cit.*, 189.

<sup>195</sup> Philipp Blom, *op. cit.*, 154.

<sup>196</sup> Cynthia J. Koeppe, *op. cit.*, 237.

<sup>197</sup> Daniel Brewer, "Language and Grammar: Diderot and the Discourse of Encyclopaedism," *Eighteenth-Century Studies* 13, no. 1 (1979): 15.

<sup>198</sup> Christine Clark Evans, *op. cit.*, 181.

terms of reason, critique, and historical context.<sup>199</sup> With regard to language, he presents his opinions albeit he was not a philologist. According to him, language is determined by thought. Therefore, the word is the sign of thought.<sup>200</sup> “Words are vessels laden with past knowledge” and their meaning, constantly, are changing. The temporality of meanings of words threatened the permanence of the *Encyclopédie*.<sup>201</sup>

In the *Encyclopédie*, there is an emphasis on the importance of current knowledge. It includes the knowledge of living, actual reality.<sup>202</sup> However, contributors mostly quoted Ancients. It seems that the contributors of the *Encyclopédie* considered the advice of Voltaire; “consulte l’Antiquité”.<sup>203</sup> Encyclopaedists did not present only the new and cutting-edge ideas. As Anthony Grafton argued that “the encyclopaedic and philosophical projects of Enlightenment owed a great deal to the erudite practices of past scholars”<sup>204</sup>. But at this point, it is important to point out that they quoted Ancients not only for consulting their knowledge but also for criticizing. Hence, the statistical results can be misleading.<sup>205</sup>

Diderot emphasizes the importance of practical knowledge in various places in the *Encyclopédie*. The underlying reason of the emphasis is the role that they provide themselves in the history, and the society. In the article “art”, he states that, “the artisans believe themselves scornful because we scorn them; teach them to think better of themselves: it is the only means to obtain from them more perfect products”<sup>206</sup>. He was planning to teach theory of arts to the artisans for the improvement of products. But he also points out the difficulty of explaining arts in an intelligible manner.<sup>207</sup> Diderot and other contributors were going to workshops of artisans. They made interviews with artisans to eliminate disinformation then they attempted to determine the fixed terminology. However, many artisans could not express clearly their work. In the *Encyclopédie*, there are many engravings and drawings for a better understanding of arts. But their endeavors, in general,

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<sup>199</sup> Jonathan Israel, *op. cit.*, 846.

<sup>200</sup> Daniel Brewer, “Language and Grammar: Diderot and the Discourse of Encyclopaedism,” *Eighteenth-Century Studies* 13, no. 1 (1979), 3.

<sup>201</sup> *Ibid.*, 7.

<sup>202</sup> Paul Hazard, *op. cit.*, 203.

<sup>203</sup> Dan Edelstein, “Humanism, l’Esprit Philosophique, and the *Encyclopédie*,” *Republic of Letters: A Journal for the Study of Knowledge, Politics, and the Arts*, no. 1 (2009): 10.

<sup>204</sup> Anthony Grafton, “Descartes the Dreamer,” in *Bring Out Your Dead: The Past as Revelation* (Cambridge, MA: Harvard University Press, 2001), 244–58

<sup>205</sup> See Dan Edelstein, *op. cit.*, 1-17.

<sup>206</sup> Cited in, Cynthia J. Koepp, “The Alphabetical Order: Work in Diderot’s *Encyclopédie*,” in *Work in France: Representations, Meaning, Organizations, and Practise*, ed. Steve Laurence Kaplan and Cynthia J. Koepp (Cornell University Press, 1986), 240.

<sup>207</sup> *Ibid.*, 247-248.

were not influential on artisans. The only achievement, in this point, is the recording of practical information. Thus scientists who exploited such practical information could invent new tools. Moreover, craft knowledge could survive only by this way.

*Encyclopédie* was a kind of popularization which was the characteristic feature of the Enlightenment. “People want to be well-informed about things, but with the least possible trouble to themselves”.<sup>208</sup> However, the popularization, in this point, was not made because of demand of people but because of the aim of encyclopaedists; giving shape to their society.

## **CHAPTER II**

### **On Historiography**

Orientalist thesis consisting of itineraries of European travelers, observations of diplomats, who were in charge in any place in Ottoman Empire, and of their relatives, and some works of orientalists, which were written prejudicially, had a great influence on Ottoman historiography for many years. The 18<sup>th</sup> century onwards, European observers and the scholars, who studied Ottoman Empire, began to use the term “decline” to define the Ottoman Empire’s condition from the mid 16<sup>th</sup> to the early 20<sup>th</sup> centuries. Moreover, some works, written in this manner, on Ottoman Empire had become canonic texts which were used by the scholars without criticizing.<sup>209</sup> The idea of “Rising of the West and falling of the East” can be seen as a leitmotif in these works.<sup>210</sup> Decline paradigm of orientalists, and the ideas of some Ottoman/Turkish intellectuals in the 19<sup>th</sup> and 20<sup>th</sup> centuries, and their

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<sup>208</sup> Paul Hazard, *op. cit.*, 200.

<sup>209</sup> As an example of these works, see; H. A. R. Gibb and Harold Bowen, *Islamic Society and the West*, (Oxford University Press, 1950).

<sup>210</sup> See Bernard Lewis, *What Went Wrong?* (New York: Harper Perennial, 2003). and also, see Bernard Lewis, *The Emergence of Modern Turkey* (New York: Oxford University Press, 2001).

successors in the Republican period, who were in favor of westernization, influenced the works of many historians of late Ottoman, and of the Republican era. These ideas emerge as an unconscious, naïve, and also sharp self-orientalism in the Republican period. On the other hand, against these ideas, among “Islamist circles”, there was an improving idea that Islamic civilization was superior to Western civilization until the reception of Islamic sciences and of the texts of Ancient Greeks through their Arabic translations by Westerners. In this sense, rising of Europeans occurred thanks to Islamic civilization. The idea of the superiority of Islam to West is an old traditional idea which was, widely, accepted even at such a time that Ottomans were modernizing their institutions in Western style. The idea of superiority was used by Ottoman/Turkish intellectuals in the 19<sup>th</sup> and 20<sup>th</sup> centuries who was against westernization or was in favor of selective reception of Western science and technology as a self-defense argument. Apart from these, there is another group: Turkish nationalists; in some ways, their thesis close to both circles, however they also have some distinctive ideas. The fact is that, the historians were under the influence of these political ideologies of intellectuals who are the research subjects of them. In this sense, their works have a legitimizing function of these ideologies. Even in our day, these approaches are fashionable especially among the some national historians.

Apart from these, the objections of some historians to decline paradigm began to be shaped especially from 1980s.<sup>211</sup> In the fields of economic, social, and cultural history, anti-declinst works are written in which historians showed changing structure of Ottoman society, economy, ruling institutions, and military by internal dynamics, and the (external) influence of the world around it. However, in the field of history of science, new approaches did not emerge; it, still, consists of two sides: Islam against Western science. There is one more idea: mediating these fractions which are related to the idea of the selective reception of Western science.

Adnan Adıvar (1881-1955), who was a medical doctor, and also the minister of health in the first Grand National Assembly of Turkey, was the first intellectual studying history of science among Ottoman Turks.<sup>212</sup> In his work, *Osmanlı Türklerinde İlim*, he

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<sup>211</sup> There are some early objections to decline paradigm, such as the works of Alber Hourani in 50s or of Norman Itzkowitz in 70s. For a brief discussion on anti-declinst historiography, see Dana Sajdi, “Decline, its Discontents and Ottoman Cultural History,” in *Ottoman Tulips, Ottoman Coffee*, ed. Dana Sajdi, (London: IB Tauris, 2008), 1-40. and also see Cemal Kafadar, “The Question of Ottoman Decline,” *Harvard Middle East and Islamic Review* 4 (1997-98): 30-75.

<sup>212</sup> For brief information about his life see *Yaşamları ve Yapıtlarıyla Osmanlılar Ansiklopedisi*, (Istanbul: YKY, 2<sup>nd</sup> edition, 2008), 79.

correlates the decline of the Empire and the history of science in the Empire.<sup>213</sup> According to Adıvar, the reason of the backwardness of science in the Empire is the Islamic dogmatism which is also the reason of unawareness of Ottoman/Turkish intellectuals of scientific revolution in the West. In the reformation era, the failure of Western style reforms is related with the oriental mentality of the intellectuals which retained in the Republican period.<sup>214</sup>

Aydın Sayılı (1913-1993), in his Ph.D. thesis, “The Institutions of Science and Learning in the Muslim World”<sup>215</sup>, focuses on the Islamic astronomy and argues that astronomy, in the Muslim world, had developed until the middle of the 16<sup>th</sup> century which influenced Copernican theory through providing astronomical data.<sup>216</sup> His idea, the development of astronomy until the middle of the 16<sup>th</sup> century, comes from the idea of Ottomans’ superiority in the fields of politics and military to West until the end of the reign of Suleiman I. In this sense his thesis is similar to declinist approach. He sees the destruction of observatory of Takiyüddin in 1580 by the order of Murad III as a proof of this process. Moreover, he puts forward Ottomans’ self-isolation from the West as the reason for non-existence of modern science in the Ottoman Empire and Islamic faith, like Adıvar’s works, is another explanatory factor of non-existence of modern science.<sup>217</sup> Of the failure of Tanzimat reforms, he similarly gives a greater prominence to the faith.<sup>218</sup>

Ekmeleddin İhsanoğlu (1943-), refuses the conflict between Islam and Western science and he argues that the attitude of the Ottoman religious authorities toward the Western science was, in general, positive. Ottomans transferred, selectively, science and technology in line with their requirements since the 17<sup>th</sup> century.<sup>219</sup> The reason of the failure of Ottomans, at the point of leveling up the science of the West, is the reception of science and technology from West according to practical requirements rather than appropriating new scientific paradigms.<sup>220</sup>

Next parts of the thesis avoid getting into the discussion on whether there is a

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<sup>213</sup> Cemil Aydın, “Beyond Culturalism? An Overview of the Historiography on Ottoman Science in Turkey,” in *Multicultural Science in the Ottoman Empire*, ed. Ekmeleddin İhsanoğlu, Kostas Chatzis and Efthymios Nicoladis, (Brepols, Turnhout, Belgium, 2003), 204.

<sup>214</sup> *Ibid.*, 205.

<sup>215</sup> It is the first Ph.D. thesis written in the field of history of science and is written with the academic consultancy of George Sarton at Harvard University.

<sup>216</sup> *Ibid.*, 205-206.

<sup>217</sup> *Ibid.*

<sup>218</sup> *Ibid.*, 208.

<sup>219</sup> Ekmeleddin İhsanoğlu, *Osmanlılar ve Bilim* (Istanbul: Etkileşim Yayınları, 3<sup>rd</sup> edition, 2010), 20, 33.

<sup>220</sup> *Ibid.*, 35. And also, see Cemil Aydın, *op. cit.*, 213.



conflict between Islam and science. However, the above-mentioned approaches will be criticized in some respects. It will, mainly, discuss the Ottoman tradition of encyclopaedic compilation, how the Ottomans treated classifications of knowledge, and the reception of encyclopaedias by the Ottoman/Turks in the 19<sup>th</sup> century.

### **a. Ottoman Science and Technology, and so-called Reception of Western Sciences**

Ottoman science and technology consisted of the knowledge of ancient Muslim scholars through transmission, and transferred technology from the world around it in line with their requirements, because of this, there was no continued research, and no developing scientific knowledge. The idea of superiority of Islam and its practical approach to science are the main reasons of stagnation in scientific activities. The idea of superiority of Islam lived in religious doctrines, and in acquired military triumphs against Europeans. Even in the 18<sup>th</sup> century this idea was still valid, because accepted superiority of the West was seen as a temporary situation.<sup>221</sup> In the 19<sup>th</sup> century, the superiority of West was attributed to translations from Arabic into the Latin in Renaissance period; therefore European development in scientific activities, in the periods of Renaissance, Scientific Revolution, and Enlightenment, was realized thanks to Islam. In this respect, modern science was compatible with Islamic ideals. Because of this nonsensical viewpoint, many Ottoman intellectuals sought the source of modern European ideals in Islam and tried to harmonize them selectively in the 19<sup>th</sup> century. In the 20<sup>th</sup> century, this viewpoint was maintained in Islamic circles<sup>222</sup>. As for pro-Westernization groups, they made fetishism of modern science and perceived science as a purpose rather than a tool. Ottomans' interest in science went towards practical purposes and implementation of scientific inventions.<sup>223</sup> The early relations with West, in sense of science and technology, occurred as transfer of technical knowledge such as about firearms, cartography, and metallurgy. In the same period, Spanish and Portuguese Jews, expelled from Spain and migrated to Ottoman Empire, had

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<sup>221</sup> For this viewpoint, see Ekmeleddin İhsanoğlu, *op. cit.*, 207.

<sup>222</sup> See Cemil Aydın, *op. cit.*, 201-215.

<sup>223</sup> *Ibid.*, 35.

brought new knowledge in the fields of astronomy and medicine.<sup>224</sup> The 15<sup>th</sup> century onwards, Jewish doctors, technicians from several countries in Europe<sup>225</sup> came and brought new techniques which were implemented in Europe. In the translated books, one can see the same practical attitude towards technology, and the idea of the superiority. In the 17<sup>th</sup> century, İbrahim Köse Efendi, who mentioned, for the first time, Copernicus' theory, showed his translation from the French astronomer Noel Durret to the chief astronomer Mehmet Efendi. He did not understand anything and evaluated the work as Frenk Fodulluğu (Vanity of Europeans).<sup>226</sup> Translated books in the field of astronomy from the 17<sup>th</sup> to the 19<sup>th</sup> century were, in general, in line with practical purposes rather than theoretical works of Copernicus, Tycho Brahe, Kepler, and Newton.<sup>227</sup> In addition to that, new knowledge and information could be acceptable, if they were not in contradiction with ancient Muslim scholars. İhsanoğlu interprets these as critical reading of Ottoman scholars.<sup>228</sup> However, refusing knowledge of Europeans rests upon the idea of superiority of Islam to West rather than critical reading, and results in a kind of “fallacious appeal to authority”. On the other hand, for observation of scientific activities and the technology of Europeans, Ottoman Empire began to send envoys to Europe as from the 17<sup>th</sup> century, however these visitations did not affect Ottomans' scientific activities. The notes that the envoys took are the reflections of statesmen's naïve observations about what they see. As a matter of fact, sending envoys to learn what Europeans do is a good evidence to see the Ottomans' practical approach; their concern is mainly the technology of Europeans, especially in the field of military, not scientific researches, because of this they sent only the envoys, instead of scholars, who were not capable of understanding scientific activities. In his visit to France in 1721, Yirmisekiz Mehmet Çelebi goes to the Museum of Natural History, Jardin des Plantes, and Paris Observatory and his notes are completely superficial, and bewildered.<sup>229</sup> As another example, observations of Şehdi Mehmed Efendi in his visit to Russia in 1757 is remarkable: He visits the Museum of Natural History, library, printing house, collection of mineralogy, department of anatomy, physics laboratory and

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<sup>224</sup> *Ibid.*, 33, 187.

<sup>225</sup> For an example, see Rhoads Murphey, “The Ottoman Attitude Towards the Adoption Western Technology: The Role of Efrenci Technicians in Civil and Military Applications,” *Contributions à l'histoire économique et sociale de l'Empire Ottoman, Collection TURCICA*, III, Louvain (Belgique), (1983): 287-298.

<sup>226</sup> Ekmeleddin İhsanoğlu, *op. cit.*, 201.

<sup>227</sup> *Ibid.*, 202-203 and for examples, see Hüseyin Yurdaydın, “Düşünce ve Bilim Tarihi (1600-1839),” in *Türkiye Tarihi*, ed. Sina Akşin (Istanbul: Cem Yayınları, 3<sup>rd</sup> volume, 8<sup>th</sup> edition, 2005), 335.

<sup>228</sup> Ekmeleddin İhsanoğlu, *op. cit.*, 202.

<sup>229</sup> For his observations, see *ibid.*, 208-209.

observatory in Russian Academy of Sciences. However, he is not aware that he is in an academy and calls this place “Acaibhane” (very weird and incomprehensible place.)<sup>230</sup> Moreover, when he sees many tools in the printing house, he evaluates the situation as wastefulness. Approximately one hundred years ago, Katip Çelebi was aware what academy, and academics are; “he calls the members of the academies ‘Ehl-i Aqademya’ and describes the ‘Academy’ as ‘a place similar to the Medrese in our countries, where those concerned with sciences assemble’”<sup>231</sup>. As can be seen, Ottomans concerned, restrictedly, with Western technology which ensures Europeans superiority against Ottoman Empire. This practical attitude can be seen also in educational institutions which were established in Western style within the army in the 18<sup>th</sup> and 19<sup>th</sup> centuries. These institutions were the second phase of the reception of Western technology by charging European military officers to carry out new technologies in the Ottoman army. Between the years of 1776-1839, all educational institutions were established in military, which were not more than a technical school rather an academy and did not have a middle-level school, therefore students did not have enough initial training.<sup>232</sup> Because of this, in 1830s, middle school departments were established within these institutions to prepare students to higher levels. Moreover, in these institutions, in written and translated books on science and technology, the main aim is, unsurprisingly, military.<sup>233</sup> Moreover, the books that published in these institutions were still written in line with obsolete theories. Mahmud Raif Efendi’s *Atlas-ı Kebir* which was the appendix of his geography book *İcaletü’l-coğrafiyye* and was published in printing house of *Mühendishane* bases on Ptolemy’s theories rather than new ones.<sup>234</sup> As from the mid 18<sup>th</sup> century, Western-Style educational institutions which were established outside the military in various fields such as agricultural, veterinary medicine, law, administration, metallurgy, and medicine were failed, and periodically were closed for some reasons and re-opened later.<sup>235</sup> The apex phase of this process occurred in 1863 as an attempt to establish a university under the name of *Darülfünun*. It is a compound word, consists of *Dar*, and *Fünun*. In the empire, the word, *İlm* and its plural, *Ulum* was used in

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<sup>230</sup> *Ibid.*, 211.

<sup>231</sup> Ekmeleddin İhsanoğlu, “Genesis of Learned Societies and Professional Associations in Ottoman Turkey,” in *Science, Technology, and Learning in the Ottoman Empire* (Ashgate Press/Variorum Collected Studies Series, 2004), 164.

<sup>232</sup> Emre Dölen, *Osmanlı Döneminde Darülfünun* (Istanbul: İstanbul Bilgi Üniversitesi Yayınları, 2009), 8.

<sup>233</sup> Ekmeleddin İhsanoğlu, *op. cit.*, 221 and also, see Niyazi Berkes, *Türkiye’de Çağdaşlaşma* (Istanbul: YKY, 12<sup>th</sup> edition, 2008), 63-66.

<sup>234</sup> Kemal Beydilli, *Türk Matbaacılık Tarihinde Mühendishane Matbaası* (Istanbul: Eren Yayıncılık ve Kitapçılık, 1995), 169.

<sup>235</sup> Emre Dölen, *op. cit.*, 8-9.

the meaning of “science”. In the 19<sup>th</sup> century, *Fenn* and its plural *Fünun* were begun to use instead of former usage, because *İlm* and *Ulum* referred, in daily use, to religious sciences, although yet their lexical meanings are “knowing”, and “cognition” and also refer to “theoretical knowledge”.<sup>236</sup> The meanings of *Fenn* and *Fünun* are sort, type, class, specy and also refer to technique.<sup>237</sup> The words, mainly, referred to modern technical information and technology in the 19<sup>th</sup> century. It is important to emphasize here that, beginning to use the word *Fenn* instead of *İlm* was not related with an attitude against Religion, they only wanted to use the correct word which refers technological information in the correct way. On the other hand, *Fünun* and *Ulum* was also used, respectively, as arts and sciences, namely in different meanings. It shows that the Ottoman-Turkish intellectuals were aware of that they were receiving selected technological information through their “necessities” from the West, not sciences. Moreover, the reason of the usage of *Fünun* in *Darülfünun* was distinguishing this modern institution from traditional educational institutions such as *Medrese*.<sup>238</sup> Ottoman Turks concerned, substantially, with the technology of West, and modern sciences, if they can be useful in practical meaning. In this sense, the main aim was still, in the second half of the 19<sup>th</sup> century, the reception of technological information of West not modern scientific knowledge because of the practical attitudes.

The first *Darülfünun* was a place in which public lectures were given by the members in general and the audiences were *Medrese* (traditional educational institution) students, and civil servants. As it is seen, it was like a public education center rather than an European university. In 1865, *Darülfünun* building faced a fire and the institution was closed. As late as 1869, graduation system in education was, legally, arranged by “Maarif-i Umumiye Nizamnamesi”. In 1869, new *Darülfünun* was opened as a second attempt which consisted of three departments; philosophy and literature, law, and natural sciences and mathematics. In first year, like the first *Darülfünun*, public lectures were given, following year the inauguration was made. In 1871, two scholars of the institution were charged with profaneness and impiety and the institution was closed.<sup>239</sup> The third one was established in *Mekteb-i Sultani* by the name of *Darülfünun-ı Sultani* in 1874 and was closed in 1881 which was a kind of professional school. In 1900, *Darülfünun-ı Şahane* was opened as the last attempt which has three departments; theology, natural sciences and mathematics and

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<sup>236</sup> See Ferit Devellioğlu, *Osmanlıca-Türkçe Ansiklopedik Lügat* (Ankara: Aydın Kitabevi Yayınları, 23<sup>rd</sup> edition, 2009), 428.

<sup>237</sup> See *Ibid.*, 256.

<sup>238</sup> Emre Dölen, *op. cit.*, 18

<sup>239</sup> *Ibid.*, 19.

literature. According to Emre Dölen, it was not more than just a high school; it survived, with several alterations, until today as *İstanbul University*.<sup>240</sup> As it can be seen, so-called Western style universities were nothing but a sort of public education center and except the fourth attempt, there was no continuity.

On the other hand, as from the reign of Mahmud II, the state sent students to European universities, by competing with Kavalalı Mehmed Ali Paşa who was the governor of Egypt. However, many of the students did not graduate from university; they only transferred knowledge but did not produce scientific knowledge.<sup>241</sup> In addition, the number of students sent abroad was very few. Radu Florescu compares number of students with Romania and puts forward that, registered Romanian students in Sorbonne and Collège de France were more than Turks.<sup>242</sup> Even in Bucharest of 1756, there were more francophone intellectuals than in İstanbul of 1839.<sup>243</sup>

Apart from these, printing house was established as late as 1727 by İbrahim Müteferrika, and Said Mehmed Çelebi with the support of the sultan and the grand vizier and was closed in 1743 after seventeen published books. As a matter of fact, first printing house was established in Istanbul in 1493 by Sephardi Jews. Two years later, they established one more in Salonica. Further, Armenians and Rums (Greeks) in the Empire established their printing houses respectively in 1567, and 1627.<sup>244</sup> The main reason of the lateness of Ottoman Turks is the resistance of calligraphers, because of job loss fear, who were approximately ninety thousand people in the time of establishment of the printing house.<sup>245</sup> Another problem is the difficulty of typing Arabic characters in printing.<sup>246</sup> Lastly, disequilibrium of supply and demand may be propounded as the reason of printing house's short story. Indeed, even in 1820s the books that were published by Müteferrika were still on sale.<sup>247</sup> Printing house was reopened forty one years later in 1784. Printing, actually, had not a great influence on Ottoman intellectual life. In the empire, printing capitalism was not well-developed; therefore authorship was not a remunerative profession. Private

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<sup>240</sup> *Ibid.*, 20.

<sup>241</sup> *Ibid.*, 13.

<sup>242</sup> Radu R. Florescu, "Osmanlı Tanzimatı Üzerinde Rumen Etkisi," in *Tanzimat*, ed. Halil İnalçık and Mehmet Seyitdanlıoğlu, (Ankara: Phoenix Yayınevi, 2<sup>nd</sup> Edition, 2006), 159-170.

<sup>243</sup> *Ibid.*, 161.

<sup>244</sup> Sina Akşin, *Türkiye Tarihi*, ed. Sina Akşin (Istanbul: Cem Yayınları, 8<sup>th</sup> edition, 3<sup>rd</sup> volume, 2005), 11.

<sup>245</sup> Orlin Sabev, *İbrahim Müteferrika ya da İlk Osmanlı Matbaa Serüveni* (Istanbul: Yeditepe Yayınevi, 1<sup>st</sup> edition, 2005), 333-336. and also, see Niyazi Berkes, *Türkiye'de Çağdaşlaşma*, (Istanbul: YKY, 12<sup>th</sup> edition, 2008), 57-58.

<sup>246</sup> Orlin Sabev, *op. cit.*, 337-341.

<sup>247</sup> Emre Dölen, *op. cit.*, 15.

enterprises emerged as late as the 19<sup>th</sup> century with tight control. Especially in the reign of Abdülhamid II printing activities were being made under the censorship of the state. Accordingly, traditional patronage relations did not change over. The only thing that changed in these relations is the manner of transferring the financial aid; the state was, officially, supporting the institutions, in which intellectual activities was carrying out, as well as traditional patronage was going on between patron and artist. Even in the 19<sup>th</sup> century, authors who have economic freedom were very few. Ahmed Mithad Efendi (1844-1912), for example, published 223 books as an exceptional author and made a considerable fortune, in this sense, he is, even though it was too late, the symbol of printing-capitalism in the Ottoman Empire.<sup>248</sup>

## b. Learned Societies in the 19<sup>th</sup> Century

In 1820s, learned societies in Istanbul had begun to establish themselves in some circles, consisted of relatively well educated people who were acquainted with Western ideas.<sup>249</sup> *Beşiktaş Cem'iyet-i İlmiyyesi* (1820), probably the first learned society in which members came, secretly, together once or twice in a week and talked about poetry, science, philosophy *et cetera* and also gave lectures to a small community about various fields in manor of İsmail Ferruh Efendi with verbal permission of the Sultan. President of the Society was İsmail Ferruh Efendi who had a remarkable knowledge about Islam and went to Europe a few times. After a while, members were charged with being *Bektaşî* and the meetings were prohibited.<sup>250</sup> Moreover, one of the members, Şani-zade, who was a doctor and wrote a medical book based on Western sources, was exiled to İzmir/Tire because of

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<sup>248</sup> Burak Onaran, "Ahmet Mithat Efendi," in *Modern Türkiye'de Siyasi Düşünce*, ed. Mehmet Ö. Alkan (Istanbul: İletişim Yayınları, 1<sup>st</sup> volume, 7<sup>th</sup> edition, 2006), 170-175.

<sup>249</sup> Ekmeleddin İhsanoğlu, "The Group of Scholars Known as Members of Beşiktaş Cemiyet-i İlmiyyesi," in *Science, Technology, and Learning in the Ottoman Empire*, (Ashgate Press/Variorum Collected Studies Series, 2004), 87-96.

<sup>250</sup> Şerif Mardin, *Yeni Osmanlı Düşüncesinin Doğuşu*, trans. Mümtazer Türköne, Fahri Unan and İrfan Erdoğan (Istanbul: İletişim Yayınları, 7<sup>th</sup> edition, 2008), 257-260.

the accusations, and personal matter with Mustafa Behçet Efendi who was the doctor of the palace and was jealous of Şani-zade's knowledge of medicine.<sup>251</sup>

*Encümen-i Daniş* (1851), unlike *Beşiktaş Cem'iyet-i İlmiyyesi*, was an officially established learned society with the aim of publishing books for future *Darülfünun*. One of another aims was contributing to spread education and sciences in order to teach people their humaneness, and provide happiness and well-being of people in, both, this world and beyond.<sup>252</sup> The aim of science, in the 19<sup>th</sup> century, widened towards secular happiness of people and, moreover, science was defined as a tool which shows the right way to the people in moral and ethical aspects independently from the religion. In this sense, secular aims were emphasized more than the religious ones.

İhsanoğlu puts forward that *Encümen-i Daniş* (1851-1861) was established on the model of the *Académie Française* (1635) by considering the inaugural declaration of the member, Ahmet Cevdet Paşa, who states that one of the objectives of *Encümen-i Daniş* is preserving Ottoman Turkish language and setting rules of grammar. He also supports his argument by referring Sir James Redhouse's translation of the compound word *Encümen-i Daniş*, in his dictionary, as "The Academy of Science of Constantinople", and as "The Literary and Scientific Academy of Constantinople".<sup>253</sup> Indeed, the main aim of the *Académie Française* was very similar to the aim of *Encümen-i Daniş* that Ahmet Cevdet Paşa stated in his speech, however, unlike the *Académie Française* which was established with the intention of compiling a dictionary of French, there was no attempt, *de facto*, to reach this goal in *Encümen-i Daniş*.<sup>254</sup> As for James Redhouse's translation, it seems that, he made only an analogy between *Encümen-i Daniş* and European learned societies in terms of function and translated it as "Academy". Therefore, there is no evidence to argue that the model of *Encümen-i Daniş* was the *Académie Française*. *Encümen-i Daniş* was a institution assigned by the state to implement some specific projects rather than a learned society and was closed in 1861 without any remarkable effect on "Ottoman science world". Following years some learned societies and professional associations were established, but

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<sup>251</sup> *Ibid.*, 259.

<sup>252</sup> İsmail Doğan, "Osmanlı Bilimsel Topluluklarının Türkiye'deki Bilim Eğitime Etkileri," *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi*, 26, no. 1 (1993): 133.

<sup>253</sup> See Ekmeleddin İhsanoğlu, "Genesis of Learned Societies and Professional Associations in Ottoman Turkey," in *Science, Technology, and Learning in the Ottoman Empire*, (Ashgate Press/Variorum Collected Studies Series, 2004), 169.

<sup>254</sup> For further discussion on emergence and function of academies in Europe since 15<sup>th</sup> century, see Levent Yılmaz, *Modern Zamanın Tarihi* (Istanbul: Metis Yayınları, 2010), 95-97, 112-115.

unfortunately they did not last long.<sup>255</sup> One of them, *Cemiyet-i İlmiye-i Osmaniye* (1861), which is the first society founded for the purpose of spreading science<sup>256</sup>, is going to be treated in the part of “Ottoman Tradition of Encyclopaedic Compilation in the 19<sup>th</sup> century” because of their encyclopaedic journal, *Mecmua-i Fünun*.

### c. Classification of Knowledge

In Islamic scholarship, there have been many classifications of knowledge throughout its history which began, at first, in the 9<sup>th</sup> century by al-Kindi.<sup>257</sup> Classification of knowledge in Islam is firstly based on the idea of the unity of the arts and sciences. Each branch is a part of this unity and never can be think unrelated with others. The aim of all the Islamic sciences is to show the unity and interrelatedness of all that exists, so that, in contemplating the unity of cosmos, man reaches a conclusion: unity of the divine principle.<sup>258</sup> Unity of nature is here only the image of the unity of divine principle. In this sense, sciences are tools to discover the divine truth and its uniqueness. Because of this, religious sciences and metaphysics, hierarchically, have the highest position in the classifications. In many classifications of knowledge, scholars divide sciences mainly as *nakli ilimler* and *akli ilimler* which were respectively referred to religious and non-religious sciences. Then, they were divided into as useful and harmful sciences. For determining usefulness of a science, the main criteria is its convenience to essential aim of getting knowledge; learning the religion (Islam) and going to heaven afterlife. On the other hand, in many classifications, scholars adopt the Aristotelian division of sciences into theoretical, practical, and productive, although they treated the division in different ways from each other, such as Al-Farabi (Alpharabius), Al-Ghazzali (Algazel), Qutb Al-Din Al-Shirazi. Whilst Al-Farabi and Ibn Sina (Avicenna), for example, used the Aristotelian division as the main principle, Al-Ghazali used this division, mainly, in science of religion. There are only few references to the Aristotelian division in philosophical sciences in Al-

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<sup>255</sup> For further discussion, see Ekmeleddin İhsanoğlu, *op. cit.*, 167-178.

<sup>256</sup> *Ibid.*, 172.

<sup>257</sup> Seyyed Hossein Nasr, *Science and Civilization in Islam* (Cambridge: The Islamic Texts Society, 2<sup>nd</sup> edition, 1987), 60. for general discussion on classification of sciences in Islam, see Osman Bakar, *Classification of Knowledge in Islam* (Cambridge: The Islamic Texts Society, 1998).

<sup>258</sup> Sayyed Hossein Nasr, *op. cit.*, 22



Ghazali's classification, in contrast to that of Al-Farabi.<sup>259</sup> In the meantime, scholars, in Islam, use different basis of distinctions in their classification of knowledge. Al-Ghazali, for example, classifies knowledge by using also the divisions into "presential" and "attained" knowledge, "religious" and "intellectual", and "fard ayn" (refers to religious obligations binding every muslim) and "fard kifayah" (refers to divinely ordained and binding the Muslim community but not necessarily binding each members).<sup>260</sup> Classification of knowledge in Islam, as in the West, formed the background of the educational system throughout the ages which are varied depending on the authors own interests, and on the age that they lived.

Molla Fenari (?-1435) is probably the first scholar who wrote on classification of knowledge in the Ottoman Empire. In his *Unmuzecü'l-ulum*, he, substantially, uses the classification of Razi, but he also adds forty more to sixty sciences that Razi counted.<sup>261</sup> Molla Lutfi (?-1494) is one of the earliest scholars in the Ottoman Empire who classified knowledge in one of his works, *el-Metâlibü'l-ilâhiyye fimevzû'âti'l-'ulûm*, in which approximately one hundred sciences were counted.<sup>262</sup> Many scholars, like their Western colleagues, use the Aristotelian division of the sciences into theoretical and practical. Taşköprülüzade Ahmed Efendi's (1455-1561) *Miftahu's-Saade* is another early example to the classifications of knowledge which was written in Arabic and then was translated into Turkish under the name of *Mevzû'âtü'l-'Ulûm* by his son, Kemaleddin Mehmed.<sup>263</sup> It was published as late as 1897 by Ikdam printing house.<sup>264</sup> Firstly, Taşköprülüzade divides sciences, like former scholars, as *nakli* (religious sciences) and *akli* (non-religious sciences) and then as useful and harmful. Then, he classifies sciences in seven categories as written sciences, verbal sciences, logical sciences, (theoretical) religious sciences, (theoretical) philosophical sciences, (practical) religious sciences, and (practical) philosophical sciences and also subdivides them into one hundred fifty, however he mentioned over three hundred sciences in his work.<sup>265</sup> He counts magic, phylactery, interpretation of dreams, and auspice as the natural sciences. Taşköprülüzade, although used the Aristotelian division, was not in

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<sup>259</sup> Osman Bakar, *op. cit.*, 204.

<sup>260</sup> *Ibid.*, 203-210.

<sup>261</sup> Ayhan Aykut, *Türkiye'de Ansiklopediciliğin Doğuşu ve Gelişmesi*, unpublished M.A. Thesis at İstanbul Üniversitesi, Department of Librarianship, 1989.

<sup>262</sup> Müjgan Cunbur, "Kütüphane Vakfiyelerinde İlimlerin Sınıflandırılması ve Bibliyografik Künyeler," *Türk Kütüphaneciliği Dergisi* 19, no. 4 (1970): 313.

<sup>263</sup> See "Miftahu's-Saade," in *TDV İslam Ansiklopedisi*, Vol. 30, (Ankara: TDV, 2002), 18-19.

<sup>264</sup> Nuri Çevikel, "Taşköprüzâde (İsâmeddîn) Ahmed Bin Mustafa'nın Mevzû'âtü'l-'Ulûm'unda İlim Kavramı 1495-1561," *Gazi Akademik Bakış Dergisi*, 6<sup>th</sup> issue (2010): 180.

<sup>265</sup> Necati, Öner, "Tanzimattan Sonra Türkiye'de İlim ve Mantık Anlayışı," *A.Ü.İ.F. Publications*, (1967): 104.

favor of the Aristotelian school in Islam. According to him, classification of knowledge of Farabi, and Ibn Sina was not in line with Sharia.<sup>266</sup> As a matter of fact, some scholars, like Ibn Sina, add esoteric sciences in the scope of classification of knowledge with little differences. However, Farabi, although being an alchemist, excluded alchemy, interpretation of dreams, and other esoteric sciences from his classification.<sup>267</sup> In this sense, he was more rationalist than Taşköprülüzade.

Katip Çelebi (Hadji Khalfa 1609-1658) compiles a bibliographical work in Arabic, called *Keşfü'z-Zunun*, in which he counts over three hundred sciences, roughly fifteen thousand books and pamphlets, and roughly ten thousand authors. He also mentions several classifications of knowledge including the division of theoretical and practical, and also the classifications of Taşköprülüzade and of Molla Lutfi, however, he does not make his own classification.<sup>268</sup> In another work, *Cihannüma*, which was a geography book extended by İbrahim Müteferrika in 1732, Katip Çelebi gives information about the theories of Aristotle, Tycho Brahe, and Copernicus; however he hesitated to accept the ideas of Copernicus. The reason of his doubt was not based on a criticism instead he looks whether theory of Copernicus was in contradiction with the theories of former Muslim scholars.<sup>269</sup> Katip Çelebi, probably, is the first Ottoman intellectual, who became aware of the development in science and technology in the West, and used Western sources in his works. But his works do not go beyond of a random transmission.

In the Ottoman Empire, various compilations were written about various topics by above-mentioned authors, and by other scholars. These compilations were written both thematically and in alphabetical order. In bibliographical compilations, for example, names were written in alphabetical order such as Taşköprülüzade's *Eş-Şekâiku'n-Nu'mâniyye fi ulemâi'd-Devleti'l-Osmâniyye*, and Katip Çelebi's *Keşfü'z-Zunun*. In general, encyclopaedic works were compiled by authors arbitrarily from mainly the Arabic sources and also other languages that author knew. In this sense, it is hard to say that the works have a kind of systematization.

Even in the 18<sup>th</sup> century, an unsystematical, random, and contradictory character

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<sup>266</sup> Taner Timur, *Osmanlı Kimliği* (Ankara: İmge Kitabevi Yayınları, 2010), 36.

<sup>267</sup> Seyyed Hossein Nasr, *Science and Civilization in Islam* (Cambridge: The Islamic Texts Society, 2<sup>nd</sup> edition, 1987), 60.

<sup>268</sup> For the classifications, see Katip Çelebi, *Keşfü'z-Zunun*, trans. Rüştü Balcı (Istanbul: Tarih Vakfı Yurt Yayınları, Vol. 1, 2007), 21-25.

<sup>269</sup> For two different approaches on this topic, see Hüseyin Yurdaydın, "Düşünce ve Bilim Tarihi (1600-1839)," in *Türkiye Tarihi*, ed. Sina Akşin (Istanbul: Cem Yayınları, 3<sup>rd</sup> volume, 8<sup>th</sup> edition, 2005), 282. and see Ekmeleddin İhsanoğlu, *op. cit.*, 202-203.

can be observable in encyclopaedic works. Erzurumlu İbrahim Hakkı (1703-1780), in his *Marifetname*, mentions about Copernican theory in supportive tone and then contrarily he explains astronomical events with metaphysical powers and superstitions.<sup>270</sup> He devoted the first part of *Marifetname* to *Fenn-i Evvel* which starts with justification of God's existence and uniqueness. Further, there is the knowledge about minerals, plants and man. Following, geometry, astronomy, calendar calculation and geography are covered. In the part about geography, he criticized people who argued that the world turns around. The second part of the work titled *fenn-i sani* which covers the sciences like anatomy and physiology. Some verses (beyit) are included in the part of anatomy. End of this part covers spirit and death in detail. The third part is *Fenn-i Salis* and includes religious and divine knowledge. The last chapter includes some knowledge about customs such as husband-wife relations, relations of relatives and friendship. In this work, he did not handle all of these topics in a "scientific" manner.

In another book, *Kevakib-i Seb*<sup>271</sup>, the author divides sciences respectively as useful sciences (Islamic doctrines, Islamic law, Arabic language and literature, logic, mathematics, astronomy, anatomy, medicine) neither useful nor harmful sciences (poetry and literature), and harmful sciences (philosophy, magic, astrology).<sup>272</sup>

In the 19<sup>th</sup> century, similar classifications of knowledge were still current which means there was nothing changed in terms of science and its definition. Many authors, such as Ahmet Cevdet Paşa, Muhittin Mahvi, Süleyman Sırrı, Mehmat Tahir, and Serkiz Orpilyan, defined science, in a broad sense, as "if there is a specific subject and a specific purpose; it can be defined as science".<sup>273</sup> Former scholars' classifications of knowledge were repeated with little differences which based on religious doctrines and Aristotelian division.

Ahmet Cevdet Paşa, for example, in his *Beyan-ul Unvan* (1872) divides sciences, firstly, into *Nakli* and *Akli* sciences which are respectively refer to religious and non religious sciences, then, he divides *Akli* sciences as theoretical and practical. He counts three sciences as practical respectively; moralization, domestic economy, and politics. As for theoretical sciences, they were divided, mainly, into theological, mathematical, and

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<sup>270</sup> Ekmeleddin İhsanoğlu, *op. cit.*, 204-205.

<sup>271</sup> It was written probably between 1728-1741 by tutor of son-in-law of Reisülkütab Mustafa Efendi.

<sup>272</sup> Hüseyin Yurdaydın, *op. cit.*, 329.

<sup>273</sup> Necati Öner, "Tanzimattan Sonra Türkiye'de İlim ve Mantık Anlayışı," *A.Ü.İ.F. Publications*, (1967): 109.

natural sciences.<sup>274</sup> One of the remarkable points is that he, unlike Ibn Sina and Al-Ghazali, discards occult knowledge from his classification of knowledge. Süleyman Sırrı goes a step further and discards religious sciences as well as occult knowledge from his classification.<sup>275</sup>

Muhittin Mahvi used the word *Fünun*, in his title instead of *Ulum* which refers, generally, to technical information received from Europe, however, he, mainly, classifies religious sciences. In this sense, it is hard to understand why he preferred to use the title *Mazbutat-ul Fünun*. Probably, he was influenced by the popular usage of *Fünun* in place of *Ulum* in the 19<sup>th</sup> century.

In short, they were still classifying knowledge in line with religious doctrines and Aristotelian division. For an intellectual, that aware of Western scholars' classifications of knowledge, one must wait early the 20<sup>th</sup> century. Rıza Tevfik (1869-1949) is, probably, the first intellectual who mentioned Francis Bacon's classification of knowledge among the Ottoman Turks. He compiles a dictionary of philosophy named *Mufassal Kamus-ı Felsefe* (1914) which was planned as ten volume work but because of the first world war he could write only the first two volumes in which articles' titles were in French and definitions in Ottoman-Turkish. The last article in the dictionary is "classification des sciences", which is relatively long, written in twenty-eight pages. Firstly, he defines epistemological problems and points out that the morphological problems are quiet distinct issue *per se* from epistemology in philosophy which was contemplated by philosophers throughout the history.<sup>276</sup> Further, he argues that, only the contemporary philosophers achieved to classify knowledge in a proper way, former philosophers could not because sciences were so primitive in their times.<sup>277</sup> After these short explanations, he mentions about the classifications of prominent scholars which begins with Aristotle. Rıza Tevfik dwells on Aristotelian division of sciences into theoretical (*nazariyye*) and practical (*ameliyye*). While he was subdividing them, he also emphasizes that these disciplines are now considered differently.<sup>278</sup> After the discussions on Aristotle's classification he stresses on Muslim scholars' classifications and says that they acknowledged Aristotelian division. Then, he discusses Ottoman scholars' classifications beginning with the classification of Kınalızade. Rıza Tevfik praises Kınalızade because he was aware of famous philosophers,

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<sup>274</sup> For a detailed treatment of the above-mentioned scholars' classifications of knowledge, see *ibid.*, 110-111.

<sup>275</sup> *Ibid.*, 111.

<sup>276</sup> Rıza Tevfik, *Mufassal Kamus-ı Felsefe* (Istanbul: Matbaa-i Amire, 1336 (1920)) 373.

<sup>277</sup> *Ibid.*, 373.

<sup>278</sup> For the examples, see *ibid.*, 376-377.

even though, was not an authentic scholar. Taşköprülüzade's classification is another issue in the article who is defined as a scholastic author. Rıza Tevfik criticizes on that, Taşköprülüzade, i.e., regards removing stain from clothes as a science. According to Rıza Tevfik, this kind of men cannot be regarded as scholar.<sup>279</sup> After a short discussion of *trivium* and *quadrivium* and a short criticism of Ibn Haldun, because of his classification of knowledge in which esoteric sciences are included, he begins to give information on Francis Bacon's classification of sciences, and his philosophy. Rıza Tevfik calls Bacon as the conqueror of the recent epoch and initiator of the new era in philosophy since he is the founder of experimental philosophy.<sup>280</sup> Before the classification of Bacon, he mentions Alexander Bain's (1818-1903) treatment of the history of the classification of knowledge in his book, *Logic* (1870) and emphasizes Bain's criticism of Herbert Spencer's classification.<sup>281</sup> Rıza Tevfik explains Bacon's classification and praises, and criticizes him; Bacon is the revolutionary philosopher that destroyed Scholastic philosophy, his classification of knowledge today is not up to date but many scholars were influenced by his classification for many years.<sup>282</sup> In addition to that, he criticizes Bacon by referring to Karl Pearson's (1857-1936) criticism of Bacon: Bacon in fact was influenced by scholasticism which he wanted to destroy.<sup>283</sup> Towards the end of the text, he turns again to criticize the scholars of the old times, who classifies knowledge as useful and harmful sciences, and emphasizes that the science is for human beings.<sup>284</sup> Then, he mentions about Spencer's criticism of August Comte as a digression; Comte's viewpoint of science is pure subjective and this is a completely wrong aspect.<sup>285</sup> Lastly, he states that religious nonsense and superstitions misleads people because of this we have to exclude these from sciences.<sup>286</sup> It seems that, Rıza Tevfik knew philosophy of science both in Islam and West. Moreover he contextualizes the ideas of philosophers and scholars, and criticizes their ideas with reference to contemporary philosophers, even though in some places he treats topics simple and naïve. One of other remarkable point is that he treats sciences as a tool for the specific use of human beings. In this sense, he excludes religious aims from the *raison d'être* of sciences. Moreover, he repeatedly criticizes scholars that added esoteric

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<sup>279</sup> *Ibid.*, 384.

<sup>280</sup> *Ibid.*, 387.

<sup>281</sup> *Ibid.*, 388.

<sup>282</sup> *Ibid.*, 392-393.

<sup>283</sup> *Ibid.*, 395.

<sup>284</sup> *Ibid.* 396.

<sup>285</sup> *Ibid.*, 397.

<sup>286</sup> *Ibid.*, 400.

sciences in their classification of knowledge and he says in a didactic manner that the religious nonsense and superstitions mislead people. Rıza Tevfik is not representative of the general character of the intellectuals of his time, in this sense, he is an exceptional man who had interest in Western philosophy beyond practical reasons.

#### **d. Ottoman Tradition of Encyclopaedic Compilation in the 19<sup>th</sup> and early 20<sup>th</sup> Centuries**

Many historians, and authors, that study on encyclopaedic compilations in the Ottoman Empire, write on the word, encyclopaedia, and Western encyclopaedic compilations in a very inaccurate manner.<sup>287</sup> Among the works of these authors, there are only two texts in which authors used a work written directly on the history of encyclopaedias.<sup>288</sup> However, these works, like the others, give misleading information on the history of encyclopaedias, because again, like others, they, mainly, base on some bad translated works of Western Scholars into Turkish, and of 20<sup>th</sup> century Turkish intellectuals. On the other hand, in these works, authors write on the controversial and ambiguous meaning of enkyklios paidea in a very definite manner. Moreover, they treat compilations throughout the history as encyclopaedias regardless of their history, shape, and content. In addition, many historians argue that, in the 19<sup>th</sup> century, many Ottoman/Turkish intellectuals were influenced by the 18<sup>th</sup> century encyclopaedists. Şerif Mardin is the first author, who puts forward this idea, and influenced many historians working on the Ottoman era.<sup>289</sup> In Mardin's viewpoint, if

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<sup>287</sup> See Ayhan Aykut, *Türkiye'de Ansiklopediciliğin Doğuşu ve Gelişmesi*, M.A. Thesis at İstanbul Üniversitesi, Department of Librarianship, 1989, 16-26. Nazan Uçak, *Türkiye'de Ansiklopedik Yayınlar ve 1980-1989 Yılları arasında Yayınlanan Ansiklopedilerin Değerlendirilmesi*, M.A. Thesis, Hacettepe University, Department of Librarianship, 1989, 9-17. Nuri Akbayar, "Ansiklopediciliğimizin İlk 80 Yılı," in *Türkiye'de Dergiler Ansiklopediler* (İstanbul: Gelişim Yayınları, 1984), 219-247. Mahmut Gündüz, "İslam'da Ansiklopediler," *Journal of Turkish Librarianship* 25, no. 1, (1976): 5-36. Selahattin Hilav, "Ansiklopedi ve Aydınlanma Felsefesi," in *Ansiklopedi ya da Bilimler ve Sanatlar Sözlüğü*, trans. Selahattin Hilav, (İstanbul: YKY, 3<sup>rd</sup> Edition, 2005), 11-21.

<sup>288</sup> Ayhan Aykut and Nazan Uçak use Robert Collison's *Encyclopaedias: Their History Throughout the Ages*, but in thesis of Nazan Uçak, there is no footnote referred to Collison's work, she only suggests this work for further discussion.

<sup>289</sup> For Mardin's assertions, see Şerif Mardin, *Yeni Osmanlı Düşüncesinin Doğuşu*, trans. Mümtaz'er Türköne, Fahri Unan and İrfan Erdoğan (İstanbul: İletişim Yayınları, 7<sup>th</sup> edition, 2008), 143, 257, 258, 274, 280, 402. For examples of the usage of Mardin's assertion by historians, see İsmail Doğan, *Tanzimat'ın İki Ucu: Münif Paşa ve Ali Suavi* (İstanbul: İz Yayıncılık, 1991). Selim Deringil, *Simgeden Millete II. Abdülhamid'den Mustafa Kemal'e Devlet ve Millet* (İstanbul: İletişim Yayınları, 2007), 95, 246. Ali Budak, *Batılılaşma Sürecinde Çok Yönlü Bir Osmanlı Aydını: Münif Paşa* (İstanbul: Kitabevi, 2004). Kayahan M. Özgül, *Münif*

someone interested in Western science or ideas and interested in more than one intellectual subject, or compiled, or wrote something in several fields by using Western sources, one can be called an encyclopaedist or very close to be an encyclopaedist. The problem is the fact that, if someone is interested in several fields besides of his/her specialty, one can be called, maybe, as a polyhistor in simple sense not as an encyclopaedist in the sense of the 18<sup>th</sup> century encyclopaedists. Anthony Grafton, in his essay, “The World of Polyhistorists”, criticizes polyhistorists sarcastically by referring to Johann Burckhardt Mencke’s (1674-1732) *De Charlataneria Eruditorum*: “Humanism and encyclopaedism, eloquence and erudition –these were the pursuits that the polyhistorists made their own.”<sup>290</sup>

Polyhistor was a figure who required high linguistic skills that provide scholars interpreting and producing literary texts in Latin.<sup>291</sup> High linguistic skill in Latin was an obsessive subject among scholars, Erasmus’s *De Copia*, for example, is famous for its exuberant pursuit of synonyms and metaphors and for its table of 150 ways to say “Thank you for the letter” in good Latin<sup>292</sup>. Further, they wanted to cover each intellectual field, that is, scholars had to know all disciplines, and their relations with each other, in addition, they must know the titles and contents of all books.<sup>293</sup> By considering the mind, the ambitions, and the function of Western polyhistorists, and of 18<sup>th</sup> century encyclopaedists, it is misleading to conceptualize the Ottoman-Turkish intellectuals as a polyhistor or as an encyclopaedist. In simple sense, their mind was close to the mind of polyhistorists in respect to ambition of knowing many things. In the Ottoman Empire, this kind of men was called “hezar-fenn” during the traditional period.<sup>294</sup> In 19<sup>th</sup> century, even though the intellectuals became familiar with Western ideas, they were still traditional, but on the other hand, they had, unlike their predecessors, strong public concerns. Accordingly, they wanted to introduce society to Western ideas in a vulgarized manner. The intellectuals regarded as encyclopaedists by Şerif Mardin and by the other historians, were interested in Western ideas in an unsystematical manner towards their practical approach. There were only a few men who were transferring knowledge in various fields from the West randomly and superficially, but on the other hand in the 19<sup>th</sup> century that kind of polyhistorists were figures

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*Paşa* (Ankara: Elips Kitap, 2005).

<sup>290</sup> Anthony Grafton, “The World of the Polyhistorists: Humanism and Encyclopaedism,” *Central European History*, 18, no. 1, *The Culture of the Holy Roman Empire, 1540-1680* (1985): 34.

<sup>291</sup> *Ibid.*, 34.

<sup>292</sup> *Ibid.*, 35.

<sup>293</sup> *Ibid.*, 37.

<sup>294</sup> For the meaning of the word, see Ferit Devellioğlu, *op. cit.*, 361.

of fun in the West rather than praised ones. Accordingly, the 18<sup>th</sup> century onwards, general encyclopaedias were compiled by a group of experts and not by a single man. Diderot emphasizes that an encyclopaedia cannot be compiled by a single person or a formal institution but by a loose association of experts.<sup>295</sup> Because, it takes many years of a man compiling the enormous quantity of knowledge, and furthermore the information that he produced in articles becomes obsolete and outdated over such period. But, in the Ottoman Empire, “polyhistor” (hezar-fenn) who were writing on many fields were still in charge in the 19<sup>th</sup> century. Even in collective works such as encyclopaedic journals of learned societies, they were the “polyhistor”, not the experts, who were compiling knowledge from the West. Ottoman “polyhistor” (hezar-fenn), unlike the Westerners, were, mostly, high officials, ambassadors, journalists who were, relatively, well-educated and acquainted with Western ideas. Şanizade (1771(?)-1826) is regarded as the closest man to be an encyclopaedist that lived at anytime in the Ottoman Empire by Şerif Mardin.<sup>296</sup> But, in fact, he was a kind of “polyhistor” instead of an encyclopaedist who was keen on many subjects. He was fluent in French, knew various things about military, mathematics, physics, medicine, astronomy, poetry, music, paint, and even matchmaking.<sup>297</sup> His work, *Hamse-i Şanizade*, is the first modern medicine book in the Empire which consisted of five books and based, completely, on Western sources. The third book, *Miyaretü'l-etibba*, is the translation of Baron Anton von Stoerck's *Medicinisch-praktischer Unterricht für die Feld und Landwundärzte der österreichischen Staaten* (1787) from its Italian translation. In these books, he was trying to find Turkish words to Latin medicine terms. Apart from this, he also wrote poetry, and also had books on geography, military, history, and mathematics.

Şemsettin Sami (1850-1904) is another intellectual, is seen as an encyclopaedist by some Ottoman historians.<sup>298</sup> In fact, he was an author, a scriptwriter, a translator, a lexicographer and also a compiler; wrote stories, novels and scripts, translated texts from Victor Hugo and Daniel de Foe, prepared French-Turkish, Turkish-French dictionaries, Arabic-Turkish dictionary (not completed), and Turkish dictionary, and also compiled an encyclopaedic book on history, geography, and also includes biographical information about “famous men”. It seems that, the historians regarded Şemsettin Sami as an encyclopaedist because of his various fields of interest, and of his encyclopaedic work,

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<sup>295</sup> Philipp Blom, *op. cit.*, 152.

<sup>296</sup> Şerif Mardin, *op. cit.*, 258.

<sup>297</sup> *Ibid.*

<sup>298</sup> For examples, see Ayhan Aykut, *op. cit.*, 58-61 and Nazan Uçak, *op. cit.*, 25. Selim Deringil, *Simgeden Millete II. Abdülhamid'den Mustafa Kemal'e Devlet ve Millet*, (İstanbul: İletişim Yayınları, 2007), 95, 246.



*Kamusu'l-a'lam* (1898). *Kamusu'l-a'lam*, as mentioned above, is a compilation, that includes historical, geographical, and biographical information, was prepared by modelling Marie-Nicolas Bouillet's *Dictionnaire Universal d'Histoire et de Géographie* (1842), furthermore, it includes, largely, word by word translation from the work that of Bouillet.<sup>299</sup> In his introduction, Şemsettin Sami mentions some encyclopaedic works in several European languages and points out that while there are many works of that kind in Europe, unfortunately, in Turkish language, we do not have: "This is why I have written my work".<sup>300</sup> It is understood that, Şemseddin Sami, and the historians, both were not aware of different compilation genres, in this sense, Sami's above mentioned statement was misleading for the historians. Compiling something in the 19<sup>th</sup> century Ottoman Empire is enough to be an encyclopaedist in the eyes of the historians and these compilations, according to them, were the equivalents of Diderot's encyclopaedia.

In the 19<sup>th</sup> century, the only thing that changed in the compiling practices is their content, intellectuals were compiling knowledge regarding the West, in this sense, they were mentoring the society with Western ideas but they were shaped, generally, for the "needs" of the "state" and not of the "society". Apart from these, there were some compilations on specific subjects based on randomly selected sources from West.<sup>301</sup> Next two parts will deal with that question.

### e. "Vive l'État!", "Vive la Science!": Mecmua-i Fünun

According to some historians, *Mecmua-i Fünun*, the official journal of *Cemiyet-i İlmiye-i Osmaniye* (Ottoman Scientific Society), played such a role in the 19<sup>th</sup> century Ottoman Empire that is in some ways analogous to the role played by *Grand Encyclopédie* in the 18<sup>th</sup> century France. This argument was first propounded by Ahmet Hamdi Tanpınar and then later used by the historians as a fact without criticizing.<sup>302</sup> Still, is it a reasonable

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<sup>299</sup> For further information, see Ömer Faruk Akün, "Şemseddin Sami," in *İslam Ansiklopedisi* (MEB, 2001), 411-417.

<sup>300</sup> Ayhan Aykut, *op. cit.*, 1989, 60.

<sup>301</sup> For further information on encyclopaedic compilations between 1870-1923, see *ibid.*, 54-72.

<sup>302</sup> For Tanpınar's argument, see Ahmet Hamdi Tanpınar, *19. Asır Türk Edebiyatı Tarihi*, (Istanbul: YKY, 4<sup>th</sup> Edition, 2008), 172. For examples to the usage of the argument, see Bernard Lewis, *Islam in History: Ideas, People, and Events in the Middle East* (USA: Open Court Publishing, 2<sup>nd</sup> edition, 2001), 130. Zafer Toprak, "Fikir Dergiciliğimizin Yüz Yılı," in *Türkiye'de Dergiler Ansiklopediler* (Istanbul: Gelişim Yayınları, 1984),

suggestion or an over-interpretation by the historians? This part dwells on this question through examining *Cemiyet-i İlmiye-i Osmaniye*, *Mecmua-i Fünun*, and the ideas of leading member of the society, also the editor of the journal, Münif Paşa.

*Cemiyet-i İlmiye-i Osmaniye*, the first scientific society in the Empire, was founded in 1861 with the aim of writing and translating books, giving free lectures to people and disseminating arts and sciences.<sup>303</sup> Bernard Lewis puts forward that Münif Paşa founded the society by modelling it on the Royal Society of England,<sup>304</sup> but he has no explanation as regards how he reached this conclusion; moreover, there is no evidence in history with respect thereto. There is also no similarity between the aims and functions of these two societies, so as Royal Society was founded in 1660 with the aim of improving knowledge of the natural world through observation and experiment, not with the aim of giving free lectures to people or disseminating science throughout the country. What is more, the majority of the members of *Cemiyet-i İlmiye-i Osmaniye* were, unlike Royal Society, bureaucrats, not scholars. This also partly explains the simplicity of the content of their journal, *Mecmua-i Fünun*.

In 1862, they, in line with their objective, published the first volume of *Mecmua-i Fünun*, the first scientific journal in the Empire. *Mecmua-i Fünun* was published monthly but with interruptions due to financial difficulties, and censorship. In sum, forty-seven volumes were published between the years 1862-1883 and each volume contained pages variable from forty to five-hundred, and each one had a few hundred print run. In this sense, this was an economic failure. They stated in the directives of the society and also in the journal that they will dwell on everything regarding to arts, sciences, literature and nothing regarding to the religion and the politics. Interestingly enough, Diderot and d'Alembert, in a similar way, also excluded the religion and the politics, but for different reasons. Ali Budak argues that, Münif Paşa and other members aimed to provide scientific and institutional autonomy by doing so,<sup>305</sup> even so, afterwards they wrote on actual political issues, presumably because of their audience. In fact, the journal in which there are various essays casually ordered and on various topics such as history, geography, economy, politics, physics, chemistry, biology, philosophy, logic, pedagogy and so forth was being read mostly by bureaucrats. Majority of the texts in the journal were essays unlike an

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13-54. Ali Budak, *Batılılaşma Sürecinde Çok Yönlü Bir Osmanlı Aydını: Münif Paşa* (İstanbul: Kitabevi, 2004), 279.

<sup>303</sup> Ali Budak, *op. cit.*, 175-176.

<sup>304</sup> Bernard Lewis, *op. cit.*, 130.

<sup>305</sup> Ali Budak, *op. cit.*, 229.

encyclopaedia article and one could find even some short stories.<sup>306</sup> Essays were written by the members yet they were also accepting essays from outside of the society as well as translated essays. In the process of selecting essays, comprehensibility is more important than the scientific depth as a criterion.<sup>307</sup> Moreover, in many essays, subjects were treated by relating them with then-current situations. The aim was probably to present to the people some unfamiliar western topics through vulgarization. In an essay on money and economy, for example, Münif Paşa dwells on the necessity of presence of a central bank in the Ottoman Empire.<sup>308</sup> In another one, he writes about the importance of industrial exhibitions for a country. It seems that their aim was promoting and popularizing the science, technology, philosophy *et cetera*. They also attempted to translate scientific terms into Turkish, especially in the field of medicine.<sup>309</sup>

Münif Paşa wrote most of its essays on various topics from philosophy to economics and led the direction of the journal with his ideas. Münif Paşa's principal education was religious. Afterwards he learned French and got acquainted with western ideas thanks to his duty in the Chamber of Translation in 1852. Between the years 1855-1857, he worked in the Embassy of the Ottoman Empire in Berlin as second secretary and learned German; later, he assumed the office of the Minister of Education for three times between the years 1877-1891.

Münif Paşa believes that the written language must be standardized and simplified for the purposes of spreading knowledge and education. To that end, he makes two suggestions; first, words should be written with vowel points to read them correctly and easily, and, second, letters should be written separately as they are in European languages.<sup>310</sup> Münif Paşa, both in his translations and his own works, preferred to use a plain language. His primary aim was the popularization of knowledge through the simplification and standardization of the language.

Münif Paşa translated dialogues from Fontenelle, Fénelon, and Voltaire under the title of *Muhaverat-ı Hikemiye* (Philosophical Dialogues) in 1859. The first dialogue translated from Fénelon is on fallacy of generally accepted ideas and concurrence with the opinions of the majority even though those are wrong. The second dialogue is also again

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<sup>306</sup> For the list of the articles, see Kayahan M. Özgül, *Münif Paşa* (Ankara: Elips Kitap, 2005), 51-69.

<sup>307</sup> *Ibid.*, 51.

<sup>308</sup> Ali Budak, *op. cit.*, 247.

<sup>309</sup> For translation activities of the society in the field of medicine, see Hüsrev Hatemi and Yeşim Işıl Ülman, *Bir Bilim Dili Mücadelesi ve Tanzimat* (Istanbul: İşaret Yayınları, İstanbul 1989).

<sup>310</sup> Ali Budak, *op. cit.*, 588.

from Fénelon on the question that whether the people would have the right to resist to a king acting unjust and imprudent. Thirdly, Münif Paşa translated a dialogue from Fontenelle on new men and their new ideas and on the impossibility of implementing those new ideas due to the vivid support for the old and famous. According to the dialogue, new ideas could be adopted only if the old ones are annihilated. The rest of the dialogues are translated from Voltaire. First dialogue from Voltaire is about the question on what has to be done for the progress of people. Second one is about a poor woman who becomes the mistress of Louis XIV. In the third one, it is argued that the wealth of a country is measured with its population, and with the work and ability of its inhabitants. In the following dialogue, the civilization is discussed between a professor and an Indian. In the next one, the topic is the importance of education of young girls. Last dialogue is written on the animosity of the human.<sup>311</sup> Though we may not be able to say why Münif Paşa preferred to translate these dialogues, it may most probably be asserted is that these translations had a great influence on the educated men of that period. On the other hand, this attempt of translation could be the result of an indirect influence of *philosophes*. Rifa'a el-Tahtawi, an Arab nationalist, was educated in France and got acquainted with the ideas of Voltaire, Condillac, Rousseau, Montesquieu, and Bezout. He also translated Fénelon's *Les Aventures de Télémaque*. Cemil Meriç argues that Münif Paşa and Yusuf Kamil Paşa both lived in Egypt and they were probably influenced by Rifa'a el-Tahtawi.<sup>312</sup> Indeed, Yusuf Kamil Paşa, like Münif Paşa, translated the same work of Fénelon, *Les Aventures de Télémaque* in 1862. Tahtawi thinks that dealing with Western sciences means going back to Islam, and to the Arab world.<sup>313</sup> This thought is based on the idea that Europeans transferred sciences from Islam therefore their achievements are also deemed to be achievements of Islam. In the meantime, this idea is accepted on a large scale among Arabs and Turks.

Münif Paşa wrote a series of essays titled *Tarih-i Hükema-yı Yunan* (History of Greek Philosophers) on life and opinions of eighteen ancient philosophers such as Thales, Pythagoras, Socrates, Platon, Aristippos, Democritus in *Mecmua-i Fünun* with no footnote and bibliography included. Mehmet Akgün claims that the essays were the first texts written in the Ottoman Empire about Greek philosophers using Western sources.<sup>314</sup> The essays were mostly on the life of philosophers, and Münif Paşa's argumentations on their

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<sup>311</sup> All information about the dialogues is cited from Kayahan Özgül, *op. cit.*, 184-189.

<sup>312</sup> Cited in *ibid.*, 195.

<sup>313</sup> *Ibid.*, 194.

<sup>314</sup> Mehmet Akgün, "Cemiyet-i İlmiyye-i Osmaniyye ve Mecmua-i Fünun'un Felsefî Açından Taşındığı Önem," *Felsefe Dünyası* 15 (1995), 53.

ideas were often unsystematic and quite superficial.<sup>315</sup> It seems that, Münif Paşa refuses the relation with Ancients through Islam and he wrote on Ancients with reference to Western sources. This could be considered as rediscovery of Ancients in the Ottoman Empire, still it is hard to determine that whether this was a search of the past. After all, searching of a new past in Turkey occurs as late as 20<sup>th</sup> century among Turkish intellectuals.<sup>316</sup>

In his other essay, “Mahiyet-i Aksam-ı Ulum”, he dwells on the classification of knowledge. Firstly, he divides knowledge, like the former scholars in Islam, as *nakli* and *akli*, and then he explains why each discipline needs each other. Münif Paşa claims that, the only discipline independent from others is mathematics.<sup>317</sup> Furthermore, he counts seven categories, but it is hard to understand what his measure is. There is nothing about modern classifications in the essay, although there were three volumes of corpus of Francis Bacon in the library of the society, which was given as a gift by a man from USA known as Mr. Trobric.<sup>318</sup> In the same essay, he also writes about the history of science very briefly and points out that Europeans took sciences from the scholars that went to Rome from Istanbul after the conquest of the city by Ottomans and henceforth Europeans improved enormously in the field of science. As can be seen, the text is very simple and was not aware of the recent developments in scientific field. Other texts in the journal were in the same manner, too. In one of his essays, Mehmed Said writes on the Aristotelian division of sciences, without referring to Aristotle, and then he oddly mentions above-moon and below-moon universes.<sup>319</sup> Finally he gives very brief and superficial information about Hippocrates, Archimedes, Galileo, and Newton.

Authors of the journal, especially Münif Paşa, associate the notion of progress with the notion of civilization. Münif Paşa puts forward that the progress is the sign of being civilized<sup>320</sup> and it is achieved by disseminating science and education. As a matter of fact, the term of progress which was translated as *terakki* into Turkish was quite new then in the Empire, and occurred in political sphere not in philosophical discussions, therefore the word itself clearly warns us not to attribute overmuch meaning to it.

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<sup>315</sup> For the content of these texts, see *ibid.*, 56-65.

<sup>316</sup> For a discussion on the quarrel on novelty in early 20<sup>th</sup> century Turkey, see Levent Yılmaz, “Şark’ın Sonbaharı: Geçmiş Ölürken,” in *Modern Türkiye’de Siyasi Düşünce*, ed. Uygur Kocabaşoğlu (Istanbul: İletişim Yayınları, 3<sup>rd</sup> volume, 7<sup>th</sup> edition, 2006), 239-250.

<sup>317</sup> İsmail Doğan, *Tanzimat’ın İki Ucu: Münif Paşa ve Ali Suavi*, (Istanbul: İz Yayıncılık, 1991), 141.

<sup>318</sup> Kayahan M. Özgül, *op. cit.*, 74.

<sup>319</sup> Mehmet Akgün, *op. cit.*, 69.

<sup>320</sup> For viewpoint of other authors of the journal, see Ali Budak, *op. cit.*, 282.

*Mecmua-i Fünun* contains essays, translations, short stories, encyclopaedic articles which include superficial information mostly about the West. In this sense, it is like a fusion of popular journal of culture in which there are vulgarized texts about history, geography, economy, politics, philosophy, literature and so on. The journal involves, unsurprisingly, neither alphabetical, nor systematical order. It was intended to give love of science to people but not the science itself. The journal only reflects how the 19<sup>th</sup> century Ottoman bureaucrats perceived the West.

İsmail Doğan claims that Münif Paşa was an encyclopaedist in sense of the 18<sup>th</sup> century encyclopaedism and counts encyclopaedist features of him<sup>321</sup> as:

- Münif Paşa undertook to get introduced society with science as a duty;
- He gave to people information about the new knowledge without his own interpretation;
- He gave to the society information in an entertaining manner in order for them to gain reading habit;
- He wrote biographies of famous people;
- He used translation as a method of transferring the new knowledge;
- He treated foreign politics with its cultural aspect.

These are, obviously, nothing to do with encyclopaedism. Münif Paşa was interested in philosophical and scientific issues with a bureaucratic pragmatism. In one of his essays in *Mecmua-i Fünun*, titled “Mukayese-i İlim ve Cehl”, he writes that, achievements of England shows the value and importance of science.<sup>322</sup> His main aim, as a bureaucrat, was ensuring continuity of the state with Western science and technology. However, he had no idea about the science, therefore, only gave a kind of love of science in his texts but not transferred scientific theories. After all, the formulation weirdly was shaped like this: love of science for the survival of the state.

## **f. A Woolly-Minded Man in the 19<sup>th</sup> Century: Ali Suavi**

Ali Suavi (1839-1878), who was a journalist and a member of Young Ottoman Movement,

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<sup>321</sup> İsmail Doğan, *op. cit.*, 121-128.

<sup>322</sup> Mehmet Akgün, *op. cit.*, 54.

had a religious education before he got acquainted with Western thoughts. His contradicted ideas are thoroughly in line with his formation; he was a defensive modernist person, explaining origins of some Western political ideas with Islamic terminology and claiming that many of the modern Western thoughts were already present in Islam for a long time. Ali Suavi had a close friendship with Pierre Guillaume Frédéric le Play (1806-1882)<sup>323</sup>, who paved the way for racism with his ideas. Suavi, throughout his life, strived to find words and terms from Islamic doctrines for Western concepts. He, for example, offers the term, *Sem'u Ta'at*, which is an expression in the Koran meaning obedience to chief, for "counter-revolution".<sup>324</sup> He believed that the state was passing through hard times and it was the time of unity and solidarity around the Sultan not the time of revolution. On the other hand, he defends the right of revolt on grounds of Islamic doctrines. According to him, protesting coercion, which is a basic political principle in Europe developed by thousand years of experience, is the religious duty of Muslims.<sup>325</sup> In the same vein, he claims that the modern political institutions and principles, such as principle of separation of powers, and representative government, already exist in Islamic doctrines and are implemented in many Islamic countries in years.<sup>326</sup> He interprets, in a strange way, the principle of separation of powers in Islam. According to him, the administrative power divides amongst *Müftü* (man of religion), *Kadı* (judge), and *Vali* (governor), but on the other hand, they do not contradict with each other for the purposes of the principle of *vahdet-i imamet* (the principle of uniqueness of the leader -everyone obey and serve him).<sup>327</sup> He explains this principle as high officials rule over people, *Ulama* (men of religion) rule over high officials and the *sharia* (religious law) rules over *Ulama*.<sup>328</sup> It resembles "the circle of justice" of Kınalızade, which is considered traditionally the ideal order of a state and of a society; the only difference is that Suavi grants higher rank hierarchically to the *Ulama* than high officials.<sup>329</sup> Most of the ideas of Suavi were based on the main principles of the Koran, not on the secondary sources of Muslim scholars; in this

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<sup>323</sup> İsmail Doğan, "Sosyolojik Düşüncenin Osmanlı'daki Kaynakları: "Ulum-ı İktisadiye ve İçtimaiye" Mecmuası Örneği," in *XIII. Türk Tarih Kongresi Kongreye Sunulan Bildiriler* (Ankara: Türk Tarih Kurumu Yayınları, 2002), 49-82.

<sup>324</sup> Hüseyin Çelik, *Ali Suavi ve Dönemi*, (Istanbul: İletişim Yayınları, 1994), 287.

<sup>325</sup> Şerif Mardin, *op. cit.*, 418-419.

<sup>326</sup> For further information on Suavi's interpretation on the principle of separation of powers, see *ibid.*, 407-408. For the interpretation on representative government, see *ibid.*, 415-416.

<sup>327</sup> *Ibid.*, 407.

<sup>328</sup> *Ibid.*

<sup>329</sup> *Ibid.*

sense, he was a kind of purist.<sup>330</sup> Accordingly, he explains the actual problems of the Empire with steering away from Islam not with the problem of modernization of the state.

Ali Suavi associated the idea of progress with the recovery (development) of the Empire. He uses the words progress, civilization, and development in the same meaning. He explains the actual problems of the Empire and “backwardness” of Islamic world with steering away from arts and sciences.<sup>331</sup> According to him, welfare comes from arts; arts are acquired with sciences; sciences are acquired with learning and research; learning and research can be realized in an environment of confidence; environment of confidence is provided by well administration; well administration is only possible with being fair; justice is ensured through remaining loyal to *sharia*; respecting law means the dutifulness of administrators; reminiscence of dutifulness of administrators are the people defending their legal rights.<sup>332</sup> As can be seen, the justice in terms of traditional Islamic doctrine is the primary concern of Suavi. He attempted to blend certain Western concepts and Islamic doctrines; however, his solution for the problems of the state is going back to the so-called ideal type of state in Islam. In this sense, he is much closer to Islamic doctrines than modern political thoughts. The only thing having its roots in Western thought in his ideas is the legal rights of people. For the progress of the state, they have to be powerful both materially and morally; hence, he offers reform in traditional educational institutions (*medrese*). The new curriculum of *medreses* must consist of modern and religious sciences. In order to legitimate learning modern natural sciences, he claims that there is no relation between Ancient Greek sciences, which are prohibited in Islam, and modern sciences.<sup>333</sup> But at the same time, he offers that the religious lessons are taught in conjunction with Western sciences in the last level of education in *medrese*, thus it can be achieved to prevent the perversion of the West.<sup>334</sup> What he was calling the perversion is materialism from which they had to stay away; as a matter of fact, according to him, enlightenment philosophers, sooner or later, accepted the existence of the creator.<sup>335</sup> Apart from these, he offers the simplification of language to disseminate general education. He also suggests that writing style of the letters is need of a reform in order to easily publish printed books

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<sup>330</sup> *Ibid.*, 414.

<sup>331</sup> Hüseyin Çelik, *op. cit.*, 668.

<sup>332</sup> *Ibid.*,

<sup>333</sup> Şerif Mardin, *op. cit.*, 409.

<sup>334</sup> Hüseyin Çelik, *op. cit.*, 666.

<sup>335</sup> Şerif Mardin, *op. cit.*, 407.



and to provide standardization.<sup>336</sup>

Many Ottoman historians consider his encyclopaedic journal, *Kamusu'l-ulumi ve'l-maarif* (Dictionary of Sciences and Education) which was published in five volumes supplementary to Suavi's journal, *Ulum*, logged between the dates July 1, 1870 and August 31, 1870 in Paris, as the first modern encyclopaedia.<sup>337</sup> As a matter of fact, it was a short-lived and failed project. There are various essays on randomly selected topics, arranged alphabetically and written superficially.<sup>338</sup> It was not so much different from the former compilations, to the extent that its content is composed of some information received from the West.

Suavi writes his essays regarding to arts and sciences not only in *Kamusu'l-ulumi ve'l-maarif* but in several journals. In several essays published in the journal *Muhbir*, he claims that, human's propensity to science is an inherent thing as being human is only possible with sciences and the purpose of creation of human probably is for the science.<sup>339</sup> In his another essay, he writes that, Taşköprülüzade's classification of knowledge is reasonable.<sup>340</sup> Yet in another essay, he classifies sciences as related to body, and related to soul.<sup>341</sup> Again in another one, he divides knowledge as arts and sciences and then, classifies them as "need-to-know sciences for students", and "need-to-know sciences for state". He claims that students has to know calculation, geometry, geography, history, and painting, as the state has to know economy-politics, military, diplomacy, military engineering, gunnery, metallurgy, chemistry, medicine, agriculture, natural history, marine science, translation.<sup>342</sup> As one can clearly see, Suavi had no idea about modern classifications of knowledge since he found Taşköprülüzade's classification reasonable. On the other hand, he, his own way, practically counts what is necessary to be known in his day. Şerif Mardin puts forward that the historical romanticism of the 19<sup>th</sup> century and encyclopaedism of the 18<sup>th</sup> century came together in the mind of Ali Suavi.<sup>343</sup> Indeed, he romantically wrote something about the "contributions of Turks" to the civilization by

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<sup>336</sup> For his ideas about language, see İsmail Doğan, *op. cit.*, 300-305.

<sup>337</sup> Ayhan Aykut, *op. cit.*, 55. Hüseyin Çelik, *op. cit.*, 544-545. İsmail Doğan, *op. cit.*, 271. Nuri Akbayar, *op. cit.*, 221. Zafer Toprak, *op. cit.*, 15.

<sup>338</sup> For the list of the articles, see İsmail Doğan, *op. cit.*, 272-273.

<sup>339</sup> *Ibid.*, 297-298.

<sup>340</sup> *Ibid.*, 299.

<sup>341</sup> Hüseyin Çelik, *op. cit.*, 658.

<sup>342</sup> İsmail Doğan, *op. cit.*, 299.

<sup>343</sup> Şerif Mardin, *op. cit.*, 280.

referring to Arthur Lumley Davis, and J. S. Bailly.<sup>344</sup> In a similar vein, he romanticizes former Islamic scholars' contributions to sciences and claims that the West owes the science to Islam and honest Europeans of that day accepted this reality.<sup>345</sup> In between two of these characteristics, Islamic romanticism of Suavi is predominant as he emphasizes persistently on the superiority of Islam.

On the other hand, there is nothing to do with encyclopaedism in what Ali Suavi did. His articles in *Ulum* and its supplement, *Kamusu'l-ulum ve'l-maarif*, give the impression of compilations of what he just randomly could find as sources. In the article of "Astronomy" he gives information about new discoveries in this field; in the article of "Economy" he attempts to analyze the origin of the world by referring to Katip Çelebi's *Keşfüz-Zunun* and in the article of Anatomy, he mentions old-fashioned medical theories.<sup>346</sup> Suavi was an educated man that transferred information from the West, sometimes in line with the "practical needs" of the state, and an unelaborated compiler although he did not act only as a compiler but he also pretended that he was an erudite figure who knew everything.

### **g. Encyclopaedia or *Muhitü'l-Maarif***

In 1898, in the journal *İkdam*, Emrullah Efendi wrote serial essays named "Ansiklopedi yahud Muhitü'l-maarif" (*Encyclopaedia or Muhitü'l-Maarif*) in which he suggests to use the Arabic compound words, *muhitü'l-maarif*, as the Turkish equivalent of encyclopaedia. Emrullah Efendi is a good example of defensive modernist figures in the Empire who was in favor of Westernization with adherence to Ottoman/Islamic tradition. He was trying to find words in Ottoman Turkish for modern philosophical and scientific terms. Since the language of science was Arabic, they had to find Arabic equivalents; in this way, they could receive Western science and also could maintain their own tradition.<sup>347</sup> *Muhitü'l-maarif* is a compound word meaning "circle (muhit) of learning (maarif)". It seems that he knows the etymology of the word encyclopaedia. After his suggestion, the word *muhit* was

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<sup>344</sup> *Ibid.*, 279-280.

<sup>345</sup> See Hüseyin Çelik, *op. cit.*, 667.

<sup>346</sup> For these articles, see İsmail Doğan, *op. cit.*, 289.

<sup>347</sup> For examples of his word suggestions, see İsmail Kara, "Modern Türk Felsefesi Tarihinde Öncü bir İsim Emrullah Efendi ve İlm-i Hikmet Dersleri," *Kutadgubilig Felsefe Araştırmaları Dergisi* 8, (2005): 93-123.

used in titles of some compilations in the meaning of encyclopaedia between the years 1900-1913.<sup>348</sup> However, the word was short-lived, in 1927 the compilation which titled as encyclopaedia was published under the name of *Çocuk Ansiklopedisi* (Children's Encyclopaedia).<sup>349</sup> The reason of the short-life of the word, *muhitü'l-maarif*, can be explained with its anachronism. Indeed, Arabic was no longer the language of science in that period yet Emrullah Efendi still preferred to use this word because of his political ideology.

Emrullah Efendi also wrote an encyclopaedia named, unsurprisingly, as *Muhitü'l-maarif* (1900) which was planned as a comprehensive work but he could only publish the first volume. As a matter of fact, this is the general characteristic of this kind of projects in the Empire; no project could be completed due to economic insufficiency.

In the introduction of his encyclopaedia, he states that, he compiled this work to gather all terms of arts and sciences in alphabetical order in a dictionary.<sup>350</sup> Considering the articles written by him, it seems that, he compiled his work from randomly selected sources and wrote very much on relatively trivial issues such as for the article of “at” (horse) which was seventy-eight pages long.<sup>351</sup>

After the second constitutional period, he attempted again to compile an encyclopaedia and for this, he established a learned society named *Yeni Muhitü'l Maarif Cemiyeti* (Society of New Encyclopaedia). This time, he organized a team in the society to compile the encyclopaedia instead of compiling personally. They planned to publish thirty volumes, each volume to be one thousand pages. However, they only edited the former encyclopaedia of Emrullah Efendi, added several articles and re-published it in 1911 again under the name of *Yeni Muhitü'l Maarif*.<sup>352</sup> Then after two years, a group of intellectuals, Mehmed İzzet, Ali Reşad, Ali Seydi, L. Feuillet, attempted to compile an encyclopaedia under the name of *Musavver Muhitü'l-Maarif* (Illustrated Encyclopaedia). In its introduction, they state that the former attempts to compile an encyclopaedia failed because of lack of private printing companies, but they will complete their project anyway because they took all measures against any misfortune. However, once again, they could

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<sup>348</sup> In “Özege Kataloğu”, there are five works which starts with the word *muhit*, two among these are: “Muhit-i Fünun-ı Fotoğrafiye” (Circle of Photography Art), “Muhit-i Fünun-ı Tıbbiye” (Circle of Medicine). See M. Seyfettin Özege, *Eski Harflerle Basılmış Türkçe Eserler Kataloğu* (İstanbul, Vol. 3 1973), 1200.

<sup>349</sup> For further information about *Çocuk Ansiklopedisi*, see Ayhan Aykut, *op. cit.*, 73.

<sup>350</sup> See İsmail Kara, *op. cit.*, 96.

<sup>351</sup> Ayhan Aykut, *op. cit.*, 66.

<sup>352</sup> *Ibid.*, 67.

publish only the first two volumes.<sup>353</sup> They indicate their purpose, like many of their predecessors, as to overcome the deficiency of not having an encyclopaedia in their country and in their language.

## CONCLUSION

In ancient times there was no encyclopaedia as a genre of compilation. Pliny, and the other so-called encyclopaedists of that age, Cato, Varro, and Celsus, did not write in the same manner or genre; they only compiled some information regarding various fields in their era in a very loose manner. Logic of their classifications is hard to understand for a modern reader. Pliny the Elder, for example, sorts animals according to their size and nobility. This resembles, in some ways, to Borges' classification of animals in the fictional Chinese encyclopaedia in his work, "The Analytical Language of John Wilkins".

On the other hand, there is no evidence with regard to the compound usage of the words, *enkyklios* and *paedia*. The well-accepted meaning of *enkyklios paedia* in ancient times was general education and the content of this general education varies upon period and philosophers' viewpoint. Some historians attribute the first usage of the compound word to Quintilian, however, the editors of Quintilian in the 15<sup>th</sup> and 16<sup>th</sup> centuries, as stated above, neologise the word by referring to contemporary discussions in their era.

In the Middle Ages, the source of knowledge was God, to this respect, knowledge was only a morphological problem, not an epistemological one. Science was a tool providing one to understand two books of the God, the nature and the Bible, thereby serves to come close to God and to secure the heaven. Men of Middle Ages did not invent new things, instead, they only collected, arranged and transferred knowledge.

In early stages of the Middle Ages, educators and compilers proposed a number of different classifications of knowledge.<sup>354</sup> The concept of seven liberal arts as *trivium* (grammar, logic, rhetoric), and *quadrivium* (arithmetic, geometry, music, astronomy), for

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<sup>353</sup> *Ibid.*, 71.

<sup>354</sup> See Ann Blair, "Organizations of Knowledge," in *The Cambridge Companion to Renaissance Philosophy*, ed. James Hankins (Cambridge University Press, 2007), 287-303.

example, was broadly and commonly used by Martinus Capella; and after adoption of the concept by Cassiodorus and usage thereof by Isidore of Seville, it became very influential among Christians.<sup>355</sup> Seven liberal arts formed, substantially, the curriculum of general education. In the late medieval period, seven liberal arts were associated with seven ages of man which was conceptualized as “tree of wisdom” by Raymond Lulle and was used in variations by different authors. The 13<sup>th</sup> century onwards, Aristotelian division of sciences into theoretical and practical became influential on “tree of wisdom”.<sup>356</sup>

The structure of encyclopaedic works was based on Christian doctrines. The hexameral scheme based on six days creation was very common or some compilations with respect to five wounds of the Christ were arranged.

There were some compilation genres such as *speculum*, *de rerum naturis*, *institutiones*, *etymologiae*, *summa*, *summa brevis*, *compilare*, *compilatio*, *compendium*. Although they were named under the same title, their content was variable. Compilations were seen as the assistant of memory in the Middle Ages. Memory was the most valuable faculty of human mind rather than reason. Thomas Aquinas, for example, was praised for his great memory rather than his power of reasoning.

In the Renaissance period, there was not a radical change in the classifications of knowledge which were, substantially, inherited from the Middle Ages.<sup>357</sup>

In 1559, the word, *encyclopaedia*, was firstly used in a compilation, titled *Encyclopaedia, seu Orbis Disciplinarum, tam sacrum quam profanarum, Epistemon* (Encyclopaedia; or Knowledge of the World of Disciplines, Not Only Sacred but Profane) by Paul Scalich. In 1630, Johann Heinrich Alsted named his compilation as *Encyclopaedia, septem tomis distincta*. Both of the works had no difference from their predecessors. Alsted’s work, for example, was kind of a treatment of the Bible. They used the word *encyclopaedia* in different meanings; therefore the works was not the ancestors of the 18<sup>th</sup> century encyclopaedias. The word, in general, referred to a group of discipline, which was necessary for an educated man, but not to a single work, by the 18<sup>th</sup> century.

In the 16<sup>th</sup> century, the commonplace books, gradually, became systematical practice which was also used by Ancients and by Medieval scholars in similar ways among scholars. Scholars recorded their notes from what they read, in systematical, alphabetical, or disordered manner to their own commonplace book to make easier remembering data

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<sup>355</sup> *Ibid.*, 289.

<sup>356</sup> For the recovery of the Greek philosophy, and the influence of arabic commentaries, see *ibid.*, 289.

<sup>357</sup> *Ibid.*, 290.

later: Assistant of memory and a useful practice for writing their works and for rhetoric. In the 17<sup>th</sup> century, there were some printed commonplace books such as Moréri's *Le Grand Dictionnaire Historique*. It was arranged like a commonplace book in alphabetical order, even in the preface of its English translation, it was called as "universal commonplace" book. Bayle used his own commonplace book while he was compiling his well-known dictionary. The 18<sup>th</sup> century encyclopaedists, such as Ephraim Chambers, use commonplace as a note-taking practice.

Francis Bacon classified the knowledge pursuant to three faculties of mind - memory, reason, imagination- a notion based on Galen's medical theory of three ventricles of brain. Old theory became a new one in the logic of Bacon's classification. This classification later was used, substantially, in the *Encyclopédie* of Diderot.

In the 17<sup>th</sup> century, getting expeditiously increased knowledge under control was one of the main problems of scholars. According to Leibniz, horrible mass of books and in parallel with the insurmountable disorder of knowledge were disgrace rather than an honour for authors.<sup>358</sup> Comenius, in 1641, attempted to abbreviate all the knowledge for people who were lost in sea of books. Comenius, in this sense, may be seen as the originator of the idea of compiling a general encyclopaedia.

On the other hand, a "Mechanicall Committee" was established in the 17<sup>th</sup> century within the body of Royal Society for the purpose of recording practical knowledge which could not be found in books. In the same vein, "Compagnie des Arts et Métiers" was founded in France. For both the societies, the main aim was preserving craft skills in written form. For the same purpose, the ancestors of general encyclopaedias emerged at the end of the 17<sup>th</sup> century as scientific dictionaries. In 1690, Furetière compiled his *Dictionnaire Universel des Arts et Sciences* which is the first general encyclopaedia. Furetière arranged his work alphabetically. It is a radical change in the history of scientific compilations because their structure arranged systematically in line with any classification of knowledge. John Harris published his *Lexicon Technicum: Or, A universal Dictionary of Arts and Sciences* in 1704 which is the first encyclopaedia in English. In 1728, Chambers, in the same vein, published *Cyclopaedia: Or, An Universal Dictionary of Arts and Sciences*. Unlike Furetière and Harris, he used a diagram, which was originated from Alsted's classification, showing the relations of disciplines with each other. Diderot's project, initially, was begun as the translation of Chambers's *Cyclopaedia*.

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<sup>358</sup> See Richard Yeo, *Encyclopaedic Visions... op. cit.*, 87.

Diderot's *Encyclopédie, ou Dictionnaire Raisoné des Sciences, des Arts et des Métiers* was the most large scaled encyclopaedia project in its era, approximately one hundred forty experts, jointly, worked in the project and the work was published in seventeen volumes. *Encyclopédie* does not include biographical, historical, religious, and political information; it only includes "universal" knowledge that is useful for all human being. Editors went to workshops and gathered information by interviewing experts to fix the terminology of each field. In the encyclopaedia, they used drawings and engravings for a better understanding. Their classification of knowledge and cross-references utilized in order to provide a continued discourse, are the features that distinguish *Encyclopédie* from a dictionary. *Encyclopédie* gives philosophical insight to general encyclopaedias. According to Diderot and d'Alembert, philosophers are the pioneers of the civilization. Philosophers, especially from the Renaissance to their time, paved the way for tremendous progress of humanity. They have a historical role that is shaping society, by this means, they could accelerate the progress. In the *Encyclopédie*, there are many articles regarding arts and crafts such as making bread or stuffing sausage. If everyone does their job as the best as they can, in other words, does their job "scientifically", the progress occurs faster. This is the reason of popularization of knowledge.

One can find in the encyclopaedia, mainly, the philosophy of science, current knowledge and information in the fields of science and technology rather than religious, political, or economical ideas of the contributors. "Discours Préliminaire" of d'Alembert, in this sense, is one the most influential manifestations of the French Enlightenment, which reflects intellectual revolution ongoing in the 18<sup>th</sup> century instead of justifying the political revolution.<sup>359</sup> In the *Encyclopédie*, Bacon's classification was used with a little modification. There is also a great influence of Locke's empiricist method and Descartes' rationalism, Newton is called as the perfect modern philosopher. d'Alembert considered the scientific method of Newton as the supreme method which combines the rationalism and empiricism -starting with sensual evidences, analyzing objects and problems and then arriving in laws and principles. d'Alembert, in "Discours Préliminaire", blended Descartes' rationalist spirit, Bacon's classification of knowledge, and empiricism of Locke and Newton.

As for the Islam, there were scholars who classified knowledge throughout the ages. Farabi's classification was one of the most influential ones was used even in the West by

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<sup>359</sup> Richard N. Schwab, *op. cit.*, XI.

some scholars.<sup>360</sup> Aristotelian division of science into theoretical and practical, like the West, had a great influence on classifications, as from very early periods in the East. In the Ottoman Empire, scholars used the classifications of former Islamic scholars with little differences, even in the 19<sup>th</sup> century, the period of intense Westernization, classifications based on Islamic doctrines and Aristotelian division were still used currently by the members of intelligentsia. Münif Paşa, for example, classified knowledge mainly as *nakli ilimler* (transmitted sciences), and *akli ilimler* (intellectual sciences) in the 19<sup>th</sup> century. Ali Suavi states that Taşköprülüzade's classification based on the classification of former Islamic scholars is reasonable. In this classification, Taşköprülüzade sees magic, phylactery, interpretation of dreams, and auspice as natural sciences. The only person who mentioned Bacon's classification of knowledge and some other classifications in the 19<sup>th</sup> century was Rıza Tevfik. He wrote an article, "classification des sciences", in his *Kamus-ı Felsefe* (1914) in which he gives detailed information about classification of knowledge both in Islam and the West by referring to several authors from previous centuries such as Comte, Spencer and Rousseau and also referring his own contemporaries such as Alexander Bain, and Karl Pearson.

Scientific texts in the Ottoman Empire were, mainly, the reproduction of former Islamic scholars' theories. European scholars' theories were accepted if they were not in contradiction with those of the Muslim scholars. On the other hand, from traditional period to the 19<sup>th</sup> and early 20<sup>th</sup> centuries, they preferred to transfer only technological developments rather than scientific knowledge.<sup>361</sup> These attitudes, mainly, related with the idea of superiority of Islam against the West and with the practical attitude of Ottomans. Even in the 19<sup>th</sup> century, they called the transferred knowledge from the West as "Fünun" which refers to technological information. There were only a few scholars who strived to transfer theoretical knowledge in various fields. Ishak Efendi (1774-1836) was one of them, who was the chief instructor of engineering school, used Lavoisier's theories in the field of chemistry.<sup>362</sup>

In the Ottoman Empire, scholars compiled works about various subjects from traditional period to the modern period. In the 19<sup>th</sup> century, compilations were the same as the compilations of traditional period with little differences. The only thing that changed

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<sup>360</sup> Ann Blair, *op. cit.*, 287-303.

<sup>361</sup> As an example see; Rhoads Murphey, "The Ottoman Attitude Towards the Adoption Western Technology: The Role of Efrenci Technicians in Civil and Military Applications," *Contributions à l'histoire économique et sociale de l'Empire Ottoman, Collection TURCICA*, III, Louvain (Belgique), (1983): 287-298.

<sup>362</sup> See Ekmeleddin İhsanoğlu, *Başhoca Ishak Efendi* (Kültür Bakanlığı Yayınları, 1989), 67-82.



was the content; authors compiled knowledge that was transferred from the West. The attempts to compile an encyclopaedic work in the 19<sup>th</sup> and early 20<sup>th</sup> centuries are short-lived and failed projects. One of the reasons is that in the Empire printing capitalism was not developed; therefore, there was no fundamental change in traditional patronage relations. Münif Paşa's learned society and his project of encyclopaedic journal was patronized by the state for a short time, Ali Suavi, likewise, was under the patronage of Mustafa Fazıl Paşa. Emrullah Efendi's *Muhitü-l Maarif* was failed because of economic insufficiency. In another periphery of modernity, in Russia, it seems that an alternative path was, partly, succeeded. Publication of the *Encyclopédie* caused a tremendous excitement among many educated Russians. From the beginning of the publication of the first volume in France, many Russian audiences followed its progress through *St. Petersburg News* of Russian Academy of Sciences and they could also buy the latest editions from bookstore of the Academy.<sup>363</sup> Some members of the Academy of Sciences translated some articles from the *Encyclopédie*. Some of the attempts were supported by Empress Catherine II. She, for example, supported a society's translation project with 5000 rubles annually from her personal funds. At the end of many translation attempts, a small part of *Encyclopédie* was translated into Russian. *Encyclopédie* was, in one way, a guide to technology; however, there was no translation of articles, and of plates on mechanic arts into Russian.<sup>364</sup> Despite the many enterprises, Russian translations failed to give a comprehensive picture of the *Encyclopédie*.<sup>365</sup> More comprehensive attempts came in the 19<sup>th</sup> and 20<sup>th</sup> centuries. In the Ottoman Empire, in the library of *Mühendishane-i Berri-i Humayun*, there was *Encyclopédie Methodique*, which is the extended edition of Diderot's *Encyclopédie* by the editor Panckoucke<sup>366</sup>, it was probably used by students for lectures but there is no information about with respect thereto.

Encyclopaedic journals, *Mecmua-i Fünun* and *Kamusu'l-ulum ve'l-maarif* were both unsystematical; there are articles on various subjects including current issues, though they give an impression of being randomly selected. Moreover, there are some essays, and stories related with the current problems of the state. The authors of *Mecmua-i Fünun* were generally bureaucrats. The author of *Kamusu'l-ulum ve'l-maarif* was a man who

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<sup>363</sup> Joseph H. Denny and Paul M. Mitchell, "Russian Translations of the *Encyclopédie*," in *Notable Encyclopaedias of the Late Eighteenth Century: Eleven Successors of the Encyclopédie*, ed. Frank A. Kafker (Oxford: The Voltaire Foundation, 1994), 335-386.

<sup>364</sup> *Ibid.*, 361.

<sup>365</sup> *Ibid.*, 368.

<sup>366</sup> Ekmeleddin İhsanoğlu, *op. cit.*, 20, 218.

attempted to write on everything, but not an expert of any field. The thing what they did in their encyclopaedic works was transmitting information about technological developments but not science. Münif Paşa perceived science as a purpose not as a tool, because of this he tried to bring love of the science to the heart of the people. Ali Suavi perceived science as the most necessary mean to save the state. The so-called encyclopaedists of Ottomans were people who were in favor of reform and progress. At this point, it is important to emphasize that, the term, progress (terakki), emerged in the political field in the Empire, yet it was not the subject of philosophical discussions. In the modern era, the idea of the end of the times converged into the idea of an open future.<sup>367</sup> According to this idea, humanity was progressing to the perfection. In the 17<sup>th</sup> century, Perrault held the belief that with passing of time, perfection would be attained.<sup>368</sup> On the other hand, he believed that, the era of Louis XIV was the summit of perfection, there would be nothing that the next generation would envy of.<sup>369</sup> Leibniz wrote that progress was irreversible.<sup>370</sup> In the 18<sup>th</sup> century, philosophers, such as Voltaire and Diderot, had optimistic expectations about the progress of humanity; however they, unlike Leibniz, were not the dogmatists of a linear progression.<sup>371</sup> Rather, they thought that there will be some interruptions in the progress but after these interruptions the progress of humanity would continue, and may be even faster than before. Diderot published his *Encyclopédie* to accelerate the general enlightenment; his encyclopaedia would save the sum of humanities knowledge.<sup>372</sup>

Among the so-called encyclopaedists of the Empire, the meaning of progress is redressing the falling Ottoman Empire by technology. In this sense, this attitude is similar to the idea of cyclical time rather than an open future. In the 19<sup>th</sup> century, August Comte's synthesis of "order and progress" influenced most of the Ottoman intelligentsia as a motto (as well as Brazilians where his positivism became a secular religion). The name of the political association of "Union and Progress" referred probably to the order and progress of Comte: Ahmet Rıza for example places this motto on the front page of the French version of Societies journal.<sup>373</sup> Comte, in his letter to Mustafa Reşit Paşa, offered a secular

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<sup>367</sup> Koselleck, Reinhart *İlerleme*, trans. Mustafa Özdemir (Ankara: Dost Kitabevi Yayınları, 2007), 49.

<sup>368</sup> Yılmaz, Levent, *op. cit.*, 30.

<sup>369</sup> Koselleck, Reinhart, *op. cit.*, 56.

<sup>370</sup> *Ibid.*, 53.

<sup>371</sup> Koselleck, Reinhart. *Kavramlar Tarihi: Politik ve Sosyal Dilin Semantiği ve Pragmatiği Üzerine Araştırmalar*, Trans. Atilla Dirim (İstanbul: İletişim Yayınları, 2009), 181.

<sup>372</sup> *Ibid.*, 18. And also see, Richard Yeo, *Encyclopaedic Visions... op. cit.*, 3.

<sup>373</sup> Murtaza Korlaelçi, "Pozitivist Düşüncenin İthali", in *Modern Türkiye'de Siyasi Düşünce* (İstanbul: İletişim Yayınları, 7<sup>th</sup> edition, Vol.1, 2006), 214-222.

substitute religion and invited him to be the agent of the new religion, positivism, in the East. In this way, he reduced the enlightenment to his utilitarian positivism.<sup>374</sup>

Some contributors of the *Encyclopédie* had an influence on several members of Ottoman intelligentsia, however it is important to emphasize that “the views of the individual contributors differed greatly, and they do not constitute a school.”<sup>375</sup> Berkes relates the visit of Macfarlane to the medical school. He was surprised to see at the library of school were many books by materialist authors; and especially, students were reading d’Holbach’s *Système de la Nature* which was considered as the manual of atheism by Macfarlane. d’Holbach had also a great influence on Beşir Fuat and Rıza Tevfik. Beşir Fuat praised d’Holbach as well as Diderot and d’Alembert, but he praised them for their materialistic view, not because of their encyclopaedia.<sup>376</sup>

Unity of the sciences was a conception associated with the intellectual progress in the Enlightenment.<sup>377</sup> Therefore, classification of knowledge according to a unique principle was one of the main topics of the 18<sup>th</sup> century encyclopaedists.<sup>378</sup> For them, the most important feature was attaining the unity of scientific discourse and the human reason should aim this objective thus the production of this unity should be the core of scientific inquiry.<sup>379</sup> The philosophy of science, and science itself, unlike the West, was not the concern of the so-called Ottoman encyclopaedists. Therefore, the perception of the correlation between science and technology was not probable. What they could only compile, at its best, was a solemn *quiproquo* of the idea of the encyclopaedia

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<sup>374</sup> For a criticism of Comtean approach, see Max Horkheimer and Theodor W. Adorno, *Dialectic of Enlightenment*, Trans. John Cumming (Verso, 1997), XII.

<sup>375</sup> J. B. Bury, *The Idea of Progress* (Macmillan, 1920), 165.

<sup>376</sup> See Murtaza Korlaelçi, *op. cit.*, 214-222.

<sup>377</sup> J. B. Bury, *op. cit.*, 164.

<sup>378</sup> See Max Horkheimer and Theodor W. Adorno, *op. cit.*, 81.

<sup>379</sup> *Ibid.*, 81-82.

FIGURE 1



FIGURE 2



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