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SHAMS AL-DĪN AL-FANĀRĪ AND ATHĪR AL-DĪN AL-'ABHARĪ, A LINK IN LOGIC BETWEEN OTTOMAN AND IRAN

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Introduction

Cultural and scientific bonds and relations among different countries and lands, unlike political relations which are subject to change and alteration, are generally deeper and more stable. Needless to say, these bonds are stronger when countries are in close proximity and have the same religion. In fact, religion is one of the social institutions which have a profound impact on the relations between countries and nations. Iran and Turkey are two neighboring countries with the same religion, with deep social and cultural bonds. Scientific and cultural exchanges between the two countries in the Islamic era were of enormous importance. The common areas with Iranian and Turkish features had a dynamic position in the history of Islam. Following the 4th and 5th centuries AH, the Islamic civilization started to flourish and scientific exchanges took place among Islamic lands. Many of the Muslim scholars travelled in search of knowledge to different countries and established master-pupil relationships with each other. Islamic culture and Arabic language, as the scientific language of the time, were widely accepted and thus provided a common ground which facilitated such exchanges. In the Ottoman era, the 9th AH century/15th century AD is of great importance in advancing sciences and knowledge in the Ottoman lands (Fazlioglu, 2005). At the beginning of this century, the Ottoman government established the position of *'ifta*, and paved the way for the presence of scholars in courts. The first person to be assigned to this position was Shams al-Dīn al-Fanārī (751-834/1350-1430) who was held in high regard by Sultan Yildirim Bayezid (Reign, 791-805/1389-1402).

Logic, which because of its intermediary nature was regarded as the key to sciences, has been of considerable importance in different fields of knowledge. It might seem that because of the strong bond between logic and philosophy, this importance was underlined only in the field of philosophy, however, its intermediary nature made it indispensable for all sciences; even the Asha'ri school of *kalam* (Muslim scholastic philosophy), which treated philosophy lightly, learned and taught logic diligently and tried to develop it. This was also the case with scholars of other fields of knowledge such as Shams al-Dīn al-Fanārī who was well versed in *fiqh* and gnosis. The present

article aims to examine the scientific bond among neighboring Muslim countries in the field of logic. This bond can be revealed through Shams al-Dīn al-Fanārī's commentary on one of Athīr al-Dīn al-'Abharī's book entitled *Isāghūjī*.

Athīr al-Dīn al-'Abharī

Mufazzal ibn 'Umar, known as Athīr al-Dīn al-'Abharī (c. d. 663 AH/1265 AD), was an Iranian philosopher, logician, astronomer and mathematician, born in Abhar, a city between Qazvin and Zanjan. Athīr al-Dīn al-'Abharī was one of Imam Muḥammad al-Ghazzālī's pupils. Because of the Mongol invasion to Iran, al-'Abharī moved to *Shām* and Asia Minor; in *Shām* he studies under Muḥyi al-Dīn Muḥammad ibn Sa'īd ibn Nādī (d. 651 AH) and in Asia Minor he was educated by Kamāl al- Dīn Abu al-Fatḥ Mousā ibn Younes (551-639/1156-1242), the great logician, astronomer and mathematician who was Khājeh Nasīr al-Dīn Tūsī's master as well. Athīr al-Dīn al-'Abharī was a contemporary of Khājeh Nasīr al-Dīn Tūsī (597-672/1201-1274) and had some correspondence with him (Movahhid, 1994, pp. 586- 587; cf.: Brockelmann, 1986, p. 98; Anawati, pp. 216-217).

Dabīrān Kātebī Qazvīnī (600-675/1203-1276) is one the famous pupils of Athīr al-Dīn al-'Abharī, who has written numerous works on mathematics, astronomy, *hikmat* (Islamic philosophy) and logic; one of Dabīrān's important logical works is a commentary on *Isāghūjī*. Among his other well-known pupils are 'Imād al-Dīn Zakaryyā Qazvīnī (600-682/1203-1283), the writer of *Athār al-Bilād* and *'Ajayib al-Makhlouqāt* and Ibn Khallekān (601-681/1204-1281), the author of *Wafiyyāt al-A'yān (*Movahhid, 1994, p. 587).

'Abharī had written numerous works in different fields of science. In logic and philosophy he wrote two important books. The first one is *Hidāyat al-Hikmat*, written in three parts: *logic*, *physics*, and *theology*. The section dealing with *hikmah* has attracted a lot of attention and several commentaries and glossaries have been written on it. Among the most famous scholars and philosophers who has done commentrary, is Mullā Ṣadrā (979-1050/1571-1640) (Ibid, p. 588; cf.: Brockelmann, 1986, p. 98; Hājī Khalīfeh, 1941, v. 2, pp. 2028- 2029). Mullā Ṣadrā's commentary on this book, entitled *Sharh al-Hidāyat*, has been among the essential books in philosophical education in Indo-Pakistan subcontinent, and several glosses and commentaries have been written upon it has been reprinted many times (Nasr, 1997, p. 47).

His second important book is on logic. In addition to some books such as *Kashf al-Haqayiq*, *Daqayiq al-Afkar* and *Tanzil al-Afkar*, al-'Abharī has written an important logical work named *Isāghūjī*. This book provides a summary of some important logical discussions, and it bears this name only because it starts with a section named *Isāghūjī*, which thus has given its name

to the whole book (Movahhid, 1994, p. 588; cf.: Brockelmann, 1986, pp. 98-99; Anawati, pp. 216-217). Numerous commentaries and glossaries have been written on this treatise (Hājī Khalīfeh, 1941, v. 1, pp. 206-208; cf.: Movahhid, 1994, p. 588; Brockelmann, 1986, pp. 98-99), the most well-known of which has written by:

1. Dabīrān Kātebī Qazvīnī (600-675/1204-1276)
2. Qutb al-Dīn Rāzī (d. 776/1375)
3. Taftāzani (d. 792/1390)
4. Mīr Sayyid Sharīf Jorjānī (d. 816/1456)
5. Hisam al-Dīn Hassan Kati (d. 760/1359)
6. Shams al-Dīn al-Fanārī (d. 834/1430)
7. Zeyn al-Dīn Zakarya ibn Mohammad Ansarī (d. 926/1520)
8. Mahmoud bin Hafiz al-Maghnīsī (d. 1222/1807); entitled *Moghnī al-Tullāb*, which has been reprinted repeatedly in India and Istanbul.

Abulfath Shirāzī translated *Isāghūjī* into Farsi, which has been repeatedly reprinted under the title *Mir'at al-Mantiq* (Movahhid, 1994, p. 588). It has been also translated into Latin by P. Thomas Novariensis and published in Rome in 1625. Its English translation was provided by E. Calverly and published in *D. B. Macdonald Memorial Volume* in 1932. *Isāghūjī*, has been published widely, along with commentaries, glossaries and appendixes, in India, Istanbul and Cairo (Anawati, pp. 216-217).

Shams al-Dīn al-Fanārī

Mohammed ibn Hamza ibn Rumi, nicknamed Shams al-Dīn and known as al-Fanārī, is one of the famous Ottoman scholars, of Hanafi School, highly knowledgeable about literature and different fields of intellectual and transmitted sciences. He is known as Ibn Fanārī and Allameh Fanārī as well. The word Fanārī derives from Fanār (fener), a quarter of Constantinople (modern Istanbul) (Mordtmann, 1991, p. 879); this Turkish word is from the French "phare" and the Greek "pharos" which mean "lighthouse" (Dehkhodā, 1341, v. 37, p. 323; Moein, 1382, p. 713). He is the founder of a prominent family of Ottoman scholars and jurists, known as Fenārī-zāde (Walsh, 1991, p. 879). According to Tashkoprizadeh (968 AH), Fanārī belonged to the fourth class of the Ottoman scholars. This class belongs to the era of Sultan Bayezid Khān (Reign, 791-805/1389-1402), son of Sultan Murad Ghazi, known as Yildirim Bayezid (Tashkoprizade, 1975, p. 16). Nicholas Rescher considers him among the important Iranian logicians, but there is no evidence to support his claim (Rescher, 1964, p. 225).

Shams al-Dīn al-Fanārī was born in 751/1350-1, in *Bursa*. He started his education at *Azniq* School, one of the earliest schools of the Ottoman Empire, as a pupil of 'Alāi' al-Dīn al-'Aswad (d. 800/1397). 'Alāi' al-Dīn al-

'Aswad, the commentator on *al-Moghani fi al-Osoul* and *al-Waqayah*, came to Iran after the Timurid era to study sciences and different fields of knowledge. In the era of Sultan Ourkhan (c. 727-761 AH), he went back to Ottoman and was chosen as the head of *Azniq*; al-'Aswad was one of the first scholars to create the scientific link between al-Fanārī and Iran. Shams al-Dīn al-Fanārī went to *Qarāmān* in southern Anatolia to study under Jamāl al-Dīn 'Āqsarāeī (d. 770 AH) at *Selselah* School. Here he became acquainted with Mīr Sayyid Sharīf Jorjānī (740-816 AH). Jorjānī who had moved to *Qarāmān* out of enthusiasm to study under Jamāl al-Dīn 'Āqsarāeī, moved to Egypt with Shams al-Dīn al-Fanārī after Aqsarayi's death (Tashkoprizade, 1975, p. 17; cf.: Mirzaei, 2010, p. 709). This acquaintance is another bond between al-Fanārī and Iran. Jorjānī was a prominent Iranian scholar and logician who lived in Shīrāz and has written some important logical books: a commentary on his master Qutb al-Dīn Rāzī's *Tahrir al-Qwa'id al-Mantiqiyyah*, which is a commentary on Dabīrān Kātebī Qazvīnī's *Shamsiyah Najm al-Dīn, al-Kubra fi al-Mantiq* and a commentary on al-'Abharī's *Isāghūjī* (Mirzaei, 2010, pp. 711-713). Probably the same acquaintance paved the way for al-Fanārī's acquaintance with logic and made him write a commentary on the book of the great logician al-'Abharī. However, more comments cannot be made about the acquaintance between Jorjānī and al-Fanārī, and the master-pupil relationship between them can be suggested only as a possibility (Rescher, 1964, p. 222).

Shams al-Dīn al-Fanārī, along with Mīr Sayyid Sharīf Jorjānī, studied under Sheikh Akmal al-Dīn Muhammad Babarti (d. 876/1384) in Egypt and then returned to Ottoman. Later, al-Fanārī accepted the position of Judge (*Qāḍī*) in Bursa. This position has been held by his family after him. Sultan Yildirim Bayezid held him in very high regard. The Ottoman government, which had started to involve scholars in affairs of the state, to secure its legitimacy, established the position of *'ifta* (*supreme mufti*) or *sheikh al-Islam* or *hujat al-Islam*. The first person to be assigned to this position by Sultan Bayezid Yidirim was Shams al-Dīn al-Fanārī (Tashkoprizade, 1975, p. 17; Walsh, 1991, p. 879). In the era of Sultan Yildirim Bayezid (Reign, 791-805/1389-1402) and Suleyman Qanuni (Reign 926-974/1520-1567), fifteen jurists (experts in fiqh) were selected as "mufti of the capital", "mufti of the Ottoman Empire" or "hujat al-Islam" (Ansarimoqaddam, 1381 AH Solar, p. 42). Sultan's high regard for al-Fanārī made him sometimes be referred to as "minister"; this shows his importance in the affairs of the state, and also as a *mufti*. Also, he was a master at *Manāstir* School, teaching sciences (Tashkoprizade, 1975, p. 18; Walsh, 1991, p, 879). His high status was not limited to Ottoman, and when he went on pilgrimage to Mecca (hajj) the king of Egypt invited him to his country, warmly received him and treated him as

superior to other scholars. In Egypt many scholars and scientists gathered around him and engaged in scientific discussions.

Toward the end of his life, Shams al-Dīn al-Fanārī went blind. It is told he regained his eyesight and in gratitude for that once again he went on pilgrimage to Mecca through Intakiyyah in 833 AH. He died in 834 at the age of 74 and was buried in the courtyard of his mosque in Bursa (Tashkoprizade, 1975, pp. 17-18; Walsh, 1991, p. 879).

He is believed to have written over twenty works, the most important of which are as follows (Tashkoprizade, 1975, p. 18; Modarres Tabrizi, 1374, pp. 354-355):

1. *Misbāh al-Uns bayn al-Ma`qul va al-Mashhud fi Sharh Miftāh Ghayb al-Jam' va al-Wūjūd.* This book is a commentary on *Miftāh al-Ghayb* by Ṣadr al-Dīn Qūnawī (d. 673/1274) the famous Gnostic and pupil of Muḥyi al-Dīn ibn al-'Arabī (560-638/1165-1240). Al-Fanārī learned about this book through his father. His father, Hamzat al-Fanārī, who taught him *Miftah al-Gheyb*, was a pupil of Ṣadr al-Dīn Qūnawī. As a very important commentary, this book attracted the attention of most scholars and gnostics of the time;
2. *Al-Fawaeid al-Fanariyah.* This book, which is the subject of the present article, is a commentary on al-'Abharī's *Isāghūjī*, in logic, to which some refer to as "Sharh Rislah Athiriyah fi al-Mizan";
3. *Fosul al-Bada'i al-Osul al-Sharayi'*, in the principles of *fiqh*;
4. *`Awisat al-Afkar fi Ikhtiar Ulu al-Absar*, discussions on intellectual sciences;
5. *Onmuzaj al-Ulum*, which is said to have been written by his son Mohammad Shah;
6. *Tafisir al-Fatihat*, a commentary on the Qur'an.

Structural Evolution in Logic in the Islamic Era

In his *Logic*, Aristotle (384-322 BC) developed rules and laws for logic which are discussed dispersedly in his different treatises. At the end of the ancient Greek era, i.e. the Byzantine era, Aristotle's logical works were collected in a volume entitled *Organon,* including 6 treatises: The *Categories*, the *De Interpretatione* (on proposition and judgment), the *Prior Analytics* (two books on inference), the *Posterior Analytics* (two books on proof, knowledge of principles, etc.), the *Topics* (eight books on dialectic or probable proof), the Sophistical Fallacies. The Alexandrian Neo-Platonists in the fifth century AD, contrary to Alexander of Aphrodisias' belief, considered *Rhetoric* and *Poetics* logical and added them to this collection. Then Porphyry, the Neo-Platonic commentator, who was a follower of Aristotle and pupil of Plotinus, collected the discussions in *al-Hodud va al-Burhan* independently

under the title *Isāghūjī* as a prelude *to Aristotle's Logic*. Muslims added this prelude to the 8-volume collection of Organon and considered 9 sections for logic; thus Aristotle's logic became popular among Muslims as a 9-part work (Gharāmalekī, 1373, p. 38; Copleston, 1993, p. 271; Inati, 2001, v. 2, p. 817). This construction of Aristotelian logic resulted in the following organization (Table:1) in Islamic logic (Rescher, 1963, pp. 13-14):

Table: 1

Branch	**Arabic Name**	**Basic Text Isagoge**
(1) "Introduction"	al-isaghuji	(Porphyry)
(2) Categories	al-maqulat	Categoriae
(3) Hermeneutics	al-ibarah	De Interpretation
(4) Analytics	al-qiyas	Analytica Priora
(5) Apodictics	al-burhan	Analytica Posteriora
(6) Topics	al-jadal	Topica
(7) Sophistics	al-mughalitah (al-safsatah)	Sophistici Elenchi
(8) Rhetoric	al-khitabah	Rhetorica
(9) Poetics	al-shi`r	Poetica

At the beginning Islamic logicians take this construction and write on logic based on it. These logicians, according to Nicholas Rescher, are known as the "School of Baghdad" and during 3rd/9th-4th/10th century, Islamic Logic was a monopoly of this school. The most prominent logician, Abu Nasr al-Fārābī (257-339/870-950), can be regarded as the representative of this school and his masterly commentary on the logical works of Aristotle is one of the achievements of this school (Ibid, pp. 14-15).

But logic in the Islamic era is not limited to this and continues its life with a structural evolution. This evolution was brought about by Ibn Sīnā (370-428/980-1037). Therefore, two currents can be considered in the evolution of logic in the Islamic era which turned into rivals in the 7th century AH/13th century AD. Nicholas Rescher refers to this evolution as the Eastern School and brings it up as against the Western School (Ibid, p. 17). According to him, Ibn Sīnā refused to imitate Aristotle and brought about a fundamental transformation in logic and changed it dramatically in the Islamic culture (Ibid, pp. 16-18). In fact, by doing this, he indigenized logic, which was a foreign science, and made it compatible with Eastern and Islamic culture to enable it to remain in the Eastern and Islamic atmosphere. Furthermore, this xenophobia was continued by Al-Ghazzālī's "Qura'nic logic" as against Greek logic and Suhrawardī's "illuminationist logic" against Aristotelian logic ('Abūlhasanī, 1388 AH Solar, p. 56).

Rescher's explanation on the historical evolution of logic on the basis of the distinction between the Eastern and Western schools are inadequate; while his explanation is based on a relative and unsteady criterion to understand the logical identity of works, it shows numerous contradictions

which disqualify it as a means to explain all the differences. This explanation cannot appropriately suggest why Abu al-'Abbas Lukari, Nassir al-Dīn Tūsī and Ghiāth al-Dīn Dashtakī followed the model of the Western school. Therefore, a more reasonable explanation should be provided (Ibid, p. 59).

Another explanation can be discussed here which is based on the distinction between nine-part logical writing and two-part logical writing. In this explanation, like in Rescher's, the turning point is Ibn Sīnā, however, the analysis is different. This structural evolution has a background among the historians of logic (Gharāmalekī, 1388 AH Solar, pp. 42- 43). Ibn Khaldūn speaks about this evolution and attributes it to later scholars (*Muta'akheran*); according to him, this evolution was started by Imām Fakhr al-Dīn Rāzī (544-606/1149-1209) and was continued by logicians such as Afzal al-Dīn Khūnjī. Among the transformations which he believes to have occurred are the changes in the attitude toward logic and its being considered as independent. Thus, the Five Concepts are regarded as the outcome of logic and the topics of definition and description are transferred from the books on argument to logic; also the topic of categories is omitted for logic because its discussion in logic is accidental. In this evolution, statements, propositions and syllogism are homogenized. Some other logicians speak about a different style in the structure and arrangement of discussions by late scholars (Ibn Khaldūn, 1410 AH, pp. 491- 492).

Some scholars have discussed the two-part structure of logic and the transformation in logic in their works. Vattier, the translator of Logic of *al-Nejat* of Ibn Sīnā, into Latin in the 17th century, has discussed this evolution, and Mohammad Taqī Dāneshpajooh has repeatedly referred to it is his comments on logical works (Gharāmalekī, 1373 AH Solar, p. 39; 1388 AH Solar, pp. 42-43). However, Dr. Ahad Farāmarz Gharāmaleki, professor at University of Tehran, has presented a coherent model and a credible explanation in the framework of a theory ('Abūlhasanī, 1388 AH Solar, pp. 55-56). According to him, this transformation was not out of xenophobia, neither was it meant as an Eastern school against the Western school, as Rescher maintains; but the reason was that the new structural model in the works of Ibn Sīnā was more efficacious (ibid, p. 58).

According to Dr. Gharāmalekī, the evolution in the works of Ibn Sīnā occurred in several stages: the omission of categories, the inversion of the subject of expressions (words), the inversion of the subject of autonomy, the inversion of the subject of definition and the inversion of the subject of conversion (1373 AH Solar, pp. 40-41; in: Mullā Sadrā, 1378, pp. nine-ten; 1388 AH Solar, pp. 57-58). This evolution occurred gradually and in the later works of Ibn Sīnā, such as in *al-Ishārāt*, they come together and create new a structure of logical writing called "two-part logical writing". This logical

writing is different from the nine-part logical writing, seen the works of scholars before Ibn Sīnā, such as in al-Fārābi and the earlier works of Ibn Sīnā; the two-part logical writing turned into a model which the later scholars followed (Gharāmalekī, 1388 AH Solar, pp. 56-57; Seven-Fifteen; 1373 AH Solar, pp. 39-41; 1378 AH Solar, pp. nine-ten).

However, the later scholars are affected differently by Ibn Sīnā's works. Some, like Bahmanyar, Lukarī, Tūsī and Ghiāth al-Dīn Dashtakī, followed the earlier works of Ibn Sīnā, such as *al-Shifā*, and the nine-part logical writing. Some others, such as Ibn Sahalān, in his *Basā'ir* and *Tabsirah*, and Shahābi, in *Rahbar-e Kherad*, followed the mid works of Ibn Sīnā, which are eclectic and mixed. However, many logicians followed the new model in *al-Ishārāt*, and because of its efficacy they tried to complete and promote it; al-Ghazzālī, Fakhr al-Dīn Rāzī, Sheikh Ishrāq, al-'Abharī, Ormavey, Kātebī Qazvīnī, Allāmeh Hellī, Qutb al-Dīn Rāzī and Taftāzanī are among these scholars; Shams al-Dīn al-Fanārī, like al-'Abharī, belongs to the last group. Therefore, there are four models of logical writing: nine-part logical writing among the first group, eclectic and mixed logical writings among the second group and two-part logical writing among the third group. Since nine-part and two-part logical writings, apart from their structure, are different from each other in their viewpoint, they can be regarded as two different logical schools in the Islamic era (Gharāmalekī, 1388 AH Solar, pp. 56-57).

Al-'Abharī's *Isāghūjī* and Al-Fanārī's Commentary on *Isāghūjī*

As discussed earlier, in his logical works, including *Isāghūjī*, al-'Abharī followed the two-part logical writing. Shams al-Dīn al-Fanārī followed the same school in his commentary on *Isāghūjī*. Al-Fanārī was well aware of the difference in the viewpoints of the earlier and later logicians on logical issues, and has repeatedly referred to it in his book. However, his attention is not limited to these differences, and in the introduction to his book, he outlines the characteristics of the structure of al-'Abharī's book using the two-part logical writing (Fanārī, 2012, pp. 12-16; cf.: 'Abharī, 2003, p.99). In fact, while al-'Abharī does not write an introduction to his short work, al-Fanārī write an introduction to his commentary which reveals al-'Abharī's following the structure presented in *al-Isharat* and the two-part logical writing.

In the beginning of his commentary, al-Fanārī, following the example of previous scholars, deals with some important points about the Eight Principles and the new methodology of logic, i.e. the definition of logic, its aim and its structure. According to al-Fanārī, logic can be defined and introduced from two aspects: its subject and its aim. In terms of its subject, logic has two parts: conception and judgment. And since any science discusses the essential property of its subject, logic can be defined as "the science which

discusses the essential properties of conceptions and judgments" (Fanārī, 2012, p. 13).

He defines logic in terms of aim as well. Here the purpose of logic is considered to be recognizing the validity of thought, and logic is defined as the science "through which correct thinking is distinguished from incorrect thinking". He deals with the types of thinking, categorizes logical topics and outlines the structure of logic. In fact, like al-Ghazzālī, he believes that the reason for logic's being two-parted lies in its purpose (ibid, pp. 14-15; cf.: Gharāmalekī, 1373 AH Solar, p. 39).

Thinking in logic is defined as "sorting out prior knowledge in order to find out the unknown" (Gharāmalekī, 1378 AH Solar, p. 17). In this definition, thinking is associated with the unknown. Depending on the type of the unknown, thinking is divided into two types: thinking to acquire the unknown conception and thinking to acquire the unknown judgment. Thus logic is divided into two types: one type is related to the conceptions and the other type is related to judgments. The conceptions and judgments have their own principles and objectives, based on which four topics can be addressed in logic (Fanārī, 2012, p. 15): Principles of conceptions, objectives of conceptions, principles of judgments and objectives of judgments; all of these can be discussed under the following discourses (Table: 2): The Five predicables (universals), explanatory phrase (definition), propositions (and their properties) and syllogism (proof);

Table: 2

Division	Discourse
principles of conceptions	five predicables (universals)
objectives of conceptions	explanatory phrase (definition)
principles of judgments	propositions (and their properties)
objectives of judgments	syllogism (proof)

Furthermore, syllogism, regarding matter, is divided into five types called the Five Arts: demonstration, dialectics, rhetoric, poetry and fallacy (sophistry). Fallacy is the last topic of logic, and al-'Abharī ends his treatise with the same topic ('Abharī, 2003, p. 104).

Altogether, these topics comprise nine divisions in logic; it should be noted that these nine divisions are essentially different from the nine-part logical writing and should not be confused. In this structure the topic of expressions (words) is missing. Although some of the later scholars have included the topic of expressions (words) in logic and thus considering ten

topics in logic, believe that this is not a topic in logic but an introduction to the discussions of *Isāghūjī* in which the Five Arts and the first topic from the logical topics are discussed. Thus, al-'Abharī starts his book with the topics of expressions (words) (Fanārī, 2012, pp. 15-16).

Following the pattern of logical writing, a structural evolution occurs in the status of expressions (words). The topic of expressions (words) in nine-part logical writing is very brief, and also it is the introduction to *al-ibārah* (*propositions*). But in two-part logical writing, it comes at the beginning of the topic of logic. This reveals the importance of language in this structure. In fact, since language reflects mind, the person who is thinking, and is in the domain of concepts, uses expressions (words), and therefore discussion about it should be at the beginning of logic (Gharāmalekī, 1373 AH Solar, p. 40).

This ten-part division of logical topics in Ibn Bājah's (d. 533) *Ta'liqat*, on al-Fārābi's logic, is outlined in this way: "And its (Logic) ten chapters are: the first: topic of expressions (words) ... the second: *Isāghūjī* ... the third: definition (had) ... the fourth: interpretation (propositions) ... the fifth: syllogism ... and the remaining five are the famous Five Arts" (Ibn Bājah, in: Fārābī, 1408, p. 434).

In this two-part structure, the topic of categories is omitted, which is one of Ibn Sīnā's innovations in *al-Ishārāt*. Another difference between this structure and the nine-part structure is that in this structure definition (had) and description is included in framework of explanatory phrase (definition), and furthermore, is considered to be prior to topics of proposition and syllogism from the chapter of proof. Also, the topic of "conversion" has been omitted from the topic of syllogism and has been put before it; and the topic of "opposition", like the conversion, has been considered among the properties of propositions and preliminaries of syllogism. An important point in this structure is the independence given to the Five Arts. As al-Fanārī has highlighted, the Five Arts reveal a material attitude toward logical topics and therefore the material logic is distinguished from the formal logic. Paying attention to material logic and discussing it along with formal logic, are of great importance and expand it beyond the confines of formal logic (Gharāmalekī, 1373 AH Solar, pp. 42-43; 1388 AH Solar, pp. 46-58).

Conclusion

Shams al-Dīn al-Fanārī, who lived in the 9th AH century/15th century AD, the era of scientific flourishing in the Ottoman Empire, played a substantial role in the development of sciences. By conferring the position of *mufti* ('ifta) on him, Sultan Yildirim Bayezid (Reign, 791-805/1389-1402) paves the way for the entrance of scholars into the court. Shams al-Dīn al-Fanārī used his scientific status to lay the foundations for the establishment of

a strong bond among Islamic countries, including Iran and Ottoman, and facilitated scientific exchanges in the Islamic world.

Logic, regarded as the key to intellectual and transmitted (traditional) sciences, was of great importance to al-Fanārī, who was well versed in different fields of science. Through his acquaintance with logicians such as Mīr Sayyid Sharīf Jorjānī, al-Fanārī realized the importance of al-'Abharī's *Isāghūjī* in teaching logic and thus wrote an illuminating commentary on it.

In the Islamic era, Ibn Sīnā made a structural evolution in logic; an important change was the establishment of "two-part logical writing". This structure, which played a great part in explaining the status of logic and made it more efficacious, attracted the attention of many, and a huge number of logicians, including al-'Abharī followed it. Because of the brevity of *Isāghūjī*, this structure is not explained by al-'Abharī in his book, however, in his commentary on *Isāghūjī*, Shams al-Dīn al-Fanārī deals with it. Al-Fanārī discusses the important points about "the Eight CarDīnal Questions" or the methodology of logic in the beginning of his book and presents the structural scheme of logic using the definition of logic and its aim (ultimate object). On the basis of the inclusion of conception and judgment in Logic, al-Fanārī considers a two-part structure for logic: explanatory phrase (definition) and syllogism (proof). Al-Fanārī not only follows this two-part structure, but also explains its planning. Thus, al-Fanārī is one of the followers of this school, along with al-Ghazzālī, Fakhr Rāzī, Sheikh Ishraq, al-'Abharī and Mullā Ṣadrā; and this is a bond between Iran and Ottoman.

Al-Fanārī's bond with Iran through his master, ʿAlāi' al-Dīn al-'Aswad (d. 800/1397), is also important. He moved to Iran after the Timurid era and returned to Ottoman after acquiring knowledge and learning sciences. In addition to this bond, al-Fanārī was well acquainted with Iranian scholars and was a companion of them. He met Mir Sayyid Sharif Jorjani and travelled to Egypt with him. This relationship was not limited to al-Fanārī himself and was continued by his grandson through his descendants. ʿAlāi' al-Dīn ʿAlī Chalabi al-Fanārī (d. 903/1497) travelled to Iran to learn sciences and then returned to Ottoman (Tashkoprizade, 1975, p. 111).

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