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Research

Jabir Ibn Hayyan's Classification of Science And Its Place in Islamic Epistemology*

Aygün Akyol

Assoc. Prof., Hitit University Faculty of Theology
Department of Philosophy and Religious Sciences Department of Islamic Philosophy
aygunakyol@hitit.edu.tr | <https://orcid.org/0000-0003-4108-7184>

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Abstract

The formation and development of scientific knowledge requires a process and description of civilization. This first requires the formation of a worldview, allowing for formation of a knowledge tradition, enabling for a method and order and denominating the information clusters. This paper, to review that how philosophical and scientific approaches are assessed in our tradition, the first one we come across is Jabir Ibn Hayyan who is one of the most significant scholars of the Islamic history of thought and science. When his scientific and philosophical approaches are reviewed, it will be seen that how he has a deep infrastructure in the starting stage of Islamic thought. In the article, we will try to assess his understanding of science and classification of sciences with reference to his book called Book of Definitions. Within this context, we want to discuss what it means today. Before mentioning science understanding of Jabir Ibn Hayyan, we want to give information concerning to his life and scientific personality.

Keywords: Jabir Ibn Hayyan, Classification, Sciences, Islam, Epistemology.

Cabir b. Hayyan'ın İlimler Tasnifi ve İslam Epistemolojisindeki Yeri

Bilimsel bilginin oluşumu ve gelişimi, bir süreci ve bir medeniyet tasavvurunu gerekli kılar. Bu, öncelikle bir dünya görüşü oluşumu, bilgi geleneğinin teşekkülü, bir yöntem ve düzenin sağlanması ve bilgi kümelerinin adlandırılması zorunlu kılar. İslam düşünce geleneğinin oluşumunda ve ürünlerini ortaya çıkarmasında bu süreçlerin varlığını gözlemleyebiliyoruz. Cabir b. Hayyan'ın ilmi ve felsefi yaklaşımları incelendiğinde İslam düşüncesinin başlangıç aşamasında ne kadar nitelikli bir alt yapıya sahip olduğu görülecektir. Çalışmamızda düşünürün Tanımlar Kitabı adlı eserinden hareketle ortaya koyduğu ilim anlayışını ve ilimler tasnifini değerlendirmeye çalışacağız. Bu bağlamda ortaya konulan yaklaşımların günümüz açısından ne ifade ettiğini müzakere etmek istiyoruz. Çalışmamızda Cabir b. Hayyan'ın ilmi anlayışına değinmeden önce hazır bulunuşluk açısından hayatı, ilmi kişiliği hakkında bilgi verilecek, sonra ilimler tasnifi ve tanım anlayışı değerlendirilecektir.

Anahtar Kelimeler: Cabir b. Hayyan, Sınıflama, Bilim, İslam, Epistemoloji.

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Introduction

The tradition of Islamic philosophy and science should be updated in terms of either terminology or methodology in order to be able to produce responses to the problems of today. In order to achieve this, a two-stage research is required. In the first stage, it should be reviewed that how philosophical and scientific infrastructure should be fictionalized in our tradition and in the second stage, it should be determined that how philosophical and scientific infrastructure should be fictionalized today. If this may be achieved, this may have been achieved with a consistent and significant viewpoint.

The formation and development of scientific knowledge requires a process and description of civilization. This first requires the formation of a worldview, allowing for formation of a knowledge tradition, enabling for a method and order and denominating the information clusters. We may observe the existence of these processes in the formation of Islamic thought and occurrence of its products.¹ But today, a problem comes in sight in Islamic world in the point of following the relevant stages relevant to formation and development of scientific knowledge and we are faced with problems in the point of implementing these processes. In order to overcome this, it is beneficial to review how the understanding of knowledge and science has been formed and configured in our tradition.

When we want to review that how philosophical and scientific approaches are assessed in our tradition, the first one we come across is Jabir Ibn Hayyan who is one of the most significant scholars of Islamic history of thought and science. When his scientific and philosophical approaches are reviewed, it will be seen that how he has a deep infrastructure in the starting stage of Islamic thought. In our notification, we will try to assess his science understanding and classification of sciences with reference to book of our philosopher called *Book of Definitions*. Within this context, we want to discuss what it means today. Before mentioning science understanding of Jabir Ibn Hayyan, we want to give information concerning to his life and scientific personality.

A. Jabir Ibn Hayyan, His Life and Scientific Personality

Jabir Ibn Hayyan (200/815 B. C.) is described as a famous chemist and all-rounder Islamic philosopher. Ibn Nedim mentions that Hayyan is also known as a Sufi/Misticks, as Ebu Abdullah Jabir Ibn Hayyan Ibn Abdullah el-Kûfî or Ebu Musa Jabir b. Hayyan but then the thought of that his personal record should be Ebu Musa not Ebu Abdullah has gained importance due to Ebu Bekir Razi gave place to

¹ Açıkgenç, Alparslan, *İslam Medeniyetinde Bilgi ve Bilim*, Isam Publications, İstanbul 2006, p. 27, 59; Açıkgenç, *Islamic Science Towards a Definition*, ISTAC Publications, Kuala Lumpur 1996, p. 36, 37; Açıkgenç, *Bilgi Felsefesi*, İnsan Publications, İstanbul 1992, p. 59.

the expression of "Our Hodja Jabir Ebu Musa Jabir Ibn Hayyan says" in one of his sentence.²

According to the information concerning to Jabir Ibn Hayyan, it is known that his father was from the Ezd tribe of Yemen and dealt with herbalist's trade in Kufa and he supported Abbasids in the events that were resulted in collapse of Umayyad Dynasty in VIII Century. Accordingly, it may be said that Jabir Ibn Hayyan was born in first quarter of VIII Century. It is discusses whether he was born in Kufa or Tus. It is acceptet that he was born in Tuswhile his father was in Khorasan Region. Jabir Ibn Hayyan who spent a significant part of his life in Kufa found the opportunity of getting benefit from Jafer al-Sâdiq here. Also, he preferred living in this city as the weather of city is convenient for chemistry researches.³

Even if the works of Jabir Ibn Hayyan constitutes a broad structure covering the medicine, astronomy, mathematic, philosophy and other significant science branches of period, he is accepted as a chemist in the first degree.⁴ When the assessments relevant to the chemistry science are reviewed in the tradition of Islamic thought, it is emphasized *that this has been developed on two main currents. One of these is Alchemy/Psychical Chemistry* of which roots goes back to Jafar al-Sadiq and that is represented by various scientists and some Sufis; the other one is *Physical Chemistry* that refers to modern chemistry science. Jabir Ibn Hayyan is qualified as founder of Alchemy science. The most significant characteristic of this ecole is that it accepts the existence of mines and minerals with not also their physical characteristic but also existence of a spirit. These claim that there is a bond between spirits and chemical characteristics and the physical and chemical structures of mine and goods may be changed with nurture of spirit; as the core of every substance is same, the mines transform into each other after they have been subjected to various spiritual and chemical operations. The followers of this ecole accept the mines and metals as a living like animals.⁵

Ibn Khaldun mentioned interest of Jabir Ibn Hayyan in the fields of Chemistry, Sorcery and Charm in his work called *Muqaddimah*. Ibn Khaldun who stated that Jabir Ibn Hayyan is the master of the ones who wrote works in the field of chemistry emphasized that he is also called as "İlm-i Câbir" in other words "the Science of Jabir" by assigning and leaning this science to him as Jabir is the most leading person in this science. Ibn Khaldun states that Jabir has seventy booklets

² Ibn Al-Nadim, *al-Fihrist*, ed.: Ibrahim Ramazan, Daru'l-Mearif, Beyrut 1994, p. 435; Kaya, Mahmut, "Cabir b. Hayyân" art., *IA.*, TDV. Publications, Istanbul 1996, vol. 6, p. 534; Ulken, Hilmi Ziya, *İslam Felsefesi*, Ülken Publications, 1998, p. 36; Kahya, Esin, *Modern Kimyanın Kurucusu Câbir b. Hayyân*, TDV Publications, Ankara 1995, p. 109; Akyol, Aygün, Iclal Arslan, "Cabir b. Hayyan ve Tanımlar Kitabı", *InBook of Definitions*, Elis Publications, Ankara 2015.

³ Ibn Al-Nadim, *al-Fihrist*, p. 435; Kaya, Mahmut, "Jabir Ibn Hayyan" art., vol. 6, p. 534; Bolay, Süleyman Hayri, "Câbir İbn Hayyan'ın Bazı Felsefi Görüşleri", *I. Harran School Symposium in Science, Religion and Philosophy History with International and National Participation*, 28-30 Nisan 2006, p. 308; Ulken, *İslam Felsefesi*, p. 36; Akyol, Arslan, *ibid.*, p. 12.

⁴ Kaya, Mahmut, "Jabir Ibn Hayyan" art., vol. 6, p. 534.

⁵ Bayrakdar, Mehmet, *İslam'da Bilim ve Teknoloji Tarihi*, TDV. Publications, Ankara 1985, p. 122, 123; P. Kraus, "Jabir Ibn Hayyan" art., *IA.*, MEB. Publications, Istanbul 1977, vol. 3, p. 3, 4; Akyol, Arslan, *ibid.*, p. 12.

relevant to this science but these works may have been only understood by the experts who know all methods and secrets of this field as they were written with a closed tone.⁶ Jabir is known with the name of Geber in the Latin world. It is understood that the entire corpus of Geber came up in XIII and XIV centuries in the West undertook very significant roles in six centuries development of chemistry. It was stated that the Stoics are among the intellectual frames affected by Jabir.⁷

In terms of his works, the works wrote by Jabir constituted a wide corpus. We may find the oldest list of these works in the work of Ibn Al-Nadim called *Kitâb al-Fihrist*. Ibn Al-Nadim prepared two lists concerning to this subject. While he mentioned whole of the works in one of these, he listed the ones relevant to the Chemistry in the other one. He stated relevant to Jabir that he had three hundred philosophical books, three hundred books about mechanic, five hundred books about medicine and three hundred thousand booklets concerning to arts and combat vehicles. One hundred twelve books in general those are not relevant to each other among this corpus belong to the field of alchemy and there are references to alchemists from Archaic age Hellenistic period. Also, seventy books in the field of chemistry among the corpus are known as a product of studies based on empiric and systematic. He collected his thoughts concerning to philosophy of nature and his opinions relevant to the chemistry and mystic sciences in one hundred forty-four books called with the name of *Mevazin*. The claim of that the works attributed to Jabir do not belong to him and even may not belong to anyone else but this claim was rejected by the researchers.⁸

B. Classification of Sciences in Islamic Tradition of Philosophy and Jabir Ibn Hayyan

Jabir Ibn Hayyan is a philosopher who draws attraction in the field of philosophy and science in the Islamic history of thought. Especially the methodology that he put forth relevant to the definitions and classification of sciences should be examined. But first, we want to shortly mention how the classification of sciences is assessed in the Islamic tradition of philosophy and then assess classification of our philosopher and his authenticity.

⁶ Ibn Khaldun, *Mukaddime*, translated by: Zakir Kadiri Ugan, Ministry of National Education Publications, Istanbul 1991, vol. III, p. 89; Akyol, Arslan, *ibid.*, p. 13; Please see for opinions of Jabir Ibn Hayyan relevant to cosmology: Mahmut Kaya, "Jabir Ibn Hayyan" art., vol. 6, p. 535; Jabir Ibn Hayyan, "Kitâbu'l-Mîzânî's-Sağîr", In *Muhtaru Resaili Jabir Ibn Hayyan*, neşr: Paul Kraus, Mektebetü'l-Hanci, Cairo 1354, p. 428; Jabir Ibn Hayyan, "Kitâbu's-Seb'iyin", p. 481; Jabir Ibn Hayyan, "Kitabu İhrâc mâ fi el-kuvvete ila'l-fî'l", p. 32; Akyol, Arslan, *ibid.*, p. 16.

⁷ Kaya, "Jabir Ibn Hayyan" art., vol. 6, p. 536; Eyüp Bekiryazıcı, "İslam Düşüncesinde Felsefî Ekoller", *İslam Felsefesi Tarihi*, ed.: Bayram Ali Çetinkaya, Grafiker Publications, Ankara 2012, vol. 1, p. 81.

⁸ Ibn Al-Nadim, *al-Fihrist*, p. 436; Kaya, Mahmut, "Cabir b. Hayyân" art., vol. 6, p. 536, 537; P. Kraus, "Cabir b. Hayyân" art., vol. 3, p. 3; Yakıt, İsmail - Durak, Nejdîet *İslam'da Bilim Tarihi*, Isparta 2002, p. 102; For booklets of Jabir Ibn Hayyan, please refer: Jabir Ibn Hayyan, *Muhtaru Resaili Jabir Ibn Hayyân*, pp. 7-559; Jabir Ibn Hayyan, *Resâilü Jabir Ibn Hayyan*, haz.: Ahmed Ferîd el-Mezidi, Daru'l-Kütübi'l-İlmiyye, Beirut 2006, pp. 1-608.

1. Classification of Sciences in Islamic Philosophy

We come across two aspects that Islamic philosophers paid attention while they were putting forth their opinions as the aspects that we should take consideration today in the field of philosophy and science. One of these is the issue of terminology used in the field of science in other words the issue of definition; the second one is clarifying the correlation between the classification of sciences and disciplines. If integrative studies may be put forth by relocating these two aspects, we will have the opportunity of obtaining healthier and reviewable opportunities in the field of science.

The Islamic philosophers first tried to establish a contact between language, opinion and reasoning by thinking that science requires a terminology and methodology. At this point, we come across first with the language development and then the process of putting forth the methodology in the field of science. Therefore, they reviewed the classification of sciences in detail and they discussed from which science needs to be started for these sciences in other words priority and recency issue and the most significant one is the method issue under this title.⁹

The breakdowns that may occur at this point adversely affect the approaches that were put forth in the field of science. Therefore, the philosophers stipulated first terms on which come to an agreement in terms of meaning and then clarification of the methodology in order that the philosophers may discuss on a subject. At this point, the explanations of Ibn Rushd [Averroes] carry importance for us. Accordingly, Every evidence may be only explained by some known precursors on which two opposing parties may come to an agreement. If any of these opposing parties asserts the contrary to the every evidence put forth by the other, the discussion has been closed. In fact, the persons who have this qualification will not have any interest to humanity and therefore they are required to be trained as they have quitted resolving the difficulties. Therefore, a philosophical negotiation and scientific discussion should be first based on some aspects jointly accepted.¹⁰

The issue of definition is an aspect that should be reviewed all by itself. Therefore, we want to review the sciences understanding of Jabir Ibn Hayyan by focusing on the issue of classification of sciences that constitutes subject of our study. This will make contribution to us in terms of clarifying how the approaches of philosophy and science in the first periods of Islam were.

⁹ For formation of words and language in Islamic thought, please refer to: Al-Farabi, *Kitabu'l-Huruf*, translated by: Omer Türker, Litera Publications, İstanbul 2008, pp. 79-88; Arslan, İclal, "Abdurrahman el-Câmi ve el-Fevâidü'z-Ziyâiyye Adlı Eseri", *Dokuz Eylül University Institute of Social Sciences Unpublished Doctoral Dissertation*, İzmir 2008, pp. 110-115; Arslan, İclal, "Rafî'b. Muhammed b. İbrahim el-Huseyni el-Musevi el-Haseni el-Kirmanî'nin 'İlmü'l-Beyan' Adlı Risalesinin Edisyon Kritik Çalışması", *Dokuz Eylül University Institute of Social Sciences Unpublished Postgraduate Thesis*, İzmir 1997, pp. 8-28; Akyol, Arslan, *ibid.*, p. 19.

¹⁰ Ibn Rushd, *Tehafütü't-Tehafüt*, translated by: Işık, Kemal - Dağ, Mehmet, Kırkambar Publications, İstanbul 1998, p. 44; Akyol, Aygün, *Şehristânî'nin Filozoflarla Mücadelesi*, Araştırma Publications, Ankara 2011, pp. 25-50.

The classification of sciences was disregarded by the philosopher in Islamic philosophy. In general, the explanations relevant to the classification of sciences are started with the assessments of Al-Kindi. Al-Kindi mentions divine and humane knowledge types in his work called *Risâle fî Kemmiyeti Kütübi Aristûtilîs and Ma Yuhtâcu ileyhi fî Tahsîli'l-Philosophy/Number of The Books of Aristotle and The Need Felt for Philosophy Education*. In this sense, we see that Kindi who is the first Islamic philosopher also adopted the classification of religious and rational/philosophical sciences. In this subject, the work of Al-Farabi called *Ihsâu'l-Ulûm* and the work of Ibn-i Sina called "*fî Aksâmi'l-Ulûmi'l-Aklîyye*" are significant. In the assessments of Al-Farabi and Ibn-i Sina, they adopted the classification of Theoretical and Practical philosophical sciences in accordance with Aristotle's classification of sciences and the assessments were made accordingly. We find the general frame mentioned in the Islamic thought relevant to classification of sciences in the work of Katip Celebi called *Keşfu'z-Zunun*. Here, we see four different classifications of sciences as the Religious and Philosophical, Theoretical and Practical.¹¹

These classifications are the classifications that reflect the classification of sciences in Islamic philosophy with main lines. Here, the remarkable side is that the sciences were reviewed in two parts as *theoretical* and *practical*. This approach has become a classification mainly adopted and followed by Islamic philosophers. The classification developed by Jabir Ibn Hayyan has become a subject that should be reviewed before these classifications.

The first assessments concerning to the classification of sciences among the Islamic philosophers was put forth by Jabir Ibn Hayyan. But it was also claimed that this classification does not belong to Jabir Ibn Hayyan. At this point, the claim of that the *Book of Definitions* does not belong to our philosopher brought the claim of that the approached in the subject of classification of sciences was put forth after him. But when we review the method that Jabir put forth in his other works, we think that this work belongs to our philosopher. At this point, the belongingness of work will be understandable when the approach types

¹¹ See.: Aristotle, *Metafizik*, translated by: Arslan, Ahmet, Sosyal Publications, Istanbul 1996, pp. 291-300, 1025b, 1026ab; Kindî, "Aristoteles'in Kitaplarının Sayısı Üzerine", *Felsefi Risaleler*, translated by: Kaya, Mahmut, Iz Publications, Istanbul 1994, p. 159, 160; Fârâbî, *Mutluluğun Kazanılması*, translated by: Arslan, Ahmet, Vadi Publications, Ankara 1999, pp. 51-96; Fârâbî, *İlimlerin Sayımı*, translated by: Uyanık, Mevlüt - Akyol, Aygün ed. Arslan, İclal, Elis Publications, Ankara 2017, pp. 78-176; Ibn Al-Sînâ, "Fî Aksâmi'l-Ulûmi'l-Aklîyye", *In Tis'a Resâil*, Istanbul 1298, pp. 71-80; Al-Ghazali, *İhyâu Ulumid'd-Dîn*, translated by: Serdaroğlu, Ahmet, Akçağ Publications, vol. 1., Ankara, pp. 43-66; Katip Celebi, *Keşfu'z-Zunun*, Ministry of National Education Publications, Istanbul 1971, pp. 11-18; Bayraktar, Mehmet, *İslam'da Bilim ve Teknoloji Tarihi*, Turkish Religious Foundation, Ankara 1985, p. 21-27; Uyanık, Mevlüt, *Bilginin İslamileştirilmesi ve Çağdaş İslam Düşüncesi*, Ankara Okulu Publications, Ankara, 1999, p. 84; Uyanık, Mevlüt, *İslam Bilgi Felsefesinde Kalbin Anlaması -Gazali Örneği-*, Araştırma Publications, Ankara 2006, p. 59, 60; Akyol, Aygün "İbn Haldun'un İlim Anlayışında Felsefe ve Tarih Tasavvuru", *Hitit University Journal of Faculty of Theology*, vol. 10, issue: 20, 2011/2, p. 35, 36; Uyanık, Mevlüt - Akyol, Aygün, "İbn Haldun'un Felsefe ve Tasavvuf Eleştirisi", *In İslam Felsefesi Tarihi II*, Grafiker Publications, Ankara 2012, p. 136, 137; Uyanık, Mevlüt - Akyol, Aygün "İbn Haldun ve Felsefe Tasavvuru", *Doğudan Batıya Düşüncenin Serüveni*, ed.: Çetinkaya, Bayram Ali, İnsan Publications, Istanbul 2015, vol. 7, p. 822.

concerning to the Chemistry that were put forth in his other works and the *Book of Definitions*.¹²

2. Jabir Ibn Hayyan and Classification of Sciences

We come across Jabir Ibn Hayyan's *The Book of Definitions* as a study that he put forth his own terminology and methodology. But this booklet of the philosopher has a slightly different content from other definition booklets that were written after him in Islamic tradition of philosophy. The remarkable side of this work is that the philosopher also made detailed definitions relevant to the science of Chemistry as well as the logic, philosophy and the classification of sciences in *The Book of Definitions*. Therefore, we may say that this text carries importance in terms of determining the position of Chemistry in the early periods of Islamic thought.¹³

In *The Book of Definitions*, Jabir first focused on the concept and quality of definition. The philosopher who analyzed the issue of increasing and decreasing within this frame also discussed the opportunity of making a consistent and inclusive definition. According to Jabir, the aim of definition is to encircle the essence defined in order not to exclude the one available in it and not to include the one not available itself into the definition. Therefore, there is no either increase or decrease in the definition as it was taken from the articles revealing the species and kind as saying "laughing very much and two-legged" and similar things for people. Therefore, the definition is also referred to as the word pointing to the quality of anything. In other words, the ones available in it in terms of quality should be included and the ones not available should be excluded while forming a definition concerning to something.¹⁴

If the definition is not put forth accurately, a method is not possible in the field of science. After the definition of definition is made, the sciences are individually defined and then their correlations are put forth by our philosopher. This constitutes a part of *The Book of Definitions*.¹⁵

C. Classification of Sciences and Authenticity

The most authentic side of Jabir's *Book of Definitions* is his classification of sciences. Jabir Ibn Hayyan first assessed the sciences in two parts as *Religious Science* and *Earth Science*. Then he reviewed the Religious Science in two parts as

¹² Kaya, Mahmut, "Câbir b. Hayyân", vol. VI, p. 537; Türker, Ömer, "İslâm Düşüncesinde İlimler Tasnifi", *Journal of Sociology*, vol. 3, no: 22, year: 2011, p. 540.

¹³ Jabir Ibn Hayyan, *Kitabu'l-Hudûd*, ed.: Abdu'l-Emir el-A'sem, Cairo 1988, pp. 164-185.

¹⁴ Jabir Ibn Hayyan, *Kitâbu'l-Hudûd/Tanımlar Kitabı*, ed. M. Uyanık, translated by: Akyol, Aygün - Arslan, İclal, Elis Publications, Ankara 2015, p. 12, 13, 34, 35; Ibn Al-Sina, *Tanımlar Kitabı*, ed. Mevlüt Uyanık, translated by: Akyol, Aygün - Arslan, İclal, Elis Publications, Ankara 2013, p. 16, 17; Khwarizmi, *Felsefi Tanımlar*, ed. Mevlüt Uyanık, translated by: Akyol, Aygün - Arslan, İclal, Elis Publications, Ankara 2015, p. 12, 13; Akyol, Aygün - Uyanık, Mevlüt - Arslan, İclal *İslam Felsefesi Tanımlar Sözlüğü*, Elis Publications, Ankara 2016, s. 350-359.

¹⁵ Please refer to Jabir and the classification of sciences: Zeki Necib Mahmud, *Jabir Ibn Hayyan*, Mektebi Mısriyye, Alexandria 2001, p. 91; Akyol-Arslan, "Câbir b. Hayyan ve Tanımlar Kitabı", p. 23-25.

the *Spiritual* and *Rational*. He also reviewed *Earth Science* which is another part of the classification of sciences under two parts as *Sovereign/Supreme* and *Ordinary/Homily*. It is seen that the classification of sciences put forth by Jabir Ibn Hayyan in *The Book of Definitions* is different from the tradition of Islamic philosophy and includes distinctive and authentic approaches.

1. Religious Science

The remarkable side of this classification is first classifies the sciences that we mention as the religious sciences as rational and religious sciences. Here, the religion indicates an inclusive position over the mind and religious law. Therefore, the person enlightening the word and eternity seems possible by taking the rational and religious one into hand together.

At this point, this will be useful especially when we review the rational and religious science definitions. The rational science is defined as "the science of secret one among the sense perceptions". "It is that the particular one perceives the plenary one in accessing the perpetuity world by running towards the virtues from the existence world". The remarkable side of this is to perceive the truth of existence over the questions. The definition of religious science is "the science obtaining the useful things in terms of both religion and world as it includes earth benefits belonging to the post-mortem". As seen here, when religious science is said, it is understood that both mind and religion enlighten the world and eternity life of person as a whole. The religious science encircles the rational and religious sciences. We may understand this closely if we review the religious science. According to Jabir, the religious science is "the things that the mind get benefit in order to use the things from which benefits are expected after death". This occurs in the way to cover the rational and religious one. This remarkable aspect is seen as the main aspects in order that the mind and religion may build the life of person after death.¹⁶

This viewpoint offers a structure that will resolve our current problems. Today, the results of the ones who excluded the mind in the religious field affect all of our perceptions relevant to the religion and world. As the people may not perceive the religion accurately, the things seen as the outbreak of religion do not conform to the religious things. While the mind and divine inspiration should come into mind as a whole when the religion is said, the understandings putting the mind aside make our life miserable.

Another significant issue that we should state at this point is that our philosopher submitted the philosophical sciences as a sub-title of religious sciences. The philosophical sciences were included into denotations science of rational science which is a sub-title of religious science. The denotations science is assessed in two parts such as the divine and philosophical. While the philosophical science is defined as "the science of truth of chaste assets", the divine science is

¹⁶ Jabir Ibn Hayyan, *Kitâbu'l-Hudûd*, p. 42, 43.

described as "knowing the first chastity and the thing from itself. The remarkable side of this is that perception of the denotations science by the person is possible by accessing the divine one and philosophical one. This requires the knowledge of cause. As seen, having a healthy opinion relevant to religious science is correlated to the knowledge of cause. This is seen possible by knowing the causes and the First Cause.¹⁷

There are the ones who emphasized on the excluding the rational one among the discussions made concerning to the religious sciences today. In fact, especially the ones who defend the opinion of that the philosophy should be excluded in the education of theology try to activate a mentality that destructs and damages the infrastructure of religious sciences in the field of religious sciences. At this point, it is useful to state that a religion description not having a rational basis will not have the possibility of having neither religious nor the rational concept as seen in Jabir Ibn Hayyan. This will be resulted in that this mentality will reach an unhealthy religion description. Therefore, it is required to form the religious field with both its religious and religious parts as a whole.

2. Earth Science

The second part of Jabir Ibn Hayyan's classification of science is formed by the earth science. He mentioned that the Earth Science is divided into two parts as Sovereign and Ordinary. This indicates that there is a rating among the earthly sciences. The earth science is defined as "the forms that mind and soul obtain with the aim of getting benefit before death and getting off the harms". Here, Jabir uses the soul as well as the mind and the purpose of this is to emphasize that benefit and harm are characteristics of soul. The balance is correlated to establishing the contact between the mind and soul in the earth science.¹⁸

In the assessments made concerning to the earth science, the intendment of earth science is "the science referring knowing the beneficial and harmful one and how these will be obtained and avoided". The *Sovereign Science* that is one of the parts of earth science gives the one required for maintaining his/her life without feeling a need for others. The *Ordinary Science* is defined as the science that lets the one reaching to the tastes and benefits and protects the human life.¹⁹

The aspect that draws attraction is the need for the change and other creatures. The importance that Jabir Ibn Hayyan gave to the science of Chemistry and Alchemy will guide to us in this subject. Especially thanks to the science of Alchemy that is about to the change within the body of objects, there is possibility of observing the development, change and alteration and determining which process these will follow in the following stage. I guess that due to that, our philosopher mentions the issue of changing under the sub-title of earth science and tells us how the change on mines and living creatures is in accordance with

¹⁷ Jabir Ibn Hayyan, *Kitâbu'l-Hudûd*, p. 46, 47.

¹⁸ Jabir Ibn Hayyan, *Kitâbu'l-Hudûd*, p. 42, 43.

¹⁹ Jabir Ibn Hayyan, *Kitâbu'l-Hudûd*, p. 48, 49.

their chemical structures. In fact, this is a result of the effort of creatures in term of reaching maturity.

As seen, the effort of person in terms of maturing his/her personality on his/her own is seen within the field of earth science but this is qualified as sovereign. The sovereignty here is allowing for reaching more sovereign and outstanding targets by obtaining the knowledge. Especially, it is an indicator for reaching more outstanding and sovereign things through this sovereign knowledge that this sovereign science is divided into as the sciences desired for someone else and desired for him/her. The homily science is reviewed in two parts as the sciences needed in the art and the sciences needed in an alliance on an art. The one what is homily is that the person qualifies his/her commitment to other things in order to maintain his/her existence in fact as it indicates his/her deficiency.²⁰

Conclusion

The scientific approach that was put forth by Jabir Ibn Hayyan represents a different point of view in science and tradition of Islamic philosophy. Especially these are the remarkable aspects that it includes the disciplines relevant to the rational and moral sciences into the category of religious sciences; the sciences belonging to empirical field into the part of earth sciences. The point that draws our attraction here is that when the person obtains all sciences referred to both religious and earth sciences as a whole, he/she will reach a structure that he/she has realized himself/herself.

We think that emphasizing union of mind and transfer in the field of religious sciences is an aspect that we should take into consideration today. Especially, it is a remarkable issue that he fictionalized the philosophical sciences as a sub-title of religious sciences and when doing this, he put emphasis on the knowledge of reason. Today, the comments made with viewpoints devoid of arational basis in the field of religious sciences affect people's lives and sometimes result in that the people keep the religious field at bay. We consider that the approach put forth by Jabir in relevant to the religious sciences is significant for us today and it is an aspect required to be thought over.

It also has importance that he relocated the chemical science to the center in the assessments that he made relevant to the earth science. The formation, development and change of minerals were relocated to the center in the part of earth science. It also drawn attraction of our philosopher that the chemistry examines the changes on the structure of objects and he subjected the changes to a detailed examination. In fact, this maintains its validity when we reviewed it in terms of human. The chemical structure of human affects his/her rational and physical health as a whole. Therefore, our philosopher gave the central position of earth science to chemistry and alchemy in terms of giving the meaning of its

²⁰ Jabir Ibn Hayyan, *Kitābu'l-Hudūd*, p. 48, 49.

existence. At this point, he put forth a mythology that relocated examining the change and essential of these changes to the center.

The only way to obtain healthy results in the field of science will be possible by overcoming the terminology and methodology problem. As stated by our master Alparslan Açıkgenç, the infrastructure of method and science requires a specific process and knowledge. Although there is no sufficient data in our hand in relation to obtaining this knowledge both in our tradition and in modern times, we need to show much more effort for these works and in order to make them functional. Jabir Ibn Hayyan shows us a method in the point of achieving this.

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