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Charting Science: Fuat Sezgin's Contribution to Science History Writing in the Islamic World (1250-1800)

Memetakan Ilmu: Kontribusi Fuat Sezgin untuk Penulisan Sejarah Sains di Dunia Islam (1250-1800)

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Abstract

This article describes the discourse on the development of writing the history of science in the medieval Islamic world, namely Fuat Sezgin, whose major work influenced the development of writing the history of science among Eastern and Western scholars, especially Orientalists. This article uses an intellectual biography writing model, using a historical approach. Hopefully this article will add to the scientific treasures in writing the history of science in the Islamic world and material for further study of Fuat Sezgin and his works in the field of Islamic science, because the study of Fuat Sezgin in his field as a scholar of the history of Islamic science is still very minimal in Indonesia. Only a few articles specifically examine Fuat Sezgin in the study of hadith. Writing the history of science in the Islamic world became an object of study for western orientalists in the 19th and 20th centuries. The view that emerged from orientalists towards science in the Islamic world was only limited to a positivistic historical view. The presence of Fuat Sezgin in Orientalist circles as a Muslim who contributed to the writing of the history of science has given a new color to Islamic science in the eyes of Muslims themselves. Fuat Ssezgin's contribution to writing the history of science in the Islamic world is recognized by eastern and western scholars, he is a continuation and complement to the studies of the history of science by Orientalists such as Carl Brocklemann and Helmut Ritter. Fuat Sezgin views the history of Islamic science as not just a theory, he applies it in the form of research institutions and museum buildings in Germany and Turkey to become a trigger for the study of the history of science in the Islamic world.

Keywords: *Fuat Sezgin; History of Science; Islamic World;*

Abstrak

Artikel ini mendeskripsikan wacana perkembangan penulisan sejarah sains di dunia Islam abad pertengahan yaitu Fuat Sezgin yang mempunyai karya besar yang berpengaruh terhadap perkembangan penulisan sejarah sains di kalangan para sarjana Timur dan Barat khususnya para orientalis. Artikel ini menggunakan model penulisan biografi intelektual, dengan memakai pendekatan historis. Semoga artikel ini menambah khazanah keilmuan dalam penulisan sejarah sains di dunia Islam dan bahan kajian lebih lanjut terhadap Fuat Sezgin dan karya-karyanya dalam bidang sains Islam, karena kajian tentang Fuat Sezgin dalam bidangnya sebagai ilmuwan sejarah sains Islam masih sangat minim di Indonesia. Hanya beberapa tulisan yang mengkaji khusus Fuat Sezgin dalam kajian hadits. Penulisan sejarah sains di dunia Islam menjadi objek kajian para orientalis barat pada abad ke-19 dan 20. Pandangan yang muncul dari para orientalis terhadap sains di dunia Islam hanya sebatas pandangan historis positivistik. Kehadiran Fuat Sezgin dalam lingkaran para orientalis sebagai seorang muslim yang mempunyai kontribusi dalam penulisan sejarah sains mempunyai warna baru bagaimana sains Islam dalam pandangan muslim sendiri. Kontribusi Fuat Ssezgin dalam penulisan sejarah sains di dunia Islam diakui oleh para sarjana timur dan barat, dia menjadi pelanjut dan pelengkap dari kajian sejarah sains para orientalis seperti Carl Brocklemann dan Helmut Ritter. Fuat Sezgin memandang sejarah sains Islam tidak hanya sebatas teori, dia mengaplikasikan dalam bentuk institusi penelitian dan bangunan museum di Jerman dan Turki untuk menjadi pemantik dari kajian sejarah sains di dunia Islam.

Kata Kunci: Fuat Sezgin; Sejarah Ilmu Pengetahuan; Dunia Islam;

INTRODUCTION

Science has evolved gradually and evolutionarily from ancient times to the present day. It does not happen instantly, but there are stages of evolution and development until it passes through several civilizations. At first, it was necessary to carry out periodic divisions or classifications to understand the evolution of science throughout history, because the progress of science showed different characteristics in each era. The development of science began in the period of ancient civilizations such as the Babylonian and Greek civilizations, to the Renaissance in the West which made the Western nation experience rapid progress in various fields of science.

The progress of Western civilization in the world of science is inseparable from the phase of scientific progress in the Islamic world, Islamic civilization colors the development of science in the world, especially the Islamic period of the classical to medieval centuries. This is evidenced by historical records that show that Islamic civilization has a heyday in the world of science. There are three different phases in the development of science in the Islamic world first, the translation of Greek written records collected at that time and then translated into Arabic. Second, built during the reign of Caliph Al-Ma'mun of the Abbasid dynasty, Baitul Hikmah is one of the well-known institutions that collects and translates. In addition to Baitul Himkah, the center of science in the Islamic world is Andalusia. Third, the phase where Muslim scientists concoct and combine various fields of science to the stage of discovering new discoveries producing scientific classifications, and developing scientific research and evidentiary techniques. (Azhar, 2017)

At this stage of scientific classification, science in the Islamic world has progressed rapidly and many Muslim scientists have created a science index to find traces of the history of Muslim scientists in the Middle Ages. One of the scientists who made the science index and its scientists was Ibn Nadhim with his work, Al-Fihrist. In the period when Western civilization experienced progress in the world of science after Islamic civilization, the West was active in tracing the scientific works of Muslim scientists. One of the orientalist figures who studied Ibn Nadhim's work was Carl Brocklemen later followed by Helmutt Ritter. From this Helmut Ritter was born a Muslim scientist who directly studied orientalists in studying the history of science in the Islamic world, namely Fuat Sezgin. (Tekiner, 2019)

Fuat Sezgin is a Turkish scientist who has long pursued a career in Germany. He is famous in two fields of study, namely the field of hadith and the writing of the history of science. His great work in the field of hadith is his criticism of the thought of Ignaz Goldziher, while in the study of the history of science, his greatest work is the Tarikh Turats Arabi, a monumental work that discusses the index and its explanations of Muslim scientists and their works. The study of science that tends to be popularized by orientalists has triggered Muslim scholars to look at it from a different perspective, whereas some orientalists tend to judge Islamic history with a positivistic lens and interpretations that ignore the deepest side of Islam.

This article was written with the aim of introducing Fuat Sezgin, who is usually known in the study of hadith, there is a field where most researchers in Indonesia rarely mention him in the field of writing the history of science. Fuat Sezgin through his great work contributed to the writing of the history of science in the Islamic world which influenced the development of science history departments in universities in the eastern and western world. There are several focus of study that must be considered as Fuat Sezgin must get appreciation in the field of writing the history of science in the Islamic world. His scientific background gave him a very strong authority, and he was a scholar who dedicated his life to great research. His thoughts in the field of the history of science are often discussed among Western scholars, especially in the use of authoritative historical sources.

The First, Fuat Sezgin as a Muslim scholar who was educated by the German orientalists gave a new answer to how the study of the history of science is not just for research material, but how scholars re-present empirical evidence from the memoirs of Muslim scientists.The second, how Fuazt Sezgin's efforts in writing the history of science provide an overview of the

development of the classification of science in Islam continues to develop from time to time, so that the chronology of discoveries in the world of Islamic science can be identified where the novelty of an invention lies. The third, how Fuat Sezgin's work had a great influence on the development of writing the history of science among Western and Eastern Scholars. The seriousness of Sezgin's research was able to dismantle manuscripts scattered throughout the world and reconstruct how manuscripts became the primary source in Sezgin's work and became empirical evidence of the greatness of the world of science in Islamic civilization.

METHODS

Research on the intellectual biography of a scientist who has contributed to the writing of the history of science. The thoughts and contributions of the characters are included in historical research, therefore the author uses historical methods. The First is the heuristic stage (collection of sources) by looking for sources in Indonesian, English, and Turkish where the figure the author researched is a Turkish scientist and is studied by Turkish scholars. The second, the verification stage (source criticism), this is done in order to get valid data and to obtain the validity of the source by criticizing and comparing sources about Fuat Sezgin both from English and Turkish-language journals. The third, the author carries out the stage of interpretation (interpretation) of this stage strengthens in terms of perspective on verified sources by re-analyzing and finding new interpretations of the figure of Fuat Sezgin. The fourth, it is the last stage, namely historiography (writing) this stage is the end of the historical method by pouring it into writing. In addition, this research is included in the literature study by relying on data scattered in journals and books in the library so that this research can be called qualitative descriptive research.

RESULTS AND DISCUSSION

Medieval Muslim scientists and scientists

The birth of scientists in the Islamic world is a sign of the era of Islamic enlightenment which has a great influence on civilization afterwards, especially Western civilization. Many scientific works emerged in the classical to mid-Islamic period. Among the works of Muslim sanitary men such as Ibn al-Haitham with Optic, al-Khwarizmi with al-Gebra, Canon Ibn Sina, and in the field of medicine, Galen and Hippocrates. Several educational institutions at the time made use of these works as the cornerstone of their curricula, until Oxford and Paris, two of the 1200 educational institutions, finally achieved very rapid advances in science. The three main philosophies covered in the curriculum are natural philosophy, metaphysics, and moral philosophy. At that time, natural philosophy became the foundation of scientific progress. (Masrur, 2012)

Islamic progress in the field of mathematics and astronomy cannot be separated from the contributions of previous countries such as Greece, Sassania, and India. Muslim astronomers hope to open the curtain on the movement of celestial bodies using mathematical systems. One of the goals of mathematics, namely as a method for solving problems related to celestial bodies, can be found in the purpose of astronomy. Historically, the goal of all Islamic scientific endeavors in the field of mathematics and astronomy has been to develop further ideas that have been invented by the Greeks, Sassanians, and Indians. Of course, as Islamic scientists sought to develop these ideas, they gave rise to many new theories. However, although astronomy is coming to an end, Islam concentrates more on denying various aspects of Ptolemy's theory, which is recognized as the origin of a number of theories of planetary motion. (Rahman, 2019)

Islam initially became an expert in the field of astronomy and mathematics through the educational institutions and discoveries of Indian scientists, whose discoveries were truly advances from the Greek and Babylonian conceptions. This was immediately directly influenced by the theories developed by the Greeks in response to Ptolemy's discoveries, particularly in astronomy, and Euclid's discoveries in mathematics. Muslim scientists can make progress, adjustments, and discoveries in the fields of mathematics and astronomy through these two gates.

Prominent astronomers and mathematicians, such as Habbas al-Hasib, author of the Ma'munik Table, were born from these two gates. In addition to producing many works in the field of astronomy, Al-Khawarizmi combined two mathematical traditions from Greece and India in his book Summary of the Compulsive and Equal Calculation Processes. Al-Fraghani (al-Fragnus) is the creator of the famous work The Element of Astronomy, while Al-Mahani developed the theory of algebra and is famous for his commentary on the issues raised by Archimedes. (Mafar, 2012)

In addition to astronomy, Muslim scientists also make a great contribution to the science of medicine. The legacy of Islamic medicine leaves a lasting legacy for future generations. They are professionals in writing and creating works related to medicine. Published in the encyclopedia Canon fi Tibb and Firdaus Al-Hikmah, this work laid the foundation for medical discoveries and became a classic medical text for several centuries afterward. It is even translated into other languages. These important historical figures include Ali Ibn Rabban Thabari, who taught al-Razi (Rhazes) and wrote Heaven of Wisdom (Firadaus al-Hikmah). Al-Razi, one of his students, became famous as a doctor and was even given permission to oversee a hospital in Baghdad. His contribution is contained in a number of his writings detailing measles disease in great detail and the difference between smallpox and chickenpox. Al-Hawi is the title of a work of art that al-Razi made based on his experience and observations. (Nasrul, 2019)

It is a well-known medical encyclopedia. Currently the oldest medical document in the world, a copy of this work is kept in Bethesda, Maryland. Ibn Sina is considered one of the best doctors. His works, which number about 100 and are divided into 16 different categories of medical works, as well as Qonun fi l-tibb, his masterpiece in this field, prove his genius. Ibn Nafis belongs to the group of people who made significant contributions to the special field of human anatomy. Muslim scientists in the century of Islamic glory left behind many works that today are evidence of the progress of science in Islamic civilization. Therefore, scholars who research the history of science in the Islamic world cannot escape the works that have been written by Muslim scientists in the past.

From Science Classification to Science History Writing

Islam is not against science and technology, nor is it against technical progress. It also does not contradict rational and orderly theories of thought, as long as the analysis is comprehensive, impartial, and does not contradict the principles of the Quran. The development of science and technology has made people's lives easier and more prosperous. Technology and science are two concepts that are closely related to each other. Science is a source of technology that can open the door to the development of new concepts and inventions of techniques. (Bakar, 2008) Technology is the application of science that can provide actual results, be more advanced, and inspire people to pursue further developments. Because the Qur'an contains a lot of material about science and technology, it is important for Muslims to understand that the philosophical foundation for the development of science and technology can be studied and explored in this holy book. (Nasrullah, 2016)

Muslims played an important role from the sixth to the fourteenth centuries, but due to a number of internal intellectual and political difficulties, their influence faded and continues to be a concern today. Meanwhile, Westerners studied and translated works written by Muslim scholars and leaders at Islamic universities in Cordova and Toledo, both in Andalusia and Spain. About ninety texts by Muslim scholars were translated into Latin by Gerardo de Cremona. consists of the writings of Ibn Haitham, al-Farabi, al-Hayyan, and al-Battoni. According to Professor Fuad Sezgin, many publications written by Muslim scientists were actually plagiarized through Latin translations, with the name of the copyist added in place of the original author's name. After going through a dark period, the West entered the era of enlightenment and began to replace Islam as the dominant force shaping global civilization. (Mafar, 2012)

The result of centuries of intellectual dialectics in the Western mind is the study of history. Although history is a discipline in its own right, history is thought to have originated from the writings of the Greek historian Herodotus (5 BC), the study of Jewish history, and the Christian interpretation of the Bible. Thirteenth In the seventeenth century, history developed further and was taught in schools and universities. Le Goff's talks show how history did not initially spread evenly throughout Europe. The country that is considered to be the first to recognize history as a field of study is Germany. The Reformation then gave the historical opportunity to become a compulsory course at the Christian university in Marburg founded in 1527. (Muslih, 2021)

Other universities, such as Tübingen and Königsberg, adopted a similar strategy over the next two decades. The study of history developed on its own between 1550 and the following century. Throughout the century, a similar pattern also occurred in Germany's neighboring countries, namely England, Switzerland, and Italy. The University of Göttingen became a model for history education as this development continued into the second half of the eighteenth century. A century later, the European scientific community largely recognized history as a branch of science with unique qualities.

The progress of historical studies in Germany has led German thinkers to study more deeply the history of the development of science in various civilizations until it reached the peak of the European Renaissance. Studies in the scope of the history of science give birth to scientists who focus on that field. One of the scientists who was educated in Germany was Fuat Sezgin. Like Ibn al-Nadīm, who compiled the encyclopedic catalogue of the Arabic Kitāb al-Fihrist (Book of Catalogues) with a bio-bibliographic index, Fuat Sezgin was one of the few people who devoted almost his entire life to the study of several fields. focusing on the advancement of science and technology in Islamic society, especially in the field of medicine. Although he had difficulties at the beginning of his career, he overcame them by working hard, tenaciously, and having clear long-term goals. As a result, he went from a guest lecturer to an award-winning director at a renowned academic institution. for research purposes. (Waluyo, 2014)

In addition to his credentials, education, and scientific achievements, he stood out from his contemporaries and contributed to public awareness because of two other elements. First, his cunning schemes to take advantage of his extensive network and international reputation. He made contributions to the field of Islamic Science and Technology History during his long career. For example, the Institute in Frankfurt was established with the financial aid he obtained after he was awarded the King Faisal International Award. Second, this approach uses creativity to transform theoretical information into practical applications, which facilitates understanding and appeals to a wide audience, including young people and non-professionals. His attempt to create a duplicate of scientific equipment.

Islamic scientists developed a system of categorization of science much earlier than Western scientists, especially in the field of libraries. One of the most popular science classification schemes, the DDC, was established in 1876. Meanwhile, the Middle Ages—especially the Islamic Golden Age—saw the emergence of scientific classifications in the Islamic world. In the Islamic world, classification arises from the abundance of knowledge produced by Muslim scientists. In general, Plato divides science into two categories. First, the natural sciences provide a concrete and logical source of knowledge. The second type of science is metaphysics which includes the science of divinity and riyadiyah.

Aristotle divided science into three categories. First, theoretical sciences, including mathematics, astronomy, and engineering. Second, amaliyah science is related to economics, strategy, and morals. Third, the science of production, including balaghah and poetry. This is in accordance with the division of science by Thomas Aquinas into three categories: mantiq science, theoretical science, and practical science. Francis Bacon, meanwhile, divides knowledge into three main categories: intellect (philosophy), memory (history, etc.), and imagination (poetry, etc.). (Muslih, 2021)

The first academic in the Islamic world to categorize science was Jabir Ibn Hayyan. However, until now, he claims, the classification has not been documented. As a result, the next generation will not be familiar with the classification of Jabir science. The author's search

yielded information that shows that Jabir Ibn Hayyan separated science into two categories: global science and religious science. The science of Sharia and the science of 'aqliyan are religious sciences. Moreover, the disciplines of ma'ani and literature are part of the science of 'aqliyan. Moreover, Thabi'i science and spiritual science are further divided into the science of letters. The four categories of Thabi'i science are Heat, Cold, Dry, and Humid. There are two parts of spiritual knowledge: the science of Zhulmânîy and Nûrâni. The science of philosophy and the science of Ilâhiyan are two parts of the science of Maânî. (Nuri, 2014)

Al-Kindi divides the classification of science into two broad categories: global science and religious science. In addition, according to Al-Kindi, there are three categories of science: production science, practical science, and theoretical science. Aristotle, the father of Greek philosophy, had a significant influence on Al-Kindi's idea of science. Meanwhile, Al-Farabi categorizes science into five major fields in his two books, Tanbih 'ala Sa'adah and Ihsa' al-'Ulum. Al-Farabi is said to have categorized science into seven broad categories in other literary works: conversation, mathematics, physics, politics, metaphysics, logic, and fiqh (law). (Ahsan, 2021)

Al-Farabi divides into eight parts to form the science of logic, which begins with categories and ends with poetry. The seven components of conversational science are language, grammar, syntax, poetry, writing, and reading. The study of language in conversation science includes prepositions, mufrad phrases, rules for writing and reading, and guidelines for quality poetry. Seven parts of mathematics are separated. Meanwhile, for natural sciences, physics is broken down into eight parts. There are two main discussions in metaphysics: the first is about the knowledge of animals, and the second is about the philosophy of science. It is stated that ethics and politics come from politics which is one of the branches of civil science. The two branches of religious science are the science of divinity/kalam (theology) and the science of fiqh. (Rahman, 2019)

In addition to Al-Farabi and others, Ibn Nadhim categorized science into 10 categories in his famous book Fihrist. Ibn Nadhim studied under the guidance of prominent academics, including Abu Sulayman al-Mantiqi, Al-Munajin, Al-Sirafi, and others. He also obtained a wealth of information about general science and logic from Greece, Persia, and India while living in the Bani al-Jarrah neighborhood. This is what arouses his curiosity about various sciences. In addition, he was a bookseller who died in 385 AH/995 AD. Ibn Nadhim was a scientist, although his specialty was bibliography.

The legend of Ibn Nadhim is closely related to the book of Fihrist. The book, also called the Nadhim Index, is a bibliography of Arabic literature published by Arabs and non-Arabs. Al-Ausaf wa Tasybihaat is one of Ibn Nadhim's other famous works. German orientalists including Fuat Segin who wrote a bibliography of Islamic science were inspired by the work of Ibn Nadhim. Ibn Nadhim categorized knowledge into 10 categories in his famous book, namely:

1. Arabic and non-Arabic languages from different countries.
2. Philology and grammar.
3. Genealogy, biography, and history.
4. Poetry and his works.
5. The Philosophers and Philosophical Sciences.
6. Expert in hadith, law, and fiqh.
7. Classical science and philosophy.
8. Myths, folklore, witchcraft, witchcraft, and witchcraft.
9. Sects and ideologies.
10. Chemist and Chemical Sciences.

Fuat Sezgin Biography

Fuat Sezgin is a Muslim scholar who is an expert in the field of Arabic Islamic history. Fuat Sezgin is a Turkish national. Fuat Sezgin was born in Turkey in 1924, precisely on October 24. He studied elementary school, and high school in Turkey, and continued his education at the

university at the University of Frankfurt. Fuat Sezgin's thoughts were very colored by an orientalist named Helmut Ritter. (Amin, 2008)

Sezgin obtained his doctorate through a work he had written with the theme "Buhari'nin Kaynaklari" (The Sources of Al-Bukhari) in the Arabic edition of Mashadir Al Bukhari, in which Fuat rejected the Western orientalist statement that criticized Saheeh Al Bukhari that his sources were not outenistic, Fuat explained that Bukhari in his Saheeh had referred to previous writings which were the tradition of narration of hadith in writing and orally. From the results of his research related to Imam Bukhari Fuat Sezgin received a certificate of appreciation from the King Faisal International Prize for Islamic Studies in 1978, and the Order of Merit of the Federal Republic of Germany. He is a member of the Turkish Academy of Sciences, the Royal Academy of Morocco, and the Arabic language academies in Cairo, Damascus, and Baghdad. (Aysegul, 2020)

Turkish researcher Fuat Sezgin (1924–2018), who lived in Germany, specialized in the scientific heritage of Arab and Islamic culture. He was the founder of Goethe University at the Arab Institute of Islamic Sciences in Frankfurt. Its birthplace is Bitlis is a small town in Anatolia. Then, when he was young, he moved to Istanbul. He studied Arabic at the Department of Oriental Studies at Istanbul University. After learning to speak Arabic well, he went on to become proficient in 27 other languages, including Hebrew, Syrian, Latin, German, and others. He became acquainted with Hellmut Ritter (1892–1971), an orientalist who had been a teacher in Turkey since 1926, and advised him to read about the history of the Arab-Islamic world. His mentor was a famous German orientalist Helmut Ritter, he studied Arabic while earning his Ph.D. in 1914 from the Department of Eastern History of the University of Bonn. (Akdemmir, 2019)

After that, he moved to Iraq to become a translator for the German army for two years (1916–1917), then moved to Turkey to continue as a translator for the German army (1918). Ritter left the war and returned to Germany, where he taught Oriental Studies at the University of Hamburg until 1926. He then left again and returned to Turkey to study. was appointed professor of Arabic literature at Istanbul University (1936), in addition to serving as director of the Oriental Institute in Istanbul (1927). As a result, Ritter had the opportunity to see Arabic manuscripts in Istanbul. It was at this moment that Ritter met Fuat Sezgin, a brilliant student, all this time and guided him to study Arabic literature and science. Ritter also encouraged Fuat Sezgin to delve deeper into the study of Islamic History, especially related to the history of Islamic scientific heritage in the classical and medieval centuries.

Sezgin earned his PhD from the same university in 1951. He finally released his thesis on Sahih al-Bukhari. He works at the University. from Istanbul until 1960. Later, he departed from his home country and traveled to Germany, mainly to work as a visiting professor at Goethe University in Frankfurt. He was awarded the title of professor in 1965 for his groundbreaking research tracing the growth of natural sciences in Arab-Islamic civilization. He presented his second doctoral thesis on Jabir bin Hayyan, a chemist, in 1965. (GÜNGÖR, 2020)

Throughout his life, he was awarded numerous international awards and awards from various organizations, including the Academy of Arabic Language in Cairo, the Academy of Arabic Language in Damascus, the Academy of Arabic Language in Damascus, and the Academy of Arabic Language in Cairo. Baghdad and the Academy of Sciences in Turkey; In addition, he was awarded the Goethe Medal in Frankfurt, the Great Medal of Honor of the Federal Republic of Germany, and other prestigious awards of significant scientific significance. It focuses on research projects that advance human understanding in the disciplines of humanities and history, fostering intelligence and greatness. In addition to being the first recipient of the King Faisal International Prize in Islamic Studies given in recognition of his scientific efforts in writing the encyclopedic book The History of Arab Heritage, he also received a certificate of honor and a large sum of money to support it. scientific research. The funds he received from the King Faisal Prize were used to establish the Institute in Frankfurt, which has been discussed earlier in this study.

He also contributed to the establishment of another institution in Istanbul in 2010 and the Islamic Science History Waqf in order to provide assistance for the operations of the

Istanbul-based Museum of Islamic Science and Technology. Although he immigrated to Germany, where he worked, wrote, married, and had children, he remained an honest man who cared about the problems of the Islamic nation and craved virtue; as evidenced by the fact that he was awarded the Hessen Cultural Prize with Salmon Korn, the leader of the Jewish community in Frankfurt; However, Sezgin refused to accept the honor because Salmon Korn supported the Israeli operation in Gaza.

Fuat Sezgin's Contribution to the Writing of the History of Islamic Science

Sezgin is known for three important publications, one of which is the Encyclopedia of Arab Heritage (originally published in German under the title "Geschichte des Arabischen Schrifttums"), an important work in the field of Arabic and Islamic studies. This volume of the encyclopedia has been published by Sezgin since 1967. Volume XVI on Rhetoric and Criticism and Volume XVII on Educational Literature and Entertainment are the last two volumes, both released in 2015. As stated in the book's preface, he struggled to complete this project. Sezgin provides these facts in the introduction to his book, which is available to read as a source for his writing. (DÖNMEZ, 2019)

The second is a long bibliography in German entitled "Bibliographie der Deutschsprachigen Arabistik und Islamkunde." It means in Indonesian it is "Bibliography of Arabic and Islamic Studies". The encyclopedia is published in two parts: an index of the works from its inception to 1986 is included in the first section, which consists of twenty-two volumes. Eight volumes of the second phase, which contained works published between 1986 and 1994, were released in 2006. (Tekiner, 2019)

The annual scientific research entitled "Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften," which translates to "Journal of the History of Arab-Islamic Sciences," is Sezgin's third scientific endeavor. He launched it in 1982. A history professor at Baghdad University Akram Al-Omari conducted an important study in which he thoroughly discussed the findings of this Sezgin scientific investigation. He believes that there is no need to discuss it further because readers can consult the research, to which Sezgin devotes the journal to publishing his scientific research as well as research from other Institutes researchers and existing orientalist research. interested in the scientific heritage of the Arab world. (Betül, 2019).

Scientists can benefit from these three books because they have a significant influence on all countries in the world. This has helped these texts become more widely known and build a dependency among Arab Islamic scholars. Some believe that this book is just a complete bibliography of Arabic historical works. However, this work provides a comprehensive picture of Sezgin's scientific personality for two reasons: First, let's talk about Sezgin's relationship with the science of Arab and Islamic history. On the one hand, he is interested in studying this heritage and incorporating it into a broad bibliography. This feature made Sezgin spend a lot of time studying in ancient times. The sources of his writing are based on his tracing of manuscripts spread around the world. For example, with the help of some of his friends, he managed to obtain drawings of various manuscripts from various international libraries, such as the Zahrieh Library in Damascus, which is famous for having many manuscripts related to Arab and Islamic heritage. (Ekhtiar, 2019) The most important manuscripts he managed to obtain are stored in the German National Library and in Istanbul, where many Arabic manuscripts were moved to ensure their security was maintained throughout the Ottoman era. Gaining access to the scientific gems of Arab-Islamic heritage that have spread around the world requires great hard work. It's also important for us to understand that Sezgin has been working on this project alone for decades. Muslims today know very little about Islamic manuscripts, despite the fact that they were brought to libraries around the world by colonizers.

However, once he began to gather Arab-Islamic descendants, he showed an amazing thing of knowledge by completing this remarkable scientific endeavor. We are made aware of the deep spiritual connection between Sezgin and the scientific heritage of Islam through this

effort. Nevertheless, through this book, we have witnessed the evolution of Sezgin's scientific perspective from the science of the lost Arab-Islamic heritage to the realization of contemporary projects of the Islamic era. We will only touch on this point in the next paragraph. (Tekiner, 2019)

Sezgin hopes that Islamic heritage will be a catalyst for the rise of science in Muslim countries today. The sciences that have developed for thousands of years are not widely known to Muslims in modern times, their lineage is backward. Sezgin argues that the nation may benefit from the significant power factor of this heritage in the current era. In terms of his rejection of insults that some orientalists consider to be from the Islamic past, Sezgin's work also provides a comprehensive overview of his scientific approach to restoring Arab-Islamic heritage. Some orientalists who want to erase the features of their Arab background are doing this slander in order to advance their agenda. Some of these orientalists sought to give full credit to Europe Therefore, in the process of building human scientific civilization, they hid or ignored the scientific facts that existed in the scientific heritage of Islam. But Sezgin was able to uncover the procedure and regain the rights that had been taken away from the Arab-Islamic heritage. (Tekiner, 2019)

It is true that other important works considered the development of subjects that have been covered in the history of Arab heritage have been produced by the basic works in this Sezgin project. For example, his very large book in German entitled "Wissenschaft und Technik in Islam" translates to "Science and Technology in Islam". The book has been published in multiple languages, including German (2003), French (2004), Turkish (2006), and Arabic (2007). (Argun, 2020)

The significant development of scientific perspective in Sezgin's life occurred before his trip to Germany. His scientific plan for life was changed by this incident. He intends to enroll in the Faculty of Engineering of Istanbul University. There, he attended a lecture given by Professor Helmut Ritter in oriental philology at the university. Thus Sezgin's plan was completely reset. He raised his engineering goals and enrolled at Ritter starting in 1942. Ritter began assigning his new students to study the language and history of science among Arabs and Muslims after realizing the student's talent. As a result of Ritter's annual language learning program, Sezgin acquired many important languages for his research. (Argun. 2020)

After his close friendship with his teacher Helmut Ritter, Sezgin visited the famous library in Istanbul with him. Ritter shares his experiences, wisdom, and documents. Later Sezgin became aware of Ritter about his instructors and their publications, such as Carl Brockelmann's (1868–1956) book. Ritter claims that the amount of knowledge about the Arab past that can be gained from this work is now inadequate, especially given the discovery of previously unknown manuscript collections and the growing number of research and cataloging being carried out in Egypt and Islamic countries. world. Therefore, Sezgin decided to take on the responsibility of renewing this work. (Beşir, 2022)

Sezgin got to know the German Orientalist community in Istanbul through Ritter. One of them was the German Muslim orientalist Oskar Ritter (1885–1948), who agreed with the findings of his professor Brockelmann. are no longer appropriate or adequate, even after expansion and renovation. If it was fully updated and resolved, he might also be able to regain his place. Later, Sezgin learned that Ritter had begun gathering the bibliographic information needed to publish a new edition of Brockelmann's book. For example, Brockman's book, although named after literature, studies topics unrelated to literature. Brockelmann's work contains a lot of confusing information; this deviates from the scientific process, so Fuat Sezgin aims to continue and complement Brocklemen's research. (AKDEMİR, 2019)

Because he did not cover all topics in Arabic literature, Brockelmann's work is incomplete; however, Sezgin's book is more comprehensive in terms of the historical period covered. and demonstrate the scientific nature of Sezgin through the precision of scientific methodology: because he really wanted to study the history of Arab ancestors, especially Arabic literature. But it turned out that Brockelmann was wrong when he stated that his book was only about literature. He then confused literature with other subjects related to other Arabic sciences. As a result, readers will find that Sezgin's book is more thorough and accurate in terms

of scientific methods. However, Sezgin also covered controversial topics, such as the argument for the uniqueness of the Arabic language.

It is important to note here that Sezgin assisted Richer for a while in the creation of Brockelmann's book, but he was relieved that he was unable to continue his duties due to health issues. From its text, the "History of Arab Heritage" is considered the definitive global record of Arabic literature. In order to build a world institution specializing in the history of Arabic and Islamic studies, 14 Arab countries and other organizations took part in the subject "History of Arabic and Islamic Sciences". One of the most significant achievements of his institution was that he founded the Institute of the History of Arabic and Islamic Sciences in Frankfurt in 1982. Recovered antique Arabic instruments, many of which are found in ancient manuscripts. Nevertheless, the document often only lists the functions of the machine without providing an illustration. He established a museum within the institute in 1983 and collected more than eight hundred reproductions of ancient scientific instruments and maps (Sezgin, 1914:13).

Sezgin overcame the shortcomings of Brockelmann's bibliographic books on Arabic literature by digging into the history of the Arab world's scientific heritage and conducting extensive research and analysis. Nonetheless, the book was released in 1967. The financial challenges he faced, the first volume of his large encyclopedic book was published in German under the title "Geschichte des arabischen Schrifttums". Afterward, it was translated into Arabic and published as "History of Arab Heritage", an encyclopedia detailing the achievements of Arab and Muslim intellectuals. translations of each professor, along with the titles of their publications and locations in the global libraries where the manuscripts are stored. It includes the scientific contributions made by the Arabs throughout the peak of Arab Islamic civilization.

The translation of this Arabic book is divided into the following four parts: historical codification, Islamic religion, Qur'anic science, hadith science, and Sufism. Arabic poetry in five parts. In two components: veterinary and medical. Plant chemistry, agriculture, and semiotics all fall into one section. Mathematics in one piece. Two parts: astronomy. Star supplies and the like are discussed in one section. Two parts: language. Grammar is discussed in one section. Three parts: maps and geography. A map of the ancestors of Islam in the West is included in one section. These parts were released gradually between 1991 and 2009 by the Imam Muhammad bin Saud Islamic University in Riyadh. (Right, 2019)

Sezgin wrote many volumes on the history of the Arab ancestors before he died. These parts were released gradually between 1991 and 2009 by the Imam Muhammad bin Saud Islamic University in Riyadh. Sezgin wrote many volumes on the history of the Arab ancestors before he died. The first appeared in 1967. He immersed himself in his scientific endeavors, dedicating 17 hours a day to collecting Arabic manuscripts scattered from public and private libraries in the East and West. He took their treasure, translated it into German, and published it. (Akdemir, 2019)

It also makes extensive use of studies and research conducted by orientalists who have expertise in this field. The first appeared in 1967. He immersed himself in his scientific endeavors, dedicating 17 hours a day to collecting Arabic manuscripts scattered from public and private libraries in the East and West. He took their treasure, translated it into German, and published it. It also makes extensive use of the various studies and research projects created by orientalists who have expertise in this field. (Argun, 2020)

However, he adds many scientific justifications and statements, such as the one we find in reaction to statements made by orientalists regarding some of the leading scientific figures in the history of Islam.

Despite his extensive curiosity in various fields of scientific history, such as geography and astronomy, Fuat Sezgin also made many contributions to the field of the history of medical sciences. He painstakingly recorded scientific publications and breakthroughs made by Islamic figures. A broad and thorough study is the most important of all, as has the Arabic language for centuries been the tongue of the educated in Islamic society. Islamic medicine, pharmacy, zoology, veterinary medicine, and other historical materials are covered in the third and fourth

volumes (1970 and 1971) respectively which are botany, alchemy, and chemistry. Prominent medical historian Manfred Ullmann praised Fuat Sezgin for his diligent efforts in amassing a large number of manuscripts. "Never before have the natural sciences and Islamic medicine been presented in such a documented form," the statement read.

Fuat Sezgin provides an overview of the history of the evolution of medical writing in Islamic civilization, namely in the field of medical science. He did this by thoroughly explaining the works of some medical writers from the Islamic Golden Age, with an emphasis on their receptions. and the merger of Islam with Indian and Greek knowledge. He cited an Arabic-language manuscript containing Galen's previously missing commentary on De Aere, Aquis et Locis, or On Air, Waters, and Places, Hippocratic's treatise on bioclimatology. He provided numerous historical publications in the field of medicine for future research by publishing print editions. (Tekiner, 2019)

Among the examples are Kitāb al-Mu'alaja al-Buqratia by al-Ṭabarī (838–923), Adab al-Ṭabīb (Practical Ethics of Doctors) by al-Ruhāwī (c. 9th century), and Kunnāš fī al-Ụibb (Compendium on Medicine) by al-Kaskarī (c. 10th century) are some of the works containing medical information. In a series of developments in medicine in Islam, in addition, Fuat Sezgin translated, edited, or reprinted 61 works published in 100 volumes in total; Galen in the Arab Tradition: Texts and Studies, 4 volumes, 1996, and Historical Studies of Islamic Medicine and Related Subjects, 3 volumes in 1997.

Sezgin's scientific life in the last fifty years was greatly influenced by this encyclopedia, which quickly became famous. However, he died shortly after publishing the seventeenth book of this great encyclopedia, after all After years of hard work, this book became famous as a global reference and contributed to Sezgin's scientific recognition for uncovering the hidden gem of the Arab-Islamic scientific legacy, an award that has been recognized by many scientists around the world.

In addition to these efforts, he founded the Institute for the History of Arabic and Islamic Sciences in 1982 within the walls of the Goethe University in Frankfurt, with the aim of advancing scientific understanding of Arabic science. Despite having limited funds, the Institute has accumulated a wealth of knowledge. The institute has published numerous studies, mostly in German. These studies have provided a precise and transparent picture of Muslim scientific achievements in various scientific fields. Until 2018 Fuat Sezgin died by leaving his work in Germany and Turkey with the building of the Islamic Science Museum, as well as his works that influenced the history of Science in the Islamic World.

CONCLUSION

Fuat Sezgin as a Muslim scholar who was educated by the German orientalists provides a new interpretation that is empiric and uses authoritative sources, where how the study of the history of science is not only a memoir that continues to boast of grandeur, but how scholars re-present empirical evidence as scientific evidence in connecting sains and Islamic civilization in the past. Fuat Sezgin's research in the history of science in the Islamic world has had a very extraordinary impact on scholars after him by providing complete data on the existence of manuscript sources from various fields of science. The results of Fuat Sezgin's work in writing the history of science provide an overview of the development of the classification of science in Islam continues to develop from time to time so that the chronology of discoveries in the world of Islamic science can be identified where the novelty of discovery lies. The discourse on the classification of science was born from the works of scientists who trace the work of Muslim scientists from various disciplines. This classification makes a great contribution to reformulating the scientific construction of Islam. How Fuat Sezgin's work had a great influence on the development of writing the history of science among Western and eastern scholars. The seriousness of Sezgin's research was able to dismantle manuscripts scattered throughout the world and reconstruct how manuscripts became the primary source in Sezgin's work and became empirical evidence of the greatness of the world of science in Islamic civilization. In addition, Sezgin immortalized his discovery in the form of a physical building that became a research institution in the field of

science history, which triggered scholars to continue to develop and conduct research on the subject of the history of Islamic science that is still relevant to be researched today.

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