Multidisciplinary

Concept of science, scientific method in Islamic civilization, paradigm of progress and transfer in medieval

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Abstract
Medieval research has a scientific memory of paradigm of progress and transfer, progress of world science history by Islamic civilization has been recorded by European and American orientalists. While in Middle Ages, phenomenon of initiative of a new method in recognizing nature, man and God in Islamic civilization has been formed and new scientists and texts have been created which are symbol of sciences and with civilizational connection between East and West, Science has evolved from Islamic East Christian West and paved way for European Renaissance. Some historians have a political, ideological, and military approach to civilization that they are monopolists and they have to besiege and preserve civilization. The origin, development and transfer of science in the Middle Ages showed that civilization is a human thing and a thousand years of history of science was written by Islamic societies and civilization belongs to different lands and societies and there are many hearts in the world that love science. It cannot be confined to framework of politico-military rules, and this phenomenon is in constant operation in history of world. Hypothesis of development and permanent transfer of sciences between civilizations of different nations in this research is given by mentioning cases of Islamic people who caused the advancement of science in the Middle Ages by a scientific method. Some of these sciences that are a sign of concept of science in Islamic civilization are: light physics, scientific irrigation, separation of mineral chemistry from alchemy (Kimiya), medical engineering in manufacture of surgical instruments, announcing transmission of epidemics by invisible creatures, increasing number of herbal medicines, increasing Issues discussed in philosophy, development in astronomy, formulation of theoretical principles of psychology and theoretical foundations of cognitive sciences, writing principles and methods of healthy living and basic foundations of hygiene are among achievements of Islamic civilization and in field of humanities, science of civilization and philosophy of history, sociology, anthropology are noteworthy.

Keywords: sciences, medieval, civilization, sarton, progress, transfer, islam

1. Introduction: science, civilization, science transfer between nations by researches and states

1.1 The concept of science in Islamic civilization and the scientific policy of Muslims's state

History of science from sixth to sixteenth century was written by any scholar, George Sarton (1956) in his book, Introduction to the History of Science, divides the millennium from the history of world science into 100-year periods, and each period of history of science has named by one of Islamic scholars [1]. These scientists have been pioneers in science in their day. Islamic culture and civilization are historical phenomenon in which have been written nine centuries of scientific and cultural investigation of the human through the Middle Ages, and the cultural-scientific and social-political history of the human in the vast domain of the world. This civilization began from Mecca and after establishing Medina by the Islam's Prophet Mohammad (pbah) as a place for descent of the Quran, the book that is known as "firm saying". The worldly part of this civilization was to develop the sciences and doctrines heritages of previous civilizations. The Islam civilization then became the most productive civilization that heretofore have been seen in the world [2]. In this civilization it had been created unique results such as Avecina (an unparalleled man), Farabi, Biruni, al-Kharazmi, Aenzoar, ALBUCASIS, Al-hazen [3], Maslama al-Majriti 'Ibn Arabi, Averroes, Hafez, Rumi and Ibn Khaldun. In the Islamic culture, Muslim's nations behave according to the customs and behaviors of the Prophet (pbuh) and his successor's Ali (as) as a perfect man and other true Imams. One of the wonders of the Islamic civilization is this that it appeared very soon in the Maghreb, Ifriqiya and the Iberian Peninsula, and created the more majestic sample of civilization which in this study we briefly will deal with this aspect of the Islamic culture and civilization during the period of 13 governments of this area [4]. These states are: Aghlebids, ummayeds, Idrisids, Al-Mohads, Moravids, Marinids, Hafsids, Fatemids, Zirids, Bani-Nasr as result, the hypothesis is that the concept of science in Islamic societies is the same as the concept of science in the Aristotelian view [5].

1.2 Historiography of development and transmission of medieval sciences in twentieth century

George Sarton considered Islamic civilization to be the main phenomenon in the history of science in the Middle Ages and named four periods of the history of science by the global scholars of Islamic civilization, such as AL-Birunee, George Sarton is the only historian of civilization who has defined the relationship between civilization and philosophy for the first time. In expressing the international face of civilization, in the era and in different parts of the world, he has defined its philosophical backgrounds. And culture is the emergence of civilization, which has been considered by historians after the history of the civilization of Durant and Twain, and they have

paid attention to the physical role of the Prophet and the philosophical ideas after him in creating the foundations of civilization. Which is a fundamental stage in the history of world science, especially in the Maghreb, Andalusia and Europe, and the transfer of science to Europe and the preparation of the Renaissance, many orientalists study the phenomenon of Islamic civilization [6].

1.3 Creation of paradigm of Islamic civilization in medieval

Islamic civilization and sciences in detail and has created the paradigm of Islamic civilization. The hypothesis of the research is that the phenomenological view of Islamic civilization was made by Islamic scientist. Ibn Khaldun (732-808) has studied nine centuries of the history of science in Islamic civilization, which is more than nine centuries of human scientific experience in the Middle Ages. Like Razi, but one hundred and eighty years later, he has categorized the sciences in Islamic civilization by expressing empirical reason and considering the fundamental separation of sciences in methods and ends. And has specified the separation of science from superstition and its evolution in Islamic civilization. Throughout the book Islamic Culture in Europe, Hunke has sought to define science in terms of science from Islamic civilization to the European Renaissance in the expression of several empirical sciences. The concept of science in Islamic civilization is the same as the classical heritage of Roman, Greek, Alexandrian and Iranian civilizations, and this concept is a factor of transfer and acceptance. Rosenthal considers the reason for the acceptance of the classical Greek heritage by Muslims to be of historical importance. It existed in India and Iran, and Islamic civilization did not exist without Greek heritage. Nowhere in the world has there been research like Ibn Haytham. This Iranian and Shiite scholar of Twelve Imams left Basra, Iran, and Fatimid Caliph wrote a loving decree to him and prepared himself for any Developed educational services and facilities for Ibn Haytham. He joined court of Fatimid caliphate in Cairo. In Cairo, Ibn Haytham conducted extensive research in light and astronomy. Research in light still needs to be researched and can open new horizons in science of light on human civilization in twenty-first century [7].

2. Application of scientific methods and scientific productions in middle ages

2.1 Investigation at global development of light physics in middle ages, birth of optics

Among human research, studies on the physics of light have played a special role in the development of human civilization. Today's atomic civilization is the result of the increasing development of light physics in the twentieth century. The author of contemporary science, George Sarton, mentions Ibn Haytham as the father of the science of light in his book Introduction to the History of Science in the Twentieth Century. This note by Sarton points to the physical place of Ibn Haytham's medieval studies in international and world studies of light. One of the characteristics of civilization in the Middle Ages is its universality and internationality. A civilization was formed in the Middle Ages that was neither Eastern nor Western, but human. George Sarton, the leader of twentieth-century civilization, announced the birth of the science of light in the Middle Ages by Ibn Haytham. He first brought to light the scientific knowledge of light and formulated the laws governing light. For this reason, he has been called the father of science. In Sarten's study of the history of world science, no research similar to that of Ibn Haytham has taken place anywhere in the world. This twelve Shiite scholar was borne in Iran scholar left Basra and joined the court of the Fatimid caliphate in Cairo. The hypothesis of the research, which has been proved by Sarton by mentioning minor cases, is that the research of light in the east and west of the world evolved and developed under the influence of Ibn Haytham's writings. Roger Bacon He was in a higher position in the balance of East and West in the science of light of Islamic civilization in the Middle Ages, and the roots of all the research of Islamic and Christian scholars go back to Ibn Haytham's book Al-Manazer. The research hypothesis is that the concept of science in Islamic civilization, meaning experimental science, is reflected in the case study of light and the development and transfer of optical research from Ibn Haytham to Tusi and Bacon in English [8].

2.2 Final period of the development of Islamic mathematics in Hafsids Dynasty in Ifriqyah

There is In the history of science, obvious phenomenon of the role of Muslims in development of mathematic but paper present special subject in final period of Islamic mathematic and his stage in transferring of mathematical sciences to Europe in hafsids dynasty flourished any aspect of mathematic sciences as :arithmetic, mathematical geography, geometry [5], applied and speeding up calculations, creating new relations, equations and symbols and solving new problems and by these progress, Tunisia the capital of hafisds kingdom became the bridge for transfer mathematic to Europe [9]. The present article has shown that Islamic west mathematicians created final stage of development of mathematic before Newton and Pascal. The works of some individuals provide clear proof for this theory in the world of mathematic history as the books of Qalsaadi and Hassan Ibn-AL-Banna, by creating many symbols like the letter, as a radical for stage of mathematic development as his book “Jaamah al-mabadi_wa al-ghayaat “on mathematical geography his books are considered as the most important works through east to west of the world for final stage of development in mathematical geography. This phenomenon in A part of the doctoral thesis of the author deals [10].

2.3 Application of induction, experience in humanities, emergence of sociology, anthropology in medieval

Ibn Khaldun is main sources of historiography, orientalism in medieval, despite of more than one thousand writings about his opinions many scholars are unaware of his dignity and they think historiography did not continue after Thucydides and Herodotus and has stopped in ancient, therefore place of Islamic historiography in medieval, it has not yet been determined, while existence of Ibn Khaldun is sufficient to

prove it as international paradigm. He uses term humanities based on empirical reason for first time in his book, AL-Moqadimmah, he explained evolution of civilization by natural causes centuries before Vico (1744), Montesquieu, August Comte, any orientalist as Gibb (1895) considered Ibn Khaldun as oriental theorist, father of sociology that has developed humanities with Western secularism a few centuries earlier than Europe [11]. As conclusion and achievement of Ibn Khaldun's critical theory, it is kind of pathology of civilization has been used by contemporary anthropologists, sociologists to explain events of evolution of city, civilization, According to Ibn Khaldun's paradigm 21st century is historical period death of many developed cities. In describing cyclical evolution of history, he is leader of Frankfurt School of sociology which claims to critique and reform modern civilization [12].

2.4 Application of scientific method, experience by induction in Islamic civilization, emergence of drip irrigation science

Among Andalusian scientists, Ibn Awm is the initiator of the scientific experience of drip irrigation with pottery. His book was translated into France in the early nineteenth century and is considered useful in the development of French agriculture [13]. In the author's article on irrigation in Islamic civilization, which was presented at the International Conference on Traditional Water Management in Yazd in 2011, Ibn Awam's initiative in drip irrigation [14]. The field of development of agricultural knowledge is based on the book of Al-Falaha and water management in medieval Spain. The development of agricultural knowledge in a scientific way and with experimental tactics and based on theoretical efforts, was one of the honors of Muslim Spain and one of their last gifts to this country. The book of Ibn Awam is a symbol of the concept of science in Islamic civilization in medieval. Sarten called it the best agricultural work of the Middle Agesp [15]. His book is the most important medieval book in 34 chapters. The first thirty chapters discuss pure agriculture and the four chapters discuss poultry herding and beekeeping. Which is obtained experimentally Symptoms of vine plants and their treatment methods are shown [16].

3. Discussion and Result

Science entered the stage of building of civilization by product of world Islamic civilization and the foundations of a new civilization were built in the Middle Ages, which has special features. Among them is the separation of science from superstitions and the application of scientific methods in the study and extraordinary development of the basic sciences. This study, by analyzing historical propositions, shows that the establishment of civilization occurs with the progress of the scientific method and the development of basic sciences. And the pattern of science transfer between different societies is a human paradigm that is based on changes in the human soul.

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