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The Contributions of Muslim Scholars to Science in the Book "The Venture of Islam: A Comprehensive Study of Islamic History as a World Civilization" by Historian Marshall Hodgson.

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Abstract

The book "A Comprehensive Study of the History of Islam as a Global Civilization" by historian Marshall Hodgson aims to provide an in-depth and extensive study of the history of Islam, not only from a religious perspective but as a global civilization with a wide impact in various fields such as politics, culture, economics, and science. Hodgson focuses on how Islamic civilization developed over the centuries, what made it one of the greatest civilizations in history, and how it contributed to the development of global thought. He moves away from the traditional narrow view that only emphasizes religious aspects, presenting Islam as an integrated civilization. The book highlights how Islamic civilization interacted with and influenced other cultures throughout history, particularly in intellectual, philosophical, and scientific fields, and how these factors shaped the development of the Islamic society and its interaction with the world. Overall, the book aims to encourage readers to think of Islam and its civilization in a comprehensive and global manner, surpassing the limited perceptions that may exist in certain cultural or academic circles.

Keywords: Era, Nature, Analysis, Contributions, Summary

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1. Introduction

The First Section: The Era of the Historian Marshall Hodgson

His Biography

Marshall Goodwin Simms Hodgson was born on April 11, 1922, in Richmond, Indiana, United States. At an early stage, he studied at Westtown School in Pennsylvania, a school affiliated with the Quaker denomination. He obtained a bachelor's degree in economics and political science from the University of Colorado in 1943. He then continued his studies in the Relief and Reconstruction Program at Earlham College, an educational institution affiliated with the Quakers. This period coincided with the Second World War. Hodgson's interest in human history was still in its early stages, while he attached great importance to his religious and humanitarian principles and aspired to contribute to the reconstruction of countries affected by the war. When the time came for military

service after his graduation, Hodgson refused to serve on the basis of his religious convictions. Consequently, he spent three years (1943–1946) in detention camps designated for conscientious objectors. This period became a time of reflection and writing, during which he wrote an extensive study of world history while working at Concord Mental Hospital.) [Hisham, 1987].

His Works and Studies

At the time of his death, Hodgson had published only one book, namely his doctoral dissertation, which he revised and published in 1955 under the title The Secret Order of the Assassins: The Struggle of the Early Nizari Ismailis with the Muslim World. This study provided a profound understanding of the central currents of the eleventh century.

In the same year, Hodgson published an important study on the sectarian

formation of the Imami Shi'a entitled How the Early Shi'a Became Sectarian. He intended to expand this study into a book dealing with this issue.

Hodgson continued to demonstrate an interest in early Shi'ism. In 1962, he published a study entitled The Druze and Hamza in the Foundations of Druze Theology. In 1968, he added a chapter entitled “The Ismaili State” to The Cambridge History of Iran. He also contributed an article on the Ghulat to the second edition of the Encyclopaedia of Islam, as well as an article on the Ghassaniyya sect.

In the field of general Islamic history, Hodgson published a study in 1959 entitled The Attention to the State of Islam. In 1960, he added another study entitled The Unity of Later Islamic History, in which he discussed the unity of Islamic history following the Mongol invasion. He also published a comparative study of al-Tabari and Abu al-Fadl Allami as historians entitled Two Muslim Historians

Before Modernity: The Pitfalls and Opportunities of Presenting Them to Moderns. In 1964, he published a study entitled Islam and the Image, which examined the relationship between Muslims and images and icons. He referred to this subject [Said , 2015] at several points in his book The Venture of Islam. After his death, a study entitled The Place of Islam in World History was published in 1970.)1 (Hodgson developed an interest in world history at an early stage. His first study in this field was published before he entered graduate studies at the University of Chicago under the title World History and the World View in 1944. In 1954, he published his first serious study entitled The History of Relations in the Hemispheres as an Approach to World History. This was followed by a study in 1956 entitled At the Center of the Map: How Nations See Themselves as the Focus of History. [Hisham, 1978]

In 1963, he published a study summarizing his approach to world history entitled The Interrelations of Societies in History. He also wrote a methodological critique of William McNeill's work entitled On the Work of World History in 1966. In 1968, two studies by him were published: Toward a World Community and The Historian as Theologian [Marshall, 1985].

Hodgson hoped to complete his book, which he described as his “dream book,” under the title The Valleys of Vision. The book was mentioned in his papers as early as 1944, and Hodgson had written numerous notes intended for inclusion in it. In one of his letters in 1955, he described the book as a poetic work in the style of The Divine Comedy, presenting a vision of the world similar to the works of John Milton or Ibn Arabi. In another letter, he described it as an epic work resembling the writings of Toynbee, comparing it with the works of Hegel or Herodotus.

In a letter written in 1961, he stated that the book had begun to evoke a kind of “science fiction,” incorporating elements of artificial intelligence. Nevertheless, his objective remained constant: to present his own conception of the course of humanity and the story of humankind as a whole, enabling the reader to receive the human heritage in all its aspects, both good and evil, as a shared heritage. The book represented an ideal objective through which Hodgson sought to bring human history together into a single narrative carrying profound philosophical and religious insights [William McNeill].

Hodgson was unable to complete this book before his death. Nevertheless, he left behind numerous studies focusing on the relationship between different cultures and the history of Islam within a broader historical context. He had a profound influence on the field of world history and on methods of studying civilizations, introducing a renewed way of thinking about relationships across

history.

The book A Comprehensive Study of the History of Islam as a World Civilization by the historian Marshall Hodgson is considered an important work dealing with Islamic

history as a civilization, and it had a significant impact on the academic field. The book examines the development of Islamic civilization across the ages, beginning with the emergence of Islam in the seventh century CE and extending to the modern period.

The book is distinguished by its attempt to interpret Islam and its civilization through an evolutionary framework, away from traditional conceptions that focus solely on religious dimensions. It adopts a comprehensive perspective that brings together history, religion, and thought. It also discusses the relationship between Islamic civilization and other civilizations and highlights the scientific and intellectual contributions of Muslims throughout history.

Contents and Parts of the Book

The book is divided into three parts, with each part covering a specific period or aspect of the history of Islamic civilization.

Part One: Islam in the Early Periods discusses the emergence of Islam, the

historical and cultural context of the Arabian Peninsula, and the life of the Prophet Muhammad (peace and blessings be upon him and his family).

Part Two: Classical Islam focuses on Islamic expansion, the Golden Age of

Islamic civilization, and the emergence of major Islamic empires such as the Abbasid Empire.

Part Three: Modern Islam addresses the transformations experienced by Muslim

societies in the modern period, the impact of colonialism, and the rise of reform and renewal movements.

The book was translated into Arabic under the titles The Venture of Islam and Conscience and History in a World Civilization, translated by Osama Ghawji and published by the Arab Network for Research and Publishing [Raymond Schwarter].

Part One: Islam in the Early Periods

This part focuses on the emergence of Islam in the seventh century CE in the Arabian Peninsula. It examines the historical and social context that prevailed in the Arabian Peninsula, including the tribal and religious situation before the emergence of Islam.

Hodgson explains how the political and social environment of the Arabian Peninsula had paved the way for the emergence of the new religion. Particular attention is given to the life of the Prophet Muhammad (peace and blessings be upon him and his family), from his birth until his death. This includes his receiving and conveying the divine message, the challenges he faced in preaching, the persecution he and his followers experienced in Mecca, his migration to Medina, and the establishment of the Islamic state.

This part examines the role of the Prophet Muhammad (peace be upon him) in laying the foundations of the religion and Islamic society, with emphasis on the values and principles carried by Islam in its early stages [Fuad Sezgin]

Part Two: Classical Islam

This part focuses on the Golden Age of Islamic civilization, extending from the eighth to the thirteenth century. It highlights the rapid expansion of the Islamic Empire following the death of the Prophet Muhammad, including the conquests undertaken under the Umayyad and Abbasid caliphates.

Hodgson explains that Islam was not merely a religion, but a comprehensive civilization with a system of cultural, social, and political values that influenced numerous peoples. He also presents the Golden Age, during which the Islamic world witnessed remarkable advances in many fields, including science, philosophy, medicine, astronomy, mathematics, and chemistry. Prominent Muslim scholars such as al-Farabi, Ibn Sina, and al-Khwarizmi, among others, are highlighted. The emergence of major Islamic empires, particularly the Abbasid state, which witnessed scientific and cultural flourishing in Baghdad, is also discussed, together with the legacy of this period in shaping an advanced civilization.).

Part Three: Modern Islam

This part examines the changes and transformations that occurred in Muslim societies during the modern period. Hodgson focuses on the impact of Western colonialism on the Muslim world during the nineteenth and twentieth centuries and how this influence shaped the development of Muslim societies.

The book discusses the emergence of intellectual and political movements that sought modernization and reform within the Muslim world, such as the reform

movements led by thinkers including Muhammad Abduh and Rashid Rida, as well as nationalist movements that emerged in response to colonial domination.

The book also addresses the emergence of the modern Islamic state and the impact of the Industrial Revolution and Western theories on political and social thought in the Muslim world. It further discusses the political conflicts that affected the Muslim world after independence, including nationalism, democracy, and political Islam, as well as issues that continue to occupy Muslim societies in the modern era [Raymond]

Analysis and Critique of the Methodology and Main Idea of the Book

2. The Methodology of the Book

The book adopts a comprehensive methodology, providing an extensive analysis of Islamic civilization in its various dimensions—religious, social, and cultural. It also adopts a global perspective by presenting Islam as a world civilization and emphasizing its influence in multiple fields. As an intellectual contribution, the book represents a valuable addition to the academic library for understanding the history and civilization of Islam. However, one of the shortcomings of the book lies in the complexity of its terminology. It may be difficult for the non-specialist reader because of its complex academic terminology and its emphasis on economic factors.The book may also be criticized for presenting an economic and social perspective that may overlook certain intellectual and theological dimensions. Furthermore, it may not devote sufficient attention to internal political challenges and may lack adequate focus on the political challenges and conflicts that

occurred within the Islamic state [Raymond ,P75]

The Comparative and Historical Approach

Hodgson relies in his book on a comparative historical approach, through which he examines the development of Islam within a broader civilizational context. He does not treat Islamic history merely as the history of a religion, but as part of the history of humanity, examining its impact on world culture.

This approach is one of the book's most important characteristics because it focuses on Islam as a comprehensive civilization and examines the interaction among religion, politics, culture, and economics

Terminology and Definitions

Hodgson employed new terminology in the book to understand and clarify the development of Islamic civilization. He distinguishes between Islam as a religion and Islam as a civilization and places religion within a broader social and historical context.

Analysis and Critique

Some readers may encounter difficulties in understanding certain new terms used by Hodgson, particularly in the chapters dealing with complex concepts related to the development of religion and politics. Although this may be regarded as an academic advantage, the non-specialist reader may find it difficult to comprehend some of the complex ideas presented.

Some critics may also criticize the book for making excessive use of the comparative approach, which may obscure or diminish the significance of internal interactions and the unique cultural factors that distinguished Islamic civilization during certain periods.

Focus on Economic and Social Factors

Hodgson clearly emphasizes the role of economic and social factors in shaping Islamic civilization. He argues that the spread of Islam was not merely the result of military conquests, but was also connected to the economic and commercial transformations that took place in the region. Religion also played a role in organizing social relations [Adel Hussein, p130].

Criticism and Analysis

Although the economic and social analysis constitutes one of the distinctive aspects of the book, some critics may argue that focusing on these factors could reinforce a stereotypical image of Islam as merely the outcome of social and economic developments.

The book may at times overlook the intellectual and philosophical factors that contributed to the advancement of Islamic civilization, such as the development of Islamic philosophy and interaction with Greek and Indian philosophies.

Cultural and Scientific Renaissance

Hodgson extensively discusses the influence of Islamic civilization in fields such as science, medicine, and astronomy. He also highlights the role of Muslim scholars in preserving and developing the ancient scientific heritage. He examines in detail how Islamic sciences

influenced the European Renaissance during the Middle Ages.

Analysis and Critique

Although the book presents the achievements of Muslim scholars, it may not sufficiently balance this presentation with a discussion of the challenges faced by Muslim scholars during different periods, particularly during the Abbasid era and subsequent periods.

The book also places considerable emphasis on the role of the "Golden Age" of Islamic civilization and devotes comparatively less attention to the factors that contributed to the decline of this role in later periods, such as internal challenges and political conflicts that affected intellectual life.

Islam and Politics

One of the major themes of the book is the manner in which Islam influenced politics, particularly with the establishment of major Islamic empires such as the Umayyad, Abbasid, and Ottoman empires. Hodgson argues that the political system within Islamic civilization was complex and reflected the interaction between religion and politics [John, 2003]

Analysis and Critique

The book may be criticized for presenting an idealized conception of the political system within Islamic civilization. Although Hodgson analyzes the development of the Islamic state in considerable depth, he may at times overlook the political tensions and conflicts within the Islamic state, such as the conflict between Sunnis and Shi'a or the challenges faced by major empires amid internal

divisions.

Islamic Identity and Cultural Pluralism

Hodgson focuses in his book on cultural pluralism within the Islamic world, considering Islam capable of accommodating cultural and ethnic diversity within its empires. This contributes to portraying Islam as a global civilization open to the Other [Yusuf, p180].

Analysis and Critique

Although Hodgson emphasizes cultural pluralism, he may not provide sufficient detail concerning the challenges faced by such pluralism during different periods. The reader may note that the book does not sufficiently address tensions between different cultures within the Islamic world, such as the relationship between Arabs and non-Arabs or the relationship between Muslims and non-

Muslims during later periods.

Analysis of Hodgson's Historical Methodology

Moving Away from Western-Centered History

One may analyze how Hodgson sought to challenge traditional historical concepts that focused on Western history while marginalizing other cultures. The approach adopted by Hodgson reflects his critical perspective toward Western dominance over historical narratives. [Gustav, p75].

Focus on Cultural and Social Factors

An analysis may be provided of how Hodgson presented the social, economic, and cultural factors that influenced the history of the Islamic and wider world, and how he made these factors central to understanding world history.

Hodgson's Understanding of the Relationship between Islamic History

and Global History

Islamic Civilization as Part of World History

It may be noted how Hodgson viewed Islamic civilization as part of the fabric of world history and emphasized its influence on the development of other civilizations through cultural and scientific exchange [Muhammad, p220]

Contributions of Muslim Scholars in Various Fields

This section may highlight the contributions of Muslim scholars to philosophy, science, mathematics, medicine, and astronomy, and explain how these contributions were central to the development of human knowledge.

Expanding the Role of Islam in Shaping Global Thought Islam and Western Philosophical Thought

This section may examine the influence of Islam on the development of Western philosophy and how European thinkers benefited from the Islamic intellectual and scientific heritage, as occurred during the Middle Ages when Arabic translations of the works of Greek philosophers were transmitted into Latin.

Thinkers such as al-Farabi, Ibn Sina, and al-Ghazali

This section may examine how Muslim philosophers contributed to the development of philosophical thought, together with an analysis of some of their ideas and their influence on subsequent Western philosophies.

A History of Conflict and Cultural Interaction

Relations between the West and the Islamic World

This section may address the interaction between Islam and the Western world throughout different historical periods, particularly during the Crusades and periods of commercial and scientific exchange. It may also discuss how these [Adel Hussein, p134].

interactions may have contributed to shaping Hodgson's understanding of world history [Mustafa, p110].

Intellectual and Political Conflict

The influence of political and religious conflicts on historical narratives should be discussed, as such conflicts sometimes contributed to rethinking interactions between different civilizations.

The Role of Arab and Muslim Historians in Enhancing a Global

Understanding of History

Contributions of Arab Historians such as al-Tabari and Ibn Khaldun

The role of Arab historians in presenting diverse conceptions of history may be analyzed, particularly how their approach was characterized by a comprehensive and global perspective.

Concepts such as “Social History” and “Civilization” (‘Umran)

It may be shown how historians such as Ibn Khaldun addressed social and civilizational issues and how his ideas correspond with modern understandings of history.

Interaction between Western Historians and Muslim Scholars

The Influence of Hodgson's Thought on Contemporary Historical Studies

It may be discussed how Hodgson's ideas concerning Islamic history contributed to shaping modern studies of Islamic history and world history.

Challenges Facing Orientalist Studies in Understanding Islamic History Due

to Cultural Bias

Attention may be given to the challenges that Western historians may encounter and how such challenges can be overcome through the adoption of integrated methodologies.)1 (

History and Identity: An Analysis of the Impact of the Islamic Scientific

Heritage on Hodgson

The Scholarly and Historical Identity of the Historian Hodgson

The manner in which Hodgson, as a Western historian, developed within an academic environment and began exploring the influence of Islamic civilization through his reading of philosophers and thinkers may be analyzed.

It may also be discussed how Hodgson criticized certain approaches that prevailed in the history of Islam, particularly those relating to the traditional methodologies of early Muslim scholars [Raymond, p75].

Emphasizing the Value of East–West Interaction

Cultural Exchange between East and West

The cultural dimensions of relations between the Western and Islamic worlds may be examined, together with the ways in which this interaction contributed to the development of human thought.

The Pioneering Role of Muslim Scholars in the Western Enlightenment

It may be discussed how Muslim scholars during the Middle Ages contributed directly to the advancement of science and knowledge that later reached Europe, including medicine, astronomy, and mathematics [Mustafa, p110]

Contemporary Views on Hodgson's Influence

Contributions of Other Scholars in the Same Context

The views of some contemporary scholars who have examined Hodgson's ideas and their impact on historical studies may be addressed, including the ways in which they value his work in advancing intercultural dialogue.

Challenges that Historians May Face in the Future

It may be discussed how Hodgson's work can continue to inspire new historians in the field of world history [Adel, p134].

10. The Importance of Continuing Research into the History of Islamic

Civilizations

Future Challenges in Historical Studies

Emphasis may be placed on the importance of continuing research into the history of Islamic civilizations as part of world history and on the need for further research and study in this field in order to achieve a better understanding of the interaction among nations and cultures throughout the ages [Raymond, pp 52-75].

Conclusion

Marshall Goodwin Simms Hodgson represents one of the historians who sought to reconsider the history of Islam within a broader framework of world history. His approach went beyond treating Islam solely as a religious phenomenon and instead examined it as a comprehensive civilization shaped by complex interactions among religious, political, social, economic, and cultural factors.

His studies of Islamic history, world history, cultural interaction, and the relationship between different civilizations contributed to developing a broader understanding of the position of Islamic civilization within human history. His comparative and historical methodology also sought to move beyond Western-centered approaches and to place Islamic civilization within the wider history of

humanity.

Hodgson's unfinished intellectual project, particularly his proposed Valleys of Vision, reflects his ambition to present a comprehensive interpretation of human history in which the experiences of different peoples and civilizations could be understood as part of a common human heritage.

At the same time, the methodology adopted by Hodgson can be subjected to critical examination, particularly with regard to his emphasis on economic and social factors, his comparative approach, and the complexity of some of his terminology. Such aspects provide important material for evaluating his contribution to the study of Islamic civilization and world history.

The continued study of Hodgson's writings therefore remains significant for understanding the development of modern approaches to Islamic history and for examining the interaction between Islamic and Western historical traditions.

The Second Section: The Scientific Contributions of Muslim Scholars in the Book

A Comprehensive Study of the History of Islam as a World Civilization

From its earliest beginnings, Islam encouraged the pursuit of knowledge and regarded learning as an essential part of the Muslim's life. Although knowledge and science had existed in earlier civilizations, Muslim scholars were among the pioneers who contributed to the development of the natural and human sciences. This intellectual environment gave rise to the “Islamic Scientific Renaissance,” which continued for several centuries and played a major role in enriching human thought.

The Holy Qur'an contains numerous verses that encourage reflection, contemplation, and learning, such as the command “Read” in Surat al-‘Alaq. Although many earlier civilizations witnessed significant developments in science and the arts, Muslim scholars were pioneers in developing these sciences and established a scientific renaissance that continued for several centuries. This renaissance was not limited to the scientific fields alone; rather, it also encompassed philosophical and social thought and contributed to the expansion of knowledge that laid the foundations for the European Renaissance [Mustafa, p120].

Muslim scholars were among the most prominent participants in the scientific renaissance witnessed by the world during the Middle Ages, which contributed significantly to the development of human knowledge. In this book, an important section is devoted to examining the contributions of Muslim scholars in numerous scientific fields, contributions that left a profound impact on the development of modern sciences. The principal contributions addressed in the book are as follows:

Mathematics

Al-Khwarizmi Al-Khwarizmi (780–850 CE) is considered one of the most prominent scholars who laid the foundations of algebra. His book The Compendious Book on Calculation by Completion and Balancing was a starting point for this field. Al-Khwarizmi also made an important contribution to the science of algorithms, from which the modern term is derived, as well as to arithmetic.

Al-Khwarizmi had a profound influence on mathematics, particularly through his development of The

Compendious Book on Calculation by Completion and Balancing, which remains one of the fundamental works upon which the science of algebra is based to this day. On the other hand, it appears that al-Khwarizmi also developed mechanical calculations, including algorithms, which are regarded as a foundation of modern computing. However, some historians point out that he made extensive use of ancient Indian techniques in developing these ideas.

Al-Tusi Al-Tusi developed the concept of angles in geometric space and employed them in astronomy. His works influenced Western mathematics during the Middle Ages. His contributions to astronomy and mathematics had a clear influence on Western astronomy during the medieval period. However, some critics, even today, question the extent to which al-Tusi's major contributions to the development of Islamic astronomy should be understood without sufficiently acknowledging the contributions of earlier scholars, including the Greeks and Indians.

Astronomy

Al-Battani Al-Battani was one of the prominent astronomers of the Islamic world. He contributed through his writings on planetary motion and measurements of celestial distances. His work had a significant influence on the development of astronomy in Europe.

Ibn al-Shatir Ibn al-Shatir was an astronomer from Damascus who made notable contributions to the development of astronomical methods and calculations concerning planetary motion. His works formed the basis for many European astronomical studies.

Ibn al-Shatir is considered one of the pioneers of astronomy. Nevertheless, it should be noted that some of these discoveries were overlooked or obscured for several centuries in Europe, including Ibn al-Shatir's attempts to explain planetary motion. Some researchers also argue that the influence of Indian and Greek astronomy on Muslim astronomers was evident, and considerable debate has arisen concerning the attribution of these discoveries.

Medicine

Ibn Sina (Avicenna) Ibn Sina (al-Husayn ibn ‘Abd Allah ibn Sina) is considered one of the greatest physicians of the Middle Ages. His Canon of Medicine served as a medical reference in European universities for several centuries. He contributed to surgical medicine, the treatment of mental illnesses, and the development of theories concerning infectious diseases.

Muslim scholars in the field of medicine established innovative scientific foundations in various branches of medicine. Nevertheless, some historians point out that Islamic medicine relied heavily on the ancient Greek medical heritage and that significant challenges existed in reconciling traditional medicine with practical experimentation.

Ibn Sina's medical contributions demonstrate the extent to which Muslim scholars sought to combine inherited knowledge with observation and practical medical experience. His Canon of Medicine became one of the most influential medical works in both the Islamic world and medieval Europe.

Al-Razi Al-Razi made remarkable contributions to medicine and treatment and authored Al- Hawi, which was a major medical encyclopedia. He also contributed to the classification of diseases, particularly dermatological diseases.

Chemistry

Jabir ibn Hayyan Jabir ibn Hayyan is considered one of the pioneers of chemistry. He developed important foundations of the science of chemistry and conducted numerous experiments that contributed to the discovery of various chemical compounds. He also invented numerous laboratory instruments, some of which resemble instruments that continued to be used in laboratories in later periods.

It may be said that Jabir was among the pioneers in the development of chemistry. His experimental approach represented an important stage in the history of scientific inquiry. Nevertheless, some studies indicate that many of the experiments attributed to him remained obscure or difficult to understand, which hindered the practical application of some of his ideas for a considerable period

Philosophy

Al-Farabi Al-Farabi was interested in developing rational philosophy and logic. He had a major influence on both Islamic and Western philosophy. He worked to reconcile the ideas of Aristotle with Islamic thought, emphasizing reason and logic.

He was also one of the prominent scholars who transmitted and interpreted the philosophical heritage of Aristotle and Plato in Arabic, and whose works exerted a

significant influence on later intellectual developments. The criticism here lies in the fact that Muslim philosophers sometimes became involved in reconciling Islamic philosophy with ancient philosophies, which could result in philosophical formulations that were difficult to reconcile completely with certain theological and philosophical questions.

Ibn Rushd (Averroes): A Pioneer of Arab Philosophy Ibn Rushd was one of the greatest philosophers of Islam and played a pivotal role in transmitting Greek philosophy to Western Europe. His commentaries and works on philosophy provided an important foundation for the understanding of Aristotelian philosophy.

The intellectual contribution of Ibn Rushd was not limited to the transmission of Greek philosophy. He also developed critical interpretations of Aristotelian thought and sought to demonstrate the compatibility between rational inquiry and religious understanding. His works subsequently became an important part of the intellectual history of medieval Europe.

Agriculture and the Environment

Ibn al-Baytar Ibn al-Baytar was a botanist and scholar of medicinal plants who made major contributions to medicine and herbal treatment. In his book The Comprehensive Book on

Simple Drugs and Foods, he compiled an enormous amount of information concerning plants and their medicinal properties. His work reflects the extensive interest of Muslim scholars in botany, pharmacology, and the practical uses of natural resources.

Social Sciences

Ibn Khaldun Ibn Khaldun is regarded as one of the founders of sociology and social history. In his Muqaddimah, he established foundations for understanding the emergence of states, the development of societies, and the factors influencing their political, economic, and social life.

His ideas concerning society and the state exerted a considerable influence on later political and historical thought. He attempted to identify the laws and patterns governing the rise and decline of states and civilizations and emphasized the importance of social solidarity, or ‘asabiyyah, in understanding political change.

Ibn Khaldun's approach was distinguished by his attempt to move beyond merely recording historical events and to examine their causes and consequences. In this respect, his work represents an important development in the methodology of historical writing.

Geography

Al-Muqaddasi Al-Muqaddasi conducted a detailed geographical survey of the Islamic world of his time. His book Ahsan al-Taqasim fi Ma‘rifat al-Aqalim (The Best Divisions for Knowledge of the Regions) was an important geographical reference during the Middle Ages.

His geographical descriptions were not limited to physical geography. He also recorded information about cities, populations, economic activities, customs, and social conditions, making his work a valuable source for understanding the geography and societies of the medieval Islamic world.

Ibn Hawqal Ibn Hawqal collected precise information concerning distances and regions throughout the Islamic world. He played a significant role in identifying and locating various places across the Islamic world.

Engineering and Architecture

Ibn Firnas Ibn Firnas was an Islamic scholar and inventor from al-Andalus. He made attempts to develop flight and made significant contributions to mechanics and the design of engineering instruments.

His experiments are frequently presented as an example of the innovative spirit that characterized scientific inquiry in Islamic civilization. His interest in mechanics and the design of devices reflects the practical dimension of scientific knowledge during the period.

Al-Zahrawi Al-Zahrawi was one of the prominent scholars in medicine and surgery. He invented numerous surgical instruments and developed medical and surgical techniques that were advanced for his time. His writings became important references in the history of surgery and contributed to the transmission of surgical knowledge to Europe.

Technology and Innovation

Ibn Sahl Ibn Sahl contributed to the development of mechanical devices and engineering techniques. He worked on devices associated with mills and hydraulic mechanisms and developed machines that could operate using water power.

Such developments demonstrate the relationship between theoretical scientific knowledge and practical

technological applications in Islamic civilization. Muslim scholars did not limit themselves to theoretical investigation but also sought to apply scientific principles to agriculture, water management, mechanical devices, and other practical needs [Majdi, pp 125-150]

The Development of Concepts of Islamic Civilization in the Development of Science

Islamic civilization developed fundamental concepts in both the human and natural sciences and began to establish comprehensive foundations concerned with practical as well as theoretical scientific dimensions.

Ibn Khaldun laid important foundations for the study of society, while astronomy flourished through the work of scholars such as Ibn al-Shatir. In addition, Muslim scholars established educational institutions and systems, including those associated with the House of Wisdom in Baghdad, and contributed to the transmission and development of knowledge in Europe during the Middle Ages.

The House of Wisdom represented one of the most significant centers of intellectual activity in Baghdad. Translation, scientific research, the collection of manuscripts, and scholarly discussion contributed to the development of an intellectual environment in which knowledge from different civilizations could be studied, translated, and further developed.

The Role of Translation and Interaction with Other Civilizations

One of the most prominent strengths that characterized the Islamic scientific renaissance was its openness to various civilizations, beginning with Indian and Greek civilizations and extending to Persian and Byzantine civilizations.

Muslim scholars translated numerous ancient texts into Arabic and adopted from them what was compatible with their intellectual and cultural environment, while adding their own scientific and intellectual contributions. The translation movement therefore represented not merely a process of transferring knowledge, but also a process of interpretation, criticism, development, and innovation.

The interaction between Islamic civilization and other civilizations was particularly important in mathematics, astronomy, medicine, philosophy, and other fields. Greek philosophical and scientific works were translated into Arabic, while Indian mathematical knowledge contributed to the development of arithmetic and astronomical calculations.

The significance of this interaction lies in the fact that Muslim scholars did not simply preserve the knowledge they inherited. Rather, they examined, criticized, reorganized, and developed it according to the needs of their own intellectual environment. This process enabled Islamic civilization to become an important intermediary through which knowledge moved between different cultural regions.

3. Conclusion

It has become evident that Marshall Hodgson was a prominent American historian specializing in Islamic history and world history. He made a significant contribution to the development of the methodology of world history through his works and studies.

One of his most prominent works was his first book, The Secret Order of the Assassins: The Struggle of the Early Nizari Ismailis with the Muslim World, published in 1955, alongside other studies on Islamic history, Shi‘ism, and the Ghulat, as well as studies concerning the concept of world history.

Hodgson was interested in developing a concept of history that would enhance understanding of the relationships among different societies throughout the ages. He also aspired to complete his most ambitious work, The Valleys of Vision, through which he sought to present a comprehensive philosophical and religious vision of human history.

The book A Comprehensive Study of the History of Islam as a World Civilization by Marshall Hodgson is considered an important contribution to the field of Islamic historical studies. It presents a comprehensive vision of Islamic civilization and covers a wide range of subjects, extending from economic and social aspects to intellectual and scientific dimensions. Nevertheless, the book may require greater balance in addressing the political and internal challenges faced by Islamic civilization during certain periods.

It has become clear that Muslim scholars did not merely preserve the intellectual heritage of previous civilizations; rather, they contributed significantly to its development and influenced the advancement of numerous sciences and arts. These contributions were central to the formation of modern sciences and helped pave the way for the

European Renaissance after centuries of scientific stagnation during the Middle Ages.

The book demonstrates that Muslim scholars made substantial contributions to various scientific fields and helped establish the foundations upon which later developments in European science were built. This knowledge was transmitted to the West through translations and scientific works, contributing to the development of many fields of knowledge and making Islamic civilization an important part of the history of global science.

It is also evident that the contributions of Muslim scholars to the development of science constituted a major foundation in the formation of modern human knowledge. Through pioneering achievements in numerous fields, including astronomy, mathematics, medicine, chemistry, philosophy, geography, and other sciences, they contributed to the expansion of human knowledge.

Islamic civilization also demonstrated an ability to integrate philosophical thought with scientific inquiry and experimentation, thereby creating an intellectual environment that encouraged significant developments in science. Through the study of these scholars, it becomes clear that their contribution cannot be reduced merely to the transmission of knowledge from other civilizations. Rather, it also involved interpreting, developing, applying, and innovating that knowledge in accordance with the scientific and intellectual requirements of Muslim society during the period.

The scientific legacy of Muslim scholars therefore represents an important component of the history of human knowledge. Their achievements demonstrate that scientific development has historically resulted from interaction among civilizations, the exchange of ideas, translation, critical inquiry, and the creative development of inherited knowledge

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