Islamic Intellectual Heritage And It's Impact on the West

Edited by
M. Basheer Ahmed M.D.
Published by
Institute of Medieval and Post Medieval Studies
DALLAS TEXAS

CONTENTS

CONTRIBUTORS

M.Basheer Ahmed M.D. is the former professor of Psychiatry at University of Texas Health Science Center, Dallas, Texas and chairman of Muslim Community Center for Human Services. He is the former president of Islamic Medical Association of North America. He has written numerous articles and has made several presentations on the subject related to Medieval Muslim Scholars. He has edited a book "Muslim Contribution to World Civilization" which was published by International Institute of Islamic Thought in 2005.

Syed A. Ahsani. is the former Ambassador of Pakistan. He is the current President of Institute of Medieval and Post-Medieval studies, Dallas, Texas. Mr. Ahsani has made numerous presentations at National conferences and has written several articles on medieval scholars.

Professor Shah Manzoor Alam Ph.D(Edin.) is the former vice-chancellor of Kashmir University, India. He has edited and written several books on Quran, Science, and Technology, and related subjects which were published by Imam Muhammed Ibn Saud University Saudi Arabia and in the Journals of Islamic culture and Hamdard Islamicus.

Dr. Ilai Alon earned his Ph. D. from Oxford University in Arabic Philosophy. He is the professor at Hebrew University in Jerusalem and the visiting professor of near Eastern cultures and languages at the University of Chicago. He has made numerous presentations in Israel, USA, and other parts of the world.

Dr. Carol Bargeron teaches Islamic History and Modern Middle East History at Texas State University, San Marcos, Texas. She is a contributor to Medieval Islamic Civilization: An Encyclopedia. Dr. Bargeron has published numerous articles on Islamic History and Modern Middle East History.

Dr. Assad Nimer Busool is from Palestine and currently teaching at American Islamic College, Chicago, Illinois. He has written numerous books and has made several presentations at Association of Muslim Social Scientists Annual Conferences and International Medieval Congress at West Michigan University, Kalamazoo, Michigan.

Preface

M. Basheer Ahmed M.D.

Current history books in the academia ignore the impact of Muslim civilization and culture on the West. Very little is mentioned about the social, political, and scientific developments since the decline of Greek culture until the beginning of the Renaissance – 16th Century. In fact, the period is referred to as "Dark Ages". In reality, it was the "Dark Ages" for Europe, but not for the entire world. Morowitz described this so called Dark Ages as "the history's 'black hole', giving the impression that the Renaissance arose Phoenix like from ashes smoldering for a millennium after the classical age of Greece and Rome." (1)

During the Medieval period, 8th to 16th century, Islamic civilization was at its height. Muslim scholars from Abbasids in the east to Andalusia in the west learned the heritage of Egyptian, Roman, Greek, Persian, Chinese, Hebrew, and Indians. This knowledge was transferred by translations from Arabic to Latin in Spain and was subsequently disseminated in Europe along with the original scientific research contributions by Muslim scholars leading to Europe's Renaissance and Reformation.

The Muslim scholars made a significant impact by changing Greek speculation to empiricism-a process of research to verify the facts. Their original contributions to medicine, astronomy, chemistry, physics, mathematics, and optics are innumerable and had a lasting effect on science and technology of the next millennium.

The scientific legacy Muslim scholars left behind laid the foundation for progress in science and technology in Europe in the second millennium. Unfortunately, the influence of Orthodox Muslims and the debate between Proponents of Reason and Revelation, Predestination and Freewill, discouraged free thinking, resulting in a decline of scientific progress. No wonder the knowledge of science and technology was gradually transferred to Europe and today the Muslim public discourse is at the lowest ebb of modern educational and economic development.

In addition, inspired by spirit of discovery to expand their business, the European traders were looking for commercial routes in the Orient which was more or less controlled by Muslim traders. Portuguese penetration into the Indian Ocean stemmed from powerful economic motivation and religious aspiration, to gain control over the trade routes. Success in doing so resulted in further decline in the power and influence of Muslim civilization which was till then was the most powerful and dominant in the world.

The logic of the policy demands that the present day young generation- the leaders of tomorrow - being educated in the contemporary academia need to be familiarized with the essential linkage between classical and medieval cultures and between the medieval and modern civilization. Hopefully this will give a correct

perception about Islamic scholars and their contribution and this may produce a climate of civil discourse among people of various faiths and culture.

Given the current post 9/11 environment, when Muslims are being dubbed as epitome of terror, proving "Clash of Civilization" a la Huntington, it is important to recognize that the West owes much to Muslims. Indeed they influenced a vast spectrum that included Jewish, Christians, and Islamic Public Square.

Such familiarization will hopefully improve the image of medieval Muslim scholars among the young generation of Muslims and non Muslims being educated in contemporary academia This knowledge will also help in developing harmonious relationships among various groups, clarifying that the foundation of modern civilization and scientific progress was not laid down in the 17th century but it is a continuum where Muslim philosophers and scholars played a significant role as a precursor.

The mission of Institute of Medieval and Post Medieval Studies, established in Dallas, Texas in 2005 is to disseminate the knowledge of medieval scholars and the influence of their contributions made on the Western world. To achieve this goal the institute holds conferences in Dallas, Texas, apart from holding Sessions at the International Medieval Congress ,the largest in the world, held by the Medieval Institute, Western Michigan University, Kalamazoo, Michigan.

This book, "Islamic Intellectual Heritage and its Interface with the Western Thought" is based on the papers presented at the 40th International Medieval Congress at Western Michigan University, Kalamazoo, Michigan in May 2005. The book discusses the intellectual heritage of Muslims, the freedom of expression, clearly outlining the critical evaluation of other scholar's work.

In Tahafat ul Falsafa-Incoherence of Philosophers the great scholar Al Ghazali was highly critical of the Greek and Muslim philosophers for giving primacy to Reason over Revelaion which to Al-Ghazali was supreme. Ibn Rushd countered Al Ghazali's criticism of philosophy. In Tahafat al Tahafatal Falasapha-Incoherence of Incoherence of Philosophers, averring that Al-Ghazali's criticism applied to Greek and Muslim Philosophers for holding Reason superior to Revelation. On the other hand, Averroes himself believed that there was no incompatibility between Reason and Revelation and if there was any, Revelation held supreme.

It is unfortunate that today, the Muslims have lost the original and critical thinking- Ijtihad- paying more attention to Taqleed – Consensus of early Scholars. The adverse influences of this Taqlid have resulted in decline of economic power for not keeping abreast with modern technological developments.

At my request Professor Manzoor Alam has written the introduction. He so eloquently wrote about the emergence of a "Galaxy of Muslim Scientists who not only excelled the scientific achievement of the Greek and Indian predecessors but also left a

rich legacy which laid the intellectual foundation for Renaissance and development of modern Science and Technology in Western Europe".

A unique feature of this book is that the contributors of the papers are the followers of three Abrahamic religions of the world namely Judaism, Christianity, and Islam, who wrote about various Muslim scholars' contribution and influence on the Western civilization.

Dr. Ilai Alon, professor at Hebrew University eloquently described how Islam from its very beginning was aware of the importance of the concept of time and acted to control it. This it did by both revolutionary steps (Introduction of the concept of eternity), as well as evolutionary ones (maintaining the institution of sacred months but giving it a different content). Control of the time is a fundamental and efficient means for ruling society that obeys it. Tending to the time was one of, if not the most effective means, used by Prophet Muhammad (PBUH) and later by Islamic authorities in bringing the new nation out of Jahilia (ignorance). History in its written form was introduced by Islam. Islam not only introduced the historical writings to the Arab world, it charged with its very salient religious – didactic significance. This new status of history offered Islam the institution of emulating the Prophet's deeds and sayings in the form of Hadith in a much more demanding manner that has an everlasting effect on Muslim civilization.

Dr. Carol Bargeron who teaches Islamic history and Middle East history at State University of Texas, San Marcos, Texas, elaborates Al Ghazali's "Reasoned knowledge". Al Ghazali was an Islamic thinker and philosopher whose controversial writings had a profound influence on Muslim intellectuals. Many scholars regarded that his powerful condemnation of Greek and Muslim philosophers had a negative influence on the progress of Muslim civilization. However, Dr. Bargeron outlined the brilliance of Al Ghazali and his influential writing on reasoned knowledge. According to Al Ghazali, the trained speculative thinker is able to learn and consequently avoid errors in logical reasoning. Even in the case where the "Arif" commits a mistake in logic, the reasoner's sound instruction in this discipline enables him to find his mistake and correct it. Making an error in reasoning does not invalidate the employment of the intellect in the endeavor to discover certain rational knowledge.

Dr. Basheer Ahmed, former professor of Psychiatry in South Western Medical School, Dallas, Texas writes about the most famous Muslim philosopher, Ibn Rushd, who has made a lasting impact on western thinking and philosophy. Ibn Rushd spent twenty-five years on research on works of Greek philosophers, Aristotle and Plato, and his commentaries on the work of Aristotle were taught as the textbooks of philosophy in Europe for five centuries. Ibn Rushd adopted Aristotelian reasoning by analogy and found it suitable for rational deduction, influence, prosecution, and judgment. Not only on issues of life, but also in religious affairs including realization of God. He applied rational thinking to theology that stirred his colleagues. Ibn Rushd's ideas influenced the transformation of thought in medieval Europe and his theories had a serious impact on the minds of many medieval intellectuals living in Europe for the next several centuries. The rise of Renaissance rationalism and humanism is clearly linked to Ibn Rushd's

emphasis on the primacy of reason in philosophical and theological discourse. Ibn Rushd introduced reasoning and rationalism in both Jewish and Christian dogma. The great Jewish physician philosopher and Rabbi Ibn Maimun (Mosses Maimonides) and St. Thomas Aquinas, a Christian philosopher were greatly influenced by Ibn Rushd's writings and had a great influence on Jewish and Christian intellectuals. The three great philosophers, Ibn Rushd, St. Thomas Aquinas, and Mosses Maimonides had a great influence on western intellectuals and up to a great extent, responsible to bring Europe out of "Dark Ages".

The last chapter was written by Dr. Assad Nimer Busool of American Islamic College, Chicago, Illinois. Dr. Busool discusses the gradual decline of the Muslim economic power and thus their influence on the west. The fall of Constantinople to the Ottoman Empire in 1453 was symbolic of the challenge of the east and the Christian world. The loss of Holy Land during the Crusades was also seen as a religious disaster. During the late 14th and early 15th century, the Christian idealism gave way in some measures to a new concept of Europeanism. The Portuguese penetration into the Indian Ocean was a result of powerful economic motivation, affecting all European traders and the religious aspirations of the Crusaders. The Europeans recognized that the Mamlukes (Egyptian rulers) military and political might was dependent on its economic stability and Egypt's center position as a trade mediator between East and West. The Mamlukes, in spite of their best efforts, were unable to regain a part in the international trade and as a result of collapse of economy, were defeated and removed from the power by Ottoman Turks. Since then, the balance of power continued tipping in favor of the Christian west until the modern times.

This is the first publication of Institute of Medieval and Post Medieval Studies and we hope that we will continue to publish similar books in the future to disseminate the information about the rise and fall of the great Muslim civilization and their ever lasting effect on the Modern world.

I am thankful to Ambassador Syed Ahsani for his inspiration and helpful comments in editing this book.

1. Morowitz, H.J. "History's Black Hole" – Hospital practice, May 1992, Pp. 25-31

M. Basheer Ahmed M.D.
Dallas, Texas
October 2007

Introduction

S. Manzoor Alam Ph.D(Edin.)

The focus of this introductory note is to highlight the pioneering role Muslim scientists played in igniting the scientific spirit in Europe and preparing the ground work for its future scientific and technological development. I am, however, tempted to touch briefly on some of the interesting points raised in the fascinating articles included in this intellectually refreshing compilation.

Dr. Ilai Alon has rightly stressed that Islam revolutionized the concept and importance of time. All the obligatory religious rituals in Islam like Zakaat, Salaat, Saum, and Hajj are time bound. The significance of time is notably marked in offering five times daily mandatory Salaat (Prayers) with punctuality. The Qur'an also introduced the concept of cosmic time distinguished from the earthly time. The duration of a cosmic day can be equal to either 1000 years or 50,000 years on Earth as revealed in verses 5 and 4 respectively of Chapters (Surahs) 32 and 70. The verse 12 of Suraah Al Talaq (65) reveals that there are as many Earths as there are Heavens. While explaining this verse, the Prophet (SAW) stated that the distance between two earths was 500 years. He used time dimension, not any linear unit of measurement to clarify the distance [1]. Among the major religions, the emphasis on time factor is unique to Islam.

The enlightening and provocative articles by Dr. Carol L. Bargeron, "Reasoned Knowledge in Al-Ghazali's teaching" and by Dr. Basheer Ahmed's "A Medieval Muslim Scholar's Influence on European Renaissance" bring out distinctly the futility of the dichotomy between revealed and rational knowledge. The Qur'an is the last word on revealed knowledge and its most authentic source. But it is strikingly rational in its approach. It is amazing how an eminent scholar like Ghazali could miss this significant point. The Qur'an does ask the believers to believe in the "Unseen God", but at the same time invites them to rationally look for the "Ayaat" or "Signs", which unmistakably establish His existence. The Qur'an also consistently encouraged human beings to unceasingly search for knowledge in order to utilize intelligently, systematically, and scientifically the resources created by God for the benefit of mankind. Ghazali's dogmatic approach and his overemphasis on transcendental knowledge as the primary source of truth will retard progress and lead to stagnation. This will be against the progressive spirit and outlook of the Qur'an itself. Both Ibn Sina and Ibn Rushd emphasized this rational Qur'anic approach and attempted to harmonize the revealed with the rational knowledge. This rational approach, inspired by the Qur'an, led to the rise of a galaxy of brilliant Muslim scientists in the Islamic realm from the 9^{th} to the 14^{th} centuries. They left a rich legacy of science and technology for the posterity. They laid the foundation for the explosion of knowledge in Europe and its subsequent scientific and technological revolution. The dominance of enlightened liberal political Islam was the crucial factor in ushering in a phenomenal growth of science and technology in the Islamic realm from the 9^{th} to the 14^{th} centuries A.D.

1. Alam, Shah manzoor: (1999)- Scientific significance in selected Quranic verses, Deanery of Academic research, Imam Muhammad Ibd Saud Islamic University, Riyadh, Saudi Arabia,pp 34-37.

The expansion of the political domain of Islam, which started with the Caliphate of Umar (RA) in 634 AD continued unabated until 750 A.D. when it extended to Transoxania bordering China and Sind in India in the east, and to the Spain (Andalusia) in the west. Thus the political territories of Islam by 756 A. D. extended far beyond the combined territory of the Byzantine (Roman) and Sasanid (Persian) Empires. With this enormous expansion of the Islamic territory it inherited the ancient scientific and technological legacy of the Mesopotamian, Egyptian and the Hellenic Civilizations. Further on its far eastern frontiers the Islamic domain was in contact with the ancient civilizations of China and India. This territorial inheritance of ancient intellectual, artistic and technological legacy and direct interaction with two other ancient cultures and civilizations produced a tremendous impact in shaping the scientific and intellectual future of the Islamic world. This rich scientific legacy together with dynamism inspired by the Quranic vision gave birth to a unique Islamic culture and civilization, which, not only politically but also culturally, intellectually and technologically dominated the world until the 15th century. Islam improved tremendously, with innovation and ingenuity, upon the intellectual and technological legacy it inherited and left a highly enriched and improved legacy of science and technology for Europe to borrow, innovate and improve upon it.

One of the most significant factors in the phenomenal growth of knowledge and advancement of scientific research in the Islamic realm was the patronage of the ruling dynasties in both Baghdad and in Andalus(Spain). In Baghad the Abbasid rulers established Khizanatul Hikmah (Treasure of Wisdom) and Baytul Hikmah (House of Wisdom) as research academies and translation bureaus. The rulers themselves maintained large libraries, appointed paid research scholars to pursue their academic pursuits and were themselves keen to acquire knowledge and participate in intellectual discourses. Robert Biffault writes in his book: "The Making of Humanity": "The incorruptible treasures and delights of intellectual culture were accounted by the princes of Baghdad, Shiraz and Cordova, the truest and proudest pomps of their courts. But it was not a mere appendage of their princely vanity that the wonderful growth of Islamic science and learning was fostered by their patronage------Learning used to have become with them the chief business of life. Khalifa and Amirs hurried from their Diwans to closet themselves in their libraries and observatories------caravans laden with manuscripts and botanical specimens plied from Bukhara to Tigris, from Egypt to Andalusia; embassies were sent to Constantinople and to India for the purpose of obtaining books and teachers; collection of Greek authors or a distinguished mathematician was eagerly demanded as the ransom of Empire" [2]. Caliph Al-Hakam of Andalusia founded a Library containing 500,000 books, mostly rare manuscripts (Ahmed op.cit p: 176)

The language barrier was the major obstacle in the development of science and technology in the early Islamic world. However the political climate was favorable in overcoming this barrier. Arabic had become the Lingua Franca of the entire Islamic territory from Bokhara in the east to Cordova in the west. Even the Jewish and Christian

scholars in Andalusia (Spain) and Syrian Christian scholars in Egypt and Syria had obtained a high degree of proficiency in the Arabic language. The Syrian scholars were equally proficient in Greek. This facilitated the translation of Greek scholarly works into

2. Ahmed, K.J (1987): hundred Great Muslims, Library of Islam, U.S.A., pp.175-176

Arabic on a massive scale. Eminent group of multi-religious translators were appointed such as Musa Brothers and Qusta Ibn Luqa (Muslim), Thabit bin Qurra (Sabian), Hunayn Ibn Ishaq (Nestorian Christian) who was also the Director of the Bureau of Translation. These translators together with a number of others translated the entire corpus of Greek scientific works, into Arabic, written by such distinguished scholars as Plato and Aristotle (Philosophy), Euclid, Archimedies, Appolonios (Geometry), Galen, Hippocrates, Dioscorides (medicine), Ptolemy (Astronomy) and many others. This had the dramatic effect of transforming Arabic into a language of science and technology and also made science and technology accessible to the common man. This Arabicising of scientific literature gave a tremendous impetus to the development of science and technology within the Islamic domain. It helped the emergence of unique scientific temper and culture in the Islamic world, which led to unhindered growth of original and innovative ideas in science and technology and its rapid dissemination across the Islamic world from Samarqand in the east to Seville and Cordova in the West. The scientific culture had the full support of the ruling elite and religion did not impede its growth for it had the formidable backing of the Quaranic injunctions and the Ahadith (Traditions of the Prophet (PBUH)). The enthusiasm and keenness to acquire and advance the frontiers of knowledge transcended the barriers of religion and language. The political and religious climates were most conducive to usher in an intellectual revolution in the world of Islam. We thus observe the emergence of a galaxy of Muslim scientists, who not only excelled the scientific achievements of their Greek and Indian predecessors but also left a rich legacy, which laid the intellectual foundation to usher in Renaissance and development of modern science and technology in Western Europe.

The Muslim scholars initially assimilated the corpus of scientific knowledge from Greece and India and built upon it a majestic scientific edifice which in brilliance and originality outshone its Hellenistic predecessors and remained unrivalled till the rise of modern science and technology in Western Europe in the 17^{th} century George Sarton in his "Introduction to the History of Science" admits that during the period 750 AD to 1100 there was and explosive growth of scientific knowledge in the Islamic world, unmatched in its brilliance, which dazzled the world with its original, pioneering and path breaking contribution to the advancement of the frontiers of knowledge. It includes encyclopedic scholars of extraordinary brilliance such as Farabi, Ibn Sina, Al-Biruni, Ibn Shatir, Ibn Rushd and Ibn Khaldun who commanded the realm of knowledge for their ingenious and innovative ideas. George Sarton also points out that "9^{th} century was essentially a Muslim century. To be sure intellectual work did not cease in other countries, but the activity of Muslim scholars and men of science were overwhelmingly superior." He specifically designates the first half of the eleventh century as Al-Biruni's period.[3] As regards Al-

Biruni, the historian D.J. Boilot wrote that he "was one of the greatest scholars of Medieval Islam, and certainly the most original and profound. He was equally well versed in the mathematics, astronomical, physical and natural sciences and also distinguished himself as a geographer and historian, chronologist and linguist, as well as impartial observer of customs and creeds."[4]

[3].Sarton, George (1947): Introduction to the History, Carnegie Institute of Washington, Willimas and Walkins, USA, Vol 2, chapters 29 and 33.

[4].Ahmad y Al-Hasan & Donald H. Hill: 1986 op.cit. p.23

These distinguished Muslim scientists through their persistent research, scientific observations and experiments and mathematical calculations could correct some of their errors in Greek scientific works. They rectified the Aristotelian misconception on human embryology that male sperm does not play any role in the fertilization process leading to the formation of human embryo, and corrected many of the errors in astronomical calculations by Ptolemy in Al-Majest. They originated new scientific disciplines and new scientific theories in almost every discipline. Al Battani introduced Indian numericals with Zero and Sines, Cosines into Greek mathematics and transformed Astronomy into a rigorous mathematical discipline. Modern Algebra owes its origin to Allkhawarizmi. Ibn Sina (Avicenna), the famous philosopher and physician, provided a remarkable unified synthesis of medical knowledge from the earliest till his time in his book: Canon (Al Qanun fi Al Tibb) which superseded the works of his distinguished predecessors like Galen, Hippocrates and Dioscorides. Al Razi (Rhazes) laid the foundation of clinical or case medicine based on observational and experimental methods in the treatment of patients, which is now even more rigorously practiced. The uniqueness of his approach is highlighted by the fact that he was once asked by the caliph to select a site, in Baghdad, for the location of a hospital. In order to do so "he got some pieces of meat suspended in various localities of the city. The place where the meat deteriorated in the last was selected as the site for the hospital." [5]

It was Ala al Din Ibn al-Nafis, who for the first time discovered, based on his anatomical observations, that the blood moves into the left ventricle of the heart via the lung and not through a hole in the heart as suggested by Galen and even by Ibn Sina. The foundation of experimental chemistry was laid by Jabir (Geber) Ibn Al Hayyan in the late 8th century but was given a definite shape and formalized with the establishment of a fully equipped laboratory for experiments in chemistry by Al-Razi (Rhazes) in the late 9th century. Laboratories in chemistry, in Europe, until the end of the 19th century, differed little from the laboratory set up by Al-Razi in the 10th century A.D. Modern scientific studies on optics owe their origin to Ibn Al Haitham (Al Hazen). He made a stunning discovery in optics and proved beyond doubt that rays of light come from external objects to the eye and do not issue forth from the eye." His book Kitab al Manazir was translated into Latin: Optica Thesarus, in 1572, and influenced such intellectual luminaries as Roger Bacon, Leonardo da Vinci, John Kepler, etc. It gave new directions to studies in optics in Europe.[6] Modern Botanical studies owe their origin to the Andalusian (Spanish) botanist Ibn Al-Baitar (13th century AD) who was the first botanist in the history of botanical sciences to have conducted field studies specifically for the collection of plants along the Mediterranean coast from east coast of Andalus (Spain) through North Africa to the

Syrian coast. He conducted his botanical research in the Royal Botanic Garden in Seville. The concept of Royal Botanic Garden was unheard of in Europe until the 16th century.

[5] Saud Muhammad (1986): Islam and Evolution of Science, Taz'eem Press, Islamabad, p:98

[6]Al-Hassan, Ahmad y: 1986 Islamic Technology, Cambridge
Hill, Donald, R.: University Press, UNESCO p:23.

Establishment of teaching hospitals for the treatment of patients and well organized astronomical observatories equipped with mathematical tools to calculate planetary movements were distinct gifts of Islam to modern medical system and astronomy respectively. Hospitals established by Muslims offered free treatment to in- and out-patients without any discrimination. They had separate wards each for contagious diseases and psychiatric cases. They had their own pharmacy and excellent library for students and teachers. Hospitals appeared in Europe in the 13th century and were developed on the same lines as hospitals in the Islamic realm.[7] A chain of astronomical observatories were established in Ray under Al-Khujandi (10th century AD), in Baghdad under Abulwafa al Buzjani (13th century), in Margha in Azerbaijan under Nasiruddin Toosi (13th century), in Damascus under Ibn Shatir (14th century), in Smarkand under Ulugh Beg (15th century) and in Istanbul under Taqi al-Din (16th century0. These observatories were interlinked, researches were well coordinated and even scholars were exchanged. Toosi and Ibn Shatir were notable for devising tools for astronomical observations. Ibn Shatir devised such a mathematical tool which could be used for the calculation of planetary movements under both geo-centric and helio-centric systems. The astronomical observatories established by Danish astronomers Tyco Brahe in Uraniborg (1576) and Stejenborg (1584) were modeled after Taqi al Din's observatory in Istanbul, which was established in 1545. The Polish astronomer Nickaulus Copernicus and Tyco Brahe used many of the mathematical models used by Arab astronomers such as Al-Toosi, and Ibn Shatir's comprehensive model.[8]

Distinguished Islamic philosophers such as Al Kindi, Farabi, Ibn Sina and Ibn Rushd who were considered as the fountainhead of knowledge were inspired by philosophical thoughts of Aristotle and Plato. They turned out to be the greatest exponents of Aristotelian rationalism. The exquisite commentaries of these brilliant Muslim scholars on the works of Aristotle and their translation into Latin in the 13th century A.D. reignited European interest in Aristotelian rationalism, which eventually ushered in intellectual Renaissance in Europe. It may however be mentioned, incidentally, that at the time when the Islamic realm was experiencing unparalleled intellectual and scientific revolution in the Middle Ages, Europe was steeped in darkness owing to fanaticism and religious intolerance of scientific and rational ideas by the Christian clergy.

[7] Alam S. Manzoor: A critical Appreciation of Arab Human Development Report (2002) UNDP, Hamdard Islamicus Vol 27, No: 3, July-September-2004, Appendix A, p:26

[8] S. Manzoor Alam: Handard Islmaicus, July-Sept, 2004, op. cit p:24.

Transfer of Technology from Islamic Realm to Europe

The Muslim contribution to the advancement of technology was equally remarkable. Charles Singer, a historian of Technology, writes in his book: History of Technology "Europe, however is but a small peninsula extending from the great landmass of Afroasia. This is indeed its geographical status and this until the 13th century was generally also its technological status---for nearly all products available to the west were those of the Near East" The paper manufacture borrowed from the Chinese was first established in Samarqand in 751 AD., later spread to Baghdad, Cairo, Fez and Jativa in Valencia region in Spain from where it moved to Europe. The first paper industry in Europe was set up in Fabriano in Italy in 1276 AD. The glass making technology from Syria, which produced the finest quality of glass products, was transferred to Venice in 1277 AC under a treaty agreement. The weight driven mechanical clocks were first used by the Muslims in Spain in the 11th century, nearly 250 years before it appeared in Northern Europe. They also initiated the use of windmill. According to Needham "The history of wind mills really begins with Islamic culture and Iran." In Europe it appeared only in the 16th century. However the most spectacular Islamic contribution in the transfer of technology was in the field of irrigation and agronomy. They inherited the Noria and the Saqiya water drawing machines from the Romans but effected significant technological improvements. These improved models reached Europe from Andalusia (Spain). The most notable and original contributions in this area was the introduction of the Qanat system of irrigation to exploit ground water or subterranean water from acquifer (precursor of modern artesian wells). According to Al-Hassan and R. Hill the Arabs introduced intensive cropping, raised four crops instead of two from the same field, used crop rotation to conserve the fertility of the soil and in the words of Herbert Rowen "…they practiced forming in a scientific way. They knew the value of the fertilizer. They fitted their crops to the quality of ground". (History of Early Modern Europe (1960) (p.359.) Al-Hassan & R. Hill sum up the situation in the following words "Muslim operations in agriculture, irrigation, hydraulic engineering and manufacture were an integral part of every day life in the southern half of the Spanish Peninsula (Andalusia), and…Muslim ideas in these three fields and in others, passed from Spain into Italy and northern Europe" (Al-Hassan-Hill: op. citp: 34) .

One of the most remarkable achievements of the Islamic civilization from the 9th to 14th century was to inculcate scientific temper and create a scientific environment. This led to incessant search for the truth, conducting coordinated scientific research in different centers, conducting experiments to test the veracity of scientific theories and rapid transmission of new scientific ideas and transfer of technology. These men of erudition

from the Islamic world laid the foundation for the scientific and industrial revolution in Europe. Biffault writes: "What we call science arose as a result of new methods of experiments, observation and measurement which were introduced into Europe by the Arabs" (Quoted in Abdussalam (1986): Islam and science: p 8) This view is strongly reinforced by George Sarton who admits that "the main and the least obvious achievement of the Middle Ages was the creation of the experimental spirit and this was primarily due to Muslims down to the 12th century." (George Sarton (1947) Introduction to the History of Science Vol. 2, chapter 29).

The rise of Ottoman Empire and its expansion into Eastern Europe was also unfortunately marked by resurgence of the Ghazalian extremism, which derided upon rationalism and was opposed to scientific experiments and observation in search for truth. It climaxed into the destruction of the Istanbul Astronomical Observatory in 1580, the observatory which Taqiuddin had built in 1545 and Tyco Brahe, the Danish astronomer, had modeled his observatories after the Istanbul observatory. Since then the decline of science and technology was sharp and precipitous. The Islamic world has since continued to decline progressively and is now, scientifically and technologically, among the least developed regions in the world. Meanwhile science and technology have advanced exponentially in the rest of the world, which has experienced information technology revolution, has moved fast into the age of satellite communication and has advanced into space research, culminating into landing of man on moon. We can only hope that soon there will be another scientific renaissance in the Muslim world leading to the rise of modern Ibn Sinas, Al-Birunis, Al Razis and Ibn Rushds.

BIBLIOGRAPHY

1. Ahmed, K.J. : (1987)_Hundred Great Muslims, Library of Islam, Kazi Publications, Chicago
2. Al Hassan Ahmed Y: (1986)_Islamic Technology, An Illustrated History, Hill, Donald R, Cambridge University Press, Cambridge, U.K.
3. Ahmed, MB (Editor): (2005) "Muslim Contribution to the World Civilization" Published by Association of Muslim Social Scientist, IIT, Virginia USA 2005
4. Esposito, John L (editor): (1999)_The Oxford History of Islam, Oxford University Press, Oxford, UK/New York
5. Fakhry, Majid: (2001)_Averroes (Ibn Rushad)_His life, work and influences, One World Publications, Oxford England.
6. Hughes, Thomas P. (1994)_Dictionary of Islam, Kazi Publications, Chicago, USA
7. Ismail al Faruqi, Lois Lmaya al Faruqi (1986). The Cultural Atlas of Islam, Macmillan Publishing Co. New York
8. Mustafa Educational Network: (MEDNET)(1997)_Quranic Encouragement to Scientific Research and Acquisition of knowledge, Monograph NO 18, Hyderabad (A.P.), India
9. Sarton, George: (1947)_Introduction to the History of Science, Carnegie Institute, Washington, Williams & Wilkings, Baltimore USA, Vol.2 , chapters 29 & 33
10. Sarton, George: 1975_Introduction to the History of Science, Robert Krieger Publishing Co. Malabar, Florida, USA.
11. Stimson, Dorothy (Editor) (1962)_ Sarton on the History of Science (Essays by George Sarton), Harvard University Press, Cambridge, Massachusetts, USA
12. Watson, Peter: Cross Roads of Culture, OP-ED, New York Times, April 21, 2003.

Has Islam introduced a New Perception of Time?[1]

Ilai Alon Ph.D

Abstract

The perception and institutions of time are among the most basic elements of any culture. Therefore, any substantive change in it, be it political, religious, or otherwise ideological, must tend to it as a means to power.

Judging by the *traditional* Islamic sources, Islam from its very beginning, was aware of the importance of the concept of Time, and acted to control it. This it did by both revolutionary steps (e.g., introduction of the concept of eternity), as well as evolutionary ones (e.g., maintaining the institution of the sacred months, but giving it a different contents).

1. Introduction

Time and place[2] being the foundations of mundane reality, revolutions of the magnitude that Islam brought have found it necessary to change their perception[3].

Time is the framework in which individuals and groups operate on a minute-to-minute basis, and therefore, any change in it, by necessity effects their every action. Not only is a change in the perception of Time basic for a new world-view, it constitutes a strong tool for control over the new believers, all the more so because such control is imperceptible. Such changes may apply to large temporal institutions, such as the calendar, but also, and perhaps more effectively, to small units, as the year, the month, the week and even the hour.

In the following pages I will try to point to this process in early Islam.

2. JÁhilÐyah

The JÁhilī Arabs considered "time" only in reference to the period between the birth and death of individuals (Qur'Án 45:23/24). Its basic manifestations seem to have been two: the fateful, cyclical, threatening *dhar*, and the less negative, "objective" one. This latter is called by several names, referring to different aspects: static (*waqt*), momentary (*zaman*), and extended (*zamÁn*).[4]

Dahr was viewed by the JÁhilÐ Arabs negatively, and they used to curse it, as they saw in it a permanent, deceitful, pitiless, vanquishing, and unapproachable enemy of humans. It played an ever-present role in every *qaÒÐdah*, probably their most important, if not the only, kind of literature.[5]

If vocabulary is an indication for importance of a concept in a given language, then time plays a considerable role in Arab culture which dates back to pre-Islamic

---

[1] A previous version of the paper appears in *Al-Usur al-Wusta, the Bulletin of Middle East Medievalists* (University of Chicago), vol. 16, no. 2, pp.34-37.

[2] The proximity between space and time is apparent in Arabic, where these two meanings are sometimes expressed by one and the same word, e.g., *bu'd = sÁ'ah*: *LisÁn al-'Arab*, 8,169.

[3] See, e.g., the Christian, the Soviet, the French, and the Libyan revolutions.

[4] Rosenthal, 1995, 7; Rosen, 1984, 174.

[5] Arazi, 1989, 49-50; 93;ÍusÁm al-DÐn, 1410/1991, 18.

times: apart from the above nouns, *Îīn, 'ahd, ajal*, also deserve mentioning,[6] as do its units, such as *muddah*, or *ʿaÒr* (indicating a period of twenty past years).[7]

Time dictated, or at least served as the framework for cultural, religious, and political institutions. The JÁhilĐ **calendar** which was solar-lunar, although Islam preferred the lunar principle to the solar, because according th early Muslims' perception, their religious predecessors were more inclined to worshipping the sun rather than the moon;[8] months which were sacred, annual rites such as the pilgrimage, commercial activities such as the winter and summer convoys, the yearly fair -*'UkkÁÛ*, the poetry competition, and the social importance of genealogy, all clearly manifest the all-encompassing nature of time for the JÁhilĐ society.

Beyond these outwardly roles, the personal and emotional attitude to temporal phenomena also had much importance in JÁhilĐ society: time was often symbolized by the **night**, which, rather than the day, was basic unit (Arazi, 1989, 50). It provoked sadness, worry, suffering, fear, and misfortune.[9] Although Islam has retained its importance, e.g., in establishing a nightly prayer (Arazi, 1989, 98), it has changed the way it was perceived: no longer has it been viewed pessimistically as sad and interminable (Arazi, 1989, 99-100).

In many areas, the attitude towards time seems to have been ambivalent: months and days used to have more than one name[10]. Thus *RamaÃÁn*, e.g., was also called *"NÁtik",*[11] *Ñafar* was also called *NÁjir*,[12] etc.

JÁhilĐ ambivalent attitude towards time was also shown by the institution of ***Nasī***, which allowed them to postpone the sacredness of the sacred months for a year. Reasons for such a step were practical, such as military or financial considerations. In contrast to the general intactness of Time, here it becomes an object for manipulation. In fact, Time could be overcome by three means the collective (Arazi, 1989, 86), one's offspring (Arazi, 1989, 94), and by means of a kind of instantaneous hedonism (Arazi, 1989, 88).

3. Islam

These matters of principle were very early on addressed by Islam, firstly, by the creating, or borrowing, the anti-time, i.e., eternity/timelessness and allocating it to God (*Ñamad* -Qur'Án 112), as well, as in some way, to individuals[13]. Still, it stands to reason that even the JÁhilĐ Arabs had had some sense of eternity, in virtue of their contact with Christianity and Judaism. If repetitiveness of events contributes to the introduction of the concept of eternity to people, and if that had been the case in

[6] For a fuller list, see IÒfahÁnĐ, 1332, I,136,12.
[7] For this issue see IÒfahÁnĐ, 1332, I, 237,3.
[8] BukhÁrī, Íajj, 100.
[9] Arazi, 1989, 49-50; 93; ÍusÁm al-DĐn, 1410/1991, 18.
[10] ÍusÁm al-DĐn, 1410/1991, 148.
[11] Qalqashandi, *Subh*, II, 401,1 ff.
[12] *Ibid*., 405, 12.
[13] By contrast, see Hawting, 1999, 54 for the possibility that MuÎammad's JÁhilĐ opponents had "some concepts of monotheism (God as a creator … perhaps the last judgment …).

the JÁhilÐyah, Islam appropriated it to God, who is, rather than Time, the sole originator of changes (Qur'Án, 35:13). Time has been thus reduced to just another natural phenomenon (Arazi, 1989, 96).

Perhaps the fiercest battle in the arena of temporal perception was waged between Islam and JÁhilÐyah over the concept to *dahr*. Its power had to be curtailed and it had to be put in the service of Allah. Cursing it was prohibited because it was God's creation, (e.g., Ibn Íanbal, V, 299, no. 311; See Goodman, 1992, 3; ÍudairÐ, 1997: 59), God Himself, (e.g., BukhÁrī, IV, 78) or one of His names.[14] Thus Time lost its independent position, and its terms have ceased to be fixed and unchanging (IÒfahÁnÐ, 1332, I,141,17), e.g., the QurÞÁn's (32:4-5), statement that [in the divine time] a day is equal to one thousand, or to fifty thousand years of human experience" (QurÞÁn, 70:4). However, it seems that this specific controversy has not been entirely successful for Islam, as the JÁhilÐ attitude is still very much present to-date (cf. Goodman, 1992: 3): Time is still considered evil, unfair, and dangerous (E.g. Ibn 'Abd Rabbini, '*Iqd*, ii, 187l,13), a mistrusted enemy (TaimÙr, 1996, 112) to be fought and overpowered by good deeds and *Òabr* (Hasnaoui, 1977,53).

Simultaneously, the other, previous forgiving attitude towards time was changed with the abolition of the *NasÐ*.

When we move from the three parts of time to smaller ones, similar changes can be observed. Islam has introduced into Arabic the meaning of "the hour of judgment" (e.g., QurÞÁn, 22:1) to the noun "hour", which previously had only meant "the present time", "a short period of time during the day or night", or "one twenty fourth of the day and night."[15]

But steps have been taken beyond the semantic: The lit part of the **day** starts with the sunrise, which for the JÁhilÐ Arab was a most significant religious moment. For this reason it had to be changed, and Islam has chosen to strip it from its religious meaning by prohibiting prayer in it (E.g., Ibn Íanbal, V, 261). Other moments were named for the five daily prayers, which have divided the twenty four hours into a new, five-part, division. This institution, viewed from its temporal, rather than its liturgical side, makes the most abstract ideas of the eternal God and of the extra-temporal day of judgment more tangible by the very repetitiveness of the action. The parallel JÁhilÐ institution of prayer had not been as developed as that of Islam, neither form the contents point of view[16] nor was its temporal aspect. Thus, in the introduction of the five daily prayers Islam has made a considerable change. In this way another objective is also achieved, namely, that of fastening the grip on the individual's schedule.

The **day** cannot be changed easily, as, in contrast to the week, it is a natural rather than social phenomenon. What may be done in this respect is to change its name or its interpretation. Indeed, both were done in the transmission between JÁhilÐyah

---

[14] E.g., Ibn Íazm, see Ibn Kathīr, *Tafsīr* iv, 151, as quoted by Arazi, 1989, 93, n. 277.

[15] The hour as 1/24 of the day and night is believed to have originated already in ancient Egypt. "Hour" in *Encyclopaedia Britannica*. Also, Ibn ManÛūr (d. 1311/711), *LisÁn al-'Arab*, s.v., *sÁŶah* (hour) in Arabic.

[16] QurÞÁn, 8:35: "Their prayer at the House (of Allah) is nothing but whistling and clapping of hands."

and Islam (SuyÙÔī, *MuÛhir*, 219,8). For instance, if in the JÁhilÐyah Sundays and Wednesdays were taboos for marriage or travel, Islam acted to change it (ÍusÁm al-DÐn, 1410/1991, 17). Sometimes the new interpretation rests on a new context which is given: Saturday became a day of tricks and betrayal (*yaum makr wa-khadÝah*) because Quraish (the defeated culture!) tricked on that day.(Qalqashandi, *Subh*, II, 392,21, ff.).

Needless to say that the most remarkable day in our context is **Friday**: its importance surpasses that of the holidays, partly because of its role at the time of the creation, in the creation of mankind, and in the final hour (BaihaqÐ, 1997, 127). Although the JÁhilÐ Arabs were familiar with the idea of a holy day of the week, they themselves never adopted it (ÓabarÏ, *Annales*, I, 1256,20). Although the name "*yaum al-Jum'ah*" was indeed used, its meaning was of gathering for the market, rather than for religious purposes (Goitein, 1966, 124). It was for this reason that Islam, while retaining it, needed it to be distinct, and the solution was in temporal terms (Muslim, *ÑaÎīÎ*, Jumʿah, 33; Goitein, *Studies*, 112, quoting QasÔallÁnī). Thus, the entire concept of the week has changed, centering on the Friday prayer. In addition to the religious and social significance of the community gathering, it now carried a political one as well, i.e., a regular, weekly stage for the ruler to be in contact (and control?) his subjects.

The same method of maintaining the institution but introducing a new significance to it operated also with regard to the **months**. While the month at large, has been retained, it is now exclusively lunar, with no compensatory arrangements, and much has been made of pronouncing its beginning by witnessing the new moon. Rajab, for example, a sacred month for the JÁhilÐ has assumed a new meaning: in it the Prophet was sent (BaihaqÐ, 1997, 23), connecting him with the Biblical figure of Noah (BaihaqÐ, 1997, 22), or RamaÃÁn which has become associated with the QurÞÁn.

The Islamic **year** offers, on a regular basis, the opportunity for the believer to fulfill a duty which is only required once in a lifetime, namely the pilgrimage. While all four other duties are repetitive on different timescales, this one may be seen as defining the believer's life, albeit combined of hours, days, months, and years. It is an instrument of identifying with a remote past wile skipping the recent one of disbelief. The year, a natural phenomenon, which in Islam on the inside, is based on the moon, the months, and the holidays, on its outside it constitutes a part of the **era**. Starting a new era is a very powerful social tool which almost literally means: "forget everything that occurred before." On the one hand, a new era has been introduced, but on the other, it rests on the longest, surest, and truest foundation. Islam is the original religion even though the years have not been counted from its real beginning. ʿUmar b. al-KhaÔÔÁb's introduction of the Hijri era in the year 6 A.H., means the acceptance not only of the historical event of the Hijrah, but of the entire belief system of Islam, including its politics, and most certainly – the QurÞÁn.

The Qur'Án itself, which is the source for the Islamic temporal system, is both a temporal and an a-temporal institution: as the former, it started to come down with

the first sūrah in 610 A.D., and ended with the last one[17]. As a written text it outlives any individual or memorized poetry. Reciting or reading it is a temporal activity with a beginning and an end, and is available for the present-time believer. But as a representation of eternity in the institution of the preserved tablet, *al-lauÎ al-maÎfūÛ*, it provides something unprecedented to pagan Arabs: it is both inaccessibly eternal and at the same time, within reach of everyone.

finally, looking at the prophet MuÎammad from our particular angle reveals again the double nature of time: on the one hand – a mortal being. On the other hand – a contact to God, and a super natural, thus super-temporal personality, very much unlike his contemporary poets (Arazi, 1989, 96).

The **past** is presented through historical writing. This has not come down to us from the JÁhilÐyah, probably, because it had not existed at all. Some hold that the introduction of such writing by Islam was rather late,[18] because in the competition with piety, the latter was more important.[19] But about the significance of the fact that eventually it has become a corner-stone in Islamic culture is difficult to exaggerate. Some earlier rites and ceremonies were re-interpreted and set in a new context, such as the Abrahamic one which was superimposed on the different parts of the pilgrimage. The very institution of the Sunnah, in which the person of the Prophet as a historical figure that must categorically be emulated is an expression of the same trend. Previous exemplary personalities only invited people to behave like them, e.g., al-SamauÞal in loyalty or ÍÁtim in generosity.

In addition to, and not less significant than the very introduction of historical writing, the character of divinity which Islam has given its own historical view constituted an important change.[20] History started with the creation and will end in the Day of Judgment: there is a direction and a director. [21] The reference to the past also holds on the individual level, and is articulated in the respect one is taught to pay for old age,[22] or for genealogy.

It seems that one of the more important changed which the Prophet MuÎammad introduced to Islam has been the attitude towards the **future**. Contrary to the JÁhilÐ Arab position that the only future that exists, and that is accessible to humans, not for influence but for forecasting, the Prophet has divided it in two: the first is the earthly future, to which humans can have access to only by foresight which involves calculation of potentialities (Eickelman, 1977, 42, referring to Bourdieu 1963:61). The other future is the eschatological one, which is very tangible in its descriptions. On this future humans do have a degree of influence by way of submitting to God in this world.

When one does address the former kind of future, in the form of a personal plan, promise, intention (but not a threat!) one is required, already in the QurÞÁn

---

[17] According to some sources – sūrat al-BarÁ'ah.
[18] Donner, 1998, 115.
[19] Donner, 1998, 231.
[20] Lewis, 1975, 24-5.
[21] FalaÙri, 1979, 66. *ibid.*, 67: The Koran's way of viewing past event is independent of time and history, but fully accords with Mohammad's central convictions."
[22] See , e.g., BukhÁrÐ, BÁb IkrÁm al-KabÐr.

(18:23-24) to employ the *istithnÁ'*, i.e., the expression "If God wills" (*in shÁ'a AllÁh*). This requirement is so much of essence, that both King Solomon and the Prophet suffered punishment for neglecting it (ÓabarÏ and Ibn KathÏr, *Tafsīr* for the above sūrah) and were punished for neglecting to express it.

The double nature of the future inevitably reflects on the nature of time at large: that which is mundane, having beginning and an end (in Arabic "ÍÐn"), and that which is eternal, in fact, the opposite of Time (in Arabic "*Dahr*".) The two are connected in that behaviour in the former influences the latter in the form of reward and punishment. These are depicted so vividly, that the *dahr* becomes an unsurpassable instrument of control and leadership of great masses of people.

In the JÁhilÐyah, like elsewhere, games of hazard were rather popular. These games relate to the future with the express hope (*amal*) of winning. Such conduct may be viewed both as a guised attempt to influence the future, and in this way, to intervene in God's decisions and decrees, and indeed, generally speaking, "far reaching hope" (*ÔÙl al-amal*) is viewed negatively in Islamic ethics. The QurÞÁn strictly forbade this procedure (QuÞÁn 2: 219), sending a message to people that they cannot challenge God to act for them.

One tinkers with the future whenever one takes a decision or makes a choice, which must be done advisedly, with no haste. This rule had, of course, been already known and practiced by the JÁhilÐ Arabs, but Islam has excluded from it laudable actions, defined in religious terms, which are to be carried out promptly (e.g., Al-Mu'minun 23:61).

However, the passage from the JÁhilīyah could not have been an "all or nothing" cut. It rarely is. Some positive institutions were retained by Islam.

The very fundamental view of time, as an institution that is influenced by the events that occur in it, has been retained form the *JahlÐyah*, albeit with some variations. Time is not an objective matrix, indifferent to events: Months (sometimes other than the JÁhilÐ ones) are "sacred", days assume character because of events that took place in them (see above, "day"), and special hours hold a specific importance. Much later there will come definitions of time in the more objective fashion (IÒfahÁnÐ, 1332, I,143,1). Time as a social framework may, and must be tended to by anyone who has a revolutionary message. Islam has made the most of it in the passage from JÁhiÐlah.

Bibliography

Arazi, Albert. (1989). *La réalité et la fiction dans la poésie arabe ancienne.* Paris : G.-P. Maisonneuve et Larose.

BaihaqÐ, AÎmad ibn al-Íusayn, (994-1066). (1997). *KitÁb FaÃÁÞil al-AwqÁt*., (Ed. KhallÁf MaÎmÙd ÝAbd al-SamÐÝ). Bayrūt: Manshūrāt MuÎammad ÝAlī BayÃūn, Dār al-Kutub al-ÝIlmīyah.

BukhÁrÐ, AbÙ ÝAbd AallÁh, MuÎammad b. IsmÁÝÐl, *ÑaÎÐÎ* (Cairo, n.d.).

Donner, Fred McGraw. (1998). *Narratives Of Islamic Origins : The Beginnings Of Islamic Historical Writing.* Studies in Late Antiquity and Early Islam 14. Princeton, N.J.: Darwin Press.

Eickelman, Dale, F. (1977). "Time in a Complex Society: A Moroccan Example," *Ethnology*, 16 39-55.

Falaturi, A. (1970). "Experiences of Time & History in Islam", in: Schimmel, A., and A. Falaturi, (1970). (Eds.),*We Believe in One God*. London: 1970. pp. 63-76.

Goitein, S. D. (1966). *Studies in Islamic History and Institutions*. Leiden, E. J. Brill.

Goodman, Lenn, "Time in Islam," *Asian Philosophy* 23 (1992): 19.
Hasnaoui, A. (1977). "Certain Notion of Time in Arab-Muslim Philosophy." In: Aguessy, H. (Ed.), *Time and the Philosophies.* Paris: Unesco Press, 49-79.

Hawting, Gerald R.: 'The Significance of the Slogan *LÁ Íukma illÁ lilli. Bulletin of the School of Oriental and African Studies,* 41 (1978) 453-63.

ÍudairÐ, ʻAbd Allah. (1997). "Al-FaÃÁʼÐyÁt alʻArabÐyah wal-Zaman and-IjtimÁʻÐ." *Al-Majallah al-ʻArabÐyah lil-ThaqÁfah* 16,33: 49-77.

ÍusÁm al-DÐn, KarÐm ZakÐ. (1410/1991). *Al-ZamÁn al-DilÁlÐ: DirÁsah li-Mafhūm al-ZamÁn wa-alfÁÛuhu fī al-ThaqÁfah al-ÝArabīyah.* [Cairo]: Maktabat al-Anjilī al-MiÒrīyah.

Ibn ʿAbd Rabíhi. (1956/1375). *al-ʿIqd al-Farīd*, ed. AÎmad Amīn, AÎmad al-Zain, and IbrÁhīm al-AbyÁrī. Al-QÁhirah.

Ibn Íanbal, Musnad (Cairo, n.d.).

Ibn Kathīr, ÝAbÙ al-FidÁ, IsmÁʿīl. (1371/1952). *TafsÐr al-Qur'Án al-ÝAÛÐm*. Al-Qáhirah.

IÒfahÁnÐ, AbÙ ʻAlÐ al-MarzÙqÐ (1332 H.). *KitÁb al-Azminah wal-Amkinah.* Haidarabad: MaÔbaʻat DÁʼirat al-MaʻÁrif.

Lewis, B. (1975). History: *Remembered, Recovered, Invented*. Princeton: Princeton University Press.

Qalqashandī, AÎmad b. ʿAlī, (1407/1987). *ÑubÎ al-AʿshÁ fī ÑinÁʿat al-InshÁʾ*, ed. Íusain Shams al-Dīn. Beirūt: DÁr al-Fikr.

Rosen, Lawrence (1984). *Bargaining for* Reality. Chicago: University of Chicago Press.

Rosenthal, F. (1995). "'Time' of Muslim Historians and Muslim Mystics: *JSAI* 19:5-35.

SuyūÔī, Jalal al-Dīn, al-: *Lubab al-Muqūl fī AsbÁb al-Nuzūl*, Tunis 1981.

ÓabarÐ, MuÎammad b. Jarīr, *Annales quos scripit Abu Djafar MuÎammad ibn Djarīr at-Óabarī*, (ed. M. J. de Goeje), (Beirut, Brill's edition in photocopy, 1965).

TaimÙr, AÎmad. (1970). *al-AmthÁl al-ʻÀmÐyah*. 3rd printing, [al-QÁhirah]: Lajnat Nashr al-MuʾallafÁt al-TaymÙrÐyah.

Reasoned Knowledge in al-Ghazālī's Teaching

Carol L. Bargeron Ph.D

Since the late Middle Ages, the name of one of the most illustrious thinkers within the Islamic intellectual tradition has been associated with a skeptical approach to human knowledge as well as an occasionalist physics and metaphysics. That interpretation of al-Ghazālī's probing criticism of the sources of rational knowledge and of his assessments of the quality of various types of cognitions (*ᶜulūm*) is chiefly based upon his treatment of human knowledge as he presented it in his life's reminiscence, *al-Munqidh min al-dalāl* (The deliverer from error). This article questions the accuracy of the association of abū Hāmid Muhammad al-Ghazālī (d. 505 A. H/1111 A. D.) with radical skepticism.

The cognitive status of rational knowledge in the ideational system of abū Hāmid Muhammad al-Ghazālī is nowhere more dramatically highlighted than in his autobiographical memoir, the *Munqidh min al-dalāl.* This volume's examination of the epistemic worth of the senses and of reason appears to leave the human knower without any cognitive resources that can provide certain, reliable, and true knowledge. Al-Ghazālī's critique of the sources of rational knowledge has been labeled as a radically skeptical analysis, one that demolishes the knowledge-acquisition enterprise. If his epistemic doctrine as it is contained in the *Munqidh min al-dalāl* is to be understood from a more nuanced vantage point, however, his treatment of rational knowledge and its sources must be explored within the larger context of his "logical" writings.[1] This work forms the subject of the present study.

We intend to analyze the problem of rational knowledge by positing three questions about al-Ghazālī's epistemological doctrine. The first asks: what is the relationship between sense-data and the axiomata of reason in the production of verified rational knowledge (*ᶜilm*)? The second frames the problem of what types of rational judgements provide true and reliable knowledge? The third question seeks to determine: how and in what sense was al-Ghazālī able to state that true judgements might not be certain.[2]

Introduction

Al-Ghazālī experienced a severe bout of skepticism for nearly a two-month period "during which [he] was a skeptic in fact, although neither in theory nor in outward expression."[3] This skeptical interlude likely began when al-Ghazālī was in his late teenaged years. He had gone to Jurjān to continue his schooling in law, which he had begun in his hometown of Tus, roughly three hundred miles distant. He spent roughly one year in Jurjān probably 467 A.H.—from approximately 27 August 1074 until 15 August 1075—pursuing intermediate level legal studies with abū Nasr al-Ismāᶜīlī; after this period of study, he returned home to Tus and came under the guidance of the Sufi shaykh Yūsuf al-Nassāj.

Al-Ghazālī spent about three years in the care of his first spiritual director, and as he later explained, "at the beginning of my career, I knew nothing of the spiritual 'states' [*ahwāl*] of the righteous and the 'stations' [*maqāmāt*] of the 'knowers' [*ᶜārifîn*] until I associated with my Shaykh Yūsuf al-Nassāj in Tus, but he did not cease to 'polish' me by means of self-discipline until I was favored with revelations and I heard the voice of God in a dream saying to me, 'abū Hāmid. . . .'" As a watchful devotee (*murīd*), al-Ghazālī opened his heart to God's whisperings and he reported his dreams to al-Nassāj who

> smiled, saying: 'O abū Hāmid, these are but the planks we use at the beginning, which now we have kicked away, but if you continue in my company, your inward vision shall be anointed with the antimony of the Divine's assistance, until you behold the Throne of God and those who are round about it. When you have reached that stage, you will not be satisfied until you contemplate what the [physical] eye cannot see. So, you will be purified from the defilement of your human nature and rise above the limitations of your intellect and you will hear the Voice

of God Most High, saying unto you, as unto Moses, 'For truly I am God, the Lord of all created things'.[4]

As a young person poised between adolescence and adulthood (he was roughly sixteen to seventeen years of age when he departed for Jurjān), al-Ghazālī framed the "knowledge-problem" in the following way. According to the assertions of Sufi masters, the intuitive knowledge of the Sufi mystics was unique, irreducible, and immune from error; by contrast, the sense perceptions and conceptual information which men ordinarily possessed were mutable and open to doubt. This structure contrasted non-illumined rational cognitions with divinely disclosed knowledge; as a result and by comparison, rational knowledge that was drawn from the ordinary human sources of sense and reason appeared to be defectible and false. Al-Ghazālī wanted to discover what a person could know with certitude and how he could know it by using his human powers alone.

His quest for true and certain knowledge and his desire to uncover "the true meaning (*al-haqīqa*) of things" began when he was still a boy in his youthful rebellion against accepting unreflected beliefs as items of true knowledge. Al-Ghazālī's revolt against *taqlīd* pushed him toward strictly scrutinizing the foundations of the beliefs which he held as certain and veridical. As a consequence, he undertook "the endeavor to distinguish between these *taqlīdāt* and their principles" because he recognized that this process "developed the mind, for in distinguishing the true from the false differences appeared." As is well-known, his searching methodological inquiry into the twin sources of rational knowledge (*al-ᶜilm al-ᶜaqlī*)—sense experience and reason—resulted in his famous crisis of skepticism. His two-month long bout with skepticism thus had a philosophical cause, but it also possessed a religious motive that originated in his earliest exposure to Sufism's generalized concepts of what true knowledge (*al-ᶜilm al-haqīqī*) was and how it was obtained.

It is easy to see how the young and enthusiastic, but immature, al-Ghazālī became confused about what he knew with certainty, when he contrasted rational knowledge—hard won through the dint of rigorous effort in his law classes—with revealed knowledge—seemingly so effortlessly attained and clearly perceived while he slept. His experiences at the "beginning of the Way," as well as his receipt of al-Nassāj's promise of heightened insight into the mysteries of God, caused him to exult. Premature exultation to be sure! As he later learned, any hasty reception of this specially privileged knowledge from the Divine was fraught with unexpected dangers, not the least of which were anxiety, depression, and mental imbalance.[5]

Against the backdrop of al-Ghazālī's rebellion against *taqlīd* or uncritically or unquestioningly accepting beliefs derived solely from authority, which spurred his search for truth, the clear opposition of rational knowledge (*al-ᶜilm*) to esoteric knowledge (*al-maᶜrifa*) unsettled this serious and studious young man. During this time period, al-Ghazālī, it seems, was as equally drawn to the life of the spirit as he was attracted to the life of earthly riches and fame that a successful scholarly career could bring. In some ways, then, al-Ghazālī's epistemological crisis combined uncertainties of four differing sorts: (1) uncertainty about the veracity of the sources of rational knowledge, (2) doubt about his own intellectual powers, (3) incertitude about his sincerity of purpose in embarking upon the Way, and (4) his simple, youthful indecision about which path in life he should pursue. At this stage in his life, al-Ghazālī was either unwilling or unable to do that which God required of His "friends," namely, to give up all attachments to the world herebelow for the pure love of God.

Much later in his life, al-Ghazālī would understand the full dimensions of what God demanded. The aspirant to esoteric knowledge, he later wrote, "has no freedom in seeking to attract the mercy of God Most High. Rather, by what he does he becomes open to the gusts of God's grace and it remains for him only to await the Divine's mercy. . . . At this point, if his will is sincere, and his ardor pure, and his perseverance good, and he is neither pulled by his passions nor distracted by an inner concern with earthly attachments, then will the glimmerings of Truth shine in his heart. . . ."[6]

The acute phase of al-Ghazālī's crisis persisted for almost two months, and it likely occurred during the latter part of his initial ascetic training as a disciple of the Shaykh al-Nassāj, when he had not yet reached his twenty-first birthday. If he had not regained his intellectual confidence completely, it would be highly improbable to suppose that al-Ghazālī (a) would have been able to travel to Nisabur, (b) undertake advanced legal studies with the Imām al-Haramayn al-Juwaynī, (c) serve as his law professor's teaching fellow, and (d) begin to write in the field of jurisprudence. All of these, however, comprised the activities that al-Ghazālī carried out successfully beginning in 471 A.H., the first day of which fell on 14 July 1078.

The Problèmatique of the Senses and Reason in the Search for *al-ᶜilm al-yaqīnī*

Motivated by his thirst for independent investigation, al-Ghazālī attempted to resolve some of the epistemological difficulties that his speculative reflection had incited. He wanted to discover first exactly what sorts of cognitions (*ᶜulūm*) were candidates for knowledge; thus, this is the issue to which we turn now. Al-Ghazālī declared that what is known with certainty is of necessity that about which there can be neither error nor doubt.[7] According to this definition of "knowledge," invulnerability to error comprises one of the epistemic hallmarks, which al-Ghazālī required. This is the question that al-Ghazālī posed: do sense organs deliver certain knowledge? Let us examine his analysis in *al-Munqidh min al-dalāl.*

With sense perception, a man relies upon his external physical senses to provide him with truthful knowledge about those things that are knowable through these media. The *ᶜārif* or the "knower" often makes mistakes in his sensing, even in the case where the most powerful sense, that of sight, purveys information about an entity or about a phenomenon. Erroneous judgements may result from weakness of or injury to the sense organ. Mistaken conclusions may come about from insufficient observation and experimentation or, as well, from inadequate theoretical knowledge.[8] Al-Ghazālī plainly did not consider sense perception to be a sufficient foundation for certain knowledge. And, very importantly, he never maintained that the appearances by themselves should constitute an adequate basis for the certainty of the knowledge-claim made as a result.

Faulty sense-based conclusions are corrigible. Let us take the case where a man sees something from a distance and judges it to be very small. However, upon approaching that entity, the man is able now to revise his initial inference because he realizes that the entity which he observed is in reality much larger in size that he first believed. In this instance and in the similar ones which al-Ghazālī cited, there are several kinds of incorrect judgements. First, there are errors of perspective; second, there are mistakes about a "common sensible," that is, motion; and third, there are errors which result from a conflict between the evidence of the senses and that of the intellect. All of these mistaken conclusions are corrigible. They must be so because human statements about material existents, which are founded exclusively upon the evidence of the physical senses, are not immune to the discovery of error. In Ghazālian theory, then, sense-derived conclusions about things in the material world are potentially defeasible and dubitable. While sense perception undeniably offers a person descriptive information about physical reality, this information by itself does not constitute indefectible, indubitable knowledge. There is nothing exceptional thus far in al-Ghazālī's discussion of waking sense presentations.

Al-Ghazālī's fundamental definition of "knowledge" additionally underlined *al-yaqīn* or "certitude" as a second requisite criterion. As we have seen, his discussion of sense-perception-based judgements strongly suggests that in order for these beliefs to be "certain" and "indubitable," they must possess stability and permanence or constancy (*lahā thabātun wa istiqrārun*).[9] The certainty of an item of knowledge implies that what is known can change neither nor alter. Whether this implication holds true for every possible world situation as well as across all time requires investigation. The idea of certainty that al-Ghazālī advanced here carries with it the corollary of necessity (*darūra*), because, as Aristotle had argued, the "necessary" is that which is eternal and therefore, unchanging and incapable of being otherwise

than what it is.[10] Epistemological certitude then seems to include the ancillary notion of the invariance or the constancy of what is known.

The *Munqidh*'s debate,[11] which pitted the partisans of reasoning (*ahl al-nazar*) against the exponents of Sophistry (*al-sūfiṣtā'īya*), ["the Sophists" = *al-sūfiṣtā'īyūn*] draws on several divergent and opposing idea-legacies about what constituted real knowledge. The full discussion encompasses three differing streams of thought: the Aristotelian, the Skeptical, and the Sufi. In the counter-claim that al-Ghazālī advanced to erode human confidence in rational cognitive judgements, however, only the mystical and the sophistical or skeptical traditions are intertwined. Let us present what al-Ghazālī has to say. Al-Ghazālī had his opponent ask the seeker of true and certain knowledge this question: "Why then are you confident that all your waking beliefs—whether [drawn] from sense or [from] intellect (*bil-hiss aw al-ᶜaql*)—are genuine? They [these beliefs] are true [only] in respect of your present state; however, it is possible (*lā fa yajūzu*) that a state will come upon you whose relation to your waking consciousness is like the relation of the latter to dreaming. In comparison with this state your waking consciousness would be like dreaming." [12] The objection voiced here consists of two parts. First, the skeptic's objection asks for the foundation of certain knowledge, whereas second, the mystic's criticism asserts the possibility of supra-intellectual falsification of a rational knowledge-claim.

Al-Ghazālī undercut sense perception's epistemological value in another way. He argued that sense presentations could be simple mental phantasms. As he explained in the *Munqidh*,

> there is no reliance at all for a man with respect to his sensing (*wa lā thiqa bi-hissihi*). The more he sees a[nother] man and speaks to him, the more decisively he affirms the other man's presence and his speech; and this is an error (*fa-huwa khatā'un*). For perhaps he sees the other man in a dream (*fil-manām*). How many a dream does a man see and believe it definitively and have no personal doubt about its [the dream's] reality?
>
> And then, he awakens suddenly and it is clear [to him] that the dream has no actual existence (*annahu lā wujūd lahu*). He even may see in a dream his own hand severed and his head cut off and believe it [to be so] definitively, yet, there is no [real] existence to what he thinks is definitive."[13]

This critique differs substantially from al-Ghazālī's initial charges chiefly because a control of sense experience is absent. Where is the line drawn between dreaming and reality, and how does a person know which state (*hāl*) he is in at any specific point in time? Moreover, is the certain belief or certain knowledge of a mad person irrefutable and true, and how can a person verify and when needed, correct, sense-based inferences? Can sensation provide a firm foundation for certain knowledge-claims?

Al-Ghazālī recognized clearly first, that unaided sense data were not trustworthy, and second, that sense-based knowledge-claims were not invulnerable to error, and third, that waking sense presentations might differ from what is perceived in sleep. While Ghazālian doctrine asserts that sense knowledge is faillible, it also affirms that the ordinary defects of sense perception either can be eliminated fully or modified. These defects can be remedied for example by supplementing sense data with the "formal" knowledge of geometry or through adding further accreted experimental data. Once these difficulties with sense perceptions are solved, they then can serve as the "matter" of the propositions in a "proof-giving" procedure. This framework of understanding explains why al-Ghazālī declined to eliminate the senses as a source of potential knowledge. At this point, it is wise to briefly comment upon the parallel that scholars often draw between al-Ghazālī and David Hume on the basis of al-Ghazālī's critique of the senses. Al-Ghazālī, I should argue, is not a Humean skeptic because unlike Hume, al-Ghazālī does not end his critique of sense data by destroying the senses as a source of knowledge. Instead, he constructs a new process through which raw sense data can be used more soundly as a source in the enterprise of knowledge acquisition.

The examples of how sense-data could be corrected, which al-Ghazālī provided, show this facet of a positive construction of sense-based knowledge. These illustrations reveal that he sought to exclude reasonable doubt through the use of appropriate verification procedures—rather than all *possible* doubt—about some factual matter, first apprehended by or through the physical senses. As his teaching stressed, the preclusion of reasonable doubt about an item of factual information yields certainty about the veridicality of the judgement that the *ᶜārif* makes concerning it. Once initial sense perception is buttressed through the employment of one or another type of support—mathematical logic, additional observation, perspectival change, incremented experimentation, among others,—then the sense-derived inference is "certain" from the point of view that any item of sensible information which is not contradicted by the evidence of the trained intellect provides reliable and true knowledge for the knower. Consequently, ordinary, "real world" sense experience is reliable, for al-Ghazālī, when (and if) it is supported by reason.

Physical sensation was not the only source of rational knowledge-claims and al-Ghazālī wanted to discover an absolutely secure foundation for human knowledge. This search for a cognitive source which would be able to guarantee the certain truth of its deliverances next led him to focus on the first principles of reason or the primary truths of the intellect. Defined as "the firsts" (*al-awwalīyāt*), they constituted necessary knowledge (*ᶜilm al-darūrī*). The "firsts" were by definition the *darūrīyāt*, that is to say, those items of knowledge that are "necessary," in the sense that once the sound mind grasps them, it must accept them as categorically true and certain. As al-Ghazālī understood them, the first principles were analytic propositions: "the same thing cannot be both affirmed and denied simultaneously"; "ten are more than three"; "one thing is not both generated in time and eternal"; and "one person cannot be in two [different] places at the same time." As he explained, all of the "necessary cognitions" (*al-ᶜulūm al-darūrīyāt*) of the intellect are grasped as certain and without doubt (*muhaqqaqun min ghayr shakk*).[14] The primary, self-evident, necessary truths of the intellect in Ghazālian doctrine comprise *a priori* verities which relate to the structure of the relationships between or among concepts; as a result, they are examples of formal knowledge.

In his autobiographical memoir nevertheless, al-Ghazālī concluded that the first truths of reason constituted potentially dubitable bases of certain human knowledge. As he argued there: I

> Perhaps I can rely only upon those rational data which belong to the category of primary truths [*illā bil-ᶜaqlīyāt allati hiya min al-awwalīyāt*], such as our asserting that [1] 'ten are more than three', and [2] 'one thing cannot be simultaneously affirmed and denied', and [3] 'one thing cannot be [both] generated in time [*hādithan*] and eternal [*qadiman*], [nor both] existent and non-existent, [nor both] necessary and impossible'. Then sense-data replied: 'what assurance do you have that your reliance on rational data is not like your reliance on sense-data? Indeed, you used to have confidence in me. Then, the judge of reason (reason-judge) [*hākim al-ᶜaql*] came along and falsified me; and if it were not for the reason-judge, then you would still accept me as true. So beyond the perception of reason [*warā'a idrāk al-ᶜaql*], there may be another judge. And if the latter revealed itself, it would falsify reason in its judgement, just as the reason-judge revealed itself and falsified the judgement of sense. The mere fact of the non-appearance of that [supra-intellectual] perception does not prove the impossibility of its existence [*lā yadullu ᶜalā istihālatihi*].[15]

Now in what sense or from what point of view could the rational precept that "one person cannot be in two [different] places at the same time" ever be false for al-Ghazālī?

Al-Ghazālī's early experiences with Sufism provided the framework of this feature of his critique of the primary rational truths, and the issue of the impact that Sufism had upon his perspective has been studied elsewhere.[16] Let us look carefully now at his investigation of the

epistemological status of the self-evident intellectual verities, apart from his religious commitment to Sufism which, at the actual time of the occurrence of his first crisis of knowledge, was not a fully unfolded conversion to the practice of the mystic Way. Al-Ghazālī raised the falsification specter relative to rational truths by once again drawing a parallel to dreaming. As he explained: II

> My soul hesitated about the answer to that objection; and meanwhile, sense-data heightened the difficulty by referring to dreams [*bil-manām*]. 'Do you not see', it said, 'how, when you are asleep that you believe certain things and imagine certain circumstances, and believe that they are stable and enduring, and, while in this dream-state, you have no doubt about them? And is it not the case that when you awake, you know that all your imaginings and beliefs were groundless and useless? Why then are you confident that all your waking beliefs, whether from the senses or [from] the intellect (*bil-hiss aw al-ᶜaql*), are genuine? They are true [only] with respect to your present state; but it is possible (*lākin yumkinu*) that a state will come upon you whose relation to your waking consciousness is like the relation of the latter to dreaming. In comparison with this state your waking consciousness would be like dreaming'![17]

When the two preceding passages are taken together, they constitute a serious critique of the cognitive worth of the intellect, one so severe that it seemingly defeats the human knowledge-acquisition enterprise. Pulled apart however, these are two separate criticisms, only one of which serves as a true possible falsifier of rational knowledge. The minor assault on the necessary first principles consists of the dream parallel. This criticism merely points to the *ᶜārif*'s assent possibly being characterized by instability, unreliability, and falsity. Under the envisaged scenario, the assent that the knower gives when he says that "I believe that this is the case with respect to thus and so" may become instable, unreliable, and false. The knower gives his firm assent when he declares that "I believe [and assert definitively] that this is the case with respect to thus and so."

According to the objection raised, however, the *ᶜārif*'s affirmation or assent may become one about which the person later understands that the occurrence of error is possible, since beliefs may be unreliable and false. Before this time, the believer is not ambivalent about his assent and he is not aware that his belief may be mistaken. Belief by itself does not qualify as knowledge; thus, what a person believes to be true about someone or something may or may not constitute true knowledge about that individual or entity. This is true even in the instance where (1) the assent conveys a belief about oneself, (2) is firmly and convincingly held by the believer, and (3) is presented directly to the believer's sensation. In al-Ghazālī's view, the clarity of the perception—which gives rise to the belief about which there is assent—does not suffice to establish that belief as verified knowledge.[18] It does provide, nevertheless, a basis for a *presumption* on the part of the knower that the specific belief is veracious and steadfast. Dreams, however, may transform clearly perceived and firmly held somnolent beliefs into nothing more than ephemeral and unstable figments of the imagination. What the *ᶜārif* may believe is certain and sure knowledge while sleeping can become mere fantasy once the person awakens.

Unsubstantiated belief is not knowledge; once rationally supported, however, it may become knowledge which is then held with indefectible certainty. In the ordinary circumstances of the human case where the aspirant to knowledge possesses a sound and healthy intellect and is not asleep, the knower can distinguish between what he knows on the basis of sufficient rational justification and what he thinks is so merely on the basis of simple, unreflected belief. The latter would be expressed in a statement which is prefaced by "I opine that . . . ." In full waking consciousness the *ᶜārif* can differentiate between these two states, the one of "being asleep" and the other of "being awake," and these two distinctive levels or kinds of cognitive

assertion. Moreover, when fully awake the knower can understand and evaluate the contribution to potentially false sensations that emotional over stimulation may create.

According to al-Ghazālī, extravagant ascetic disciplinary practices may heighten sensation to the point where distortion of experience and deception will result. In such an event the seeker of knowledge is endangered since "his mental sanity may be adversely affected, his bodily health may be destroyed, and melancholy may ensue." The aspiring mystic may deceive himself, as al-Ghazālī explained, because "if the soul has not been trained (exercised) in the sciences that deal with fact and [with] demonstration, it will acquire mental phantasms and suppose that truths are descending upon it. Many a Sufi has continued for ten years in this type of fancy before escaping from it, whereas if he had a sound scientific education, he would have been delivered from it at once."[19] Al-Ghazālī's critique of the necessary first principles then was two-pronged: the minor assault consisted of the dream parallel, while the major attack involved the possible advent of divine illumination, whose descent upon the knower could falsify the normal and ordinarily reliable deliverances of the healthy human intellect, including the primary cognitions.

Reason serves as the assessor of sense cognitions, in wakefulness as well as in sleep, in reference to both external as well as internal perceptions. According to Ghazālian theory, in all instances of external sense perception, the "sense-judge" (*hākim al-hiss*) may be refuted in its conclusions (*ahkām*) by the "reason-judge" (*hākim al-ᶜaql*), when it acts to falsify initial sensory evaluations in a way that cannot be rebutted. Quite aware that seeing was not always believing with certainty, al-Ghazālī pointed out how, in dreams, a person can become convinced of the truth of something while in this somnolent state that actually does not exist or is not true in reality. The next step for al-Ghazālī consequently involved determining how to differentiate between perceptions obtained while awake and those received while asleep in the reverie of a dream. One of the functions of the healthy intellect and of correct reasoning procedures, as he explained, was to accomplish this exact task.

Al-Ghazālī declared that the mere possibility of the falsification of sense-data inferences did not undermine the worth of sensation as an avenue to knowledge. He also confirmed that the intellect could produce "sure and certain knowledge in a decisive manner," when sound reasoning procedures were employed correctly. In line with his epistemological doctrine, decisive apodeictic proof results in the case where (1) a person understands the correct reasoning procedures, as these are explained in manuals of logic [the *Miᶜyār al-ᶜilm* and the *Mihakk al-nazar*], for example, and (2) applies them appropriately without error. Al-Ghazālī wrote that "they [the *balances* or *mawāzīn* that is, the criteria and methods of demonstrative reasoning] are those about which dispute is absolutely inconceivable, once they have been understood. Every person who understands them [the *mawāzīn*] acknowledges that they are the channels of absolute certain knowledge in a conclusive fashion."[20] Sophisticated enough to recognize various sorts of methodological impedimenta along the road to certain knowledge, al-Ghazālī explained that disparate conclusions still could result if reasoning procedures were (1) either imperfectly applied, or (2) incompletely understood, or (3) inappropriately chosen, given the matter of the premises. He consequently argued:

> but disagreement (*al-ikhtilāf*) on their [speculative reasoners/*al-nuzzār*] part is also not impossible (*lā yastihīlu*) either (1) because of the inability of some of them to grasp completely its [the proof procedure's] conditions; or (2) in connection with their reversion in [their] speculative inquiry to simple innate disposition and [inherent] nature (*ilā mahd al-qarīha wa'l-tabᶜ*), without taking into consideration weighing with the criterion (*bil-mīzān*). [It is this way in the case of] the one who, after learning perfectly [the rules of] prosody in poetry, reverts to untutored taste because he finds it tiresome to subject every poem to the rules of prosody. As a consequence, it is not far-fetched that he will err. Or (3) because the speculative reasoners differ about the cognitions which constitute the premises of the demonstrative proofs (*muqaddīmāt al-barāhīn*):

> for among the cognitions that form the principles (*usūl*) of the apodeictic proofs are [the] experimental or empirical and those based on impeccable transmission, [as well as] some other kinds. [And] men disagree about experience and impeccable transmission such that one person may consider as impeccable transmission what another person does not. Or (4) because of mixing up the judgements of the imagination with those of reason; or (5) as a result of confusing [the] renowned and esteemed sayings with the necessary rational judgements (*al-darūriyāt*) and the primary rational truths (*al-awwalīyāt*), as we have explained that [matter] in [our] book the *Mihakk al-nazar*. In general, however, when the speculative reasoners learn these [balancing] criteria (*al-mawāzīn*) and assess them as true, these people then can pause and easily keep themselves from dwelling in the places of error (*mawāqi*^{c} *al-ghilat*)—when they give up [their] mulish stubborness.[21]

In al-Ghazālī's teaching thus far, the trained speculative thinker is able to learn and consequently avoid, errors in logical reasoning. Even in the case where the ^{c}*ārif* commits a mistake in logic, the reasoner's sound instruction in this discipline enables him to find his mistake and correct it. Making an error in reasoning then does *not* invalidate the employment of the intellect in the endeavor to discover certain rational knowledge. Let us follow al-Ghazālī's argument as he elaborated it in *Faysal al-tafrīqa*.

> One should say to them [the *Bātinīya*]: How, then, do you refute the partisans of reasoning (*ahl al-nazar*) when they claim that about their own doctrine (*fī madhhabihim*), and about their distinguishing between that in which they err and that in which they do not err, . . .? If they claim that (and it requires reflection, whereas what concerns us is something intuitive,) then, we say: In matters of arithmetic there is need for the most subtle reflection. So, if in an arithmetical question with which you are familiar, a man errs [because] either his reasoning is inadequate or his intelligence is feeble, then does that make you doubt that the arithmetical cognitions are true? If you say: No!—one should say: Well, that is exactly like the state of `practiced rational thinkers when [their] adversaries oppose them. And they [the adversaries of the *nuzzar*] ought to be [urged] against them [their opponents] with regard to every position, because they flaunt so much the disagreement of the *ahl al-nazar* and maintain that [disagreement] ought to do away with safety [from error]. But our disagreement with them has not done away with their safety from error about their premises which they arranged in order. They then wanted, along with that, to do away with our safety from error about speculative matters (^{c}*an al-nazarīyāt*) by the disagreement of him who disagrees about them. This is an inane desire and a feeble supposition by the likes of which no intelligent man would be deceived![22]

Conclusion

When al-Ghazālī's teaching on rational knowledge—its sources, criteria for certainty (*al-yaqīn*), and methods of reasoning—are looked more inclusively, his doctrine identifies as well as clarifies several major conclusions. First, al-Ghazālī was not a skeptic about human knowledge on the Humean model. This late eleventh/early twelfth century Muslim intellectual doubted the sources of human knowing—sense data and reason—in order to secure their places in the construction of the edifice of human knowledge-acquisition. Muslim thinkers from the tenth century of the Christian era onward used the vehicle or technique of "doubting" instrumentally, as a device to probe the weaknesses of human knowing, identify them, and then, buttress the sources in order to support the capacity of human beings to "know" various things about themselves and their environing physical world. Second, this is not to claim that al-Ghazālī sought to elevate human knowing about the material world and about the human person to the realm of transcendentally absolute and certain knowledge about the Divine and the things of God. He clearly did not; in fact, that lay outside the scope of his understanding of the purposes for which

God endowed the human being with intellect, with the capacity to reason. Third, his critique of rational knowledge then is not global; it is localized and particularized to the specific goal of shoring up the rational knowledge enterprise (1) by pointing out the limitations of its sources, (2) by constructing ways in which to strengthen those sources, so that they can be used productively in the epistemic enterprise, and (3) by underlining the philosophical character of all human knowledge claims as relative. By their nature, claims about the physical universe cannot meet the Aristotelian standards of constancy, invariance, and invulnerability to error. They never can be absolute. However, as al-Ghazālī indubitably recognized, human "truths" about the physical universe do not need to fulfill those standards in order to be fully workable as the matter of rationalized human understanding about the entities, phenomena, and operations of the physical universe. Simply because the Ptolemaic understanding of the relationship between the earth and the sun was argued successfully by Copernicus to be wrong did not mean that human cognitive assumptions, hypotheses, and conclusions—period-bound though they were—were valueless, for al-Ghazālī, in the ultimate production of new human knowledge.

References

Bargeron, Carol L. "Sufism's Role in al-Ghazālī's First Crisis of Knowledge." *Medieval Encounters* IX: 1(2003): 32-78.

Bouyges, Maurice. *Essai de chronologie des oeuvres d'al-Ghazālī* (Beirut: Imprimerie catholique, 1959.

Frank, Richard M. "Knowledge and Taqlīd: The Foundations of Religious Belief in Classical Ashᶜarism." *Journal of the American Oriental Society* 109: 1 (Jan.-March 1989): 37-62.

al-Ghazālī, abū Hāmid Muhammad. *Ihyā' ᶜulūm al-dīn*. Ed. M. Halabi. Cairo: al-Matbaᶜat al-ᶜuthmānīyat al-misrīya, 1346/1927 [vol.1], 1352/1933 [vols. 2-4].

al-Ghazālī, abū Hāmid Muhammad. *Fadā'ih al-bātinīya.* Ed. ᶜA.-R. Badawī. Cairo: al-Maktabat al-ᶜarabīya, 1383/1964.

al-Ghazālī, abū Hāmid Muhammad. *Faysal al-tafrīqa bayna 'l-islām wa'l-zandaqa*. Ed. S. Dunyā. Cairo, 1381/1961.

al-Ghazālī, abū Hāmid Muhammad. *Mihakk al-nazar fī'l-mantiq*. Ed. M. al-Naᶜsani. Beirut: Dār al-nahdat al-hadītha, 1966.

al-Ghazālī, abū Hāmid Muhammad. *Miᶜyār al-ᶜilm fī fann al-mantiq*. Beirut: Dār al-Andalus, 1964.

al-Ghazālī, abū Hāmid Muhammad. *Mishkāt al-anwār*. Ed. A. al-ᶜAfifī. Cairo: al-Maktabat al-ᶜarabīya, 1383/1964.

al-Ghazālī, abū Hāmid Muhammad. *Mīzān al-ᶜamal*. Cairo: Matbaᶜat kurdistān al-ᶜilmīya, 1328/1910.

al-Ghazālī, abū Hāmid Muhammad. *al-Munqidh min addalâl*. Ed. F. Jabre. Beirut, 1959.

McCarthy, Richard. *Freedom and Fulfillment*. Boston: Twayne, 1980.

Smith, Margaret. *al-Ghazālī the Mystic*. London: Luzac and Co., 1944.

---

[1] Included within this term are all texts in which al-Ghazālī devoted a sizeable number of pages to discussing Aristotelian logical reasoning, its methods, areas of application, procedures, and materials.

[2] *Miᶜyār*, 134, lines 5-10.

[3] *Munqidh*, 13, lines 20-21: "*wa dāma qarīban min shahraini anā fīhimā ᶜalā madhdhab al-safsata bi-hukm al-hāl lā bi-hukm al-nutq wal-maqāl*." McCarthy in *Freedom and Fulfillment* provides an excellent English translation of the *Munqidh*. Bouyges, *Essai de chronologie* proves particularly helpful in trying to reconstruct the timeline of al-Ghazālī's early life as a student in Jurjān and in Tus.

[4] Quoted in *al-Ghazālī*, 14-15.

[5] *Mīzān*, 51, lines 3-12; *Ihyā'* IV: 3, lines 2-4, 8-10. *Mīzān*, 46, lines 10-14; *Ihyā'* III: 1, 17, lines 16-20.

[6] *Ihyā'* III: 1, 17, lines 5-12.

[7] *Mihakk*, 55, lines 2-6; *Fadā'ih*, 126, lines 3, 20-23; *Munqidh*, 11, lines 9-11: "It was plain to me that sure and certain knowledge is that knowledge in which the object (*al-maᶜlūm*) is disclosed in such a fashion that no doubt (*lā shakk*) remains along with it, that no possibility of error or illusion accompanies it (*wa lā yuqārinuhā imkān al-ghilat wal-wahm*), . . ." (lines 9-10.)

[8] *Munqidh*, 12, lines 9-14; cf. *Mishkāt*, 47, lines 3-11.

[9] *Munqidh*, 13, lines 5-8: "And my soul hesitated about the answer to that objection, and sense-data heightened the difficulty by referring to dreams. 'Do you not see', it said, 'how, when you are asleep that you believe certain things and imagine certain circumstances, and believe that they are stable and permanent, and, while you are in this dream-state, have no doubt about them? And is it not the case that when you awake you know that all your imaginings and beliefs were groundless and useless'?" See also, *Fadā'ih*, 90, lines 12-18.

[10] Necessity correlates positively with eternity since everything that is necessary is also eternal. Aristotle asserts that what is absolutely necessary is, by definition, eternal (*Nicomachean Ethics* VI: 3 1139b 23-24) and moreover, claims that the eternal and the necessary are controvertible terms (*De Generatione et Corruptione* II: 11 338a 1). That which is necessary is that which could not have been otherwise or different (*Metaphysics* V: 5 1015a 33-35).

[11] The debate structure is much more clearly evident in earlier volumes such as *Fadā'ih* and *Faysal*, two works in which al-Ghazālī argued against historically real and contemporary opponents, the Ismāᶜīlī advocates of *taᶜlīm* or the Bātinites, whose theory of knowledge contained more than a few sophistical elements. Rather than the *Munqidh*, those two texts as well as the celebrated *Tahāfut al-falāsifah* were among the writings that al-Ghazālī directed toward more intellectually sophisticated readers. The *Munqidh min al-dalāl* was a memoir expressly addressed to his fellow co-religionists as Muslims, whether learned or unlearned, whether members of the élite or part of the *ᶜāwamm*.

[12] *Munqidh*, 13, lines 8-11. In the complete discussion, three streams of thought are present: the Aristotelian, the Skeptical, and the Sufi. The mystical and the sophistical or skeptical traditions are intertwined in the counter-claim that al-Ghazālī advanced to erode human confidence in rational cognitive judgements.

[13] *Fadā'ih,* 84, lines 15-19. Cf. Munqidh, 13, lines 5-12.

[14] *Ihyā'* I: 1, 22, lines 28-29; *Munqidh*, 12, lines 17-19. Cf. *Ihyā'* I: I, 76, lines 1-4; *Ihyā'* I: 1, 77, lines 25-28; *Mishkāt* 48, lines 10-15. *Ihyā'* I: 1, 65, lines 9-12: "Every type of knowledge that is obtained in this manner is called a "certainty', whether [it is] obtained through speculative reasoning (*nazar*) or through the mind necessarily [as axiomatic] . . . or through tradition . . . or through experimentation (*bi-tajriba*) or through some proof procedure (*aw bi-dalīl*) . . . ." Also cf. *Mi*^{c}*yār*, 47-49.

[15] *Munqidh*, 12, lines 16-19, 13, lines 1-4. Cf. *Mishkāt*, 77, lines 18-19, 78, lines 1-2.

[16] Carol L. Bargeron, "Sufism's Role in al-Ghazālī's First Crisis of Knowledge," *Medieval Encounters* IX: 1(2003): 32-78.

[17] *Munqidh*, 13, lines 5-11; cf. *Fadā'ih*, 90, lines 12-18.

[18] Richard M. Frank, "Knowledge and Taqlīd: The Foundations of Religious Belief in Classical Ash^{c}arism," *Journal of the American Oriental Society* 109: 1 (Jan.-March 1989): 44.

[19] *Ihyā'* III: 1, 17, lines 16-20 lengthens the term of self-deception to twenty years.

[20] *Faysal*, 188, lines 14-16.

[21] *Faysal*, 188, lines 17-21, 189, lines 1-9.

[22] *Faysal*, 91, lines 1-12.

A Medieval Muslim Scholar's Influence on European Renaissance

M. Basheer Ahmed M.D.

For almost a thousand years of the Christian era, the scientific progress in Europe remained dormant and all scientific progress came to a halt. Any scientific theory not mentioned in the Bible was discarded and labeled as heresy. Scientists were condemned, incarcerated, and some even put to death. This period is called the "Dark Ages". Indeed these were the "dark ages" for Europe but not for the Muslim world.

The Muslim holy book, Quran emphasizes to observe, reflect, and use rationality to understand the world they live in and Islam also encourages the intellectual pursuit. By the 7th century, the Muslim Arabs had established rule in Egypt, Palestine, Syria, Iraq, India, Asia Minor, and Andalusia. They were exposed to the Greek, Byzantine and Indian culture and were keen in acquiring knowledge of Greek, Roman, and Indian sciences. They translated all the known scientific work from Greek to Arabic, thus preserving the ancient knowledge from extinction. However, their major contribution was their original work in all sciences. Between the 7th and 13th centuries, Baghdad in the East and Cortoba in the West were the most advanced cities in the world and became seat of learning where students from all over the world flanked to have the most advanced education. Hoffman writes: "The European intellectuals exploit of the Renaissance would have been unthinkable without the famous Muslim scientists, philosophers and scholars such as: Al-Razi, Ibn Sina, Ibn Rushd, Al-Bairuni, Al-Khwarizmi, Al-Haiytham, and Ibn Khaldoun."Hoffman Murad

Ibn Rushd (Averroes), a twelfth century Muslim philosopher whose master piece work was the commentary on Aristotle's philosophy and emphasis on reasoning and rational thinking has made a considerable impact on Medieval European intellectuals. The rise of Renaissance rationalism and humanism is associated with Ibn Rushd's emphasis on the primacy of reason in philosophical and theological discourse. Writing about rationalism, Etienne Gilson mentions: "Rationalism was born in Spain in the mind of an Arabian philosopher as a conscious reaction against the theologians of the Arabian Divines - Asharites." Averroës promoted the ideal of a purely 'rational philosophy' even more comprehensive than the mathematical rationalism of Descartes (1650) who is generally regarded as the father of modern philosophy. Fakhry 2000

Abdul Waheed, Muhammed Ibn Ahmed, Ibn Rushd known as Averroes in the West, was born in Cordoba in Southern Spain in 1126 and is regarded as one of the pioneers in philosophy and medical sciences. He grew up in the period of turmoil in Muslim history, when the Crusades had begun and Al-Andulas (Muslim Spain) was splintered into numerous kingdoms. However Muslim Spain remained the center for learning arts and sciences and continued to attract scholars from all over the world. While Europe was in the Dark Ages, the Muslim Spain, especially the city of Cordoba was the most advanced city in the entire European continent. Scholars of different faiths, found Andalusia as a tolerant center for people of all faiths namely Christians, Jews, and Muslims and an intellectual common ground, leading to scientific discoveries in the

Medieval Islam, which became the most advanced civilization. Ibn Rushd did his major philosophical work during this period and is regarded as the central link between Ancient Greece and European Renaissance.

Ibn Rushd mastered the Islamic Shariah under the supervision of his grandfather, who was a well-known jurist of the Maliki School of Islamic Law and Qazi-al-Quzzat (Chief justice) in Cordoba. Ibn Rushd himself became the Qazi (Justice) in Seville (1169-72) and Chief Qazi (Chief Justice) in Cordoba (1172-82). He also studied astronomy, medicine, Greek sciences, and music, but his most outstanding accomplishments were in the areas of medicine and philosophy.

Views of Ibn Rushd, in the 12th century on the status of women are still true in the 21st century. In his book, "the Moors in Spain and Portugal," Jan Reed cites from Ibn Rushd's commentary on the status of women: 'Our society allows no scope for the development of women's underlying talents; they seem to be destined exclusively for child birth, and the care of children. This state of servility has destroyed their capacity for larger matters. They live their lives like vegetables, deviling themselves in their husbands. From this stems the misery that pervades our cities for women who outnumbered men, and cannot procure the necessities of life by their own labor.' Salloum 1997

Ibn Rushd, known for his hospitality, was a kind and considerate man who abhorred position and wealth. As a judge, he was very kind hearted and seldom awarded corporal punishment. He engaged in scholarly activities 16 hours per day even when he was 70 years old. A patriot, Ibn Rushd claimed, Spain as rival of Greece praised by Plato in his Republic. Ahmed 1987 He agreed with Plato's ideas of social order, and stated that man must be free from all oppression and injustice... He considered the rule of Khulafa ar Rashidun as the ideal for humanity, and criticized Mua'awiya for introducing the dictatorship and monarchy in Islam. Haque 1990 In year1148, Alm'wahadin captured Andalusia and declared Marrakech (Morocco) as their capital. The developed the city into a center for learning and Ibn Rushd was appointed as Inspector of Schools of Marrakech in 1153 where he started his philosophical and medical work. He wrote one hundred books on philosophy, medicine, and astronomy, including a treatise on the motion of a sphere and sunspots.

Ibn Rushd recognized as the brilliant philosopher till the Renaissance, his commentaries on Aristotle's work were used as textbooks of philosophy in the West, entitling him as the father of Western philosophy. Michael Scotts translated Ibn Rushd's work on Aristotle from Arabic into Latin, thus introducing Averroës, the interpreter of Aristotle to the West, including the universities of Paris, Prague, Padua and Oxford, A department was established under the name of Averroës in the University of Paris. Francis Bacon honored him as being at midpoint between Aristotle and Ibn Sina and he advised all to study his essay in Arabic to avoid faulty translation. Haque 1990

According to George Sarton, "he was great because of the tremendous stir that he made in the minds of men for centuries." A history of Averroism includes all essential elements of the thought process from 12th to 16th century and Ibn Rushd's work was regarded as the last word on philosophy. Dante in his Divine Comedy calls him the greatest commentator of Aristotelian work. Ibn Rushd became an authority among both Jews and Christians and his commentaries on Aristotle influenced such Jewish theologians such as Moses Ibn Maimon (Mamonides 1135:1204) and Christian

theologians, Thomas Aquinas and Albert the Great. When Ibn Rushd's works started to spread in Europe in the early 13th century, they were received with much enthusiasm and curiosity. Even the Roman Catholic Church started exploring ways to permit Christians to study books written by non-Christians, which were banned at the time. However in the late 13th century, several Christian philosophers (Siger of Brabant, Boethius of Dacia and Bernier of Nivelles) who started and followed Averroism were condemned as heresies in Paris, and Dante was accused of Averroistic heresies and his book De Monarchia was burned by the order of the Pope.

The study of philosophy was also discouraged in the Muslim world during the time of Ibn Rushd, partly for political reasons. As political power declined in the Muslim world, Muslim rulers sought more and more the aid of theologians. This is the major reason why Khalifa Al-Mansour ordered to burn the philosophical works of Ibn Rushd and condemned him on the charges of heresy and deported him from Cordova.[Shaikh 1962] This was the city where Ibn Rushd held the highest judicial position of Qazi (chief justice). Later on when Al Mansour re-established his power in Spain and returned to Marrakech, Ibn Rushd was restored to grace and the charges against him were rescinded. He died in 1198 in Marrakech and three years later, his body was exhumed to be buried in Cordova.

Ibn Rushd- Physician: The famous philosopher and court physician, Ibn Tufail, introduced Ibn Rushd to the Caliph, Abu Yaqoub Yusuf. After the death of Ibn Tufail in 1182, Ibn Rushd succeeded him as a personal physician to the Caliph and subsequently became physician to his son, Abu Yaqoub Al-Mansour in 1184. He became an authority on medicine during his time. He wrote 20 books on medicine covering several topics related to illness and health. His best-known work on medicine was 'The Compendium of Medical knowledge' (*Kitab al kulliyat fil tib*-colligete). It consists of seven volumes on anatomy, physiology, pathology, diagnosis, pharmaceuticals, therapeutics, and hygiene. This book brought together the work of the best physicians from the Classical Greek and the Islamic world. The Compendium of Medical Knowledge (*Kulliyat*) was translated into Latin (colligete) in the late Middle Ages (13th and 15th century) became one of the textbooks of medicine taught both in the East and the West for several centuries.[Stone 2003] Ibn Rushd defines medicine in *al Kulliyat* as "an effective art, based on true principles and concerned with preserving men's health and abating diseases, as far as possible, in dealing with individual bodies. Thus the aim of this art is not to heal necessarily, but to do what ought to be done to the extent possible, and within the time and space needed." (al Kulliyat p.19) Ibn Rushd was well recognized for his work on smallpox. He stated that this disease does not affect more than once, showing that individuals develop immunity after their first exposure. He advised segregation of patients with smallpox to avoid spread of the disease. Ibn Rushd (Averroes) also wrote a treatise on medical jurisprudence.

Ibn Rushd (Averroes)-The Philosopher: Caliph Al-Mansour once asked Ibn Rushd: "What do the philosophers believe regarding heaven? Is it eternal or created in time?" Taken by surprise, Ibn Rushd denied that he was engaged in the study of philosophy."[(Fakhry 2000)] However, that question from the Caliph sparked the philosophical instinct, and eventually led to his interest in philosophy and he became a renounced philosopher. Ibn Rushd made a lasting impact with the introduction of Aristotelian philosophy in his own original work on reasoning, and the relationship between philosophy and theology. For Ibn Rushd, philosophy was no more than the systemic probing into phenomenon of

creation, and revealing God's wisdom, leading to truth. He strongly believed that an in-depth study of philosophy could enable man to have a better understanding of the Quran and Islam. His thought-provoking books on philosophy had a serious impact not only on Muslim philosophers and thinkers, but also on Jewish and Christian philosophers and scholars of the time, such as Maimonides, and Thomas Aquinas.

Ibn Rushd adopted Aristotelian reasoning by analogy and found it suitable for rational deduction, influence, prosecution, and judgment, not only on issues of life, but also in religious affairs including realization of God. He applied rational reasoning to theology-an approach that stirred his colleagues against him and against his philosophy as a whole. Leaman

Ibn Rushd wrote 3 books on systematic philosophy- *Fasl al Maqal, Kitab al Kashf, and Tahafut al Tahafut:*

I. Fasl Al Maqal- The Decisive Treaties- published in 1177. In this book, he discussed the creation and eternity of the universe, destiny of man, nature of the knowledge of God, immortality of the soul, and resurrection. Ibn Rushd emphasized the study of philosophy and science, and in support of his arguments, he quoted verses from Quran such as "Reflect, you have a vision" and "Have they not studied the knowledge of the heavens and the earth and whatever things God has created?" These verses encourage man to explore nature in search of Divine Providence. Ibn Rushd also interpreted from these verses that: God requires man to obtain demonstrative knowledge of His existence. He did not deny any dogma of Islam, but interpreted it in his own manner so as to bring it into conformity with the philosophy.

Eternity- Ibn Rushd made a distinction between eternity of the God and eternity of the world. He also mentioned 2 kinds of eternities: Eternity with a cause and eternity without a cause. God is eternal without cause. He exists solely in timeless eternity. The world is eternal because the Creator is working upon it. God's creative power is perpetually at work in the world, moving it and maintaining it. Sheikh 1962

Knowledge of God- Ibn Rushd stated that God in the knowledge of his own essence knows all things of the world. God's knowledge is not like that of man; it is a higher form of knowledge about which we have no conception. Our knowledge is limited to only what God permits us to have, and God's knowledge like man is not derived from things rather things derive their being through God's knowledge of them. God's knowledge can be called neither universal nor particular, as this distinction is of human origin. Rosenthal 1985

Human Destiny- Ibn Rushd clarified his perception of human destiny by stating that human actions depend partly on his free will and partly on outside causes. These causes spring from general laws of nature, and God alone knows their sequence. He believed that man is neither in full control of his destiny, nor is it fully pre-determined for him, therefore man should make utmost efforts to attain perfection, and this perfection can only be attained through study, speculation and negation of desires especially those relating to the senses. Ahmed 1987

Immortality of the soul- Ibn Rushd states that soul is a driving force like an energy, which sustains life and affects the growth of the organic bodies. This sole being independent of the body may continue to exist after the death of the body in an individual capacity. Ibn Rushd believed in the resurrection of the body. However his interpretation of resurrection may be different from that of theologians. He explains that the body that is resurrected may not be the same as our body now. Our physical bodies are dissolved after death but we may receive new celestial ones in a resurrection and those would hold our

reconstituted individual souls. The immortal life of the Hereafter will be of a higher kind than this life. [Sheikh 1962]

II. Kitab al Kashf- "Exposition of the Method of Proofs"- In this book, Ibn Rushd outlines his system of doctrine for Muslims who are not philosophers and refuted many erroneous teachings of the theologians. He argues that the highest form of demonstrative reasoning cannot clash with the principles of religion. Philosophers are best able to understand properly the allegorical passages in the Quran on the basis of their logical training and there is no religious stipulation that all such passages have to be interpreted literally. When demonstrative reasoning appears to conflict with the sense of Scriptures, then those capable of demonstration (the philosophers) know that the passages must be reinterpreted allegorically so as to cohere with demonstrative truth. Religion is a means for the easy comprehension of the majority of the people and when a hidden meaning exists, it is up to the philosophers to discover it and keep it to themselves while the rest of the community must accept the literalness of the Scripture. [Raslan 1997] He gave the example of a statement in the scripture: "God is in the Heaven." In a literal sense, it means somewhere in the skies. We know that God cannot be represented as a physical entity in space and would interpret this statement to mean that God is exalted above all that is earthly and human, and we know that God is everywhere and not merely in the heavens. The philosophical explanation or interpretation of Quran may be confusing and may mislead common people, instead of enlightening or guiding them. Therefore, Ibn Rushd states that philosophers should not share their interpretations with the masses so as to avoid confusion.

Ibn Rushd categorized people based on their understanding. The largest group consisted of those who developed faith because of the teachings of Imams. The second group consists of people who have faith in the religion, partly upon reasoning, but largely on the uncritical acceptance of the teachings of theologians. The third and smallest group have a faith in religion due to reasoning and rationality. They thoroughly examine the dogma, and accept it. These are philosophers whose understanding reaches its highest level.

Ibn Rushd was criticized for saying that an interpretation of dogma according to the intellectual level of the people is necessary. Ibn Rushd believed that some truths can be presented in different forms to different individuals based on their understanding. He showed psychological insight of human perceptibility. The Quran says: "Those who are firmly grounded in knowledge, say: 'We believe in the book; the whole of it is from our Lord and none will grasp the message except men of understanding." (7:3)

III- Tahafut al Tahafut- "Incoherence of Incoherence"- His major work on philosophy was published in 1184. This book was written as a response to Imam al-Ghazali's serious criticism of the philosophers, Ibn Sina and Al Farabi. Al-Ghazali wrote 'Tahafut al Falsafa' (Incoherence of Philosophers) in which he found serious problems with philosophers of his era. He wrote: "They have abandoned all religious duties Islam imposes on its followers." He mentioned that the kind of reasoning used by philosophers would never result in the proof of existence in God. [Maqtoub 1997] However, in response to these accusations, Ibn Rushd emphasized that certain doctrine about God must be accepted in Toto, such as the existence of God as Creator and Sustainer of the world and the resurrection of the body on the Last day. Ibn Rushd quoted Quranic verses as proof of his belief: For it is evident from more than one verse in the Book of God-Al Mighty that He calls upon men to believe in the existence of the Originator, glory be to Him, and 'O

people, worship your Lord who has created you as well as those who came before you' and as the other sayings of the Almighty: 'Is there any doubt about God, Maker of the Heavens and the Earth?' Najjar 2001

Ghazali criticized the work of Al-Farabi and Ibn Sina by saying that philosophers purport to prove that philosophy is a more sophisticated analysis of the nature of reality than that available to ordinary Muslims. On the contrary, the philosophers are creating a doubt in the religious notion of God, the life after death, and the creation, in the guise of merely analyzing these ideas.

Ibn Rushd presented two arguments against strict believers in doctrinal reasoning. The first argument targeted the notion that rational reasoning is heresy because it did not exist in the early days of Islam. His argument was that though doctrinal reasoning did not exist then and was only introduced later, it is not considered heresy. He further argued that the mind is the ultimate tool of knowledge, prepared as it is by God to deduce His presence and to reason in earthly matters as well. This divine qualification renders the human mind continuous in space and time and opens across all nations to a common knowledge. "Therefore, we must make use of the teachings of those who preceded us whether they share our religious beliefs or not," Ibn Rushd was referring to the Greek philosophers. Raslan 1997

Ibn Rushd (Averroes)- The Commentator- *Ibn Rushd admired Aristotle and showed great respect for him. He discussed his theories analytically more than any other philosopher, and regarded him as a seeker of truth.*

For a thousand years, the West had almost forgotten the contribution of Greek philosophers. There was a strong belief that philosophy refutes Christian dogma. It were Muslim philosophers who translated Greek philosophical works in Arabic, and then re-introduced to Europe through translations. The major credit goes to Ibn Rushd who wrote commentaries on Aristotle's work, and the Latin translation of his work was introduced to Europe. His works made a major impact on European philosophical and theological circles. A great number of students followed the school of Averroism, and an academic department of Averroism has also been established in Paris and Oxford.

Ibn Rushd spent over 25 years writing on works of Aristotle. He wrote an in-depth analysis of Aristotle's work in 3 books: Summary (*Jami*)-written for beginners, Middle Commentaries (*Talkhis)*, and Long Commentaries (*Tafsir*), written for advanced students and philosophers. In these Commentaries, he also included his own opinions. It was through these books translated into Latin and Hebrew that he became known as 'The Commentator.' Translations in Latin were made from the Hebrew translation of Averroes' (Ibn Rushd) works by Samuel Bin Tibbon, and Joseph Bin Abar Mare of Naples. Fakhry 2000 His books were taught in new universities of Europe for the next 4-5 centuries. He wrote commentaries on several books of Aristotle including *Organon, Meterologica, Poetica, Nicomachean, and Ethica*. He also wrote commentaries on Plato's *Republic.* While Ibn Rushd's commentaries had a serious impact on Western scholars and stirred their dogmatic thinking, it had virtually no effect on Muslim scholars in the East**.** They were gradually shifting towards Orthodoxy and Abundany progressive thinking.
Ibn Rushd (Averroës)- The Renaissance Man: The 12th century produced the most outstanding scholars of Andalus in Muslim Spain, such as Avempace (Ibn Bajja), Ibn

Tufayl and Moses Maimonides who had considerable influence on Europe. However, Ibn Rushd's ideas influenced the transformation of thought in Medieval Europe and his beliefs had a serious impact on the minds of many medieval intellectuals living in Europe for the next few centuries.

The rise of Renaissance rationalism and humanism is clearly linked to Ibn Rushd's commitment to the primacy of reason in philosophical and theological discourse. Writing about rationalism, Etienne Gilson mentions: "Rationalism was born in Spain in the mind of an Arabian philosopher as a conscious reaction against the theologians of the Arabian Divines - Asharites." Averroës promoted the ideal of a purely 'rational philosophy' even more comprehensive than the mathematical rationalism of Descartes (1650) who is generally regarded as the father of modern philosophy. Fakhry 2000

Muslim and Christian theologians were concerned about Ibn Rushd's writing especially his work on Plato's *Republic* where he discusses how society can be changed and developed to perfection. They wanted to see the order of the world as pre-ordained, and immutable. It was Ibn Rushd's text that inspired thinkers of the Renaissance such as Thomas Campanella, and Sir Thomas Moore to produce utopia or the ideal state. The notion that this ideal is something definable and that it can be attained through human endeavor and wise leadership, rather than only as a matter of God's Grace, and more good luck has inspired reformers and socially-conscious governments to the present day. Stone 2003

Initially, Ibn Rushd's writing had a negative effect on Christian schools as his rational approach was regarded incompatible with Christian teachings. This is the same reason why his philosophical teachings were rejected in the Muslim world. However his philosophical writings were greatly appreciated, and accepted later on by Christian philosophers and scholars, and have raised the conscience of European intelligencia. For nearly four centuries from the 12^{th} to the 16^{th}, his writings were subject to repeated dialogue among the scholars in Christian Europe-forcing the church to modify its teachings. In contrast, Muslim scholars and theologians out rightly rejected his ideas.

Hundred years after the death of Ibn Rushd, a group of scholars known as Averroists, whose principal exponent was Siger of Brabant, openly declared themselves as adherents of Averroës sparked another controversy within the Roman Catholic Church. Salloum 1997 Averroists were charged that they promoted the doctrine of intellect for all humans, denial of the immortality of soul, and promoted the idea of double-truth meaning two kinds of truths; religious and philosophical. Ahmed 1987 Siger of Brabant, Boethius of Dacia and Bernier of Nivelles were condemned for Averroeistic heresies in Paris, and Dante was also accused; and his book *De Monarchia* was burned. Turner 2003

Ibn Rushd introduced reasoning and rationalism in both Jewish and Christian dogma. A great Jewish physician-philosopher and rabbi, Ibn Maimun (Moses Maimonides) was born in the city of Cordoba about 10 years after Ibn Rushd. He was very much influenced with the writing of Ibn Rushd and became the master of Aristotelian philosophy. He also attempted to harmonize the truth of reason with the revelation of Torah. Maimonides is considered a most respected and enlightened Jewish philosopher with marked influence on Jewish thinking. Maimonides' writings also generated considerable controversy among the Jews. His books were, in consequence burned by Orthodox Jews. However his philosophical writings supported Ibn Rushd's concept of harmony between reason and religion prevailed and influenced European thinking.

Thomas Aquinas was born in Naples, Italy about 25 years after Ibn Rushd. He was a monk who subsequently became a professor of theology in Paris, and advocated Ibn Rushd's rationalism. He was also opposed by theologians. In 1231; Pope Gregory appointed a commission to expurgate his writing. He was also charged with heresy. However, he used grand commentaries on Aristotle as his model. Although he refuted some of the arguments of Ibn Rushd, he always spoke with respect and regard towards Ibn Rushd. Thomas Aquinas was instrumental in incorporating Aristotle's rationalism in Christian theology. His famous book: *Summa Theologia* is considered the most comprehensive exploration of the Christian philosophy. Aquinas emphasized that faith and reason will not contradict Christian revelations. This argument in general was accepted by scholars and enlightened theologians and had a profound impact on rationalism and humanism, which then became the basis of Renaissance.

The three great scholars of medieval period: Ibn Rushd, Maimonides, and Thomas Aquinas each had a great influence on Islam, Judaism, and Christianity respectively. During the 12th century, when revelations without reason were the principle dogma of theologians, these great scholars advocated understanding revelation by reason and logic and this was a great challenge. Because of their bold approach, they also faced condemnation from the contemporary theologians of their respective religion, who strongly supported orthodox views.

It has been suggested among scholars that Ibn Rushd's work may have been inspired by the desire to prove that man is rational and can learn, that nature is intelligible and its interpretation a legitimate task of man and hence, science and divine revelation need not be at odds. Part of this philosophy is derived from the Greeks, especially from Plato and Aristotle, whom Ibn Rushd admired and on whose work he wrote numerous commentaries and paraphrases in books that to a large extent won him the respect he enjoyed in the West, whereto struggle to reconcile science and faith still goes on**.** **Stone 2003** It is said that without the work of the Muslim philosopher, Ibn Rushd, much of what occurred in Medieval Europe in the field of philosophy would not have existed.

The late Pope John Paul **VI** recognized St. Thomas Aquinas' important role by pointing out that St. Thomas recognized that nature, philosophy's proper concern, could contribute to the understanding of divine revelation. Faith, therefore has no fear of reason, but rather seeks it out and has trust in it. He further acknowledges the influence of Muslim and Jewish scholars on St. Thomas. Certainly Pope was referring to Maimonides and Ibn Rushd (Averroës). Ibn Rushd's philosophical writings symbolized intellectual and religious freedom and Muslim society is still struggling to establish it.

REFERENCES

Ahmed, K.J. "Hundred Great Muslims-Ibn Rushd" Library of Islam. Des Plains, IL, 1987.
Fakhry, Majid. "Averroës (Ibn Rushd)- His life work and influence." Sept. 2000.
C. Butterworth (e-text).

Haque, M.A. "Muslim Heroes of the World- Ibn Rushd." Taha Publishers Limited. London. 1990.
Hourami, George. "Averroës on Harmony of Religion and Philosophy." (Translation of *Kitab Fasal Al Maqal)* Published by Messrs luzac, 46 Russell St, London. 1976

Hoffman, Murad. "Islamic Intellectural." Islamic Horizons. September 2003.
Najjar, Ibrahim-translation. Ibn Rushd- "Faith and Reason in Islam.". One World Publication, 2001.
Leaman, Oliver. "Ibn Rushd." http://www.muslimphilosophy.com/ir/art/Ibn%20rushd-rep.htm
Maqtoub, Aftab. "An Examination of Issues in Epistemology, Metaphysics, and Philosophy of Religion. No. 20. 1997. http://www.salaf.indiaaccess.com/atheist/groundwork_on_islamic_philosophy.htm

Raslan, Yousuf F. "Ibn Rushd-Philosophy and theologian." Al-Jadid. Vol.3.
Rosenthal, E.J. Ibn Rushd in Encyclopedia- Brittanica (e-text)
Salloum, Habeeb. "Ibn Rushd-The Great Muslim Philosopher Who Planted the Seeds of European Renaissance." Al-Jadid. Vol. 3, No. 19 (June 1997)

Sheikh Saeed. "Studies in Muslim Philosophy-Ibn Rushd." Published by M.A. Ashraf Publications. Kashmiri Bazar. Lahore. 1962

Stone, Caroline. "Ibn Rushd-Doctor, philosopher, Renaissance man." Saudi Aramco world. May-June 2003. #8-15

Turner, William. "Averroës." The Catholic encyclopedia. Vol. 2. 1997. Online edition 2003.

The Commercial Relatioship between Christian Europe and the Muslim East: 1433-1517

Assad Nimer Busool, Ph.D

Introduction

Situated at a geographical point connecting East and West, Egypt was a center of international trade since ancient times. Aware of this favorable situation, Egypt opened its doors to foreign trade, and the commercial European traders—especially Venice—eager to ensure access to the desirable markets of the Orient, were quick to establish economic ties. Egypt profited immensely throughout the fourteenth century and the greater part of the fifteenth century. Towards the end of the fifteenth century, however, Egypt lost the benefits of this trade, as a result of the greed of the Mamluke Sultans, whose confidence in the safety of their bargaining position led them to demand an unreasonable share of the profits of international trade, and the discovery of the Cape route to India, which shifted the mainstream of commerce away from Egypt's costly ports. This discovery signaled the political as well as economic decline of Egypt.i The decline of Egypt left its negative affects overall Middle East region.

After the Mamlukes reclaimed the Holy Land from the Crusaders in the fourteenth century, which had been won by the European Christians during the Crusades, the European powers were left with the problem of reestablishing their concerns in the Holy Land as well as restraining the growing Mamluke power. Until the end of the fifteenth century, the Crusaders held out hope for the aid of the Christian state of Abyssinia in a military confrontation with Muslim Egypt. Earlier, Europe had tried to convert the Mongols to Christianity and enlist their considerable force in crushing the Muslim state. This effort, too, failed.

Some Europeans, recognizing that the Mamluke military and political might was dependent on its economic stability, focused attention on Egypt's prime position as trade mediator between East and West. Encouraged by preachers of the Crusade like Marino Sanuto, whose driving motivation was the acquisition of the Holy Land, Europe hoped to gain victory by carrying out a commercial ban on Egypt's ports of trade, thereby destroying her economically and, eventually, militarily.i

Thus, the Portuguese penetration into the Indian Ocean was no chance venture. It was the result of powerful economic motivations affecting all European traders, of the religious aspirations of the Crusaders, and of long preparation and carefully matured plans formulated by such men as Prince Henry the Navigator, who like many others of Europe, "combined the commercial motive with missionary zeal and medieval hostility to the Mohammedans".i In 1487, Pedro da Conilham was sent out to investigate the spice countries and to discover, by overland routes, and land of Prester John, the legendary holdout of Christianity in the East.i A full report was sent back to Portugal, and seven years later Vasco de Gama was sailing around the Cape of Good Hope. During the course of the following year, he visited the chief Arab settlements from Mozambique to Malindi, after which he crossed the open sea to Calicut, returning to Lisbon in 1499 by the same route.i

The Portuguese fleets temporarily cleared the Indian Ocean of the Mamluke traders, but for many years after the advance of the Ottoman Turks hung threateningly over Venice and Hungary, the Islamic thrust against Christendom seeming only to have found a new vanguard. Granted that the principal object of Portuguese ambitions was the capture of economic supremacy and even the monopoly of the Eastern trade, nevertheless, there was always an underlying emotional consciousness of the holy war, matched on the Muslim side by the sentiment of the Jihad. Yet Christendom itself was not united in support of the Portuguese, for the Venetians, friends and allies of the Egyptians, tried to put an end to direct trade with the Indian Ocean via the Cape of Good Hope. The Mamluke Sultan of Egypt, instigated by Venice, demanded of the Pope that he command all Christians to desist from navigation or trading in the Arabian Sea and that he act to prevent Portuguese interference with Red Sea trade, threatening otherwise to arrest the Christians of Egypt and destroy the Church of the Holy Sepulchre in Jerusalem. The Venetian intrigue failed, and the Mamluke, in spite of their having mustered, in desperation, a certain unity of aim and even some degree of cooperation in resisting the Portuguese, were unable to regain a part in international trade and, as a result of collapse of the economy, were defeated and removed from power by the Ottoman Turks.i

Background

Before proceeding with details about the events, which took place once the Portuguese adventurers had discovered the new route to Africa and Asia, it is important to discuss the political and economic situation as it stood in Europe and Asia on the eve of these discoveries.

Europe

During the fourteenth century, Christianity was still powerful force influencing the political and intellectual life of Europe. Loss of the Holy Land was seen as a religious disaster, and Christians were receptive to the myth of Prester John who was supposed to preside over the last stronghold of Christianity in the East, long after the reports from all over that he was not to be found. And throughout the fourteenth century, there were idealistic aspirations of a revitalized crusade against the Muslim foe. By the fifteenth century, however, such Christian idealism gave way, in some measure, to a new concept of Europeanism.i It was not only the horizons of Christianity, which were threatened by Ottoman Turk's expansion from the East, but also the political and economic prosperity of Europe. "By 1500 the Portuguese were already harvesting the profits of their first sea-borne expedition to India and Columbus had returned to Castile from his third voyage of exploration to the West. Christian Europe stood poised between a new balance of east and west, and different European perspectives emerged…."i

It is not to say, however, that Europe was in any way united. Separatist elements were in evidence in all aspects of life, not the least of which was the regionalism of economic interest, which had a strong effect on commerce as well as political and military strength. In a country in which the cities established complete independence, it seemed for a time that they had gained by throwing off royal power. Each city could control its affairs and shape its policy to suit local interests, and the great cities of

Germany and Italy before the close of the Middle Ages were the most advanced and prosperous parts of Europe. The colonial empire established by the Venetians enabled them to control the trade of the eastern Mediterranean more efficiently than Great Britain controlled world commerce in the nineteenth century. "So bold were [the merchants'] enterprises that the home government, fearful for its interests, passed a law to limit their extent."i Genoa also prospered through commerce. In constant rivalry with Venice, the Genoese always managed to secure a share of the highly profitable Oriental trade, despite the disadvantages of a lesser opportunity for trade and capacity for defense.

These independent cities were prosperous and strong – strong enough to fight the lords of the prevailing feudal system, but not a modern king. While they were building up their power at the expense of rival cities and country districts, the kings of lands to the west of them were engaged in uniting the cities, and the country districts, under the rule. The cities in France and England seemed for a time to lose because of the concessions they were forced to make to each other and to the country districts. The struggle of the independent cities of Italy and Germany against the national states of England, Spain and France was not decided until after the discovery of America and the sea route to Asia, when the national organization proved decisively its superiority to the cities.i

The fall of Constantinople to the Ottoman Empire in 1453 was symbolic of the challenge of the East as well as the impotence of the feudal system in an international world. The conquests of the Ottomans during the fourteenth and fifteenth centuries were due greatly to that lord-vassal system, which hindered all united effort—a system whereby the fortunes of families and dynasties were considered of more moment than the future of a nation. But by the end of the fifteenth and beginning of the sixteenth centuries, a generation of powerful kings had dispossessed their barons of power, to be followed by the formation of royal armies.

Lands of the Red Sea and Persian Gulf

At its northern end, the Red Sea was controlled by the Mamluke sultans of Egypt and Syria, at its southern extremity by the Yemenite kings of Banu Tahir; between these two powers the Sharifs of Makkah had long maintained a theocratic control over the Hijaz, a unique province in that it contained the two Holy Cities, which were the goal of the annual pilgrimage from every quarter of the Muslim world. Pilgrims arriving in Makkah carried with them articles of merchandise, which they intended to sell and thereby defray some of the expenses of the journey, "Hajj wa-hajah, pilgrimage and business," as the Arabic proverb says, following an age-old custom of Arabia. As the histories assert, supplies for the Holy Cities had to be imported from outside even before Islam, and Jeddah, the port of Makkah, lies conveniently halfway up the Red Sea. Navigation is hampered north of Jeddah by reefs and shoals, so sea-going vessels from East Africa and India stopped there and transferred their cargoes to smaller boats bound for Suez. Camels carried the cargoes from Suez to Cairo, and riverboats moved them down the Nile to Alexandria where the Venetians purchased them. Jeddah was a port for the Indian trade fleet in its monsoon season, and no doubt, when the pilgrimage season coincide with the Indian monsoon the volume of traffic would be much greater than normal.i

The Rasulids of the Yemen and the Mamlukes of Egypt had at various times contested the Sharif overlordship of the Holy Cities, but the Mamlukes had become the

dominant power during the fourteenth and more especially the fifteenth centuries, maintaining a sort of political agent in the Hejaz and a body of cavalry at Makkah. From the mid-fifteenth century, the Egyptians took charge of the Jeddah customs, a portion of which was allotted to the Egyptian Pasha, governor of that port. As an illustration of the Hejaz dependence on contributions from the outside world. Barakat I (1425-53), the vassal of the Mamluke sultan and governor of the province, obtained one-quarter of the value of all wrecked ships, a quarter of all the gifts sent or brought from abroad for the people of Makkah, and one-tenth of all imported goods, including one-tenth of cargo of all Indian ships destined to Jeddah. About half of his public income was distributed among the leading Sharifian families.i

Mamluke extortion from merchants seems to have led to a certain decline in Cairo and Alexandria, but Grand Cairo was a great and wealthy city, with numerous extremely affluent merchants, Arabs and Jews. In the fifteenth century, Mamluke culture was at its height, and its monuments can still be seen not only in Egypt and Syria, but also in Makkah and Madinah.

Aden was an entryway not only of the India trade but also of the commerce with the countries of the Horn of Africa and coastal cities of East Africa. It was immensely strong, enjoying the advantage of an excellent harbor, and itself the southern terminal of caravan routes leading into the Yemen.

Hurmuz, the island key of the Persian Gulf on the other major East-West trade route, occupied a position similar to that of Aden. Hurmuz was the center of sea traffic from India and the overland traffic from Aleppo via Mesopotamia and the Persian Gulf. The Portuguese did not penetrate to the head of the Persian Gulf until the year 1529, when the expansion of the Ottoman Turks to the mouth of the Euphrates at Basrah and adjacent territories threatened to interfere with Cape-route trade.

Western India

Gujurat was the first maritime state of any importance in western India. One of its ports, Diu, had a large trade at this time. To the south of Gujurat lay a group of Muslim states, of which two—Ahmadnagar and Bijapur—were in frequent contact with the Portuguese because they possessed a coastline. South of Goa to north of Cannanore the coastline was in the hands of the large Hindu state of Vijayanagar. When the Portuguese first came to India, no united front by the states against them was possible since Hindus and Muslims were engaged in a struggle over the kingdom of Vijayanagar, and they thought of the Portuguese merely as irritating Pirates.i

On the Indian coast, trade was scattered and not concentrated as it was in the Red Sea and the Persian Gulf, but all Red Sea merchants had their interests in Calicut. The Muslims not only largely monopolized sea traffic in the Indian Ocean, but in southern India, they also distributed the merchandise they brought to the consumer. They were good traders, but they never attempted to acquire political independence except when it was essential for their own community. Probably the natural sympathies of the Hindus lay with the Muslim traders they had known for centuries, and not with the Portuguese interlopers who often lacked an understanding of Indian conditions and religion.i

The Mamlukes and the European Merchants

The ports of Alexandria, Damietta, Rossetta and the ports of Syria were active and prosperous trade centers under the Mamlukes. The Damietta port developed because of its fertile lands, which produced good sugar cane crops and its advanced sugar refining industry. It is known, for example, that the Knights of St. John in Rhodes sent a consul to Damietta to attend their commercial interests. Besides the people of Rhodes, there were a number of alien groups, especially from Venice, Genoa and Greece, which traded the products of their country. The trade between France and Damietta was well developed also, and in 1507 and 1508 the Sultan al-Ghouri invited the traders of Florence to visit the Egyptian ports. However, it should be noted that the port of Rosetta was closed to foreign traders in general because this was the biggest port of the Egyptian navy. Thus, foreign traders were obliged for their travels between Rosetta and Alexandria to take the sea route or the Nile. Another Egyptian port, al-Borullos, was famous for its fisheries from which salted fish were exported to Rhodes. During the beginning of the sixteenth century there was a consul from Venice in al-Borullos.i

The Mamluke sultans built inns in the ports for the foreign traders to stay, and special officials—known by the titular name if Fondicarius—had the job of managing these inns. The inn was a huge building of several stories constructed around a large yard area for loading and unloading which was entered from the front gate. The first floors were usually shops; upper floors contained the dwellings of the traders. Every inn was surrounded by a garden. In the plaza of some inns was a confine for domesticated wild animals such as deer and monkeys.

In general, the Mamluke government treated the foreign traders well and showed considerable tolerance for their customs. Towards the Venetician—their best customers—they were particularly solicitous, to the extent of allowing them to import and maintain pigs for their consumption—a remarkably tolerant action on the part of a Muslin state at that period. The influence, which the foreign traders had on the government reached such a degree that the sultan dismissed one of his high officials who was involved in an argument with the traders, and appointed a replacement which they favored.

In other ways, however, the Mameluke government put strong restraints on foreign traders. For example, it forbade them to leave their quarters for two or three hours during the Friday prayers. This restriction was imposed as a result of an incident in 1365 when Peter I of Cyprus attacked and looted Alexandria on a Friday while the men were in Mosques praying. The foreigners were considered a dangerous potential fifth column under such a situation. Furthermore, the inns were locked at night and carefully guarded by soldiers who allowed no one to leave.

Alexandria had many inns for the different alien trading groups. First and most important were the Venetians who had two inns, whereas the others—from Genoa, Pisa, Florence, Incona, Palermo – had only one inn, and the traders from Naples shared a single inn with other Italian groups. The Franks had special inns, and the Turks had an inn, as did the North Africans and the Tartars. These brought slaves for trading; thus, their inn was the slave market.

To attend the religious needs of the foreigners, they were allowed to build churches within the courtyard of the inns, and for every inn there was a church with an imported clergy. The larger foreign groups had large churches built within the city itself, such as St. Nicole built by the people of Pisa, St. Marian by the Genoese, and St. Michael

by the Venetians. Because the Venetians were the largest group in Alexandria, they had a special quarter in the city, with a consul to serve their commercial interests. The Mamluke government, in line with their usual lenient policy toward the Venetians, released them from many taxes and allowed them to trade jewels, precious stone, and furs—evidently an unusual privilege.

As a result of such immunities and privileges, the Venetians did not hesitate to bring in the full range of wares demanded in the Egyptian market, even military equipment—an export to Egypt forbidden by the Pope—were invested by the Pope with the duty of patrolling the trade routes to prevent such trade from reaching Egyptian ports.

Customs Procedures

The Venetian trade vessels reached Alexandria twice a year—in September and January. Usually, there were eight to thirteen vessels, carrying a cargo valued at a minimum of two million Venetians (monetary exchange unit). When a trading ship entered port, it was boarded by customs officials who verified the ship's identity by the way of the appropriate consul or compatriots already residing in the city. They also noted the number and identity of passengers, and the kind of cargo carried. These officials transmitted this information to the governor of Alexandria who in turn sent it to the sultan of Cairo, all by carrier pigeon. This procedure completed, every man on ship paid a fee of one ducat (this was later doubled). In addition, every person paid 2 percent of the value of the cash he carried. The ship was then admitted and passengers were allowed debark.

Wares of the Levant Trade

The products carried to Egypt from Europe were chiefly raw materials, such as hides, metals, foodstuffs, and, towards the end of the fifteenth century, raw silk from Italy. Finished woolens were also exported to the Asian market. From the East, Europe received spices, drugs, perfumes, sugar, and precious stones. That most exports from the East were costly luxuries, marketed only among the wealthy classes, was a consequence of the expense and danger of travel over great distances and difficult routes which necessitated great value in small bulk. Slaves from Africa and western Asia were also exported to Europe from the slave markets of Cairo. "At the very end of the fifteenth century there were said to be 3,000 slaves in the single city of Venice." Primary raw materials exported to Europe were dyestuffs (especially indigo from Baghdad) alum, cotton, and flax, raw silk (from China and Persia and countries near the Caspian Sea). Textiles were also brought by European traders.

The Commercial Routes between India and Europe before the Portuguese Discoveries

There were three main streams of commerce between Europe and the East. Formerly, in the twelfth century, there were several caravan routes to central Asia. Following the Crusades and the decline of the Mongol empire (marked by the capture of Constantinople in 1204), the heightened warlike activities of the Central Asian tribes made caravan trading constantly more difficult. The first of three routes, which remained transversal in the thirteenth century, was from India and the western coasts of Asia, past Basrah on the Persian Gulf to Baghdad by water. From Baghdad merchants went, still by water along

the Tigris to the point on that river nearest Sleucia and Antioch, and so to the Orontes, and then to the coast of the Levant.

The second route followed the same course till the point of leaving the Tigris, and then proceeded over the highlands of Asia Minor and Armenia to the port of Trebizona on the Black Sea, where Venetian vessels met Asian traders. For both these routes Baghdad formed a very important manufactures of cotton, silk, and linen fabrics, embroideries, gold and silver work, and leather.

The third route from the Far East, as noted earlier , was from the India by sea to Aden, then up the Red Sea to some point where goods could be landed and transported to the Nile, and then by river to Cairo—a journey of some thirteen days. From Cairo there was a canal, two hundred miles long, to Alexandria where again Venetian and Genoese merchants were ready to receive the rich spices, sugar, perfumes, precious stones, gum, oil, cotton and silk brought from the East.

A good deal of the trade from Syria, Arabia, and Persia went also through Damascus, a favorite halting place for caravans and an important manufacturing town. It manufactured saddlery and harness, weapons of various kinds, velvet and silk fabrics, and perfumes. And merchants could easily get from there to one of the seaports on the coast of Palestine, Beirut, Tyre, Sidon, or Joppa.

As a result of the Turkish invasions along the Black Sea in the fifteenth century, the available routes finally narrowed to one, that through Egypt. Thus the sultan was in a position, by virtue of what appeared to be an inescapable monopoly, to demand heavy tolls on all trade which passed through his ports and impose large transit customs. The Western traders were outraged by such infringements on their profits, and their representative to the sultan threatened that the traders would refuse to buy from the sultan’s stores. The European kingdoms of Aragon and Castile officially protested and retaliated by raising the price of their exports to Egypt, but the sultan swayed them without rescinding his monopoly. In this same period the fleets of Aragon and Castile attacked Egyptian commercial vessels near Syrian shores. The sultan ordered the arrest Egyptian commercial vessels near Syrian shores. The sultan ordered the arrest of all Venetian traders in Alexandria and confiscated their merchandise.

The Portuguese in India: Venetian and Mameluke Intrigue

Europe was thus pressed by an intolerable economic situation to seek out the sea route to India, which was by then believed to exist. Once Portugal passed the Cape of Good Hope and reached India, the situation shifted drastically. With the Portuguese in direct access to the sources of Oriental goods there was no longer any need for the intermediary role of Egypt (and Venice), nor was there reason to tolerate the sultan’s extortionist prices for these goods. A measure of pepper, which had cost between two-and-a-half and three Venetians in Calicut and eighty Venetians in Alexandria, now sold on Lisbon’s market at twenty to forty Venetians.

Venice also foresaw the danger to prosperous trade empire in the rivalry with Portugal and began to watch uneasily as Portugal’s need for financial assistance from Venice in managing the transportation of Oriental goods. Also under the influence of Venice, Sultan al Ghouri to prevent the Portuguese from rivaling their trade, but the Mameluke Empire had lost all control of the situation and was unable to act.

Venice, however, continued its attempts to form a pact against Portugal. They sent frequent missions to the court of al-Ghouri, the most important being Banedetto Sanito in 1503. This envoy suggested to al-Ghouri that he send envoys to the princes of India, urging them to cut off their relations with Portugal and to close their ports to the Portuguese traders. Benedetto Sanito also asked al-Ghouri to lower the price of spices in Alexandria so that the Venetians could compete with their rival on European markets. Al-Ghouri, however, concerned with the losses of Egyptian ships and ships trading to the Red Sea, which were being seized by the Portuguese chose to send a message to the Pope and to several European states asking them to tale steps to stop the Portuguese campaigns in the Red Sea. He threatened to take measures against the Christians in his country, particularly in Jerusalem, and to close the Holy Places. This message was carried by a Franciscan Spanish monk from Jerusalem, Fra Mauro. His mission, however, failed, for the European states considered the threat of al-Ghouri too trivial to be worthy of their attention. Venice, sensing the seriousness of the situation, dispatched still another mission to Cairo in 1504, which suggested, among other things, the building of a canal at the port of Suez. With this mission another failure and with increasing pressure from groups at home, Venice was forced to buy from Lisbon with the rest of the European traders.

Finally, sultan al-Ghouri made a decisive move and issued an order in September 1505 to prepare for campaign from Jeddah to India. He sent his ambassador and interpreter, Taghri-Bardi, with a message to Europe in April 1506. The trip of this interpreter lasted for eighteen months during which he visited Cyprus, governed at that time by Egypt, Rhodes, and Venice where he signed a new commercial treaty whose terms are still unknown. However, as for the outcome of this last diplomatic voyage, it, too, was a total failure. Taghri Bardi returned in September 1507. The Egyptian fleet, under the command of Hussain Kurdi, kept progressing during that time, after receiving supplies from Cairo, and won a victory over the Portuguese in the battle of Chaul on the West Indian coast in 1508. But the Portuguese managed to take their revenge in the year after by destroying the Egyptian fleet in the maritime battle Diu. After this battle, Portugal was in a position to attack Eden and hence succeed in interrupting completely the trade between Egypt and India.

During that period, relations were deteriorating between the Mamluke Sultanate and Venice because of the capture of some Venetians carrying letters from Shah Isma'il Safawi, which incriminated Venice in a plan to carry out a campaign against the Egyptian coasts. The sultan arrested the Venetian ambassador to Damascus and brought him to Cairo. He also arrested his colleagues in Tripoli and Alexandria, and interrogated all of them. With no other alternative, al-Ghouri carried out his threats to arrest the Christians of Jerusalem and close the church of the Holy Sepulchre, confiscating its contents in January 1511. At the same time, he discovered the treason of his interpreter, Taghri Bardi, who had written to Europe explaining the weakness of the Mamlukes and the insufficient defenses of the Egyptian coasts. He was arrested in 1511.

With that, the Mamluke state started deteriorating economically and militarily until it fell to the hands of the Turkish Ottomans in the year 1517. Under the Ottoman Sultan Selim, the commercial trade of Egypt was still endangered by the loss of its intermediary position, especially since Portugal had managed by then to tempt the north Mediterranean trade posts to the new route. Selim then tried to reestablish the commercial status of the Mediterranean, not by fighting Portugal, but by persuading the southern European centers to persist in using their old route. He thus concluded a commercial

treaty with the Venetians in 1517 with obvious lenient terms, one of which was the granting of decisive power to their ambassadors in Alexandria and other ports in matters pertaining to their subjects. It also included facilitating the arrivals of their facilitating the arrivals of their ships to the Egyptian ports and in general facilitating the business of their representatives.

Surprising enough, those privileges were useless in terms of revitalizing the commercial route across the Mediterranean. On the contrary, the privileges became concessions and in the end were very embarrassing to the Ottoman Empire and to the countries within its domain.

Prester John is a very peculiar medieval legend that originated sometime in the 1140s (about the time of the Second Crusade). According to rumour, or fervent belief, the ultimate Christian king, Prester John, ruled over the perfect Christian kingdom, somewhere in Asia (or perhaps in Africa - no one was really sure). According to an old legend, readily adapted to the Prester John legend, one of the apostles, St Thomas, was supposed to have travelled to India (or thereabouts), there to establish a Christian community that retained many of the ideals of the original church, and which would blossom into an almost perfect Christian kingdom, ruled over by this legendary king, Prester John. The legend of the journey of St Thomas to India was current by the 3rd century AD, and was widespread enough in the 833 for Alfred the Great to send two priests with gifts to St Thomas' shrine on the east coast of India.

It wasn't only the western Europeans who believed completely in the presence of this magnificent Christian king who ruled a perfect Christian society somewhere in the East. The Moslems believed he existed, too, and were generally terrified of the thought that one day Prester John was going to rouse his armies and march westwards to recapture the Holy Lands for the Christians. (During the 700s Moslem invasions had enveloped the Holy Lands - via the Crusades the Christian west had been trying to get them back since the eleventh century.) The Christian west, of course, fervently hoped that one day Prester John *would* march at the head of his armies westwards to meet the European Christians in the Holy Land. In fact, Prester John was already supposed to have driven Islam out of central Asia.

How had the legend of Prester John started? The first authentic mention of him occurred in the 1145 chronicle of Otto of Freising (this is at the time of the Second Crusade). Otto recounted that the first news of Prester John had been brought to the Holy See by the Bishop of Gabala (near Antioch). According to the Bishop's report, there was ruling in the East somewhere a Christian king named Prester John, who was descended from the Magi, and who ruled over a fantastically wealthy kingdom. Prester John had recently destroyed the armies of Media, Persia and Assyria, and was heading for the Holy Land to defend Jerusalem against the Moslems, but, according to the report, was prevented from getting there by adverse conditions.

Thus the Second Crusade had to muddle along without the help of the great Christian king, Prester John. Meanwhile, in 1165 the original secondhand report of Otto of Freising's chronicle was overshadowed by the appearance in Europe of a seemingly authentic letter from Prester John. Prester John described himself as the ruler of the Three Indias, a realm that extended from the Tower of Babel to the rising of the sun; he gave an elaborate account of the marvels and riches of his kingdom, and declared his intention of visiting the Holy Sepulcher after defeating the enemies of Christ (the Moslems). Apparently this letter had first been sent to the Emperor of the Eastern Roman Empire in Constantinople, where copies of it had been made and

circulated around the courts of Europe. The letter had arrived at a time when the Moslem pressure on the crusader states in the Holy Land was increasing; its promise of relief was a welcome message. In 1177 Pope Alexander II wrote what is generally understood to have been a reply to Prester John, entrusted it to his personal physician, Master Philip, and sent him off on his way to deliver the letter.

We know that Master Philip and his letter got as far as Palestine (modern day Israel), but after that all reports of him disappeared. The anxious pope received no reply.

Sometimes the concept of Prester John could be confused with actual living kings - for instance for a long time many Europeans believed that Genghis Khan was in fact Prester John. The Mongol hordes had invaded the Middle East in 1221 and had seriously damaged the Islamic occupation of the area - this invasion seemed to many to be the actual invasion of Prester John at the head of his Christian army, driving westwards from central Asia in order to drive the Moslems out of the Holy Land. In a contemporary chronicle, a monk wrote of the "rumours sweeping right across Christendom of the coming of King David of India, whose other name is Prester John, to the aid of the crusaders."

Jacques de Vitry, the Bishop of Acre, a port in the Middle East, fueled the rumours sweeping Europe with his translation of an Arabic book which apparently contained a prophecy that the Moslem nation would be destroyed by 2 rulers - an Eastern and a Western - which many believed predicted the eventual meeting in the Holy Land of the armies and persons of Prester John and the Holy Roman Emperor, Frederick II. Vitry had also gathered, and publicised, the reports of many merchants who were returning from the East. They had apparently spoken of a growing number of Christians in Asia, ruled over by a kindly king who treated all Christians with great generosity. To many, this seemed again to indicate the presence of Prester John.

To add to all these reports and rumours, an apparently independent report out of Hungary in 1223 declared that "the king of Hungary informed the Pope that a certain king David, or Prester John as he is being called, has entered Russia with a great multitude of people. He had left India 7 years before, taking with him the body of the blessed apostle; and during this [westward] journey his army killed 200,000 Russians and Rumanians."

In 1248 a church envoy to the court of the Mongols, a Franciscan friar called Giovanni Capini, further added to the legend of Prester John by reporting that P John was the king of Greater India who defeated the Mongols (this time) by creating men out of copper, filling them with Greek fire, and placing them on horseback, so burning the Mongol army completely.

In the 1320s another friar, Odoric of Pordenone, also claimed to have visited the kingdom of Prester John, although he doesn't seem to have been too impressed with it:

Departing from the land of Cathay and traveling westwards for 50 days through many cities and towns, I arrived at the country of Prester John; but as regards him not one hundredth part is true of what is told of him as if it were undeniable. His principal city is called Tozan, and chief city though it is, Vicenza would be reckoned it’s superior. He has, however, many other cities under him, and by a standing compact always receives to wife the Great Khan's daughter. (written 1330)

By this time, the early fourteenth century, most of the European rulers, popes, etc. seemed to have given up hope of finding Prester John anywhere in Asia – after all, by this time numerous diplomatic envoys as sundry other travelers had been through most parts of Asia without finding the wondrous king himself. A rumour soon began

that, in fact, Prester John's kingdom did not lie in Asia, but was actually in northern Africa - what we now call Ethiopia. By 1339 maps of Africa began to clearly mark the kingdom of Prester John in north-eastern Africa. European contacts with Ethiopia were only very sporadic, but reports had begun to filter back about isolated communities of Christians - and by the 1400s there was a definite belief that here, in fact, was the location of the legendary Christian king, Prester John, who might still be of some use against the hated Islamic nations. When explorers failed to find the king in Africa, eyes began to look across the Atlantic, and wonder if the kingdom of Prester John in fact that in the supposed mysterious continent across the sea.

It took several centuries for Europeans to, regretfully; admit that Prester John was nothing more than a legend. The question that they asked themselves, and which historians and the curious have asked themselves ever since, is - who wrote the supposed authentic letter from Prester John to the rulers of Europe that turned up in 1165? Well, frankly, no one now knows. There's a theory that it was written by a cleric (well, had to be as they were the only literate ones) with a good knowledge of ancient Latin sources - because of some of the information contained within the letter. The argument goes that it was actually written on behalf of the Holy Roman Emperor Frederick Barbarossa, who wanted to assert temporal power over the spiritual power of the papacy by inventing a magnificent Christian king in a distant land. Whatever, the letter appeared at a time when people strongly wanted to believe in the tale of a mighty Christian king who would relieve the Holy Lands of the Islamic menace; the many fantastic details of the letter simply related what medieval people believed the mysterious Asian kingdoms were like. Even when (apart from the friars I'll mention in a moment) most European travelers in Asia failed to find any trace of Prester John, Europeans still wanted to believe in this king so much they simply moved his kingdom to a different place, then a different place again, in order to keep on believing in him.

And why did the couple of traveling friars that I've quoted insist that they'd been to the country of Prester John? Well, in a sense, I guess they simply wanted to believe they'd been there. Some of the sights and societies they encountered in the Far East were so strange that it must have been easy for someone who so desperately wanted to believe that they'd found the kingdom of Prester John (even if they hadn't found the man himself). Their reports once they got home simply lent weight to the argument that Prester John existed.

One of the reasons I've mentioned the legend of Prester John is, apart from its curiosity value, the fact that the legend really helped stimulate exploration of the Far East and Asia. Numerous explorers and official diplomatic envoys set out in order to make contact with this wonderful king. If it hadn't been for Prester John, then quite possibly some of the European contacts with the Asian world in the medieval period would never have been made, or at least left to a much later date.

EPILOGUE

Syed. A. Ahsani

In the present age of information overload, this monograph fulfils a long-felt need to explore the theme of the "Islamic Intellectual Heritage and its impact on the West." Following the publication of Muslim Contributions to World Civili-zation (Herndon, VA: International Institute of Islamic Thought, 2005), this is another work of topical importance. To what extent it succeeds in dis-pelling the popular notion that the period of 800-1600 was known as the Dark Ages, bereft of any advancement in learning, is for the readers to judge.

The Historical Background

Islamic history and culture can be traced through the written records: pre-Islamic, early Islamic, Umayyad, the first and second Abbasid, Hispano-Arabic, Persian, and the modern periods. The various influences of these periods can be readily perceived, as can traces of the Greek, Indian, and pre-Islamic Persian cultures. Throughout the first four centuries of Islam, one does not see the synthesis or homogenization of different cultures, but rather their transmittal through, and at times their absorption into, the Islamic frame-work of values. Islam has been a conduit for Western civilization of cultural forms that might otherwise have died out. Pre-Islamic poetry and prose, which was transmitted orally, was recorded mostly during the Umayyad period (661-750), when the Arab way of life began shifting from the simple nomadic life prevalent in the Arabian peninsula to an urban and sophisti-cated one. Contacts with Greece and Persia gave a greater impulse to music, which frequently accompanied the recitation of prose and poetry. By the mid-800s in Baghdad, the Abbasid capital, the reigns Harun al-Rashid and al-

Syed A. Ahsani, former ambassador of Pakistan, is the current president of the Institute of
Medieval and Post-Medieval Studies, Dallas. He has made numerous presentations at national conferences and has written several articles on medieval scholars..

Ma'mun witnessed a flourishing of Islamic culture, commerce, and contacts with many other parts of the world.

When Alexander the Great conquered Asia Minor and founded Alexandria in the fourth century BCE, he set the stage for the great migration of classical Greek philosophy and science to that part of the world. During Egypt's Ptolemaic period (350-30 BCE), Alexandria was the radiant center for the development and spread of Greek culture throughout the Mediterranean. That great center of learning continued after 641, when Egypt became part of the Muslim world. Thereafter Syria, Baghdad, and Persia became similar channels for the communication of essentially Greek, Syriac, pre-Islamic Persian, and Indian cultural values. As a result, Islamic philosophy was influenced by the writings of Socrates, Plato, and Aristotle.

The great Muslim philosophers, such as Ibn Khaldun (d. 1406), Ibn Sina (Avicenna, d. 1037), Ibn Rushd (Averroes, d. 1198), al-Farabi (d. c. 950), and al-Ghazali (d. 1111) added their own significant contributions to the works of earlier Greek philosophers. It was essentially through such works, intellectually faithful to the originals, that Western civilization was able to benefit from these earlier legacies. In fact, St. Thomas Aquinas (d. 1274), the founder of Catholic naturalism, developed his views of Aristotle through the translation of Ibn Sina and the philosophical writings of Ibn Rushd. These great philosophers produced a wealth of new ideas that enriched civilization, particularly Western civilization, which has depended so much upon their works. The influence of Muslim scholars ultimately made the Renaissance possible, for its foundation consisted of the ideas of the Greeks filtered through Muslim philosophers. The same is true of the early legal writings of Muslim scholars, such as al-Shaybani, who in the seventh century started the case method of teaching Islamic international law that was subsequently put into writing in the twelfth century by a disciple in India. This was the basis for the writings of the legal canonists of the fifteenth and sixteenth centuries on certain aspects of international law, in particular the laws of war and peace.

Al-Ghazali's own confession, in the opening pages of his Al-Munqidh min al-Dallal, of a thirst to free his inborn intellectual nature (fitrah) from blind adherence (taqlid) in inherited religion may reflect the core of his religious quest and provide the key to his work. A more balanced interpretation of al-Ghazali may well lie in acknowledging that his manifold ideas evolved over a long career, rather than in insisting upon either an objectivist or subjectivist approach to his thought.

The richness of his legacy embraces not only a systematic study of law and theology that rejects both legal casuistry and scholastic ingenuity (yet includes a polemical fervor against philosophers and heretics), but also embodies a high standard of morals and a deep mystical insight. Al-Ghazali's influence on the rationalist philosophy of the Islamic West, as well as on Jewish and Christian scholasticism in medieval southern Europe, has been highlighted for centuries; however, the study of his impact on the inner life and mystical thought of the Persian-speaking world has barely begun.

The study of history held a particular fascination for Arab Muslims, imbued as they were with a sense of mission. Indeed, because Islam is a reli-

gion for all peoples and all times, and because the Qur'an states that God created the universe and caused it to be inhabited by men and women and peoples and tribes so that they may know each other, there was a quest for discovery and knowledge. As a result, Muslims recorded their own history and that of others. But they added insight to facts and gave to events, people, and places a philosophical dimension, as expressed in al-Tabari's (838-923) universal history. In the introduction to his multi-volume work, he devoted an entire volume to the science of history and its implications. In addition, al-Tabari's authoritative text on the history of prophets and kings remains a most comprehensive record of the period from Abraham to the tenth century.

The Sciences

From the second half of the eighth century until the end of the eleventh century, Islamic scientific developments were the basis of knowledge in many lands. At a period of history when the ancient world's scientific and philosophical heritage was about to be lost, Muslim scholars stepped in to preserve it. Indeed, without this cultivation of science by Muslim scholars, it is probable that texts that would have a formative influence upon Western culture would never have survived intact. Moreover, it is certain that the modern world would look far different than it does today, for the cultures and civilizations founded upon Islam both preserved the ancient world's heritage and codified, systematized, explained, criticized, and modified it. Finally, Muslim scholars built upon past contributions while making distinctive contributions of their own.

However, a perplexing relationship existed between the Muslim world and Europe. It was not one of mutual reverence and respect, nor was it one of a father-culture, daughter-culture nature. In fact, there was an overpowering sentiment of hate embedded in European culture that far outweighed any benefit or advancement that the Muslims would give to them.

At the same time, European scholars were learning at the feet of Muslim scholars in Andalusia. Translated Greek works introduced Europeans to an indigenous intellectual tradition they never knew existed. This helped spark a new self-confidence among its scholars. Unfortunately, they were torn between their intellectual loyalty and the hatred of their teachers present in their culture. Karen Armstrong explains:

The Arabs in particular were a light to the Christian West and yet this debt has rarely been fully acknowledged. As soon as the great translation work had been completed, scholars in Europe began to shrug off this complicating and schizophrenic relationship with Islam and became very vague indeed about who the Arabs really were… There is an unhealthy repression and doublethink about people who are at one and the same time guides, heroes, and deadly enemies. This is very clear in the scholarship about Islam.

1

This hatred, however, was, for the most part of Islamic history, one-sided. The Muslims had little reason to hate, or even to be concerned about Europe. To them it was a land of barbarism and backwardness, of a foreign landscape and weather. The battle of Poiters, for example, is considered by the Europeans as one of the major turning points in history, where the French armies repelled a Muslim raid

into southern France. However, rarely is the battle mentioned by Muslim historians, and when mentioned it has been described as but a trivial raid.
2
Another factor that plays alongside the long-standing hatred of Islam in Europe is the phenomenon known as orientalism. This concept was first articulated by Edward Said in his landmark Orientalism (London: 1978), which is now considered required reading for anyone studying Middle Eastern culture or history. Orientalism is the result of the elaboration of the imaginary distinction between East and West: geographically, culturally, morally, and intellectually.
The pivotal figure in the history of Andalusian philosophy, however, was Abu al-Walid Muhammad ibn Ahmad ibn Rushd (Averroes), whose philosophy marks the climax of Arab-Islamic philosophy and the conclusion of four centuries of philosophical-theological warfare in Islam. In global cultural terms, his contribution to Aristotelian scholarship marks a critical point in the history of transmitting Greek-Arabic philosophy to western Europe at a time when Greek philosophy in general, and Aristotelianism in particular, had been almost completely forgotten in Europe. In fact, with the exception of Boethius' (d. 525) translation of Aristotle's logical works and parts of Plato's Timaeus by Chalcidus (fourth century), very little of Greek philosophy had survived there. Thus, when Ibn Rushd's commentaries on Aristotle were translated into Latin early in the thirteenth century, they caused a profound intellectual stir in western European philosophical and theological circles and laid the groundwork for the rise of Latin scholasticism that, prior to the rediscovery of Aristotle due chiefly to these commentaries, would have been inconceivable.

Even the rise of Renaissance rationalism and humanism is closely linked to Ibn Rushd's commitment to the primacy of reason in philosophical and theological discourse. Thus, as Etienne Gilson wrote in his Reason and Revelation in the Middle Ages, rationalism was born in Andalusia in the mind of an Arab philosopher, as a conscious reaction against Arab theologians (the Ash`arite mutakallimun). He then adds that when Ibn Rushd died in 1198, he bequeathed to his successors the ideal of a purely rational philosophy, an ideal whose influence was to be such that it would deeply influence the evolution of Christian philosophy. In this respect, it can be argued that his "philosophical rationalism" is not only five centuries earlier, but even more comprehensive, than the "mathematical rationalism" of René Descartes (d. 1650), who is generally considered the father of modern philosophy.
The story of Islam's role in preserving and transmitting ancient science, to say nothing of its own lasting contributions, is truly fascinating – and a bit of a puzzle. Why do so many classical Greek texts survive only in Arabic translations? How did the Arabs, who had no direct contact with this science and learning, come to be the inheritors of the classical tradition?
The answers to these questions lie in a unique conjunction of historical forces. From the first, it appears that the Umayyad dynasty evinced an interest in things Greek, for its rulers employed educated Greek-speaking civil

servants extensively. Early friezes on mosques from the period show a familiarity with the astrological lore of late Antiquity.

The theory of numbers, developed and expanded from the original Indian contribution, resulted in the "Arabic numbers" 1 through 9. Muslim scholars also used the concept of zero, which they took from the Hindus and without which mathematics, algebra, and cybernetics could not have developed. Algebra was essentially developed by Arab Muslims, as shown by the original word: al-jabr.Among the most prominent scholars is the Basran-born Ibn al-Haytham (965-1030), who developed the "Alhazen problem," one of the basic algebraic problems. He also made significant contributions to optics and physics. Long before Newton, he advanced the thesis that extraterrestrial scientific phenomena governed the motion of Earth and the stars. He also developed experiments on light, which were nothing short of extraordinary at that time, and demonstrated the theory of parallels, based on the finding that light travels in straight lines, and the passing of light through glass. Astronomy, originally developed long before by the Babylonians, continued to flourish and soon expanded beyond the science of observation into the design of measuring instruments. In addition, it gave rise to the development of planetary theory.

Muslims recognized the importance of and used the zero effectively, borrowed from the Indians, bringing to Europe "Arabic numerals." Muhammad bin Mousa Al-Khawarizmi is the founder of modern algebra, and the mathematicians that followed made ever more impressive contributions. Ghiath Edden al-Kashi, approximated pi to 16 places past the decimal point. The system know as Pascal's triangle, which assists in factoring equations in the form of (a + b)n, was developed by Al-Karkhi, and not Louis Pascal. Later Muslim mathematicians were able to factor equations as complex as fourth degree equations; fifth degree equations are impossible to factor.

3

The contribution of Muslim mathematicians to algebra is integral to the development of all sciences as mathematics is frequently referred to as the language of science. Newton would have had quite a difficult time quantitatively describing his laws of motion without using the algebra first implemented by the Muslims. In medicine, Ibn Sina's text the Canon of Medicine was a text in Europe for centuries, and its popularity dwarfed the books of Galen and Hippocrates. Physicians like Abul Qasim al-Zahrawi, Ibn Sina, and Ali Abbas, wrote texts on surgery that would form the foundations of Western surgery.

4

The medical sciences were largely developed by Ibn Sina (Avicenna), al-Razi (Rhazes), and Husayn bin Ishaq al-Ibadi, who translated Hippocrates and other Greeks. Razi (860-940) is reported to have written 200 books on medicine, one of them on medical ethics, and Al-Hawi, a twenty-five volume practical encyclopedia. Ibn Sina (980-1037), who was already a famous physician at the age of eighteen, wrote sixteen books and the Canon, an encyclopedia of the world's known diseases. It was translated into many languages. Medical science soon led into zoology, veterinary medicine, pharmacy, pharmacology and chemistry. Indeed the word chemistry comes from

al-kimiya', or alchemy as it was later known. The most important medical school was that of Jundishapur, Iran (added to the Muslim world in 738). Managed by Syrian Christians, it became the center for most Muslim practical learning and the model for the hospitals built under the Abbasids (between 749-1258).

The Arabs clearly followed the hadith urging them to pursue knowledge from birth to death, even if that search was to be in China (deemed the remotest place on Earth.)

The Abbasids, who displaced the Umayyads and moved the seat of government from Damascus to Baghdad, made the first serious effort to accommodate Greek science and philosophy within Islam. Unlike the Umayyads, who remained Arab in their tastes and customs, the Abbasids conceived of an Islamic polity based on religious affiliation rather than nationality or race. This made it easier for people of differing cultural, racial, and intellectual heritages to mingle and exchange ideas as equals. Persian astronomers from

Jundishapur could work side by side with mathematicians from Alexandria in Baghdad's cosmopolitan atmosphere.

Then, too, the Islamic conquests erased the existing national boundarie that had kept people apart linguistically, politically, and intellectually. For the first time since Alexander the Great, former rivals could meet and exchange ideas under the protection of a single state. The rise of Arabic as the interna tional language of science and government administration helped matter along. As the cultivation of the sciences intensified and the high civilization of the Abbasids blossomed, the expressive resources of Arabic blossomed a well, soon making Arabic the language of choice for international commerce scholarship, and revelation.

Most important of all, however, was the attitude that developed within the Islamic world toward the suspect writings of the Greeks. Unlike the Christian communities of late Antiquity, whose attitudes toward the pagan philosophers were shaped by the experience of Roman persecution, Muslim did not suffer (or at least not to the same degree) the conflict between faith and reason. On the contrary, the Qur'an enjoins Muslims to seek knowledge all their lives, regardless of its source or where it might lead. As a result Muslims of the Abbasid period quickly set about recovering the scientific and philosophical works of the past, which were lying neglected in the librarie of Byzantium, and translating them into Arabic.

The task was Herculean and complicated by the fact that these text could not be translated directly from Greek into Arabic. Rather, they first had to be rendered into Syriac, the language with which Christian translators were most familiar, and then translated into Arabic by native speakers. This cir cuitous route was made necessary by the fact that Syriac-speaking Christian communities tended to know Greek, whereas Muslims generally found it eas ier to learn Syriac, which was closer to Arabic.

The translation effort began in earnest under the reign of the second Abbasid caliph, al-Mansur (754-75). He sent emissaries to the Byzantine emperor requesting mathematical texts and received, in response, a copy o

Euclid's Elements. This single gift, perhaps more than any other, ignited a passion for learning that was to last throughout and beyond Islam's golden age. The translation effort was subsequently systematized under al-Ma'mun who founded an institution expressly for the purpose, the Bayt al-Hikmah (House of Wisdom) and staffed it with salaried Muslim and Christian schol ars. Over the centuries, it put out a prodigious amount of publications – prac tically the entire corpus of the Greek scientific and philosophical thought. The works of Euclid, Aristotle, Galen, Hippocrates, and Archimedes were among the authors to receive early treatment.

It would be wrong to suggest that these scholars only translated these works. Muslim scholars generally were concerned to understand, codify, correct, and, most importantly, assimilate the ancients' learning into Islam's conceptual framework. The greatest of these scholars were original and systematic thinkers of the first order, such as the great Arab philosopher al-Farabi (d. 950), whose Catalog of Sciences had a tremendous effect on the curricula of medieval European universities.

The study of geometry was sustained by a remarkable series of scholars, the Banu Musa or "Sons of Musa," who were, quite literally, all sons of Musa ibn Shakir, al-Ma'mun's court astronomer. Their activities were all the more noteworthy because they carried on their research and writing as private citizens, devoting their lives and expending their fortunes in the pursuit of knowledge. Not only did they sponsor the translation of numerous Greek works, they also contributed substantial works of their own. Al-Hasan, one of the sons, was perhaps the foremost geometrician of his time, translating six books of the Elements and working out the remaining proofs on his own.

The enormous intellectual energy unleashed by the Abbasid dynasty left no field of knowledge and speculation untouched. In addition to mathematics and geometry, Abbasid scholars in the House of Wisdom made important and lasting contributions in astronomy, ethics, mechanics, music, medicine, physics, and philosophy, to name just a few fields. In the process, scholars of enormous intellect and productivity rose to prominence. One of these was Thabit ibn Qurra. Recruited from the provinces, where he had worked in obscurity as a money changer, he came to the Bayt al-Hikmah to work as a translator. There, his exemplary grasp of Syriac, Greek, and Arabic made him invaluable. In addition to his translations of such key works as Archimedes' Measurement of the Circle (translated into Latin by Gerard of Cremona in the twelfth century), he wrote over seventy original works on a wide range of subjects. His sons founded a dynasty of scholars that lasted until the tenth century.

Simultaneously, in far-off Andalusia, the social and natural sciences were being advanced by such scholars as Ibn Khaldun, the first historian to explicate the laws governing the rise and fall of civilizations. The brilliant flowering of Islamic science in Andalusia was directly stimulated by the renaissance in Baghdad. Scholars regularly traveled the length of the known world to sit and learn at the feet of a renowned teacher.

With the death of the philosopher al-Farabi in 950, the first and most brilliant period of Islamic scientific thought slowed down. As the empire frag-

mented over the next three centuries, leadership would pass to the provinces, principally Khorasan and Andalusia. Indeed, the latter was to serve as a conduit through which the ancient world's learning, augmented and transformed by the Islamic experience, was to pass to medieval Europe and the modern world. At the very time that Baghdad fell to the Mongols in 1258 and the Abbasid caliphate came to an end, scribes in Europe were preserving the Muslims' scientific tradition. This is why, just as many Greek texts now survive only in Arabic dress, many Arabic scientific works now survive only in Latin.

Al-Farabi's death is perhaps a fitting event to mark the end of the golden age of Muslim science. His masterwork, The Perfect City, exemplifies the extent to which Greek culture and science had been successfully and productively assimilated and then impressed with the indelible stamp of Islam. The perfect city, in al-Farabi's view, is founded on moral and ethical principles, from which flow its perfect shape and physical infrastructure. Undoubtedly he had in mind the round city of Baghdad, the City of Peace.

Trade and Commerce as Cultural Vehicles

Since Arabs historically had a tradition of trade and commerce, the Muslims continued that tradition. Due to their superiority in navigation, shipbuilding, astronomy, and scientific measuring devices, Arab and Muslim commerce and trade developed and reached many peoples. The Arabs were at the crossroads of the ancient trade routes from the Mediterranean, the Arabian Gulf, East Africa, and India, all the way to China.

One interesting result of these trading relations occurred during the caliphate of Harun al-Rashid (786-809), who exchanged envoys and gifts with Charlemagne, the Holy Roman Emperor. As a result, Harun al-Rashid established the Christian Pilgrims' Inn in Jerusalem, fulfilling Umar ibn al-Khattab's pledge to Bishop Sophronious, when he first entered Jerusalem, to allow freedom of religion and access to Jerusalem to Christian pilgrims.

A number of Arabic words relating to trade and commerce have found their way into modern Western languages. Muslin cotton, developed in Mosul (Iraq), became a favorite commodity and a new word in the Western vocabulary, as did damask fabric (from Damascus) and fustain cloth (from Fustat, Egypt).

The most interesting accounts of other cultures encountered by Arab Muslims are contained in a book on the travels of Ibn Battutah of Tangier (1304-77). Over a period of twenty-five years, he traveled to Asia Minor, Mongolia, Russia, China, the Maldives, Southeast Asia, and Africa and recounted his travels as well as the influence of early Muslim traders in those regions. He was the precursor of Marco Polo, whose accounts contained detailed descriptions of various cultures with which Arab and Muslim traders had long been in contact. Islamic craftsmanship in bookmaking and bookbinding were items of trade that carried the message of Islamic civilization far and wide.

For the Westerner, it is important to change these historical inaccuracies

to help improve the relations between the West and the Muslim world by finally acknowledging the enormous debt owed to the Muslims. However, as the celeritous progress of Western science pushes on, it is more likely that the increasing arrogance and faith in Western science with its purely Western (Greek) origins will keep this overdue apology from occurring. While a historian may mention "Avicenna" or "Averroes" fleetingly in one of his or her books, the problem is that what is left out is far greater than what is told. The eminent historian George Sarton criticized those who "will glibly say 'The Arabs simply translated Greek writings, they were industrious imitators…' This is not absolutely untrue, but is such a small part of the truth, that when it is allowed to stand alone, it is worse than a lie."