

# The Intellectual Contribution of Islamic Civilization to the West—an Impact Analysis

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## Abstract

*The research article titled as, “the intellectual contribution of Islamic civilization to the West—an impact analysis”, is a historical cum descriptive paper. Its aim is to eradicate certain misconceptions about the grandeur of the cherished Islamic civilization that once laminated the rest of humanity. Three objectives pertaining to: highlighting the then socio-cultural state of the Western civilization, revealing some of the influencing characteristics of Islamic civilization, and pinpointing the intellectual, and socio-cultural contribution of the Islamic civilization to the West, were addressed. The methodology was historical cum descriptive where authentic scholars were relied upon. An analysis of the historical fact as recorded by some prominent scholars in the field was carried out. Cross-current remarks of various scholars were also put close together so as to obtain a relatively clearer picture of the facts. It was explored that actually the Muslim scholars laid the very foundation of nearly all disciplines such as mathematics, physics, chemistry, geography, astronomy, agriculture and medicine, together with education, sociology, art and architecture, music and literature etc. It was found that Islamic civilization contributed in nearly all streams of knowledge and its application, hence, exerted enormous influence the rest of world civilizations especially the West.*

**Keywords:** *Islamic civilization, Muslim contribution, the West, Dark Ages, Cultural impact*

## Introduction

Huntington’s “the clash of civilizations” is an often- referred to intellectual contribution in the study of civilizations. He has given a comprehensive forecast of inter-impact of different world

civilizations—especially with reference to the West and the Islamic civilization. The same has been expounded by Isma’il Ragi al Faruqi in his, “Historical Atlas of the Religions of the World”. Since the dawn of the human

civilization, cultural growth and rise followed by fall and decay has remained a permanent trait of all civilizations, such as: the early Greeks, the Byzantium and the Romans, the Persians, and the Muslim civilization—to name a few. Counterpart civilizations have exerted certain influence as well as being influenced by each other. This article is about analyzing the impact of the Muslim civilization during its prime (the period from the mid-eight to mid-eleventh centuries that was marked by a profound cultural and economic expansion) on its counterpart western civilization.

### **The Advent of Islamic Civilization**

As a religion Islam is a complete code of life with some exceptional cultural attributes, hence, it laid the foundation of a gigantic civilization that overpowered all its counterpart civilizations. In the words of Hitti, “the term Islam may be treated in three senses: originally a religion, Islam later became a state, and finally a culture”. At the time of the advent of Islam, the world was in the abyss of frustration, ignorance, and barbarism. The Holy Prophet (SAW) came on the most

opportune time as aptly remarked by Syed Amir Ali, “The stage was set, the moment was psychological for the appearance of a great leader”. As a potential religion, having some very influencing characteristics, Islam highlighted the genuine path for the growth and development of human civilization. In the following are some of the cherished ideals/ outstanding characteristics of Islamic culture and civilization that onwards were pursued by the rest of civilizations especially the West.

### **Human Dignity and rule of Law**

Islam’s outstanding, rather core, value is justice and equality for all in all walks of life. This fact has been appreciated even by some Western scholars as well. Philip K. Hitti, in ‘History of the Arabs’ has rightly remarked, “of all world religions, Islam seems to have attained the largest measure of success in demolishing the barriers of race, color, and nationality”.

### **Freedom and Liberty in faith and politics**

Another remarkable trait of the Islamic culture is that it strictly believes in religious freedom. In the city-state of Medina, religious toleration became a

fundamental principle for bringing about harmony and reconciliation among the previously warring tribes. The Prophet (SAW) explicitly emphasized religious tolerance. The Muslims were commanded to believe in all the Prophets of Allah. No one should utter ill of the other's faith. The Prophet (SAW) aimed at establishing a universal brotherhood of Men so that the people must live in harmony and peace with each other. In this respect, the Quranic injunction, "there is no compulsion in religion" (Al-Quran) is self-explanatory.

So the mischievous theory that Islam spread at the point of the sword has been discarded by many impartial scholars who carried out an independent study of the teachings and practice of Islam. W. Montgomery Watt, in "the Majesty that was Islam" clearly discarded the view of some Europeans who thought that Islam spread by 'sword' and 'forced conversion' in the following words: "the accusation that Islam was spread by force of arms and that men were given a choice of 'Islam or the sword' is true only to a limited extent" and "there was no suggestion of forced conversion here, and far the most part it was only gradually that members of the minorities

went over to Islam, usually because of some form of social pressure". This fact is beautifully summarized by a late 20<sup>th</sup> century Patriarch of Constantinople in the following words,

Let the Muslim be my master in outward things rather than the Latin dominates me in matters of the spirit. For if, I am subject to the Muslim, at least, he will not force me to share his faith. But if I have to be under the Frankish rule and united with Roman Church, I may have to separate myself from my God. (Whitting 1981).

Commenting on this excerpt (Greaves, R.L) concludes, "it was an eloquent comment on the intolerance of Christianity and the greater freedom of Islam in this period. Similarly, he asserts, "in general the Ottomans proved more tolerant than Christian monarchs in Europe who subjected heretics and Jews to forcible conversion and sometimes expelled them and even executed them".

Similarly, pagans were compelled to accept baptism; missionaries were sent to convert those of western Asia; even those who failed to adopt Christianity were penalized for prohibition of inheritance (Greaves, R.L). Prior to the Arabs entry into the Iberian Peninsula, the ruling Germanic Visigoths severely persecuted the Jewish inhabitants of Spain and Portuguese. The Muslims not only treated the Jews with kindness, but also extended a very moderate attitude of kindness and tolerance towards their fellow Christians. As a result of this kind attitude of the Muslims, the Iberian Jews had to welcome the Muslim army as a liberating force and even joined this conquering force against the tyrant Visigoths (Lewis 1993).

This fact is evident from many examples such as, the outstanding Christian Spanish poet Federico Garcia Lorca (1898-1936) in the twentieth century lamented and deplored the incident of the expulsion of the Muslims from the Spanish Peninsula where the Muslim civilization stood for its religious and racial tolerance in his own country by writing: "It was a disastrous event,... an admirable civilization and a poetry,

architecture and delicacy unique in the world - all were lost..."(Shabbas 1996).

### **Islam's Rationalism and Universalism**

Unlike Christianity and Judaism, Islam, being aware of its weaknesses, strongly supports rationalism. The Creator-creation dilemma was resolved once and for all. For the first time in man's history, creation became totally and absolutely profane, providing natural science with its first and essential principle (Al-Faruqi). Such ideological stance led to an enormous cultural growth the instances of which are presented in the following paragraphs.

### **Public welfare**

Regarding this aspect it would be sufficient just to mention the civilizational grandeur of the magnificent city of Cordoba. At around 10th century, the capital city of Cordoba, was a towering center of cultural progress that had a record population of half million people as compared to this, no European city had a population of even 10,000 people. Muslim Cordoba was the largest as well as the most cultured city, having no match in all of Europe. Its civilizational tools in the

form of such products like: jewelry, woven silk leather work, and elaborate brocades were appreciated all over the world. Muslim women in Cordoba were relatively far better copyists who excelled most of the European Christian monks regarding the production of religious works. The confession of a German traveler Nun (Hrosvitha) is self-explanatory who was so impressed by the mesmerizing beauty and grandeur of Cordoba that she called it "the jewel of the world". An excerpt of her writings is presented here: "... there shone forth a fair ornament...a city well cultured...rich and known by the famous name of Cordoba,...renowned for all resources, especially abounding in the seven streams of knowledge, and ever famous for continual victories"(Townson 1979).

This is the true picture of the city while in sharp contrast the dust and mud were the familiar features of the streets of London and Paris at that time and even for the seven centuries to come. Cordoba had clean and paved luminous streets London had to wait for around 700 centuries to have such streets. There were 113,000 houses with lavatories and water drainage system together with 700 mosques; 70 public libraries; numerous

bookstores; parks and palaces; and 300 public baths (Townson 1979). Above all, the Great Mosque of Cordoba (Masjid-e-Qurtaba, on which Allama Iqbal wrote the famous poem that is considered the zenith of his all poetical works), was an unsurpassing religious shrine, that was the second largest mosque in size only to the Great Mosque of Makkah. This Great Mosque, is still a major tourist spot in modern Spain.

Another remarkable place in Muslim Cordoba was the famous public library that had over 440,000 books, a figure that could not be reached by counting all of the books in the whole of France. Together with this, there were 69 other public libraries in Cordoba. These libraries had been using paper for over 200 years at a time when the rest of Europe was using animal skins for writing purposes. Very close to Cordoba, in the city of al-Zahra, was the magnificent Palace of Madinat al-Zahra which had a sort of magical hall, having eight splendid doors on all sides, a beautiful room in the center surrounded by a pool of mercury, producing dazzling reflections during sunrises time. With a quiver on the pool surface, the room was automatically made luminous,

giving a sort of floating impression to the room. Many scholars admit that the magnificence of this mesmerizing hall was never surpassed by any civilization in the human history (Townson 1979).

Muslim Granada was another towering city after Cordoba that was famous for its trade especially in silk and silk-related products. The forte of Al-Hambra is situated in this city. This unique palace is considered to be the most magnificent and glorious of all Muslim monuments in Spain. The Al-Hambra Forte, took about 100 years to build and is today a major tourist attraction and is an evidence of the mastery of Muslim architecture in Spain. Furthermore, Seville and Toledo also remained the greatest houses of Arab Andalusian knowledge. Toledo was the center of scientific translation from Arabic to Latin.

### **Justice as a central value in Islam**

Justice is an important value in Islam. Mohammad Aslam Chaudhry has elaborated this trait of the Islamic civilization by saying; Justice was an indispensable part of administration in the Islamic state. It is manifestly based upon equality negating all traits of rich

and poor, slave and master. Right from Abu Bakr, Caliph 1, till Caliph Ali, all the Caliphs were very much sensitive for administering justice according to the injunctions of the Quran. The very basis of apostle hood is said to be justice between man and man, for it is related that the patriarchs and prophets of the old times were sent with books of Divine Law so that they might be able to decide internecine feuds (Al-Quran) and the apostle of Islam declares that he has been commanded to be just, (Al-Quran). This principle was laid down that whosoever makes a false prosecution should be punished with an iron hand, so that law must not be applied wrongly and the very basic idea of justice must not be tarnished.

### **Scientific attitude and critical thinking**

Islam held some cherished values one of such is scientific attitude. This fact has been acknowledged by some very outstanding Western scholars such as Greaves, R.L et.al, (1817) who opine, “The most influential Muslim contribution to the modern world however was in science and medicine”.

## **Impact of Islamic Civilization on the Rest of Civilizations especially The West**

Islamic civilization contributed in nearly all aspects of human life and civilization. A brief description is given below.

### **Philosophy and Metaphysics**

Muslim thinkers imprinted heavy influence on Western philosophical thought. Instances of such influence are many, however, a few glimpses are: St. Thomas Aquinas (1224-74) work who literally copied from the works of a Muslim scholar, Ibne Rushd, commonly known in Europe as Averroes (1126-98); Ibn Rushds' writings proved as the main source for St. Thomas' 'Summa'. The former had profound influence on the French philosopher, Rene Descartes (1596-1650). Similarly, St. Thomas' 'The Dominican' owes much to the doctrines of the renowned Muslim philosopher al-Farabi (Landau). Similarly, Italy's renowned poet, Dante (1265-1321), copied his famous writing, the Divine Comedy, from the intellectual contributions of Muslim scholars such as: Ibn al-Arabi, and al-Ma'arri. (Khouri, M.A.). Mansoor al-Hallaj (858-922) a leading mystic of the Islamic world, exerted enormous influence on the

Spanish mystic Ramon Llull (1235-1316).

This influence was so strong that the Western philosophers and scholars had to admit their great indebtedness in this area to the Muslims. Instances of such attribution can be seen in the works of the Scottish scholar John Duns Scotus (1266-1308) who followed the style and pattern of the Fons Vitae—written in Arabic by an Arab philosopher, Abu Ayyub Ibn Gabirut (Landau). Among other such scholars were Abu Haroon Moussa and Abu Imran Moussa Ibn Maymun who once remained the physician of Salah ud-Din Ayubi—the liberator of Palestine.

### **Mathematics**

In the discipline of mathematics, Muslims contribution is far greater than any other field of inquiry, neither was this contribution surpassed by any other civilization. Such aspects of mathematics like: algebra, basic arithmetic, geometry, trigonometry, algorithm, decimal system, and above all the inclusion of "zero" in the counting system, that was originated in Arabic land—the ancient Babylonians as early as 500 B.C.(Anderson 1972). A

mathematician, Prof. Karl J. Smith thinks that Indians of the ancient times developed digital symbols in mathematics, but with no "zero". Developed by the early Semitic Arabs in Iraq, the "zero", it was properly incorporated by the Muslims in mathematics. The Europeans had to adopt this cherished, 'zero' after 300 years.

Other towering Muslim mathematicians were: al-Khawarizmi (780-850), the founder of algebra, who wrote *Kitab al-Jabr wa al-Muqabalah*; Abu Rehan al-Biruni—a leading mathematician, an expert astronomer, a seasoned physician, geographer, and a towering historian—the greatest scientist ever produced by the medieval Islam; Naseer al-Din at-Tusi (1201-1274) a great contributor to the specialized area of trigonometry (Sabra 1992). This field was excelled by the Muslims during the 12th and 13th centuries which not only influenced the West, but also penetrated to other corners of the world as the Chinese trigonometry used by Kuo Shouching is considered an offspring of the Muslim origin (Landau).

## **Astronomy**

In the field of astronomy, the most intellectual scholar was Abu Abdullah al-Battani (858-929) who refined the then existing values for: the occurrence of ecliptic, the length of a year and of the four seasons and demonstrated that the position of the Sun's apogee varies which leads to the occurrence of annular eclipses of the Sun. Furthermore, he improved the astronomical calculations of the famous Greek Ptolemy by replacing certain geometrical techniques for trigonometry. His astronomical works regarding compendium of astronomical tables was translated in due course of time, into Spanish language and was published with the title *De motu stellarum* which stands for 'Our Stellar Motion' (Encyclopedia Britannica 1989). Other such remarkable names in the field are: Ahmad al-Farghani who is regarded as the fore-runner of Italian Alighieri Dante (Landau). The expertise of the Muslim astronomers is admitted by many European scholars such as, Nicolaus Copernicus (1473-1543) who referred to many Muslim scientists in his writings, especially al-Zarkali (Landau). He prepared a beautiful water clock that was meant for measuring hours in a day as well in a night together with



determining lunar month days (Lund 1982).

### **Chemistry**

The word "chemistry" is a modification of the Arabic word alchemy (al-Keem'ya'). Here the towering intellectual of the Muslim world is Jabir Ibn Hayyan (721-815) who wrote 2,000 scientific works (Encyclopedia Britannica, 1989). The chemical names he used, like: "alkali", "antimony", "realgar", and "sal-amoniac" were actually discovered by him and even today the nearly same nomenclature is used in English. His works were translated by Robert of Chester into Latin (Landau). Similarly explosive for gunpowder was introduced by the Muslims, rather than by the Chinese (Encyclopedia Britannica, 1989) as mistakenly believed in Europe. Chinese learnt this invention from Muslims. Furthermore, at around 1304 A.D, the Muslims introduced the World's first ever gun (Encyclopedia Britannica 1989).

### **Physics**

Physics is another modern discipline to which the famous Muslim intellectual, Ibn al-Haytham (965-1039) contributed. He demonstrated an accurate

explanation of vision (Encyclopedia Britannica, 1989). His works were translated into Latin with the title *Opticae Thesaurus Alhazeni Libri VII*. He also presented theories related to reflection; binocular vision; focusing with lenses; the rainbow; parabolic and spherical mirrors; and the artificial and unreal increase in size of planetary bodies near the Earth's horizon (Landau). Roger Bacon (1242-92) together with Leonardo da Vinci and Johannes Kepler openly admitted the scientific contribution of this Muslim genius.

### **Medicine**

The Muslim scientist Abu Bakr al-Razi (865-925) was regarded as a medical authority in his era. Al-Razi gave the world's first explanation on smallpox and measles; explored and expounded the contagious nature of diseases; and highlighted colic pain, kidney-stone pain, and many other related pains. He wrote a book, 'at-Tibb al-Mansuri', on various diseases. He also wrote, at-Tibb ar-Ruhani, dealing primarily in psychotherapy, and composed a medical encyclopedia, al-Hawi fi at-Tibb. Another genius in the field of surgery was Abu al-Qasim Az-Zahrawi (936-

1013), who wrote a 30-part medical encyclopedia, *At-Tasrif*, containing over 200 surgical instruments. Its translated version remained for nearly 500 years as the most authentic source as well as textbook on surgery in Europe. Another Muslim medical authority was Abu Ali Ibn Sina (980-1037). He is regarded as the most influential philosopher-scientist in the whole era of Islamic civilization. He wrote: *Kitab ash-Shifa*—an encyclopedia in medicine and psychology; and *al-Qanun fi at-Tibb*, that were of high reputation in East and West. This contribution remained an authority for European scholars as late as till the 19<sup>th</sup> c. (Hayes). The concept of hospitals and mobile hospitals were established by the Muslims as early as in the 9<sup>th</sup> c. for which the West had to wait till 13<sup>th</sup> c. Even in the 17<sup>th</sup> c. and even beyond especially in France and Germany (Landau).

### **Pharmacy and Pharmacology**

Pharmacy was developed by the Islamic World. It attained the status of an independent science. The first privately owned pharmacies were established by the Muslims in Baghdad as early as in the 9<sup>th</sup> c. (Hamarneh, S.K.). Muslims civilization produced the most famous

pharmacist/botanist Ibn al-Baytar who wrote renowned scholarly book on plants. He elaborated round about 1,400 medical drugs. For a considerable period of time, European dispensaries had to rely on recipes prepared by the Muslim pharmaceuticals (Landau). Muslim pharmacology remained an authority in the West till the 19<sup>th</sup> c. (Landau).

One of the outstanding occidental scholar, though very critical of Islam, admitted that the knowledge and skill of how to cure diseases and how to make surgical operations respectively were the two endowments for the Western world that was developed by the Muslim and Jewish physicians, and was actually learnt by the Christian world in due course of time (Gustave 1974).

### **Trade and Agriculture**

The Muslim rulers took interest in establishing new cities in all directions of the empire. These cities afterwards became financial hubs in most cases. Muslim governors and local rulers kept all the overland roads safe and in tradable condition. These way efficient trade routes were maintained with *caravanserais*. Such places were meant for the overnight stay and rest of the

trading personnel. The Muslims developed sound irrigation systems in the far and wide of the land for boosting agricultural productivity. The strength of the Muslim agricultural system can be assessed from the fact that even today Muslim agricultural and ornamental irrigation systems are in use in Spain.

The Muslim Spain was the leading agricultural zone in the whole Europe where a relatively modern canal system, irrigation, and land drainage were some of the outstanding features of the land. Under the Muslims Spain was the richest country of Europe with reference to agriculture. This fact is beautifully summarized by an American author, that developments regarding agriculture "constituted the finest legacies of Islam, and the gardens of Spain proclaim to this day one of the noblest virtues of her Muslim conquerors" (Landau). Furthermore, Muslim Spain produced some of the world's leading agricultural scientists as well. Such as: Ibn al-Bassal who composed a remarkable book—the worth of which can be judged from the fact that its Spanish translation came to the fore as late as in 1955 with the title *Libro de Agricultura* (Hamarnah, S.K.). Similarly, Ibn al-Awwam wrote *Kitab*

*al-Filahah* ("Book of Agriculture") containing the detail of 585 plants, together with agronomy, cattle and poultry raising, and beekeeping, which was, afterward, translated into Spanish and French languages as late as in the 19<sup>th</sup> C.

### **Art**

Regarding art, the European artists followed the Muslim art when they used the Arabic letters for decoration and calligraphy. The European Gothic script became subservient to Muslim calligraphy. The glimpses of the artistic writing of the Muslims can be seen in the works of Italian painters: Giotto Di Bondone, Fra Angelico, and Fra Lippi. The Muslims introduced various handcraft industries such as; ceramics; and manufacturing crystal etc. Even Muslim terminology such as 'Amir', and 'Imam' were used in European nomenclature. Alfonso VIII, a Spanish Catholic prince, started a coin having Arabic inscription, together with a clause written on the coin for himself as "Ameer of the Catholics" and for the Pope in Rome the inscription was "Imam of the Church of Christ".

## Architecture

The popularity of the Muslim architecture was so binding that it was followed by constructors both in the West as well as in America. Peculiar shapes of the arches of Masjid-e-Qurtaba and that of Al-Hambra Forte remained the models for the construction of arches in France and England. The Muslim brick tracery of the facades of some famous constructions of the Muslim world especially the Islamic Giralda (Seville), the Kutubia (Morocco) were the main samples followed in most of the Gothic architecture in Europe, particularly in the Bell Tower in England (Landau). Similarly some churches in Sicily and Italy were also influenced by the Muslim architecture such as Capella Palatina in Palermo; the Palazzo Ca' d'Oro; Cromer Church and Christ Hall in England (Landau).

Furthermore, the influence of the Muslim architecture can be seen in the works of Torre del Commune, the Palazzo Vecchio and Piazza San Marco, (Landau). This influence penetrated beyond Europe to America to the constructions of the famous architect Louis Sullivan (1856 certain civilizations exerted relatively more

permanent impact on their contemporary ones. The American architects owe much to the architecture of the Madrasah erected by the famous Sultan Hasan in Cairo, Egypt.

## Conclusion

Based on the above discussion, it can be concluded that during the course of time, the Byzantines contribution to the world was in law and the legal and political system. Byzantine law that was codified by Justinian, proved as a guiding force for much of the legal and political systems prevalent in Europe even today. However, Islamic civilization, being relatively stronger in science and scholarship, surpassed nearly all the Byzantines contributions and even exerted tremendous impact on other neighboring civilizations such as in the Indian sub-continent, the Far East, and North Africa. In this respect, the contribution of the Muslim civilization to the West was manifold, ranging from the philosophical level to that of practical level such as science. The Muslims influenced the ideas and theories prevalent at that time, and paved way for modern science and technology. Muslim scientists developed

the fundamental disciplines of both natural and social sciences such as: mathematics, physics, chemistry, biology, geography, astronomy, agriculture, medicine, pharmacy, in the main area of natural sciences together with education, economics, sociology, psychology, law, jurisprudence, art, architecture, calligraphy, music and literature in social sciences and humanities. In fact, the modern world owes much to the once prominent Islamic civilization in nearly all streams of knowledge that are characteristic of any civilized society.

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