

## ISLAMIC CIVILIZATION IN SPAIN – A MAGNIFICENT EXAMPLE OF INTERACTION AND UNITY OF RELIGION AND SCIENCE

Safvet Halilović

Faculty of Islamic Education of the University in Zenica, Zenica, Bosnia and Herzegovina

### SUMMARY

Islam and its followers had created a civilization that played very important role on the world stage for more than a thousand years. One of the most important specific qualities of the Islamic civilization is that it is a well-balanced civilization that brought together science and faith, struck a balance between spirit and matter and did not separate this world from the Hereafter. This is what distinguishes the Islamic civilization from other civilizations which attach primary importance to the material aspect of life, physical needs and human instincts, and attach greater attention to this world by striving to instantly satisfy desires of the flesh, without finding a proper place for God and the Hereafter in their philosophies and education systems. The Islamic civilization drew humankind closer to God, connected the earth and heavens, subordinated this world to the Hereafter, connected spirit and matter, struck a balance between mind and heart, and created a link between science and faith by elevating the importance of moral development to the level of importance of material progress. It is owing to this that the Islamic civilization gave an immense contribution to the development of global civilization.

Another specific characteristic of the Islamic civilization is that it spread the spirit of justice, impartiality and tolerance among people. The result was that people of different beliefs and views lived together in safety, peace and mutual respect, and that mosques stood next to churches, monasteries and synagogues in the lands that were governed by Muslims. This stems primarily from the commandments of the noble Islam according to which nobody must be forced to convert from their religion and beliefs since freedom of religion is guaranteed within the Islamic order.

The Islamic civilization in Spain encompasses many fields that left a profound imprint in the Iberian Peninsula and Europe. The cultural climate of Spain in the era of Muslim rule (711-1492) brought about a prospering of different aspects of science and culture. Numerous schools and libraries were established and books were procured due to which the majority of the people were literate. Literature and art flourished. Buildings were constructed and Islamic art with its specific qualities was cultivated. As a result of that movement, Cordoba became the civilization capital of both Spain and the West in general. Many schools were established in it, such as medical and technical schools in addition to the general education and other vocational schools. Hospitals, chemical plants and observatories were also built. The university in Cordoba was a beacon of thought, education and culture, and it made Cordoba the home of science and of a great number of scholars and scientists in medicine, pharmacy, chemistry, astronomy, mathematics and botany. Scholarly disciplines such as philosophy and logic were also studied and busy translation activities were underway. For that reason travelers and people in quest for knowledge and science from different European countries used to come to Cordoba.

This scientific and civilizational movement was not limited to Cordoba alone, but also spread into other cities of Spain, such as Granada, Toledo and other cities under Islamic rule. Relevant historical sources state that young men from Europe, particularly from Italy and France, competed to enroll some of the Islamic universities in Andalusia. One of the students of the university in Cordoba was Gerbert, who later became known as Pope Sylvester II. He introduced science of mathematics and Arabic numerals in Italy. The same historical sources also read that Europe was acquainted with Aristotle's manuscripts via the city of Toledo which was a center of bustling translation work from the Arabic into the Latin language. It was in Toledo that many works of Plato and Galen were translated, as were the philosophy manuscripts by Ibn Sina, al-Farabi, Ibn Tufayl, Ibn Bajjah and Ibn Rushd, and the medical manuscripts by Ibn Sina and al-Razi. These manuscripts quickly spread all over Europe and became a mandatory literature at great European universities. Ibn Sina's *Al-Qānūn fī al-tibb* was considered the fundamental reference book in studies of medicine in Europe for nearly six centuries and was called *The Canon of Medicine*. This paper cites numerous examples of interaction and unity of religion and science in the times when Islamic culture and civilization flourished in the Iberian Peninsula, the era that lasted for almost eight centuries.

**Key words:** Islamic civilization – Spain – religion – science – cooperation - unity

\* \* \* \* \*

### Introduction

Before the topic in question is discussed it is necessary to briefly look at the meaning of the word *civilization* from its linguistic aspect.

According to the linguistic meaning found in the *Al-Mu'gam al-wasit* Dictionary, the word *civilization* means, "to lead the life of a settler (in settlements, villages and towns), which is contrary to the life in the desert (in other words, highlander way of life in the wild). That is the term for a high level of development

of the human society together with its intellectual fruit: in other words, a collective term for all forms of scientific, technological, ethical and general social rise in relation to a certain society or a greater number of related societies." (Magma' al-luga al-'arabiyya, *Al-Mu'gam al-wasit*, n.d. I/186)

In the scientific circles *civilization* is defined as a "contribution of a civilised man, as a member of a society, from the standpoint of intellectual, spiritual and mental possibilities in the accomplishment of society's goals, and values, ideals and the level of

achievement towards which his society is aspiring.” (Ulwan 2001:7).

From the above-mentioned definition we can draw two conclusions:

- that civilization is a way of life a society chooses for itself in all aspects of manifestations: spiritual, social, political, economical, cultural, material, in conformity with the corresponding values and current standards;
- that civilization has two sides of which one consists of the indicators of material progress, encompassing different spheres of life such as industry, trade, agriculture, discovery, handicrafts, and the other one consists of intellectual advances related to spiritual values, ethical principles, creations of the mind and educational advances.

Having in mind the above-mentioned definition and its concise explanation, one could say that civilization is “the way of life that began when people started to live in settlements, or under the aegis of organised groups in the shape of a country. It includes technology, the form of government and everything that is related to the manner of social life. Viewed from that aspect, civilization is being equated with culture, except that culture designates any means or aspect of life including the simple and complex way of life, while civilization designates the way of life that is defined using the more complex economic, administrative and social forms of organisation. Therefore, in spite of the fact that every man lives under the aegis of some culture, nevertheless, every individual does not live under the auspices of some civilization. (Group of authors, *Al-Mawsu'a al-'arabiyya al-'alamiyya* 1996:IX/412)

### The foundations of civilization in Islam

Islam appeared at the time that saw the man of the Arabian Peninsula created anew; the time which contributed to the new civilization that “had brought men from darkness and into the light” and set the foundations for the development of man.” The Revelation of Almighty Allah is that which restores the moulding of man in the spirit of the necessary convictions and thoughts and cleanses him – it establishes connections, sets foundations on which the society is built. Allah Almighty says in the Qur'an: “*There hath come to you from Allah a (new) light and a perspicuous Book – wherewith Allah guideth all who seek His good pleasure to ways of peace and safety, and leadeth them out of darkness, by His Will, unto the light – guideth them to a path that is straight.*” (Al-Qur'an, sura Al-Mā'idah, 15-16)

The most important foundations on which Islamic civilization rests include the following:

#### **Belief that there is no god but Allah (al-tawheed).**

Islam established the concept of tawheed while it was addressing itself to the polytheists of Mecca, emphasising that it is not enough that they believe that Allah is the Lord and the Creator of everything that exists

(tawheed al-rububiyya). It is important to direct this belief towards conscious performance of ibadah to Allah, Who is One and Who has no companion among the creation of the world. Positive traces in the evolvement of Muslims are defined on such belief, since when people become submissive to Allah, the One and Only, they consider permitted only that which He allowed, and forbidden, everything He forbade; they struggle in the name of Allah with the aim of establishing real values such as truth, justice, equality, dignity and useful knowledge.

**Rightousness (al-'adl).** Primary sources of Islam, Qur'an and Sunnah, devote great attention to the question of justice. The following Qur'anic verse can serve as an example: “*Allah commands justice, the doing of good, and liberality to kith and kin.*” (Al-Nahl, 90); “*Stand out firmly for Allah, as witnesses to fair dealing, and let not the hatred of others to you make you swerve to wrong and depart from Justice. Be just: that is next to Piety: and fear Allah. For Allah is well-acquainted with all that ye do.*” (Al-Mā'idah, 8); “*Allah doth command you to render back your Trusts to those to whom they are due; and when ye judge between man and man, that ye judge with justice: Verily how excellent is the teaching which He giveth you! For Allah is He Who heareth and seeth all things.*” (Al-Nisā', 58)

Among the examples which appear in the Sunnah, belong the following words of Allah's prophet s.a.w.s.: “The righteous will be seated on the pulpits of light beside God, on the right side of the Merciful, Exalted and Glorious – Either side of the Being is the right side – and righteous are those who do justice in their rules, in matters they are entrusted with.” (Related by Muslim in *Sahih*, Kitab al-Imara, by Abdullah ibn 'Amr ibn al-'As).

An example which shows, in a practical way, how justice is best served by the Prophet s.a.w.s. is the position he took against his friend and the son of his friend, Usama ibn Zaydu ibn Harili, when he came to him to intercede in favour of a woman from the Mahzum Tribe who was sentenced to having her hand cut off for having committed theft. This event is mentioned in a sahih-hadith related by A'isha r.a., which speaks of how the Kuraysh were moved by the position the poor woman had found herself in, and asked themselves who would speak to Allah's Prophet s.a.w.s. about her problem. They wondered whether anyone else other than the son of Allah's Prophet s.a.w.s., Usāma ibn Zayd, would dare speak about the woman's problem to the Prophet. Usama appealed to the Prophet and Allah's Prophet responded: “*Those before you fell into ruin because they, due to their generosity, pardoned, while punishing a common man for the same sin. By Him in Whose Hand my soul is! If Fatima (the daughter of Muhammad) stole I would cut off her hand.*” Knowledge (al-'ilm). Islam came to reorganise man's intellect and direct it towards becoming aware of the Almighty on the basis of His signs (Qur'anic verses),

which are to be found in the universe and in the soul. In keeping with this, the first words revealed by Allah Almighty were: "Read in the name of thy Lord and Cherisher, Who created!" (*Al-'Alaq*, 1) Allah Almighty emphasised to Muhammad s.a.w.s. the importance of learning in many places in the Qur'an, and stressed to the Muslims that He had sent them a Prophet who would teach them, as it is said in His words: "Allah did confer a great favour on the Believers when He sent among them a Messenger from among themselves, rehearsing unto them the Signs of Allah, sanctifying them, and instructing them in Scripture and Wisdom, while before that, they had been in manifest error." (*Ali 'Imrān*, 164)

Among the proofs which testify to the interest Islam has for learning is one in which the Prophet s.a.w.s., as a condition for ransom, demanded from each of the captured in the Battle of Badr to teach ten ansariyas to read and write. In addition to this, a great number of hadith induce Muslims to acquire useful knowledge, which, in turn, has left a fruitful mark in the development of Islamic civilization.

**Noble character (*al-ahlaq al-fadila*).** Since the Qur'an is a universal codex of authentic education of an individual and a group in different spheres of life, the Prophet s.a.w.s. has said: "I was sent to perfect noble character of humans." – and in one hadith it says "good morals". This means that the Prophet made the perfection of noble character the chief aim of his prophetic mission. This sufficiently emphasises the place and the significance of noble character (good morals) in the Prophet's mission. One can say that all the values which were laid in the foundations of Islamic civilization during the time of the Prophet s.a.w.s. are in fact the traces of authentic Islamic education of individuals and groups. The education which started in the house of Al-Arqam ibn Abi al-Arqam in Mecca, is specific for having been a universal and moral education that encompassed all spheres of life of a Muslim.

**Work (*al-'amal*)** – Work is exactly that which fortifies the edifice of civilization. Islam not only urges people to work, but it is a religion of practical functioning. The Prophet of Islam had asked Allah Almighty for a refuge from weakness and slothfulness. For this reason the Prophet s.a.w.s. had maintained that the one who embarks on a search for provisions for his old parents, his feeble children, or to protect himself from the humiliation of begging for charity is on Allah's path. Islam urges people to build on Earth in accordance with the words of the Almighty: "It is He Who has made the earth manageable for you, so traverse ye through its tracts and enjoy of the Sustenance which He furnishes: but unto Him is the Resurrection." (*Al-Mulk*, 15); "And say: "Work righteousness: soon will Allah observe your work." (*Al-Tawba*, 105)

There are numerous hadith which urge people to work and search for provisions and build on Earth. These hadith have stimulated Muslims to develop a

world civilization, which made them the predecessors to civilised peoples. (More on this in: *Al-Mawsu'a al-'arabiyya al-'alamiyya* 1996:IX/413-414)

### **The most important specific characteristic of Islamic civilization**

The most important specific characteristic of Islamic civilization is that it is a civilization of balance and middle way, because it has united learning and faith, established a balance between the spirit and matter, and it hasn't separated this world from the next. This is what distinguishes Islamic civilization from other civilizations which devote primary attention to the material side of life, bodily needs and human impulses, attaching greater importance to mundane life through devising ways to satisfy our needs for pleasure more quickly, not finding a suitable place for God and the Hereafter in its philosophy and its reflective and educational organisation. Islamic civilization brought together man with God, linked Earth with the heavens, subjugated this world to the Hereafter, united the spirit and matter, established a balance between reason and the heart, united learning and faith – elevating the significance of moral rearing to the level of significance of material progress. For this reason, Islamic civilization is both a spiritual and material civilization, idealistic and pragmatic, divine and human, moral and consumerist, individual and collective, in other words it is a civilization of balance and middle way, on which a just community is founded, as the Almighty Allah describes it in Qur'an, surah *al-Baqara*, 145: "Thus have We made of you an Ummah justly balanced." (*Al-Qaradawi* 1997:203)

That is why one of the declarations of Islamic civilization is that it exerted strong influence on all the peoples that were subjugated by the Islamic state. Islamic culture gained dominance over the original cultures that had inhabited the regions through which the Islamic flag was carried. The most interesting thing in all of this is that this magnificent and reflective transformation was unfolding without an oath to allegiance or force. This is why we are witness to many researchers who are astonished when they ascertain that the Muslims were successful in that which the Greeks, Persians and Romans failed when they ruled the East, considering that these civilizations, in their conquest of the East, had not succeeded in exerting influence on the belief, language and the culture of the subjugated lands, while the Muslims were successful in spreading their culture, civilization, faith and the language to lands they conquered, so that those lands would spread the message of Islam, inviting people to Islam the way the Qur'an does – by speaking the language of the Arabs and Islam.

A distinguished French scholar, Dr. Gustav Lobon pointed to this phenomenon with the following words: "This is why Egypt, which has been proving for a long time that it is a land most unwelcoming to foreign

influence, forgot its seven-millennium old ancient civilization in less than one century, only to firmly embrace the new religion, language, skills and to remain eternally faithful to them." (Al-Mulla 1996:14).

Fascinating results achieved by Islamic civilization have divine origins, human aspirations, intercultural reach, flowing vitality and scientific methodology. In that respect, this civilization is the personification of hope to which different peoples are striving for, and in whose name different communities have renounced their original culture and earlier beliefs, and accepted Islam and made Islamic belief their belief, and made that which Islam teaches their religion, and made the language of the Qur'an their basic language.

One of the specific characteristics of Islamic civilization is that it spread the spirit of righteousness, impartiality and tolerance among people. The product of this is coexistence of people of different faiths and nationalities in peace and mutual respect, where a masjid stood next to a church and different places of worship existed not only in every region, but every Islamic neighbourhood. This comes mainly from the principles of pure Islam according to which no one can be forced to change his religion and convictions. Freedom of religion is guaranteed under the auspices of Islamic order. The Almighty Allah says: "*Let there be no compulsion in religion: Truth stands out clear from error: whoever rejects evil and believes in Allah hath grasped the most trustworthy handhold, that never breaks. And Allah heareth and knoweth all things.*" (Al-Baqara 256).

### Islamic civilization in Spain

Prior to Islamic conquest the Iberian Peninsula was under the rule of Visigoths. The Visigoths began conquering the Peninsula in the 5<sup>th</sup> century AD, after having pushed back the Vandals who then embarked on a conquest of North Africa, from which the Romans drove them in 543 AD. The Vandals conquered the Iberian Peninsula in the 3<sup>rd</sup> century, and from the name Vandal came Vandalusia, in other words, the Land of the Vandals. The Arabs gave it the name of Andalusia / ar. Al-Andalus. (Al-Bakri, 1968:59; Mu'nis, 1959:2; 'Ashur, 1966:1/88; 'Anan, 1969:1/27-29; El-Hajji, 1970:32)

The rule of Goths on the Peninsula, especially prior to Islamic conquest, complicated the political conditions, made life difficult for its population, so that unrest and anarchy began to engulf most of the people that lived in poverty, due to low standard of living and the policy of occupying, that had turned the conquered people into puppets with whom the ruling class, that lived in abundance, played with. The Spaniards, as was the case with other European peoples, were divided into numerous classes whose rights were violated due to the existence of class differences. Little more than one year prior to the Islamic conquest of Spain, a military leader by the name of Rodrigo came to power. He dethroned

King Vitiz which, in turn, caused internal unrest and clashes. (Ali, 1997:29; Al-Shatat, 2001:18-20)

The Arab Muslims conquered Spain under the command of Tariq ibn Ziyad, during Ramadan of 711 AD (year 92 according to hijra), after having defeated the Visigoth army. They established an Islamic state which survived for seven centuries, from the 1<sup>st</sup> to the 9<sup>th</sup> century of the Islamic era (92-897), which corresponds to the 8<sup>th</sup> century and ends at the conclusion of the 15<sup>th</sup> century AD (711-1492).

During the rule of the vicegerents who encouraged the development of science and protected the rights of scholars and scientists, Arabic-Islamic Spain (Andalusia) played an important role in transmitting Arabic-Islamic civilization from the East to the West. The provinces of Andalusia transmitted the achievements of thought and ideas with which they illuminated the surroundings, chasing away the darkness of the West and its decadence, well before anyone knew of the term "renaissance", prior to which Europe lived in ignorance and spiritual and reflective darkness.

Arabic-Islamic civilization in Andalusia was characterised by a number of specific traits, among which the most important ones are belief (religion of Islam) and language (Arabic), something that distinguishes it from other civilization that preceded Islam. Its identity is Arabic and Islamic and it encompasses Islamic values and sublime nature, along with eloquence and the articulateness of the Arabic language.

Concerning decrease and increase of power, the Arabic-Islamic civilization in Andalusia went through different periods. The historians maintain that it achieved the height of its power and maturity during the Umayyad Dynasty, more precisely, during the rule of the caliph 'Abd al-Rahman al-Nasir (300/912-350/961) and his son, Al-Hakam ibn 'Abd al-Rahman (350/961-366/976). (Al-Mawsu'a, 1996:IX/417)

During that time Andalusia produced some great poets, among them Ibn 'Abd Rabbih and Ibn Hani' and great historians, the likes of Al-Razi and Ibn al-Qutiyya. Even at that time encyclopaedic works, such as *Al-'Iqd al-farid*, were written in Andalusia. During this period the philosophical texts written by Ibn Masarra emerged. As a result of great persistence, scientific research produced valuable results in the field of astronomy and mathematics. However, more interest was shown for literature. During this period many muhaddiths, mufessirs and fekihs, who are considered the leaders in their respective fields, were active. The holdings of the Al-Nasir library are considered the most convincing of indicators of civilizational renaissance experienced by Andalusia of that period.

When the Umayyad Dynasty collapsed Andalusia was divided into a number of local administrations (emirates). However, despite internecine conflicts of the mini-states, the reflective and literary movements continued. In those turbulent times (400/1009-484/1091), Andalus produced a significant number of

outstanding thinkers, writers and poets. Most of the local rulers found a place in their proximity for some renowned thinkers and writers. This is why the cultural movement went hand in hand with the support they received. The great philosopher and a scholar, Ibn Hazm (died 456/1063), a chronicler, Ibn Hayyan al-Andalusi (died 469/1076) and Ibn Zaydun, a pearl among the poets (died 469/1076), all lived during this period.

When the Murabits, under the rule of Yusuf ibn Tashfin, come to power in Andalusia at the end of the fifth century, a period of flourishing ensued which saw some great names in various fields of learning. During the rule of Murabits literature, philosophy and civilization flourished in Andalusia, reaching their peak. In the words of a Spanish orientalist Julian Rubera, the inhabitants of Andalusia were “the only European nation where art, literature and philosophy were thriving in all its forms. In the 12<sup>th</sup> and 13<sup>th</sup> centuries, when Europe was embarking on its technological, philosophical and literary renaissance, Andalusia had the strongest influence in the fields of philosophy, astronomy, medicine, narrative literature and poetry.” (*Al-Mawsu'a*, 1996:IX/418)

Among the leading figures of that period was Ibn Baja (died 523/1138) who achieved great results in the fields of mathematics, astronomy, and philosophy and wrote detailed commentaries on Aristotle's and Al-Farabi's philosophical treatises. In terms of significance of his works, Ibn Bassam (died 524/1129), author of *Al-Thakira fi mahasin ahl al-jazeera*, came close to him. In the field of medicine, 'Ali ibn 'Abd al-Rahman al-Khazraji from Toledo, was an outstanding figure and one of the best-known physicians. A physician and an astronomer Umayya ibn 'Abd al-'Aziz ibn Abi al-Salat and Khalaf ibn 'Abass al-Qurtubi (516/1122) were also well known. (*Al-Andalusi* 1964:II/108, *Al-Hajji*, 1997:450)

During the time the Al-Muwahhiduns ruled Andalusia (541/1146-668/1269), the learning and culture continued to flourish despite political problems. The great names of that period included: Ibn Bashkwal (died 578/1182), author of *Al-Sila*; Ibn Tufayl (died 581/1184), author of *The Living son of the Watchful* (Hayy ibn Yaqzan), which is considered an important source in the study of philosophical literature; Ibn Rushd (died 594/1198), a famous philosopher, well known in the West as Averroes, who wrote valuable treatises on logic, Islamic dogmatics, Islamic philosophy, law, medicine and other scientific fields. From the standpoint of research in the field of philosophy, the treatises of Ibn Rushd from Andalusia are closely linked to the similar works by two Arabic-Islamic outstanding figures from the East – Al Farabi and Ibn Sina. Some European researchers are of the opinion that, in his commentaries of Aristotle, Ibn Rushd had surpassed the latter two. In the Middle Ages he was also known as the “writer of commentaries”. The great Italian poet, Dante Alighieri, mentions him in his *Divine Comedy* as the commentator of Aristotle's work:

*Ibn Rush wrote an incomparable commentary on the “State”. Ibn Rush also wrote The Incoherence of the Incoherence (Tahafut al-tahafut), as a response to the work by Al-Ghazali The Incoherence of the Philosophers (Tahafut al-falsifa). One can freely say that Europe was acquainted with the works of Aristotle and other Greek philosophers whose works have been preserved in the commentaries of Ibn Rushd al-Andalusi, which have been translated into Latin and Hebrew. Several copies have also been preserved in Arabic. Ibn Rushd's translations into Latin went through the second edition in 1967, as a part of the series entitled Omnia Opera Aristotelis Cum Comentariis Averrois (Esposito 2002:299).*

When the power of the Al-Muwahhiduns began to wane at the beginning of the 7<sup>th</sup> century, their influence on Andalusia and in the Arabic West weakened. Following 130 years of their rule Andalusia was reduced to a narrow region in the southwestern corner of the Peninsula, curling into a tiny state that received the name Kingdom in Grenada or Small Andalusia. It was established by Banu al-Ahmar (635/1238) and it lasted until 897/1492 Therefore, the Kingdom existed for two and a half centuries. Its long survival is considered a real miracle and is owed to the closely knit Muslim community, consistent politics and valuable civilizational achievements. (*Al-Hajji* 1997:509)

In spite of the unrest resulting from the socio-political situation, this period witnessed some great names in different branches of learning. Among the most outstanding are the following: a famous biologist, physician and a pharmacist, Ibn al-Baytar al-Malaqi, who went from Andalusia to Morocco, then to Egypt, Syria and finally Damascus, where he died in 646/1248.; Ibn Sa'id al-Andalusi, author of tafseer work entitled *Al-Mugrib fi hula al-Magrib* (died 673/1274); Abu 'Abdillah al'Qurtubi, author of a tafseer work *Al-Jami' li ahkam al-Qur'an*, who lived in Egypt where he died in 671/1272; Ibn Khaldun, founder of sociology (died 808/1405) and others.

## The Spheres of Islamic Civilization in Spain

Islamic civilization in Spain encompassed various domains, all of which left their mark on the Iberian Peninsula and Europe. The cultural climate of Andalusia made it possible for various branches of learning and cultural thought to develop. Numerous schools were established and books were procured, so that most of the people were made literate. Literature and art flourished. Edifices, which were examples of authentic Islamic heritage, were erected. As a result of this movement, Cordoba became the capital of civilization, not only in Spain, but in the West as well. In it, medical and technical schools were established, including schools for general education, as well as chemical factories and observatories. The Cordoba University was the beacon of thought, culture, and an all-encompassing bearer of

Arabic-Islamic civilization. Cordoba was the home learning where a great number of scholars and experts excelled in medicine, pharmaceuticals, chemistry, astronomy, mathematics, botany and other natural sciences. Some social sciences were also available, including philosophy, logic, translation and others. This is why many travellers and guests from different European countries visited Cordoba (*Al-Mawsu'a* 1996:IX/418).

This scientific and civilizational movement was not limited only to Cordoba, but it included other Spanish-Islamic cities, including Grenada, Toledo and other cities that were under Arabic-Islamic administration. Historical sources indicate that young men from Europe, especially Italy and France, competed to come to some of the Islamic Universities in Andalusia. One of those students who studied at the Cordoba University was Gerbert, who later became Pope, known as Silvester II. He brought to Italy the knowledge of mathematics and Arabic numerals (Busuladzic, 1997:78).

The same sources indicate that Europe, thanks to the city of Toledo where the activity of translation from Arabic to Latin was in full swing (Brenan, 1970:10), became acquainted with the works of Aristotle. Numerous works by Plato and Galen were also translated there, as well as the works by Ibn Sina and Al-Razi, Ibn Tufayl, Ibn Baja and Ibn Rushd. In a very short time these works reached all of Europe and became must reading at the great European universities. (Busuladzic, 1997:78) For six centuries, a work by Ibn Sina entitled *Al-Qanun fi al-tibb* was considered the fundamental reference book in the medical studies in Europe. This is why it had received the name *Medical Gospel*. (Ulwan, 2001:76)

The translation from Arabic into Latin continued with the same intensity even during the conversions, and even after the fall of Toledo which was an important center for translation from 519/1125 and from which science found its way to Europe. Among the most famous translators was Gerardus Cremonensi, also known as Toletanu, who came to Toledo from Italy in 545/1150. He is credited for translating more than 100 books, of which 21 were in the field of medicine, among them the work by Al-Razi entitled *Al-Mansuri* and Ibn Sina's *Al-Qanun*. However, it is quite possible that some of the works had been translated under his supervision by one of his pupils, and that some of the works had been done with the help of his colleagues, especially Galipus who was an Orientalist. The 12<sup>th</sup> century saw the Spanish and other peoples take part in the translation activities. Later, Alfonso X (650/1252-683/1284), a Castilian king, established several educational institutions and encouraged translation from Arabic into Latin, and sometimes the Castilian language.

It is a well-known fact that the works by Muslims from the East and the West, after having been translated into Latin and other European languages, were considered the most important textbooks at the European universities all the way until the 17<sup>th</sup> century. Many of the Western European historians admit to the fact that

these works played a great role in European renaissance, emphasising that without them the cultural awakening in the West would have been delayed for several more centuries (Group of authors, *Arabic-Islamic Influence on European Renaissance*, 1999:147).

\* \* \*

Various aspects of Islamic civilization can most easily be recognised on the basis of the contribution in the following fields:

**Civil engineering and Architecture.** The architectural skill and that of civil engineering are best reflected in the mosques, palaces and city planning (the city of Al-Zahra' built by 'Abd al-Rahman al-Nasir. The city of Al-Zahra', with its water fountains and public and special baths, represents a magnificent example of achievements in architecture and civil engineering, which are part of Arabic-Islamic civilization in Andalusia. The skill of decoration, drawing and carving, had a strong influence on the Europeans, especially the examples that were left by the Arabs in Andalusia, such as Alhambra (Qasr al-khamra') and the Great Mosque in Cordoba.

**Literature and Language.** As time went by the rulers of Andalusia took up more interest in learning and literature. They invited to their palaces writers and thinkers, and provided them with the conditions in which they could be prolific in their respective fields. A great number of poets, scientist and writers emerged during this period, leaving behind them magnificent works in different fields of learning. Poetry, writing of epistles and treatises on linguistics and grammar flourished. There was also a rise in compilation of dictionaries, writing of reviews and biographical works.

**Religion and Law.** Since Islam was the most important pillar of Arabic-Islamic civilization in Andalusia, the interest in Islamic studies represented a significant feature of Andalusia. Hence, came a great number of works dedicated to the Noble Qur'an and Its sciences, as well as to the Hadith of the Prophet, along with tradition and commentaries, in addition to various studies in the fields of fiqh, theology, philosophy and the history of religions.

**Applied Sciences.** The science of medicine flourished, especially in the 5<sup>th</sup> and 6<sup>th</sup> century, according to hijra (11<sup>th</sup> and 12<sup>th</sup> centuries AD). The *Andalusian* physicians and pharmacists were very skilful in surgery and the preparation of medication. Hospitals were built. Dozens of important works in medicine were written, such as the work by Al-Kattani (died 420/1029) entitled *Al-Adwiya al-mufrada* and that of Al-Zahrawi (died 403/1012) entitled *Al-Ta'rif li man 'ajaz 'an al-ta'lif*.

As far as **mathematics** is concerned, the school founded by the astronomer Musallima al-Magriti (died 394/1003), which was the first of that kind in Andalusia, made a valuable contribution to that science.

Ibn Bargūth, Al-Zarqani and others were in the field of astronomy.

Those were the most important spheres of influence of the Arab-Islamic civilization in Andalusia, which went through different phases and periods, corresponding to the political circumstances that were coming and going in Andalusia. That which leaves no doubt is that such a civilization was a product of Arabic-Islamic thinking which managed to unite its own specific thoughts and the ways that were dominant on the Iberian Peninsula before the Arabic-Islamic conquest. The Arabic-Islamic civilization achieved its strong influence thanks to religion and language. This is why some were trying to turn people away from it, one reason being that the clergymen were concerned that Latin would disappear among the Christians because they were turning to what the Arabs were writing in Arabic. (*Al-Maswu'a*, 1996:IX/418-419)

### **Andalusia – a gateway for the Islamic civilization to the West**

However, there is no doubt that the Muslims had very much so participated in the development of world civilization, thanks to the efforts of outstanding figures in different branches of learning. Today, in the libraries throughout the world we can find thousands of documents that will testify to the efforts and achievements of Arabic-Islamic civilization in the fields of astronomy, mathematics, physics, chemistry, medicine, pharmacology, geography, architecture and other branches of science. (*Al-Mawsu'a* 1996:IX/416; and for a more detailed treatment see John Esposito 2002:173-278)

Those historical documents clearly show what kind of an impact the Arabs made in the production of textiles, perfumes, soaps, ink, wax, sugar, cooking oil, gun powder, and also the invention and improvement of measuring instruments, invention of a watch hand, water mill, windmill and the telescope. The Arabs are also responsible for casting iron and coin minting, manufacture of weapons, medical supplies and surgical instruments, bridge building, manufacture of water-wheels, cooling and heating devices, building of irrigation systems, establishment of public baths, inspection towers, military forts, and other equipment and inventions for which the West gives credit to the Arabs and their civilization. Even today the world is benefiting from the numerous achievements by the Arab civilization and they are indebted to the Arabs for having discovered them. (*Al-Mawsu'a*, 1996: IX:417)

It is also important to mention that Andalusia, owing to its universities and the enthusiasm for learning which was shaped by the scholars – the seekers of sciences, libraries and translation projects, and also the freedom of thought and speech, was a part of Islamic world which had a decisive role in the transmittal of the heritage of the Arab-Islamic civilization to the West.

In the field of **philosophy** the Arab scholars had translated the most important works of classical Greek philosophy, while at the same time further elaborating on them. Al-Kindi became famous for having elaborated on Plato's and Aristotle's works. Al-Farabi for his developing of ideas about a Model City (*Al-Madina al-Fadila*), **Ibn Sina** for contributing to and strengthening rationalistic philosophy, Ibn Khaldun for his theoretical development of sociology, which is still a must-read in the study of the principles of sociology in the works of many sociologists and philosophers in the West. With his philosophy Ibn Rushd directed much attention to himself. His philosophical ideas were later elaborated on by a great number of famous philosophers in the West.

In the field of **mathematics** Al-Khawarizmi (one of the astronomers of Caliph Al-Ma'mun) established the principles of algebra, which was later, transmitted throughout the world. The Europeans took from the Arabs the concept of zero and the decimal number, and also the making of a calendar. They also took over from the Arabs the numbers that are used even today in most of the world.

In the field of **astronomy** the Muslims had invented the astrolabe, which they used to determine the time of dawn, dusk and fasting times, and eventually perfected the system of calculations – taking notice of the parallels and the meridians. They also perfected the calculations of the speed of sound and light, which served as the starting point for the Western scientists who would concern themselves with these problems later on. An Arab-Muslim scholar by the name of Al-Biruni (362/973-440/1038) managed to discover that the Earth revolved around the Sun, something that Galileo Galilei managed to “discover again” six centuries later. Arabic astronomers Al-Zarqali, Al-Fargali and Al-Fazari translated the fundamental works by Ptolemy and even contributed to them, thus making them a must-read for the European researchers and scientists that would come after them.

In the field of **medicine** the Arabs made great advances. The most outstanding contributors in the field of medicine compiled exhaustive medical dictionaries, which, after having been translated into Latin, the Europeans used as basic literature.

It was similar in other fields of learning, skills and arts. The Arabic-Islamic scholars gave their outstanding contribution in the development of world civilization.

It has already been mentioned that translation into Latin and other European languages was fully expressed in Islamic Spain (Andalusia) and that Europe took great advantage of it. The translated works were disseminated throughout Europe in the Middle Ages and were instrumental in extending cultural influence from Islamic Spain to Europe. This influence spread even more widely with the invention of printing at the beginning of the Renaissance period. Medical and other scientific literature, translated from Arabic into Latin,

were the first printed works. This is how the work by Ibn Sina entitled *Al-Qanun fi al-tibb*, which was translated by Cremonensi into Latin, went through several editions and was printed in different cities, which amply speaks of its popularity and the great interest it provoked.

The historical sources indicate that the work *Al-Qanun fi al-tibb* was printed in Strasburg in 1473. and 1480.; in Milan in 1473.; in Padoa in 1474. and 1479.; in Venice in 1482., 1486., 1489. and 1490.; in Napoli in 1491. The last European edition was printed in 1608 and it also contained a number of illustrations and colour graphs. In 1507. it was printed in Venice in Gothic. An "arabised" scientist, Andreas al-Pagus (1450-1522) translated the work into Latin from its original, and the translation was printed in Venice in 1527. and 1544., following the translator's death. The work was printed once again in 1556. along with the commentary by the translator's nephews Paulus al-Pagus and Benedictus Rinius, and added was a commentary of some terms and Ibn Sina's bibliography. This translation was printed in Basel in 1556. *Al-Qanun* was also printed in Hebrew translation in 1491. and 1608. The Arabic original was printed in Rome in 1593. along with a supplement containing some other works by Ibn Sina in logic and apologetics. These facts prove that Europe had a great number of physicians who knew Arabic. Many commentaries on this work were published in Latin, the most important among them being the commentary by Giovanni Baptiste Montanija, printed in Wittenberg in 1551. and in Venice in 1554. This speaks volumes of the importance of this work for the Europeans and their great interest in it. This is why it served as a fundamental work which the physicians consulted on daily basis, and in the medical schools of Europe it was used as a text-book all the way until the end of the 17<sup>th</sup> century. In the Middle Ages and the Renaissance Period a great number of writers of Europe cited the works by Al-Razi, Ibn Rushd, Al-Zahrawi, and other medical works which were a must-read in the educated circles of Europe. (For more on this in: Mahmud al-Galili, *Ta'thir al-tibb al-'arabi fi al-hadara al-urubbiyya fi 'asr al-nahda*, <http://www.islamonline.net>)

### **Comments by some of the European researchers on the role Andalusia played in European Renaissance**

There is no doubt that the Arab Muslims played an outstanding role in the beginnings of the world scientific renaissance. Islamic civilization had indisputably given to Europe a decisive assistance in the shaping-up of the renaissance. Many objective European researchers have testified to the important role Arabs and Muslims in general, as well as the role Islamic Spain, played in European renaissance.

In the following lines we will present a number of such testimonies. In his work *Views on the History of*

*the World*, professor Albendet Nehru, when describing Arab scientists, says: They are truly the founders of modern science. Baghdad had surpassed all the European capitals, except Cordoba, the capital of the Arabic Spain... Necessary was the emergence of Ibn al-Haytam, Ibn-Sina, Al-Khawarizmi and Al-Biruni, so that Galileo Galilei, Kepler, Copernicus, Newton and others could follow." (Ali 1997:115)

In his work *Arab Civilization*, Dr. Gustav Loubon emphasises the following: "Roger Bacon (1214-1294) is most often credited with the earliest introduction of the empirical methods and critical observation, as the basic prerequisites for fruitful scientific research. Concerning this, it should be known that it was the principle to which the Arabs adhered to all along." (Mahmud n.d.:146, Briiffault 1928:200)

The same author writes: "If we go back to the 9<sup>th</sup> and 10<sup>th</sup> century AD when the Islamic civilization thrived in Spain, we will see that the cultural centres in Europe were fortified castles inhabited by the licentious nobility who took pride in not knowing how to read, and the educated Christians were found among the poor monks and priests. Primitivism and barbarism dominated across Europe and Europe wasn't even aware of it. There was no interest in learning all the way until the 11<sup>th</sup> and 12<sup>th</sup> centuries, when individuals, who wished to remove the veil of ignorance from their communities, began to appear and looked to Muslims who were the only leaders in learning." (Loubon, 1964)

In the work *Legacy of Islam*, a group of authors – orientologists, say the following:

*"It is known for a fact that, while Europe was staggering under a heap of misfortunes and material and spiritual neglect, the Muslims of Andalusia were building a brilliant civilization and an economically well-organised life. The Andalusians played a decisive role in the development of science, philosophy, poetry and art, exerting influence on the most famous figures of Christian thought in the 13<sup>th</sup> century, such as Thomas Aquinas (1225-1274) and Dante Alighieri (1265-1321). At that time, Spain was the beacon for all of Europe."* (*Legacy of Islam, 1963:II/10*)

While comparing the Islamic civilization in Andalusia and the prevailing conditions in Europe, professor Victor Robinson made the following observation:

*Europe was darken at sunset, Cordoba shone with public lamps; Europe was dirty, Cordoba built a thousand baths; Europe was covered with vermin, Cordoba changed its undergarments daily; Europe lay in mud, Cordoba streets were paved; Europe's palaces had smoke-holes in the ceiling, Cordoba's arabesques were exquisite; Europe's nobility could not sign its name, Cordoba's children went to school. Concerning these details, Phillip Hitti observes that while the Islamic rulers in the East, such as Harun al-Rashid and Al-Ma'mun, were reading Greek and Persian philosophy, their contemporaries*



in the West, such as Carl the Great, had difficulties signing their names. Hitti does not pass over this fact in silence, even though he is known for his severe criticism of Islam and the Muslims. (Sharif, 1990:353)

During that time, Europe's monks could not read the baptismal service, while Cordoba's teachers created a library of Alexandrian dimensions ('Ulwan 2001:99-100).

**Acknowledgements:** None.

**Conflict of interest:** None to declare.

## References

1. 'Abd al-Halim Mahmud, *Urruba wa al-islam*, Dar al-ma'arif, third edition, Cairo.
2. 'Ulwan, 'Abdullah Nasih, *Ma'alim al-hadara fi al-islam wa atharuha fi al-nahda al-urubiyya*, Dar al-Salam, second edition, Cairo, 2001.
3. Abdullah ibn Abdillan al-Bakri, *Jugrafiya al-Andalus wa Urubba*, Beirut, 1968.
4. Al-Hajji, 'Abd al-Rahman 'Ali, *Al-Tarikh al-andalusi*, fifth edition, Dar al-Qalam, Damascus, 1997.
5. Al-Hajji, 'Abd al-Rahman 'Ali, *Andalusian diplomatic relations with Western Europe*, Beirut, 1970.
6. Ali Husayn al-Shatat, *Tarikh al-Islam fi al-Andalus*, Dar Quba, Cairo, 2001.
7. Al-Mawsu'a al-'arabiyya al-'alamiyya, *Mu'assasa 'amal al-mawsu'a li al-nashr wa al-tawzi*, Saudi Arabia, 1416/1996
8. Al-Mu'gam al-wasit, *Magma' al-luga al-'arabiyya*, second edition, Cairo, year of publication unknown.
9. Al-Mulla, Ahmad 'Ali, *Athar al-'ulama' al-muslimin fi al-hadara al-urubiyya*, Dar al-fikr, Damascus, 1996.
10. Gerald Brenan, *The Literature of the Spanish People*, Belgrade, 1970.
11. Group of authors, *Arabic-Islamic Influence on European Renaissance*, Sarajevo, 1999.
12. Group of authors: *Legacy of Islam, Translated into Arabic and published under the title of Turath al-islam by Husayn Mu'nis*. Cairo, 1963.
13. Gustav Loubon, *Hadara al-'Arab*, Translation from French: 'Adil Zu'aytar, Cairo, 1964.
14. Husayn Mu'nis, *Fagr al-Andalus*, Cairo, 1959.
15. Ibn Sa'id al-Andalusi, *Al-Mugrib fi hula al-Magrib*, edited by: Shawqi Dayf, Cairo, 1964. II
16. J. Briffault, *The Making of Humanity*, London, 1928.
17. John Esposito, *The Oxford History of Islam*, Belgrade, 2002.
18. Mahmud al-Galili, *Ta'thir al-tibb al-'arabi fi al-hadara al-urubiyya fi 'asr al-nahda*, <http://www.islamonline.net>.
19. Muhammad 'Abdullah 'Anan, *Dawla al-islam fi al-Andalus*, Cairo, 1969.
20. Mustafa Busuladzic, *Muslims in Europe*, Sarajevo, 1997.
21. Sa'id 'Abd al-Fattah 'Ashur, *Urubba al-'usur al-wusta*, Cairo, 1966.
22. *Sahih al-Bukhari vith Fath al-Bari*, Dar al-Rayyan, second edition, Cairo, 1987.
23. *Sahih Muslim*, Saad Suubbar, Riyadh; Dar al-Fiyha, Damascus, year of publication unknown.
24. Sharif MM: *A History of Muslim Philosophy with short accounts of other disciplines and the Modern Renaissance in Muslim Lands*. Zagreb, 1990.
25. Yusuf al-Qaradawi, *Al-Sunna masdaran li al-ma'rifa wa al-hadara*, Dar al-Shuruq, Cairo, 1997.

Correspondence:

Professor Safvet Halilović, PhD

Full professor of Tafsir and Quranic Anthropology

(and member of the Board of Trustees of the International Union for Muslim Scholars)

Faculty of Islamic Education of the University in Zenica

J. Neidharta 15, 72000 Zenica, Bosnia and Herzegovina

E-mail: safwatmustafa25@yahoo.com