

Decline of Arab Renaissance

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Abstract: Yes there was a decline. But what are the reasons? Some authors relate it to al-Ghazāli's book, *Tahatuf al-Falāsifa*, others attribute it to the invasion of Baghdad by the Mongol. And yet, scientists lived, worked after al-Ghazāli's book and an observatory was installed after the invasion. The break or decline took place around the 16th century. It witnessed the birth of modern science, a scale-split of political power within the Islamic World and the discovery of the New World. These events re-oriented wealth and trade. Further, the creation of new institutions had to do with the new wealth, for the wealth accumulated returned to fund other ideas. This situation was not similar to the early 9th century Baghdad. All these factors contributed to what is named "Decline".

Keywords: Decline, reasons, modern science, new world, institutions, split of political power.

Having discussed in previous articles, *Hospitals, Pharmacies, Education and Written Numerical Numbers during the Arab Renaissance*, it is time to examine the possible reasons of the decline of this period.

Yes, there was a decline. But what are the reasons? Some authors relate it to al-Ghazāli's book (1058-1111) *Tahatuf al-Falāsifa* i.e. *Incoherence of the Philosophers* which marked a major turn in Islamic epistemology. The encounter with skepticism led al-Ghazāli to investigate the belief that all casual events and interactions are not product of material conjunctions but rather the immediate and present will of God. Yet, Ibn Rush in the next century drafted a lengthy rebuttal of al-Ghazāli's incoherence, entitled *The Incoherence of the Incoherence*.

Others attributed the decline to the invasion of Baghdad by the Mongol in 1258. Baghdad, the capital of the Abbasid Caliphate was sacked in 13 days under the command of Hulagu Khan. Numerous atrocities were committed and residents were massacred. Further, the Abbasid's vast libraries as well as *The House of Wisdom* where Moslem, Christian and Jew scholars sought to translate and gather all the world knowledge into Arabic, containing countless precious historical documents and books on subjects ranging from medicine to astronomy were destroyed. Yet, there is a debate among historians about the level of destructions of library books. It is not to be forgotten that Nasr al-Din al-Tusi (1201-1274) astronomer and mathematician was a learned member of the Mongol and might have not allowed the destruction of *The House of Wisdom*. Scientists such as al-Jazari (1136-1206), al-Baghdadi (1162-1231), Ibn al-Shāter (1304-1375) lived and worked after al-Ghazāli's book. Further, an observatory was installed between 1259-1260 in Marāgha (East Azerbaijan-Iran) and a Library containing 400 000 books existed. Ibn al-Fuwati (1244-1329) kept a diary of the visitors to the library.

If one goes farther in the past searching for other reasons for the Decline, one could include reasons as the crusaders, mainly the first crusade 1095-6 led by 'horde of vandal franks' and then other crusades. Turmoil also existed in the region: the Fatimid losing power on what is at present Lebanon and Syria. The Mamluk taking over, the Seljuk crunching what remained of the Byzantine Empire. If Dar al-Hikma in Baghdad was mostly assumed to have been destroyed by the Mongols in 1258, what about Dar al-Ilm, house of knowledge, in Tripoli, Lebanon, which contained 100 000 books, probably destroyed during crusaders' time (Maalouf 1983:58).

Something should have happened in the 16th century which was crucial, not what is believed to be the reasons for the decline. And yet, the 16th century European Renaissance mainly based on Copernicus (1473-1543) and Ptolemy (100-170 A.D.) among others used mathematical theorems and techniques, which must have seemed as novelties, were extensively used by Arabic writing astronomers for centuries. These have continuous traditions in the Islamic domain for which one finds no parallel components in the Latin West. The only two theorems that were not found in Euclid (323- 283 B.C.) or Ptolemy were the theorems of Urdi (1200-1266) and al-Tusi.

The ancient Greek tradition predicted that when the moon will be quarter, it will appear twice as big as a full moon. This led Ibn al-Shāter as a mathematician and scientist to say nothing as such has been seen which led him back to work, for doubt is the preliminary condition of knowledge. Around a century later Copernicus adopted the mathematics of Ibn al-Shāter. Further, Antonio de Sangallo the Younger (1484-1546), who built St. Peter Cathedral in Rome had in his papers kept at the Uffizi in Florence a detailed drawing of an astrolabe that was made in Baghdad around the year 850 A.D. The Syrian Jacobite Patriarch Ni'mtallah (1510-1581) contributed to reforming the calendar as the celebration of Easter was continuing to slip backwards. In fact, the astronomical books of Ni'mtallah contained values of the lunar month and the solar year that were much refined than the values that were found in the old Greek sources or the prevailing medieval European ones. Ni'mtallah then became an actual participant in the making of the European Renaissance. With the above participant scientists, mathematicians and scholars, one may say that Arab discoveries and sciences undermined European Renaissance.

In fact, the concept of cultural decline or Renaissance is rarely datable to a specific decade or even century. The years 1500-1700 witnessed the creation of scientific revolutions in Europe and marked the birth of modern science. The political history of that period may be useful in revealing some features of the decline. A large-scale split of political power took place within the Islamic World. That split produced three great Muslim Empires which came into existence around the same time: The Safavids (1502-1736) in what is modern-day Iran; The Mughals (c.1520-mid 1700) which spread to the Indian subcontinent and the Ottomans (c.1453-1920) that swept through the eastern Mediterranean as far down as Egypt and large parts of North Africa. Also, another event took place toward the end of the XVth century and that was the discovery of the New World.

The latter disrupted the well-established Euro-Asian trade routes that used to carry the commercial wealth into the Islamic world for centuries. It also brought new raw material into European countries which were almost depleted in the Islamic lands. To understand the decline of Arab Renaissance, one should also examine the socio-financial and political changes that were taking place around the world. Then the *Age of Discovery* in the XVIIth century tracked for more lands to discover, more resources to acquire, and more colonies and slave labor.

Events of the XIIIth and early XVIIth century re-oriented wealth and trade. Circumnavigation around Africa and the colonial exploration that reached South Asia and the Far East re-routed trade *around* the Muslim world rather than *through* it. On the whole, Islamic lands lost the commercial initiative they once had and became more and more dependent on whatever wealth the European merchants were willing to part with, rather than trading with ports in the Islamic world. Also the sack of Constantinople (1204) toppled the direction of trade brought from the Byzantine Empire.

Yet, there were Venetian merchants who brought some wealth to Damascus by commissioning household products, but that meant that Damascene workers began to enter into a relationship of dependence as they were working for a foreign master. This dependence began to characterize the relationship between the Islamic world and Europe until the present.

In the beginning of the XVIIth century, the creation of new institutions that had no medieval parallels may have had something to do with this new acquired wealth. During the first half of the XVIIth century, Europe witnessed the rise of scientific and royal academies. These academies offered intellectual elites an environment of scientific and intellectual competition. The Academia de Lincei (1603), The Royal Society of

England (1662) and L'Academie des Sciences of France (1666) were the first scientific institutions. The Academia de Lincei had Galileo (ca. 1609) as a member. And one of the earliest projects of the Academia de Lincei was to look to the New World for new sources of wealth and medical plants were a suited target. Institutions as the academies, where men of science were financed to further research, if one scientist had a commercial windfall, then the wealth accumulated from the new idea would be returned to fund other ideas, allowing the patron to keep some of the profit aside. This situation was not similar to the early IXth century Baghdad. The major scientific developments in Europe during the XVIth and XVIIth centuries were the product of this dynamic cycle of wealth, initiated by the "discovery" of the New World. By this new dynamic cycle, European science began to rise and the Islamic world was left behind. The age of decline was less caused by factors as the book of al-Ghazāli or the invasion of the Mongols, but rather by the geopolitical disturbances in the Levant, including the crusaders' attacks, the Byzantine Empire with its inner and external turmoil, and the circumstances of the XVIth century as a result of the discovery of the *New World*.

With the above and hence, the European superiority and the United States as well, in commercial scientific and technological terms, into further acquisitions of resources and manpower from the rest of the world, all non-Western cultures looked like they were experiencing an age of decline. Further, the subjugation of the rest of the world to military occupation, colonialism and cultural colonialism did not help in leveling the field of competition.

On the other hand, in the Islamic world the institutions of science such as observatory, hospitals and even the various houses of science were mainly patronized by wealthy individuals and at times by ruling sultan were not directed at acquisition of further wealth. It was science for science sake.

In sum, Arab scientific discoveries through many previous centuries undermined the European renaissance.. The decline of Arab renaissance was basically due to the socio-economic and geopolitical changes that took place around the XIth and XIIIth century, to the Age of Discovery, rerouting trade around the Muslim world and its consequences. Further, the approach of scientific academies financed to further research and wealth accumulation, the subjugation of the East to the Western World were all factors that contributed to what is named "Decline".

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