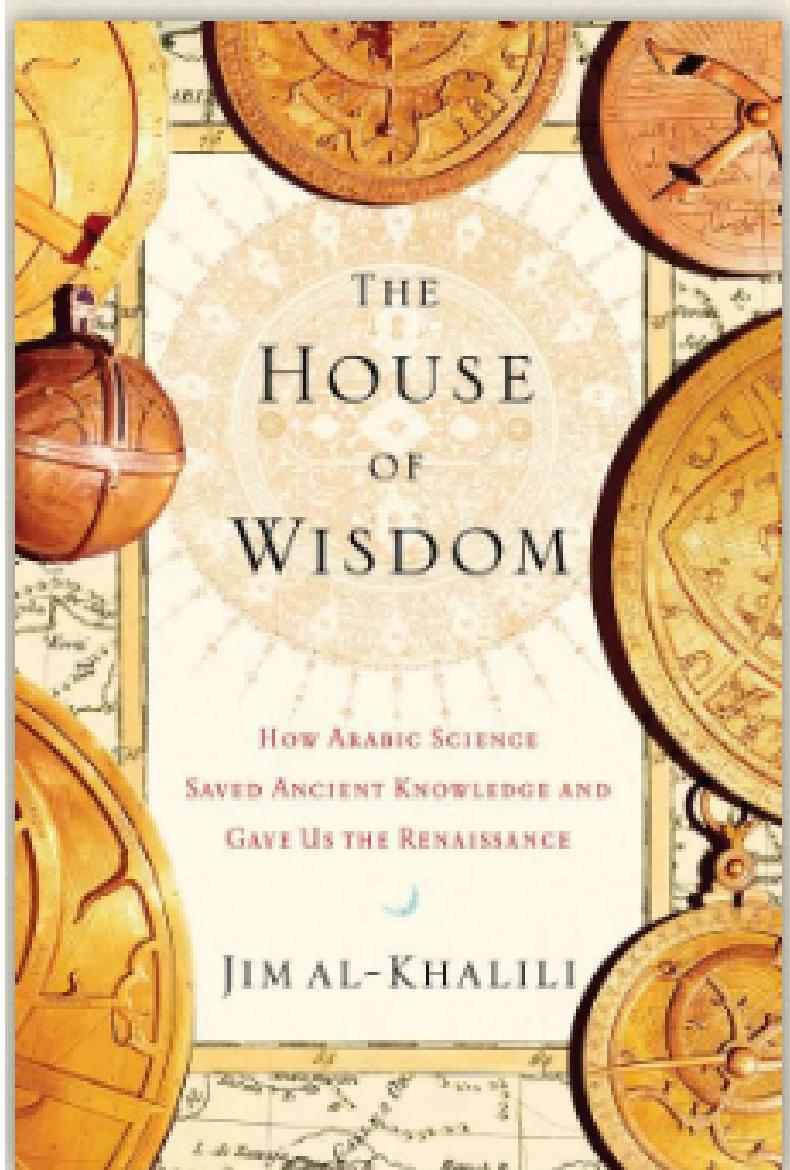


*Did Islamic contribution foster
the European Renaissance?*

Baghdad??

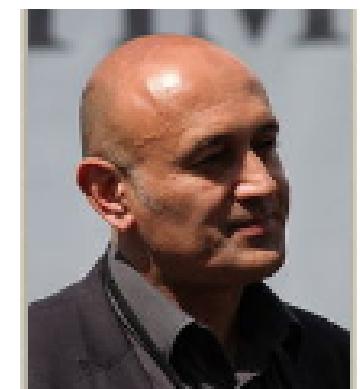






The House of Wisdom: How Arabic Science Saved Ancient Knowledge and Gave Us the Renaissance

by
Jim Al-Khalili



[http://bridgingcultures.neh.gov/muslimjourneys/items/
show/20](http://bridgingcultures.neh.gov/muslimjourneys/items/show/20)

In two phases...

- Between the middle of 8th century and the beginning of 13th century - Muslims scholars translated the ancient treasures into Arabic
- the 15th century - these works were recovered, and supplemented by the European and Jewish scholars, paving the way for Western Europe's Renaissance

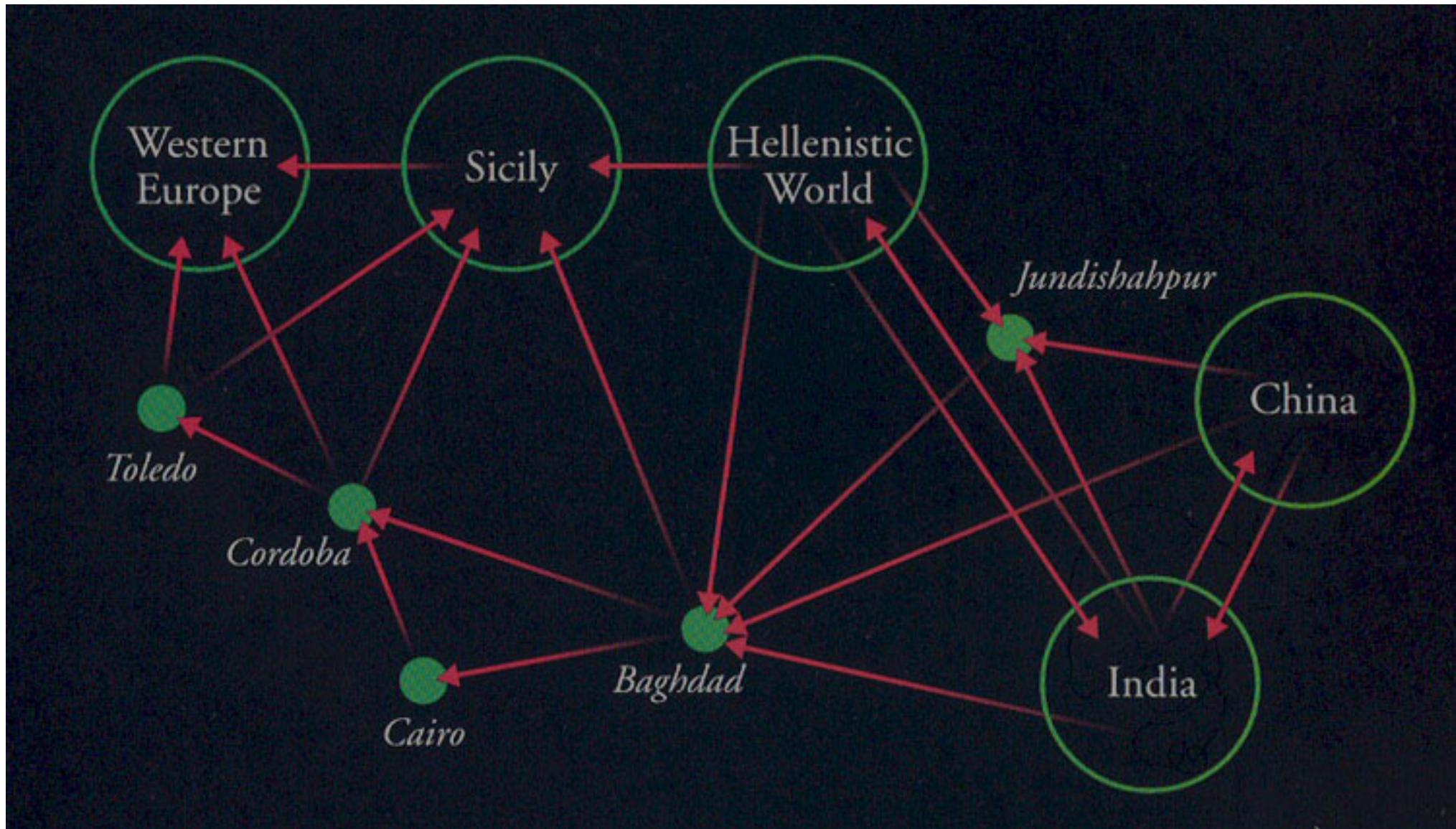
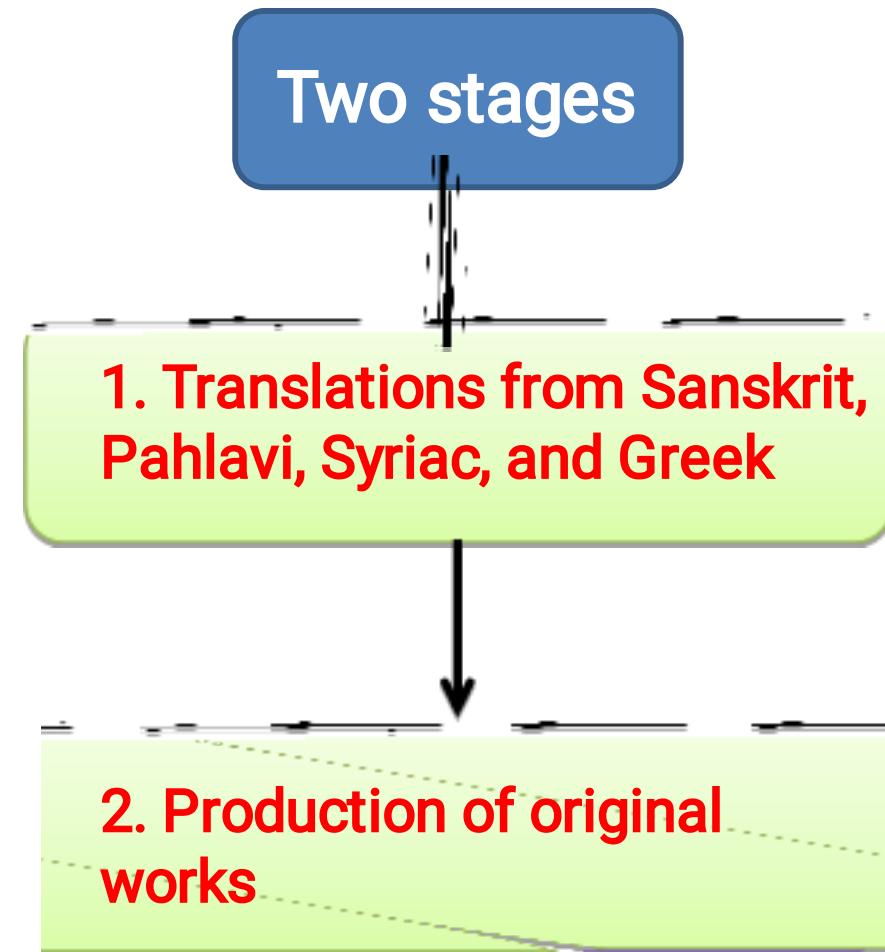


Diagram of the transfer of medical knowledge to Europe from Tschanz, David. "Saudi Aramco World : The Arab Roots of European Medicine," 48:3 (May/June 1997), pp. 20-31.

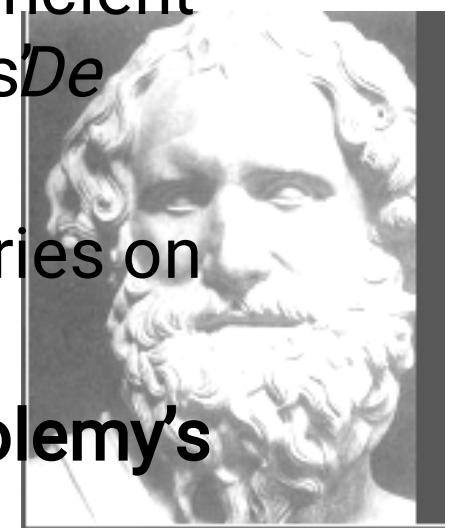
Intellectual Developments in Baghdad

- The abode of peace!
- new class of businessman, craftsmen, merchants, theologians and scholars arose
- Harun al-Rashid's court attracted eminent poets, scholars, musicians
- Science and art was patronized by the Caliph



Translations of Greek Mathematics

- Euclid, Ptolemy, Autolycus, Aristarchos and Archimedes
- **Al-Hajaj ibn Yousuf ibn Mater** was the first translator (829) of Ptolemy's astronomical treatise ***Megale Syntaxis*** (**al-Majisti**) and Euclid's ***Elements***.
- **Abdur Rahman** and **Muhammad Ibn Muhammad Baqi** wrote commentaries on the 10th book of Euclid. The latter's contribution was translated into Latin by Gerard of Cremona and edited by H. Suter in 1907.
- **Abu Yahya ibn Al-Bitriq** translated numerous ancient medical works; Galen's ***Simplicia***, Hippocrates' ***De Alimento***, Ptolemy's ***Quadripartitum***
- **Ibrahim Ibn al-Zaya al-Misri** wrote commentaries on Ptolemy's ***Centiloquim*** and ***Proportions***
- **Abu al- Abbas Nayrizi** – commentaries on Ptolemy's ***Almagest*** and ***Tetrabiblos***



Institute of Advance Study

- *Bayt al-Hikmah*
- al-Mamun al-Rashid
- 200,000 dinars
- huge library, an observatory, houses for scientists, bureau of translation, several copyists, and some basic scientific instruments
- any faith, region or culture



Name	Works/Accomplishments	Other remarks (if any)
Abu Zakariya Yuhanna Ibn Masawayh	Greek medical works into Arabic; diffusion of translated works	the first director
Al-Abbas al-Jawhari	made observations in Baghdad ; commentary on Euclid's <i>Elements</i>	--
Hunain Ibn Ishaq	medical and philosophical works of Galen; Aristotle's physics & Old Testament ; traveled to Asia Minor to search for rare medical manuscripts	the second director; students completed the translation of Plato, Hippocrates, Ptolemy, Euclid, and Pythagoras into Arabic, and made great original discoveries in arithmetic, particularly in integral calculus and spherical astronomy
Hubaysh	translated 35 medical works besides three books of Galen into Syriac <i>On the Movement of the Chest</i> , <i>On the Voice and Ethics</i>	

Name	Works/Accomplishments	Other remarks (if any)
Musa Al-Khawrizmi	book on algebra, <i>Al-Maqalafi Hisab-al-Jabrwa-al- Muqabilah</i> , was also translated into Latin in the 12 th century	it introduced this new science to the West which was completely unknown till then; several of his books were readily translated into a number of other languages, and, in fact, constituted the university textbooks till the 16th century
Yahya ibn Batriq	Plato's <i>Timaeos</i> , Hippocrates books on the signs of death, various works of Aristotle, Galen's <i>Theriaca, and isonem and Secretum Secretorum</i>	
Yaqoob Al-Kindi	Theology of Aristotle ; 241 books: Astronomy 16, Arithmetic 11, Geometry 32, Medicine 22, Physics 12, Philosophy 22, Logic 9, Psychology 5 and Music 7	
Qusta ibn Luqa	Heron's <i>Mechanics & Meteora</i> , Catalog of Galen's works, Physics of Aristotle; revised various translations of Euclid's books on geometry	



The Spanish centres of learning and research

- Cordoba's workshops were producing some 60,000 bound volumes each year.
- Students from many European countries flocked to **Cordoba, Toledo, Granada and Seville** to study sciences and other disciplines.
- 400,000 volumes in King Alfred's library amounted to more books than all the libraries of the rest of Europe put together; from China the skill of making paper
- Cordova – 'The Jewel of the World'

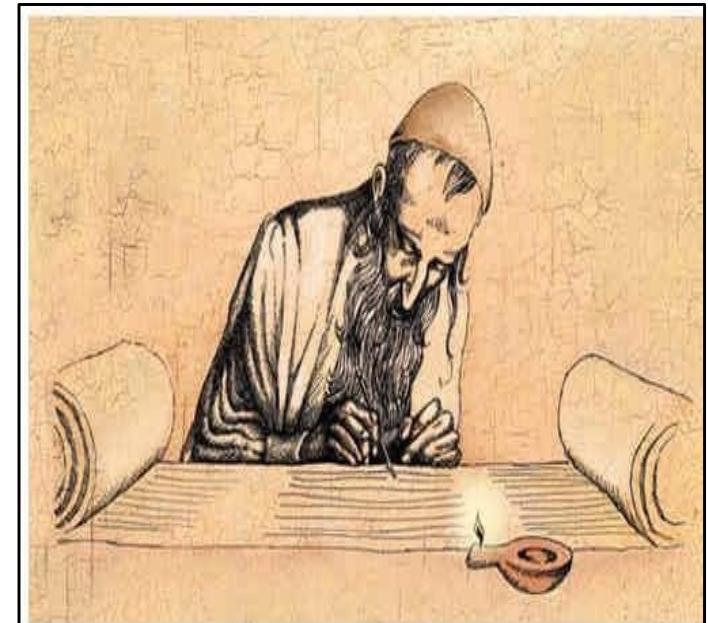


From Arabic to European languages through Latin

- 12th c. - Translations from Arabic into Latin
- 13th – 14th c.s - translations in various European languages
- Spain - the leading role in transmitting the Islamic learning to Western Europe
- The translation work was carried on at Barcelona, Tarazona, Leon, Pamplona, Toulouse, Narbonne, Marseilles; Toledo the chief center
- Within Europe men of diverse learning traveled to Islamic Spain to study; chief among them were Gerbert of Aurillac, Adealrd of Bath, Plato of Tavoli, Robert of Chester, Herman of Carinthia, Rudolph of Bruges, Gerard of Cremona and Michael Scott.
- The teachings and influences of the Arabs, according to C. Elgood, spread through Montpellier and Bologna to every medical school in Western Europe.
- Ibn-Sina and al-Razi's textbooks were taught across European Universities.

The role of the Jews

- Jews were the great exponents of Islamic learning.
- In Italy they founded schools along the line of Andulasian schools in Bari, Salerno, Tarentum.
- In England they established the first school of science in Oxford where Arabian sciences were taught.
- 14th c. translators - Moses ben Solomon, Qalonymos, Samuel ben Judah, Samuel ibn Motot, Abraham Abigdor, Solomon ben David



Did Islamic contribution foster the European Renaissance?

- “It was under the influence of Arabian and Moorish revival of culture and not in the 15th century, that the real renaissance took place. Spain and not Italy, was the cradle of the rebirth of Europe.”

Robert Briffault, *The Making of Humanity*

- The Arabs “were the medium through which ancient science and philosophy were recovered, supplemented and transmitted in such a way as to make possible the renaissance of western Europe.”

Philip K. Hitti, *History of the Arabs*

- "I have to deplore the systematic manner in which the literature of Europe it has contrived to put out of sight our scientific obligation to the Muhammadans. Surely they cannot be much longer hidden. Injustice founded on religious rancour and national conceit cannot be perpetuated for ever."

John William Draper, *The Intellectual Development of Europe*

John Davenport, Stanley Lane Poole, M.P.E. Berthelot ; Holmyard, Max Meyerhof, George Sarton, Philip K. Hitti, Robert Briffault and John William Draper have