

into Arabic, or from Sanskrit into Persian and then from Persian into Arabic.

Numerically, it seems, the most important body of material translated was made up of Greek works. The translators were particularly interested in scientific works. These were held to be the most valuable and important. Some literary works were translated, such as *Kalila and Dimna*, an originally Sanskrit work that had been translated into Persian and was translated into Arabic in the early Abbasid period by Ibn al-Muqaffa`. This work was a collection of advice tales with animal characters, but was understood to be valuable background for rulers and government officials. The scientific works translated focused primarily on astronomy, arithmetic, geometry, medicine, and philosophy, and secondarily on other topics such as music. Many Greek works became standard textbooks in the Islamic world, including Euclid's *Elements*, on geometry, Ptolemy's *Almagest* and *Tetrabiblos*, on astronomy; Aristotle's *Organon*, on logic, dialectic, and philosophy; and Galen's sixteen books, which in many cases constituted the entire curriculum for the study of medicine.

Many of the most famous translators were Middle Eastern Christians who spoke Arabic as a native language but had learned Syriac and Greek in the course of their religious education. Perhaps the most famous is Hunayn ibn Ishaq, who translated hundreds of works, including most of the books of Galen, in addition to supervising a workshop of other translators, including his nephew and others.

The translation movement played an important role in preserving classical heritage. There are still many classical Greek works that have only been preserved in Arabic versions—the original Greek versions have been lost. Greek manuscripts were copied in Byzantine territory specifically for the translation movement—it kick-started a revival of scholarship in Byzantium itself. The Islamic world played a crucial role, in addition, in transmitting knowledge of these works to medieval Europe. Primarily in Spain and Sicily, many were translated into Latin. However, the scholars of the Islamic world were not mere transmitters. They assimilated and built on the achievements of the Greeks in nearly every field. They developed algebra, produced the general solution to the quadratic equation, discovered the lesser circulation of blood in the human body, and made many other similar advances. Examples of works by Muslim scholars that criticized and revised classical scholarship include Abu Bakr al-Razi's *Doubts about Galen*, on medicine, Ibn al-Haytham's *Doubts about Ptolemy*, on astronomy, and Avicenna's *Eastern Philosophy*, which outlines his major areas of disagreement with Aristotle in philosophy. Moreover, the effect of the translation movement reach beyond the scientific fields in which works were actually translated, but also had a profound effect on the theoretical discussion of grammar, theology, law, and the

other Islamic sciences. By the end of the ninth century, they were the most advanced scholars in the world in most fields, something that would have been impossible without the translation movement.

The translation movement ended in the late tenth and early eleventh century. Scholars in the Islamic world had in many cases surpassed the translated works. Sources of patronage dwindled. A conservative coalition opposed to the rational approach adopted by most scholars in the sciences grew strong, and was supported by the Caliph al-Q•dir (991-1031) and the Turkish ruler of Ghaznah, Mahmud. Mahmud's conquest of the Buwayhid capital of Rayy in Iran in 1020 and the Seljuk conquest of Baghdad in 1055 put an end to much official support. Funds were funeled into other areas where the study of the rational sciences was limited, such as madrasas or colleges of Islamic law, and the religious sciences were favored overall. Moreover, there was less and less tolerance for the strictly rational approach in society at large and among scholars as well.

#### **Exercise I: Quiz**

1. When did the Abbasid Caliphs come to power?
  - a. 632 C.E.
  - b. 651 C.E.
  - c. 661 C.E.
  - d. 750 C.E.
  
2. Ibn al-Nadim was which of the following?
  - a. a Shiite
  - b. a Mu` tazili
  - c. a bookseller
  - d. all of the above
  
3. When did Ibn al-Nadim write the *Fihrist*?
  - a. 987 C.E.
  - b. 377 C.E.
  - c. 750 C.E.
  - d. 895 C.E.
  
4. The most popular writing material during Ibn al-Nadim's time was
  - a. papyrus
  - b. stone
  - c. pulp paper
  - d. parchment
  
5. Which of the following was a famous translator?
  - a. Ibn al-Nadim
  - b. al-Mansur
  - c. Hunayn ibn Ishaq
  - d. Aristotle

6. Scholars of the medieval Islamic empire
  - a. Ignored Greek, Persian, and Sanskrit works.
  - b. Transmitted Western European knowledge to the Middle East and India.
  - c. Made significant advances in mathematics and medicine.
  - d. Specialized exclusively in the Islamic religious sciences.
  
7. Who of the following patronized translators?
  - a. The Caliph `Ali ibn Abi Talib.
  - b. The Caliph al-Mansur.
  - c. The Caliph Abu Bakr.
  - d. The Caliph al-Qadir.
  
8. When did the Buwayhids conquer Baghdad?
  - a. 750 C.E.
  - b. 800 C.E.
  - c. 900 C.E.
  - d. 945 C.E.
  
9. What is a *warrag*?
  - a. a government official
  - b. a caliph's companion
  - c. a bookseller
  - d. a writing instrument
  
10. The works of Galen focus on:
  - a. astronomy
  - b. medicine
  - c. logic
  - d. geometry

**The Organization of Knowledge:**

By the tenth century, the following division of the sciences into two main groups had become standard:

I. The Religious Sciences (*al-fiulüm al-sharfıyah*)  
 = The Traditional, or Transmitted, Sciences (*al-fiulüm al-naqlıyah*)

Qur••nic sciences; Arabic grammar, lexicography, and rhetoric; poetry, prosody;  
 Islamic law; Islamic theology; hadith (oral reports about the Prophet which constitute scripture)

II. The Sciences of the Ancients (*fiulüm al-aw••il*)

= The Rational Sciences (*al-fiulüm al-fiaqlıyah*)  
 arithmetic, geometry, astronomy, medicine, logic, philosophy, music

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**Ibn `azm (Cordoba, d. 1064), *Mar•tib al-fiulü,m* "The Divisions of the Sciences"**

"The prevailing sciences today are divided into seven, and they are the same for all people in all places and at all times. They are:

1. the religious law of every nation
2. the science of history of a nation
3. the science of language of a nation

Nations differ from one another by virtue of these three sciences.

The remaining four sciences are common to all nations and consist of:

4. philosophy, which is the knowledge of things as they are and according to their definitions from the highest generalities to particulars; it also includes the knowledge of metaphysics
5. astronomy
6. arithmetic
7. medicine, which deals with the body

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**The Organization of *al-Fihrist* "The Catalogue" 377A.H. = 987 C.E.**

I. Scripture.

1. Scripts of the world.
2. Sacred Texts of the world: Sabian, Jewish, and Christian.
3. Qur••nic scholarship.

II. Grammar and lexicography.

1. The beginnings of Arabic grammar; the Basran school of Arabic grammar and lexicography.
2. The Kufan school of Arabic grammar and lexicography.
3. Grammarians and lexicographers who mixed the methods of the two schools.

III. History and genealogy.

1. Historians and genealogists.
2. Abbasid historians.
3. Other historians.

IV. Poets and poetry

1. Pre-Abbasid poets and transmitters of poetry.
2. "Modern poets"

V. Theology.

1. Mufitazilah and Murji•ah.
2. Shiite theologians.
3. Theologians of the Mujabbirah and ~ashwiyah.
4. Theologians of the Khariijis.
5. Ascetics and Sufis.  
    Ismafilis

VI. Law.

1. Malik and the Malikis.
2. Ab,u Hanifah and the Hanafis.
3. Shafifiis.
4. Da'ud and the Zahiris.
5. Jurists of the Shiites.
6. Sufyan al-Thawri and others (Hadith specialists).
7. al-Tabari and his followers.
8. Khariji jurists.

VII. Sciences.

1. Philosophy and Logic.
2. Mathematics and Geometry.
3. Medicine.

VIII. Anecdotal and Miscellaneous literature.

1. Fables and tales.
2. Magic and the occult.
3. Anecdotal and miscellaneous literature.

IX.

1. Non-monotheist religions.
2. Heresiography.

X. Alchemy.

**Exercise II: Answer the following questions:**

1. How is the organization of the Fihrist related to the distinction between the traditional sciences and the rational sciences?
2. Which sections are devoted to distinctly Arabic and/or Islamic topics?
3. Which sections are devoted to non-arabic and/or non-Islamic topics?
4. What is alchemy?
5. Is there some logic to the order of the topics presented, either within a single chapter or in terms of the order of the chapters themselves?
6. Compare and contrast Ibn al-Nadim's classification of knowledge with that of Ibn Hazm above.

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**Emory University Departments (modified]  
Humanities:**