

Modest Variations—
Theoretical Tradition and Practical Innovation
in the Mechanical Arts from Antiquity
to the Arab Middle Ages

**1. Reflections on the Cultural Transmission
of Texts in the Applied Sciences and the Arts from
Classical Antiquity and the Hellenistic Period
to the Early Islamic Period**

Today it is a well-known historical fact that the Islamic cultures preserved, utilised, and developed a range of classical, mainly Greek sciences, especially the natural sciences, medicine, and philosophy parallel to the Byzantine and Western European tradition. This reception by Arab scholars applies to a much lesser degree to literary and aphoristic texts, and still less or nothing was handed down and translated about the socio-historical and religious background of “academic life” in the ancient world. When and how the transmission from Greek, Syriac, Hebrew, and Pahlavi to Arabic was effectuated is still a matter of debate to some extent; however, the reception of great masses of texts certainly reached its peak in the middle of the Abbasid caliphate of the ninth and tenth centuries CE. Further groups of texts were translated into Arabic and Persian up to the thirteenth century in certain circumscribed areas of the Islamic world, like Spain and Mongolian Iraq and Iran, and single works on the subjects of astronomy and geography continued to be translated into Persian and Turkish as well. Greek and other pre-Islamic texts are reported to have been brought to the Abbasid court and may also have been collected later by princes and some private scholars; Sanskrit manuscripts may also have been available for the curious. However, it appears that a systematic library of classical Greek and Latin authors did not exist, not even of Syriac, Hebrew, and Pahlavi texts, within Islamic cultured circles and colleges (*madrasa*) apart from occasional exotic corners in some collections. The Islamic academic system of teacher and students demanded personal tutoring, so scholars from different communities must have met informally in such contexts and requested discussion of the texts