

Afterthoughts on Alhazen's Visual Theory
and Its Presence in the Pictorial Theory
of Western Perspective¹

Pictorial perspective, the famous invention of Renaissance Florence in the early fifteenth century, borrowed the term and also the underlying mathematical theory of vision from the eleventh-century *Book of Optics* (*Kitāb al-Manāẓir*) by Ibn al-Haytham, also known as Alhazen or Alhacen in European texts. The title of the Arabic treatise in early Latin translation was “*Perspectiva*” or “*De aspectibus*”; this was retained from the thirteenth century until Friedrich Risner replaced it in the first printed edition of 1572 with *Opticae thesaurus*, which contains the original Greek term again. From then on, this astounding prehistory was forgotten, both because of the new denomination of the discipline of visual theory and because of the progress the discipline made in the age of Kepler and Descartes; progress, however, which was due to a new examination of Alhazen's results and methods. In seventeenth-century Amsterdam and Delft, there were even new proposals on what is now known as Alhazen's problem—explaining visual rays and their refraction in a mirror.

Although the translation of Alhazen's *Book of Optics* into Latin enjoyed a long success when scholastic philosophy got hold of it and debated it in the circle of the so-called “perspectivists”, namely Erasmus Ciolek Witelo, Roger Bacon and John Peckham, Renaissance philosophers like Biagio Pelacani and Renaissance artists like Filippo Brunelleschi, the builder of the dome cupola in Florence, and the humanist Leon Battista Alberti, the author of the first text on perspective, took a different road. Their aim, in line with the Renaissance ideology of revival, was to obliterate the Arab contribution or to marginalize it with regard to Euclidean geometry, although Alhazen had gone beyond such Greek antecedents in his own experiments and discoveries. This is the explanation why today Alhazen is a topic in History of Science but not in Cultural History or Art History.

¹ This essay is an expanded version of: Hans Belting, Perspective: Arab mathematics and Renaissance Western art. *European Review* 16 (2008):183–190.