

Reactions of Historians of Science and Art to the Hockney Thesis: Summary of the European Science Foundation's Conference of 12-15 November, 2003

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Abstract: The claims of David Hockney's *Secret Knowledge*, buttressed by Charles Falco's optical measurements, were recently debated at a conference at Ghent University. The consensus was that for technical and historical reasons, painterly reliance on optical tools is plausible from the late 16th century onwards, but less likely for the 15th.

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At the recent ESF conference on *Optics, Optical Instruments and Painting: The Hockney-Falco Thesis Revisited*, 20 historians of science and art discussed with David Hockney and Charles Falco the evidence for and against the claims made in Hockney's *Secret Knowledge*, where the emergence of pictorial naturalism around 1420 is explained by the discovery of mirrors as image projectors, and art from ca. 1420 to ca. 1860 is described as relying on ever more sophisticated optical tools, mirrors first, and later lenses and prisms [1].

None of the participants denied the importance of this thesis, but no one was willing to subscribe to it wholesale [2-4]. Participants felt that for the period ca. 1600-1860, Hockney's claims are persuasive, but less so for 1420-1600. The main problem is the late discovery of optical image projection. Sven Dupré (Ghent) showed that even Leonardo, an expert on mirrors, never recognized their projective powers. Michael John Gorman (Stanford) traced this discovery to the mid-16th century. Filippo Camerota (Florence) documented Johannes Kepler's pioneering application of the camera obscura to painting. Philip Steadman (London) and Christoph Lüthy (Nijmegen) documented the use of the camera obscura in the seventeenth century. Concerning the 15th century, however, Yvonne Yiu (Basel) showed that while convex mirrors were used for self-portraits, there is currently no evidence for the existence of concave mirrors, needed for projections. Charles Falco's alleged mathematical proofs did not fully persuade participants. First, it was felt that it was viciously circular to invoke pictorial precision and aberrations likewise as evidence for the use of mirrors. Second, given the strong inaccuracy of patterns on oriental tapestry and of hand-made chandeliers, Falco's calculations based on perfectly symmetrical originals were found to be inconclusive.

References:

- [1] David Hockney, *Secret Knowledge. Rediscovering the Lost Techniques of the Old Masters* (New York: Viking Studio, 2001).
- [2] <http://www.esf.org/generic/1653/EW02130Report.pdf>
- [3] Christoph Lüthy, "Malen mit optischen Apparaten. Eine Konferenz in Gent über die "Hockney-These". *Frankfurter Allgemeine Zeitung*, 26 November 2004, N3.
- [4] Some of the papers will be published in *Early Science and Medicine* **10.2** (2005).