

Optical instruments and realism in European art ca. 1400-1800

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Abstract: This paper will review opinions among historians of European art concerning the importance of optical devices for the making of naturalistic images from about 1400 onward, and will compare David Hockney's sweeping claims on the same subject. His examples and others, including paintings by Van Eyck and Vermeer, will be considered. It will be shown that optical aids were regarded by pioneers of naturalism like Leonardo not as "secret knowledge" (Hockney's notion) but as curiosities that were of little use to mature artists.

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The use of optical instruments to assist in the making of naturalistic paintings and drawings has been discussed in isolated cases of European art dating from about 1400 onward. A number of examples are cited in Martin Kemp's exemplary study, *The Science of Art* (1990), which for the most part discusses the use of linear perspective, theories about color, light and shadow, the interest of various artists (especially Leonardo da Vinci) in the nature of vision, and other "optical themes in western art." In surveys of Renaissance and Baroque art and in quite specialized studies of European artists the notion of using lenses or mirrors as recording devices is almost never discussed, with the principal exception of the Dutch painter Johannes Vermeer (1632-1675). His possible use of some form of camera obscura is much debated. Recently, however, the English artist David Hockney has extended his initial theory that J.A.D. Ingres (1780-1867) used a camera lucida to trace some of his portrait drawings back to the age of Jan van Eyck (ca. 1395-1441) and has essentially suggested that major advances in European art - if innovations in realistic description may be so described - must have been achieved by using optical devices as a means of tracing or otherwise recording images.

The present paper will examine some of Hockney's examples and his historical assumptions. The latter include the notion that advances in realism were consistently desired; that instances of skill exceeding modern norms must reflect the use of automatic recording devices; and that artists painting realistic images did so by staging the subject with props and models in the studio. Most scholars of Vermeer and his contemporaries - that is, the Dutch artists who painted similar compositions - recognize that his style and motifs are complexly related to other works of art, that even his most "optical" effects are employed arbitrarily, and that the artist painted even his most naturalistic pictures of figures in domestic interiors without reference to a corresponding scene in the actual environment. That works of art were just that - artistic inventions or constructs - is more obvious in the case of other examples discussed by Hockney (Van Eyck, Lorenzo Lotto, etc), and was a point insisted upon by Leonardo and many other artists. As he put it, "There are some who look at the things produced by nature through glass, or other surfaces or transparent veils. . . But such an invention is to be condemned in those who do not know how to portray things without it . . . They are always poor and mean in every invention and in the composition of narratives, which is the final aim of this science" (the art of painting).