

New insights into Caravaggio's studio methods: Revelations from computer vision and computer graphics modelling

David G. Stork

Ricoh Innovations, 2882 Sand Hill Road Suite 115, Menlo Park, CA 94025 USA

ABSTRACT

A new, full three-dimensional computer graphics model, or *tableau virtuel*, of Caravaggio's *Calling of St. Matthew* has been created recently, and allows the number, position, and relative brightness of light sources (illuminants) to be adjusted so as to match the painting as closely as possible. Further, computer shape-from-shading techniques infer the location of illuminants based on cast shadows and the pattern of rendered lightness on the figures in the painting in order to extrapolate the number and location of illuminants in Caravaggio's studio itself. These independent methods corroborate each other and reveal that the studio light sources were local, thereby calling into question the claim—a fixture in scholarship since Mancini—that Caravaggio used direct solar illumination when executing paintings like the *Calling of St. Matthew*. Moreover, this kind of analysis permits us to test claims (by Hockney) about the possible use of optical aids by Caravaggio and others.