

IS EL GRECO'S UNIQUE STYLE EXPLAINED BY ASTIGMATISM?

It has been suggested that El Greco suffered from astigmatism. This suggestion is based on the unidirectional elongation in the perception of objects that astigmatism characteristically induces and the observation that viewing one of El Greco's paintings through a cylindrical lens with the proper power and orientation eliminates the distortions.

However, there are several arguments against this theory. Firstly, El Greco's tendency for elongation may be simply stylistic and traceable back to both the Byzantine and Mannerist eras. Secondly, El Greco's elongated distortions did not simply occur in one direction as would be expected with astigmatism. Thirdly, in "The Burial of the Count of Orgaz" (see left), the vertical distortions are not uniform; there are normally proportioned figures as well as distorted ones. Fourthly, El Greco's distortions progressed over his career. However, astigmatism does not normally increase in severity with age.

Fifthly, while the axis of astigmatism normally changes with age from the vertical axis (with-the-rule astigmatism) to the horizontal axis (against-the-rule astigmatism), there was no indication of this change in El Greco's work. Lastly, and perhaps most conclusively, X-ray analyses of some of El Greco's works reveal that



National Gallery of Art, Washington, Widener Collection

the underlying figures were painted in normal proportions. On those grounds it might be more reasonable to conclude that the artist's distorted tendencies should be attributed to a purposeful style rather than astigmatism. Yet it may also be that there is an alternative optical defect at work.

THE KERATOCONUS THEORY

The elongations of the figures and the Manneristic approach in his paintings first begin to appear in those works he did at around 30 years of age, immediately after his arrival in Italy. This style becomes prominent in the depiction of the burial of the Count of Orgaz, where the figures of the angels are stressed, that is, in figures which come from his fantasy rather than from living models. The elongation of the figures is demonstrated more obviously in his later works. These elements are consistent with keratoconus, a progressive corneal disorder, which has a very high prevalence among Eastern Mediterranean populations.

Patients with keratoconus first notice its effects when they are around 30. If there is no acute progression causing a substantial decrease in vision during the first two to three years, keratoconus has a slow progression and continues until the age of 40-50 years. The landmark of this period is the appearance of the so-called "irregular astigmatism", which elongates and distorts the objects, but in an irregular way. El Greco's "evolutionary Mannerism", as I would call it, perfectly fits the profile of chronic, progressive, subclinical keratoconus. Unfortunately, only topographies and resolution of El Greco's corneal and optical system's wavefront aberrations could resolve this enigma.

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