The 'uncatchable smile' illusion in Da Vinci's Bella Principessa depends on the viewing angle

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INTRODUCTION

In 2009, a little-known picture catalogued as a 15th-century imitation of an Italian Renaissance portrait by an anonymous German Romantic artist was sold for a record sum in New York gallery. Later, a claim was made that Da Vinci could have been the creator of the portrait. However, scholars were divided on the authenticity of the painting. This uncertainty led to a research project aimed at exploring the phenomenon of the elusive smile in Da Vinci's Bella Principessa. The hypothesis was that spatial frequency-related effects may be responsible for the elusive smile illusion in the portrait. The present study aimed to investigate whether the elusive smile in Da Vinci's Bella Principessa is influenced by the viewing angle.

METHOD

Participants

Twenty-four participants took part in the experiment, eight for viewing condition A, eight for viewing condition B, and eight for viewing condition C.

Stimuli

A portrait of Da Vinci's Bella Principessa (width = 203 cm and height = 29.3 cm) was placed in the centre of an A3 paper sheet resting on a table against a blue background (Fig. 1).

Procedure

The participants were seated before each stimulus, and were asked to view the portrait for 30 seconds. They were then asked to rate the presence of the elusive smile on a scale from 1 to 10. The rating was based on the visibility of the smile in the portrait.

RESULTS AND DISCUSSION

A one-way between participants ANOVA highlighted a significant difference between viewing angle A, B, and C (F(2, 22) = 4.69, p = 0.017). Effect size was 0.70, which is regarded as a large effect size. Figure 2 shows a graphical representation of the data. The results confirm the presence of the elusive smile illusion, which is not consistent with previous studies.

In conclusion, the elusive smile in Da Vinci's Bella Principessa is influenced by the viewing angle. This finding has implications for the understanding of spatial frequency-related effects in art and for the study of visual perception in general.

REFERENCES


