Following the masters: Viewer gaze is directed by relative detail in painted portraits

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Question
Does the textual detail of a painting guide the viewer’s gaze?

Art Background
some portrait artists claim fine detail guides the viewer’s gaze to selected regions, making it a tool for highlighting selective character traits of the sitter (Sander, Portraits from Life, 1988).

Vision Background
human eye attracted to regions of higher contrast in luminance, color, orientation in natural scenes (Trein et al, 1988).

Problem of Interpretation
greater detail in a painting confounded with:
- meaning (foreground vs background interest)
- lighting (direct vs shadowed)
- location (center vs periphery of composition)

Approach
Generate portraits where detail uncorrelated with meaning, lighting, location.

Three steps
Step 1: original Rembrandts inspire new photos
Step 2: render photos using Rembrandt style painterly techniques
Step 3: vary detail of selected regions

Stimuli
Detail varied in four selected regions:
Test original and mirror image views to control image location, lighting, side of face

Procedure
Participants view each portrait for 5 seconds, intermixed with filler portraits in a wide range of styles, and rate for “artistic mark”

Results
1. A calm eye. Fewer fixations overall when viewing paintings than photos or fillers.
2. Attention-getting. Greater detail attracts first fixation in less time.
3. Attention-holding. Greater detail attracts more viewing time.
4. Detail in non-fixed regions (collar) influences gaze

Implications
Artists are right: Relative detail in a painting guides viewer gaze.
Greater detail not only attracts first look, but encourages repeated looks.
Rembrandt experimented with this technique in late 1600s. Was he among the first to realize he could use it to guide the viewing experience?

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