



Art and Vision Science

What does art tell us about visual perception? How does vision science illuminate what happens in visual art? New research into these questions reveals – with increasing clarity – that art provides a unique window on visual processing, yielding insights beyond those from artificial or other real-world stimuli. In paintings, highlights or shadows may violate the laws of physics and yet still convey glossiness or three-dimensional structure. From conflicts like these, vision scientists have dissected out the crucial components in images that drive perception. Machines, too, may learn to recognize particular artists' styles if trained on a sufficient number of images, with the right neural network architecture. In turn, the study of visual perception provides a framework for understanding what makes a piece of visual art different from any other visual image. Image statistics matter, but so too does top-down knowledge. How do these interact? To what extent does cognition penetrate perception in the interpretation or appreciation of visual art? Vision science, philosophy and art history may work together to understand when, how and why artists learned to depict transparency, for example, or more abstract concepts such as wealth, spirituality, or time.

The *Journal of Vision* invites submissions for a special issue on visual art and perception, with the tenet that art is not just one of many possible types of visual stimuli to study, but the superset of visual forms that are encoded by the human brain. This special issue welcomes papers that take an analytical or empirical approach to understanding visual perception through examining visual art, as well as to understanding visual art through vision science. The editors also welcome papers on new methodologies or technologies – for example, for displaying or reproducing visual art, modeling image aesthetics, or generating new art - where these intersect with the study of human visual perception.

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Submissions Accepted through March 1, 2023. **Authors must obtain permission from the copyright holders to reprint any art image that is not in the public domain.** Accepted papers will be published as ready in the current monthly issue as well as presented together as a special issue on the JOV website.

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