



GOMBRICH-LECTURE

1st Annual Lecture of the Research Platform Cognitive Science

Prof. Dr. Patrick Cavanagh

Vision Sciences Laboratory, Department of Psychology, Harvard University
Center Attention & Vision, Institut Neurosciences Cognition, Université Paris Descartes

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The Artist as Neuroscientist

A piece of art can trigger many emotions and impressions, many of them just as the artist intended. However, the same painting may also reveal, unintentionally, much about the workings of the brain: how the brain recovers the light and space and surfaces that we see. Painters often stray from photorealistic styles, taking liberties with the rules of physics to achieve a more effective painting. Critically, some of these transgressions of physics such as impossible shadows, shapes, or reflections go unnoticed by viewers – these undetected errors are the ones that tell us which rules of physics actually count for visual perception. As artists find the rules they can break without penalty, they act as research neuroscientists and we have only to look at their paintings to uncover and appreciate their discoveries. Which means that 40,000 years of art also counts as 40,000 years of documented, neuroscience research, a record unmatched in any other discipline. We will survey art from cave paintings to the modern era and show how to do “science by looking”, unlocking the discoveries in art every time you give it a painting a second, knowing look.

Patrick Cavanagh started his career 1972 at the Université de Montréal where he worked on memory and vision research and created a Laboratory of Perception. In 1990, with Dr. Ken Nakayama, he founded and co-directed the Vision Sciences Laboratory at Harvard University where they trained more than 27 doctoral students and 32 postdocs. Currently he is also affiliated with Université Paris Descartes and Dartmouth College.