

The author replies

Computer image analysis in the study of art

Thin-film physicist Charles Falco finds it notable that I did not cite his work (none of which has passed rigorous peer review) but my piece¹ was to promote the first International Symposium on Computer Image Analysis in Art,² so I focused on research by scholars who will present there (see *Vision Systems Design*, Oct. 2007, p. 69). If I had been writing a historical overview, I would have cited many researchers who possess a scientist's rigor and an artist's vision, such as Richard Taylor—a professor of physics and painter with a master's degree in art, who pioneered fractal image analysis of Jackson Pollock's paintings a half-decade before Hockney published his speculations. Surprisingly, Falco feels his work with Hockney “established the power of an artist's visual skills for making discoveries in art history,” but everyone who has studied art history knows this rich tradition goes back to artist Giorgio Vasari's *Lives of the Artists* (1568) and earlier.

I am unaware, too, who “widely acknowledges” the Hockney/Falco “discoveries,” given the fact that the unanimous consensus in a four-day symposium and every appropriate scholarly publication—by one curator, seven historians of art and optics, seven scientists and counting—rejects their highly promoted claim that artists as early as 1420 secretly traced optical projections. Moreover, rigorously peer-reviewed papers in the relevant disciplines (computer vision and pattern recognition) have pointed out technical flaws in Hockney's and Falco's unpeer-reviewed methods.³

Falco touts his collaboration with Hockney, but their methodology is fraught with problems. If two artists have different visions that fit the evidence in a painting equally well (as has happened numerous times), which one is right? Science can never appeal to fame or authority, of course. Unless Falco figures out an objective way to prove to scientists that Hockney's beliefs are correct in such cases, then Falco's “results”—even if expressed in rigorous math—will be mere interpretation or speculation, not science.

Upset about the conclusion from sev-

eral scholars rebutting his theory, Falco has complained to editors of at least 10 journals and conferences and the host institutions of at least three such scholars. Falco suggests here and many places that in publishing his rebuttal the editors of *IEEE MultiMedia* had found errors in the papers of at least three scholars, but he is wrong. Sethuraman Panchanathan, its editor in chief, sets the record straight: “It is not accurate to suggest *IEEE MultiMedia* was doing anything more than facilitating a healthy exchange of ideas.” Indeed, the editors invited me and a coauthor to publish a rebuttal to Falco's claims.⁴ To the best of my knowledge, not a single such editor or scholar has agreed with any of Falco's protestations; moreover, every expert who has reviewed Falco's claims and these scholars' counter-arguments finds his protestations without foundation.

Open debate, peer review, expert consensus, and the rejection of statements that appeal to authority have been—and will always be—the proper scientific method for determining truth.

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1. D. G. Stork, “Imaging technology enhances the study of art,” *Vision Systems Design* 12(10):69 (2007).
2. D. G. Stork and J. Coddington, eds., “Computer image analysis in the study of art,” SPIE Press (2008).
3. For example, A. Criminisi and D. G. Stork, “Did the great masters use optical projections while painting? Perspective comparison of paintings and photographs of Renaissance chandeliers,” J. Kittler, M. Petrou, and M. S. Nixon, eds., *Proc. 17th Intl Conference on Pattern Recognition IV*, 645 (2004).
4. D. G. Stork and M. Duarte, “Revisiting computer image analysis and art,” *IEEE MultiMedia* 14(3):108 (cf., www.diatrope.com/stork/FAQs.html; July-September 2007).