art & optics

Art Institute of Chicago

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II. More general questions

1. What does science have to do with this debate?

Few people at the N.Y.U. conference were scientists, or interested in science. (In my enumeration, four people including Falco.) I was one: I work in history of science; I read *Nature*, the offprints at arXiv, and *Physics Today*. I know quantum mechanics, and I also know the relevant optics and perspective. I say this because the scientific claims made by Falco and a few others were largely ignored by the other participants, and because Falco and others have chided art historians for not knowing enough science. Falco is right, but the lack of interest and knowledge in science also meant that during the conference, Falco's claims went almost completely unaddressed. (I agree with Falco that David Stork, who seemed to many participants to have addressed the science, had not read the book carefully enough.)

When Falco and Hockney draw receding perspective lines on a still life attributed to Memling, they find two distinct vanishing points.

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When I draw receding lines in my own copy of the book, I find a much messier convergence.

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The question, then, is how to address Falco's claims. I have a very elementary proposal in this regard: that the "two cultures" begin by discussing what counts as evidence.

Several years ago I proposed that when art historians (and others) draw lines on paintings, they do some housekeeping to ensure that their lines, and therefore

their results, are comparable to other peoples' lines and results. I proposed that the lines be numbered. The vanishing areas can also be quantified, in case two scholars end up drawing them slightly differently. There is a graphical least-squares method, and more simply it's possible to just draw a best-fit ellipse around the area of convergence. At least in that way scholars (and scientists) will be able to compare results. I had nothing specific to say about Falco's claims because his lines, so far, don't correspond to mine.

Van Eyck's *Lucca Madonna*, with lines numbered (in margin) and that the areas of convergence be labeled (in center).

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In general I am very skeptical about connections between science and art. It seems to me that proposed links are often trivial; that they do not link science and art but technology, or popular science, and art; that the scientific moments in artworks are absolutely marginal to the principal conversations about modernism, postmodernism, and so forth; and that putative scientific influences on art do not get us far into the meanings of the artworks. (Alpers made the same objection at the end of the conference.) The whole art-science question is a thicket, which I and others have written on extensively.

If Hockney's thesis is to move forward, it is necessary that scientists talk to artists: hence my very rudimentary proposal on a way in which scientists and artists might agree on which lines are actually present in a painting. I call the idea "rudimentary" because it does not even involve the question of whether or not lines *can* be drawn on paintings without being anachronistic -- an idea I discussed at length in my *Poetics of Perspective*. There *are no* projected lines in the still life attributed to Memling. Scientifically, they can be extrapolated: but notice this isn't science: it's history, and it's an historical fact that no one drew lines on photographs of paintings before the late nineteenth century. The whole project, start to finish, is modern: so if we insist on moving forward with it, then let's at least agree about *where* the lines are.

2. What is "skill" and who has it?

Hockney and Weschler have both said that art historians resist their theory because the art historians want artists to have supreme, untouchable skill, adequate to every object.

What could Titian or Michelangelo draw from memory? This is a subject that is virtually unstudied. Over the years, lutes are typically portrayed straight on, but there are some views from a side (perspective) angle.

Virgin and Child, detail
Masaccio, 1426.
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The Lute Player, detail
Caravaggio, 1600.
ENLARGE

Four Ages of Man, detail
Valentin, ca. 1628-9.
ENLARGE

I think the situation is more or less the opposite: art historians often underestimate the technical abilities of artists because they themselves don't draw. They just don't think about skill-they are too concerned with the historical meanings and functions of the art. (Entire fields of inquiry are waiting to be explored by the few art historians who are interested in skill.)

In the art world, too, skill is a dead issue. I have proposed several courses on the subject where I teach, but studio artists just are not interested. It's also the case that art historians who follow modern and postmodern agendas don't usually care about skill. Hockney and Falco emphasize skill much more than any modernist historians I know. A fair amount of Hockney's argument turns on the claim that some configurations and objects are inherently difficult to draw.

The Ambassadors, Hans Holbein, 1533.
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Skill is possessed in various ways by various people, as Ellen Winner showed in her demonstration of the naturalistic skills of autistic children. I am not convinced, for example, that a lute or a violin cannot be drawn accurately in foreshortening without an optical device.

I can do it myself, using simple perspective lines. Consider the lute in Holbein's *Ambassadors*.

Shown below, is a freehand sketch I made of it, which ended up being a little different from the original. Then I imagined the same lute from another angle, and made this drawing. I used only three very simple aids, which would have been available to any artist after the fifteenth century; I did not use rulers or perspective or optical devices -- because I had no lute.

[The mouseover images don't appear in this pdf capture, so they are pasted in on the following pages.]

The point is that with a skill substantially less than Holbein's, and with neither optical devices nor geometrical perspective, I managed three perfectly "optical" pictures. (I used almost no perspectival rules in making these drawings: they were entirely "eyeballed," in Hockney's word, except for the second drawing, where I made a couple of tick marks to be sure that the lute appears equally broad on each side of the strings. That particular perspectival rule would have been known to every fifteenth-century artist who used perspective--and in fact it turned out to be unnecessary, because my initial guess was close enough.)

I am not a child savant, like the ones Winner described, and as far as I know I'm not autistic: but I am definitely, as Richard Wollheim said, an "inferior artist." So the skill level Hockney says is required may be lower than he thinks.

I agree with Hockney that the various foreshortened musical and astronomical instruments are *influenced* by optics. Many may be based on paintings originally done using optics, but I do not think we have to say that most are.

It is also important to notice that the objects in the *Ambassadors* are far from perfect. On Holbein's original, one side of the lute near the neck is straight, and the other side curves: that is an error, and in that respect my drawings are *better* than Holbein's.

An interesting test case here is intarsia, and especially the intarsia room in Urbino. The pictures have several characteristics Hockney assigns to optical devices, including differing vanishing points and complex curved forms in foreshortening. But as Martin Kemp points out in the book, there is good evidence from perspectival treatises that these objects were all drawn geometrically, on paper, without optical devices.

Such drawings could easily have been used as models for paintings that look "optical," as I did when I drew my variations on Holbein's lute.

So skill is a big question. Is it too heretical, or too improbable, to say that Hockney's skill is *different* from Ingres's, or Rubens's, or Martin's, or mine-not better, but just different? And I wonder what would happen if we gave up the idea

Point at numbers

1. **The painting**

2. Similar sketch

3. End-on sketch

4. Detail of strings

5. Bottom sketch

The Ambassadors (detail) and various sketches
Hans Holbein, 1533 and James Elkins, 2001

Point at numbers

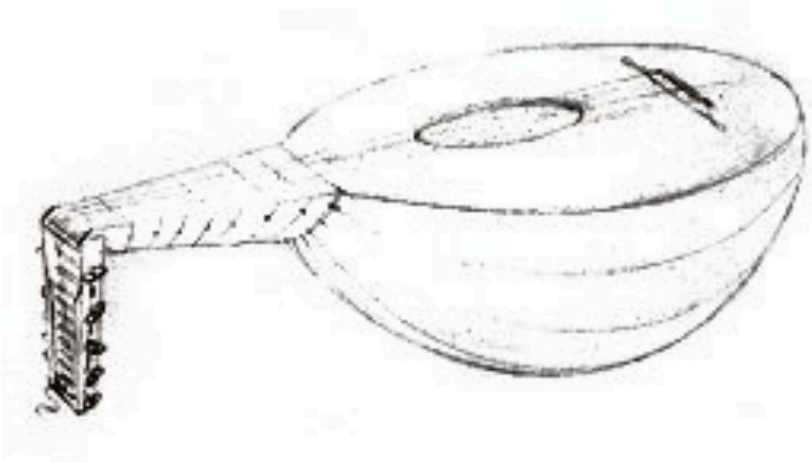
1. The painting

2. Similar sketch

3. End-on sketch

4. Detail of strings

5. Bottom sketch



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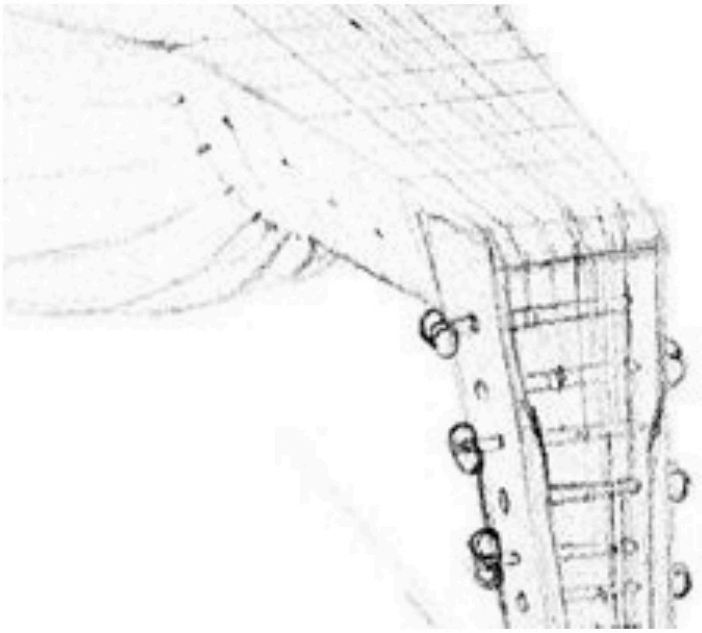

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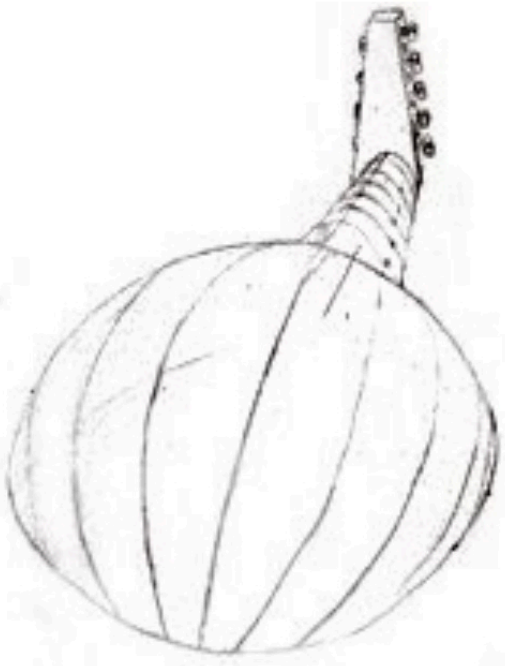

The Ambassadors (detail) and various sketches
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of skill-the abstract idea-altogether?

3. Why is the press so interested in Hockney's book?

I am astonished and depressed at the amount of publicity Hockney's new interest is getting. The publication is lavish. I bet most of us on these panels wish we could get production values like that. And I think it's true that no matter how many doubts art historians raise, and how well we argue, *we will all lose,* because the publicity on the other side is just too great.

Recently I talked with someone at Thames and Hudson (who originally published the book in the UK), who expressed some skepticism about Hockney's thesis, but said that "at least" people who don't know anything about the Old Masters might encounter them in this book.

Now a publisher certainly does not have to believe in everything she publishes, but that reasoning seemed especially unfortunate. The book makes it appear as if optical devices are what make the Old Masters interesting. That wouldn't be a problem in an academic monograph, but this book will be read much more widely, so it's unfortunate that Hockney has not tried to tie the optical "secrets" and "tricks" to the paintings' more complex and demanding meanings. (It is also unfortunate, but typical, that the book does not have even the very simple calculations that Falco uses to make his points-though that also goes to the point of the kind of reader that is expected.)

So why will we all lose? Because there is a tremendous desire on the part of readers, journalists, and people who visit museums to *understand* the Old Masters once and for all. The optical tricks listed in Hockney's book promise to make that possible. Each trick also helps demote the priesthood of academic interpreters and bypass the often opaque or irrelevant labels that curators normally provide. People like James Marrow and Walter Liedtke (who connected the optical themes to deeper historical meanings) are the worst nightmare for viewers who want their art accessible and relatively free of context. But I wonder, as the reviews of the conference begin to appear, how many journalists will note that the satisfaction of knowing that a given painting was accomplished with the aid of a trick is a very superficial satisfaction, and that it leaves the value, the mystery, and the meaning of the painting entirely untouched. It is far more satisfying just to *know* something once and for all: hence, we will all lose.

I will even make a prediction: in twenty years, by 2020, Hockney's claims will be part of first-year art history textbooks regardless of the critical consensus.

4. How perspective and optics are a kind of hypnosis

Perspective and optics have a hypnotic power: Vasari acknowledged as much in his wonderful (if inaccurate) life of Uccello, when he wrote about Uccello's disastrous social life, his depression, and his strained marriage.

I argued in my book on perspective that contemporary scholars who work on

perspective are in thrall of the same questions that attracted artists in the sixteenth century. They ask: Where did perspective begin? How can it be proved? Can it be used to control everything in a picture? Hockney's inquiry is just the latest manifestation of those same responses. He concentrates on optical devices, but his project fits perfectly with the current academic vogue for mirrors (curved and straight), windows, complicated reflections, and other optical phenomena. Academics-many of those on the panels in this conference -- are already mesmerized by paintings with mirrors and lenses, and there have been many papers on the subject.

So to me the *affect*, as well as the opinions, in the conference were symptomatic. They were a particular kind of response to an anxiety provoked by realistic pictures. The challenge for a more reflective (notice the unavoidable optical metaphor) response to pictures is to understand the effect that optical pictures have, and to resist it at least long enough to see that we are only rehearsing responses that were already felt-and often felt more intensely, and expressed more eloquently-in the fifteenth century.

5. A parallel with Sherlock Holmes

The result of the hypnotic power of perspective is that paintings are turned into puzzles: it's as if they are questions that that need to be solved, as if their solutions could be given once and for all by some clever interpretation. (Something I've tried to analyze in *Why Are Our Pictures Puzzles?*) The puzzle metaphor flattens the paintings' meanings, domesticates them, and facilitates a kind of pleasure -- people can think they have solved paintings the way that one solves a jigsaw puzzle.

I'll end with a parallel between Hockney's book and Conan Doyle's murder mysteries. Consider how heartless Sherlock Holmes was: after all, his way of coming to terms with death and violence was to tinker with his chemistry set. His glee at the discovery of a correct solution was never clouded by any sorrow about the victims, or any thought about the deeper motives of the killers.

I don't want to follow Carlo Ginzburg's parallel between art historical methodology and Sherlock Holmes's methods -- that seems true but perhaps trivial. What concerns me is that murder mysteries are ways of *not* coming to terms with death, and I'd like to propose that Hockney's project is similar. In his case what is being avoided isn't *only* death-we all do that-but also the real problems posed by modernism, and especially the modernist abandonment of realism.

In historical terms, it is simply weird to have written a book on the rational solutions of optical problems after a century of non and anti-optical art. The weirdness of the timing of the book is another sign that it is functioning as artist's theories so often do, and as Holmes's scientific investigations certainly did-to mask or repress a greater problem.

Hockney's real and central problem, I think, is cubism. He paints in a cubist manner, which is odd enough at the beginning of the twenty-first century-I mean it

is odd to be thinking about cubism in that way just now. There are hundreds, perhaps thousands, of artists around the world who are still painting in vaguely cubist modes: virtually all of them, except Hockney, are unknown to art history. As an active question for art, cubism was answered by the 1940s.

Perhaps in the end Hockney's hunt for the optical grail is a way of *not thinking* about how to come to terms, once and for all, with exactly what cubism did, and why it ended.

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A shorter version of this lecture (Part II only) was given on December 2, 2001 at N.Y.U. I have also reviewed the conference for the Irish art magazine *Circa*.

The proposal mentioned is in the essay "On the *Arnolfini Portrait* and the *Lucca Madonna:* Did Jan Van Eyck Have a Perspectival System?" *The Art Bulletin* 73 (1991): 53—62.

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