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EVALUATING NEUROAESTHETICS

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ISSUE #2:EVALUATING NEUROAESTHETICS SUMMER 2011

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NEUROVISUALITY

WHITNEY DAVIS

Visuality can be defined as a way of seeing shaped in interaction with items of visual and material culture. Its neural correlate or neural identity, if any, can be called "neurovisuality"—the neural circuitry laid down in populations of people using just those artifacts visually in the ways in which they were culturally intended. The paper explores why a model of the recursions of neurovisuality in natural vision might be needed in various domains of vision science and identifies particular recursions of neurovisuality that have been suggested in art-historical scholarship. The hypothesis of neurovisuality may allow a general theory of visual culture to be coordinated with a general science of vision. Possibly it can help make sense of unresolved problems in art history, including the question of the "power of images" and their "agency" in human perception. But empirical evidence for neurovisuality in the past will be hard to find. In this regard experimental investigations and historical inquiries need to join forces, and may find that the contemporary new media provide an ideal object of study.

By "visuality," art historians mean socially constructed ways of seeing, *Sehformen* as Heinrich Wölfflin called them, often shaped in interaction with styles of art, depiction, and built form (often called "visual culture").[1] To take Wölfflin's most famous example, we might compare what he called the "linear" mode of seeing exemplified by Lorenzo di Credi's *Venus* (c. 1490), with the "painterly" mode exemplified by Gerard Ter Borch's *Concert* (c. 1657). Both modes of seeing are also modes of *painting*, perhaps *primarily* modes of painting—a point to which I will return. In *A General Theory of Visual Culture*, I have argued that an interaction between vision and the visible features of visual culture—notably the recursion of "pictoriality" *in* vision and *as* vision—constitutes visuality. I also noted, however, that the recursions of this interaction are not well understood analytically, let alone neuropsychologically, as operations of retinal

proprioception and subsequent processing in the visual cortex. In *A General Theory of Visual Culture* I ventured no speculations, then, about the neural manifestation of visuality, if any. My proposals were meant to be compatible with any neuroanatomical or neuropsychological model of imaging and visual knowing, especially with models that assume the plasticity and the pluripotency of the visual brain. In this essay, however, I push further. Should a general theory of visual culture be accommodated to a general science of vision, and vice versa? If so, how should the equation be stated? [2]

I. Vision, Visuality, and Visual Culture

Wölfflin understood *Sehformen* to be cultural styles particular to a time and place (such as the fifteenth and sixteenth centuries in western Europe in the case of Lorenzo di Credi and Gerard Ter Borch) *and* natural routes or relays of vision, that is, ways in which human beings are visually sensitive to contour, shape, and so on. The ways, in fact, in which *all* human beings are visually sensitive: in removing the background in Dürer's engraving of *Knight, Death, and the Devil* of 1513 (the figures of Death and the Devil, the Knight's dog, and the landscape) to expose the outline silhouette of the Knight, to *visibilize* it, Wölfflin meant to show how his readers—that is, people today—can still *see* the primary rhythmic configuration of a pictorial artwork made five hundred years ago. Wölfflin's contemporaries appreciated that this investigation of expressive form in art was compatible with psychophysiological investigations of the human awareness of "rhythm" and other aesthetic orders in artworks and many other visible things. But other art historians have not fully followed him in that direction. Responding directly to Wölfflin's treatment of Dürer's engraving, Erwin Panofsky argued that we must understand the artist's explicit theories of beauty and proportions (the subject of Panofsky's earliest art-historical researches in writing his doctoral thesis) in order to interpret the allegory, that is, the Protestant (specifically Lutheran) visuality within which Dürer conceived the image—what Panofsky called "iconology." [3]

Later "social historians" of art have proposed that the visual skills needed to interpret pictures are coordinated as a "period eye," to use Michael Baxandall's version of E. H. Gombrich's general ethological theory (based on evolutionary psychology) of "perceptual readiness" or "mental set." Such socially constituted visuality might be found, for example, in a fifteenth-century Florentine merchant's ability to judge the size, volume, weight, and mass of things in space (and therefore value and cost—*especially* value and cost), a visual skill cultivated specifically in his tasks and purposes in commerce or banking and brought by him to the work of making sense of simulations of volume-shape produced in painter's perspective at the time. To my mind, Baxandall may have erred in restricting explanation of *Sehformen* to "social history," reducing the general ethology of perceptual readiness as conceived by Gombrich (his teacher) to a *sociology* of perceptual readiness that might be too limited. Regardless, the

point here is that Baxandall's notion of "period eye" has been widely accepted as a material explication of Wölfflin's *Sehformen*—as "the social history of pictorial style."[4]

II. The Hypothesis of Neurovisuality

In sum, visuality as conceived from Wölfflin (or before) to Baxandall (and beyond) seems to involve historical *variations* and *specializations*—variations and specializations that might be described by terms like *Sehformen* or "period eye." As I would like to put it, human beings succeed to visuality when they recognize the forms of likeness that things have in a particular historical form of life—the visible *and* invisible aspects that things come to have in a network of analogies constituted in that form of life. Nonetheless, vision does not *always* and *wholly* succeed to visuality. Things remain visible to people outside the visuality within which they were intentionally produced, though what is visible in an artifact in this context (or what is visible about it) may differ from what is visible in the context of visuality. By the same token, people can succeed to *many* visualities, though both Wölfflin and Panofsky were somewhat uncertain (on different grounds) about just how far it is possible to do so when we are dealing with visualities constituted in the past and accessible to us only in things made to be visible within them that happen to have survived into our own visual world.

It is precisely for these reasons that the relations and recursions—logical, neurological, psychological, or sociological—between vision and visuality are not easy to state. I do not share Dürer's Protestant faith, let alone his familiarity with figurations analogous to his depiction of a Christian Knight on a dread journey in the wilderness of temptation and imminent death (at least according to Panofsky's interpretation of the iconography of Dürer's engraving of 1513). But I can see the rhythm and balance of his engraving of the Knight, or more exactly I can see it when I am confronted with the visual replication of it in Wölfflin's illustration, where it has been visibilized *for* my seeing *of* rhythm and balance in the engraving. (The illustration functions, then, as an autonomous artwork, though one produced by Wölfflin rather than Dürer.)

The visibility of rhythm and balance in the engraving, if any, is presumably a matter of processing in the visual brain—a material question in visual neuropsychology. Of course, Wölfflin could not invoke the results of later twentieth-century neuroscience. But he assimilated the psychophysiology of his own day, and during his own lifetime he could read experimental psychology that could have been pertinent for his art-historical phenomenology, notably Gestalt psychology. (For the sake of economy I set aside the way in which Gestaltists might have responded to art-historical formalist phenomenology, not to speak of the incorporation of both art-historical formalism and Gestalt psychology in the modern arts

addressed *both* by art history *and* by psychology.) At the time other art historians made explicit use of psychophysiological concepts. [5]

But what about *visuality*? Should we suppose that historical periods or phases of human picture-making—*Sehformen* or "period eyes"—depend on neural circuitries *unique* to the human populations that used those pictures visually or, to use my terms, visually understood their forms of likeness in a form of life? (In Panofsky's iconology, remember, we can only use a picture that was made in the distant past or in a different culture in *discursive* ways; we cannot fully use it *visually* in the way that its makers did.)

To designate the neural manifestation of the succession *to* visuality (if any) in natural vision, I will use the term "neurovisuality": the neural specificity, if any, of vision-*in-visual-culture*, or visuality. The neologism is a convenient way to designate (hypothetical) successions to visuality in neural circuits that are laid down *for* such recursions in natural history and *by* such recursions in social life. They are laid down, then, *as* visual culture and *in* visual culture. (Still, if visual culture is *nothing but* neurovisuality then it may not be necessary to ontologize it: it might suffice to describe natural-historical recursions of vision in human society.) The term echoes (and in certain circumstances it overlaps) two other terms: "neuroaesthetics" and "neuroarthistory." But it is not quite the same concept, as we will see.

The hypothesis of neurovisuality—that there might be a neural correlate or even causation to the visual succession to visuality—is unpopular among art historians, if it is entertained at all. Still, if it is correct it makes a powerful (and in some arenas a decisive) contribution to vision science from ophthalmology or psychiatry to lighting design or the engineering of human-computer interfaces (HCI)—a specifically *art-historical* contribution. For this reason it can be unpopular in vision science too.

III. The Hypothesis of Neurovisuality in Vision Science and Art History

To investigate neurovisuality in my sense, experimental neuropsychology must join forces with art history (and vice versa) in full measure. Why? And how?

On the one hand, laboratory or clinical experiments on visual processing in living human subjects must address visual brains that are *already* acculturated in historical visualities (that is, "visual culture"). But it may be difficult to detect this parameter experimentally without historical perspectives. And by definition these cannot readily be built in to any laboratory or clinical experiment.

It will not do simply to administer questionnaires and tests to populations of undergraduates in psychology courses in American colleges. In fact, it probably will not do simply to administer questionnaires and tests to *any* range of human populations of any kind anywhere

on earth today. If art history and the historical study of visual culture are correct—correct, that is, as an account of the history of art and visual culture *whether or not* explicated as neurovisuality—then all living human populations possess visuality. But in theory not all neurologically possible visualities are represented in any range of living human populations on earth today. Therefore it is logically impossible fully to specify the neural correlates (if any) of visuality *specifically as a question of the neuropsychological capacities and adaptations of the visual brain* by way of any experiment on living human subjects. More exactly, neuropsychological experiments with living human subjects can identify a (neuro)visuality—namely, the (neuro)visuality of the subject(s) who have been observed experimentally. But this might be no more helpful than the art-historical or anthropological evidence it purports to explain. Indeed, art-historical or anthropological evidence may suggest that populations in the past or in other cultures have (had) neurovisualities different from the ones observed.

On the other hand, however, art history must be just as unsatisfyingly partial as experimental neuropsychology, though for inverse reasons. Art historians writing in the main lines of formalism and historicism from Wölfflin (and before) to Baxandall (and beyond) have usually addressed human beings in visuality without any direct *experimental* access to the experience of many of the people they purport to survey, and whose configurations and figurations they claim to interpret, even if such access is available. Since its consolidation in the late eighteenth century, to be sure, professional art history has had many *opportunities* for such experiment, notably among living human populations who have made and used the visual arts. But usually it has eschewed laboratory or clinical evidence about these experiences unless there has been a special art-historical reason—usually a biographical reason—to investigate them (for example, in the case of artists who have suffered damage to the visual brain). And it has disdained psychological and sociological questionnaires and tests as well as protocols in the pedagogy of art even when they could be salient. (Since the late nineteenth century, then, art history has rarely included in its professional purview such writers on configuration in the visual arts as Guido Hauck, Denman Ross, Hans Prinzhorn, Henry Schaefer-Simmern, Erle Loran, Rudolf Arnheim, Roy Schafer, Rhoda Kellogg, Margaret Hagen, or John Willats, regardless of their influence in institutions of art making in modern society—in classrooms, lawcourts, hospitals, and so on—and even when they have made valid contributions to the resolution of specifically art-historical problems.[6])

For this very reason, art historians can overlook neural causalities that might operate *outside* visuality—causalities that might explain why pictures or artworks can retain their visual "power" or "agency" (aesthetic or otherwise) far beyond their original contexts of making in a particular historical visuality, that is, why they can be globally transmitted *between* historical visualities despite tenuous material connection between the social groups or visual cultures in

question. In this regard it is not surprising that neuropsychological research has been most visible in art history specifically in the frame of "world art studies," within which it subsists (a bit uneasily) with comparative anthropologies of art and histories of intercultural interaction in visual culture.[7]

At the same time, art historians may have missed a chance to enrich their historical understanding of visuality (*Sehformen* or "period eye") by entertaining the hypothesis of neurovisuality. Often they have eschewed responsibility for investigating ontogenetic succession *into* visuality—neurological, psychological, *or* sociological. They have left that question to developmental psychology, projective testing, the pedagogy of art, art therapy, and other professions, where the thesis of neurovisuality sometimes has been stated too strongly or simply taken for granted.[8] For example, children's drawing, depiction, or art-making has typically interested art historians only when artists or visual cultures of the past have been interested in it, despite the obvious sense in which the very notion of *Sehformen* or "period eye" demands anthropological or experimental study of visual acculturation *in history*, that is, in the experience of human subjects being integrated over time into visualities. If children learning to draw or to interpret pictures are not instances of this historical process of succession-to-visuality, it is very hard to know what possibly *could* be an example of it.

In sum, neither neuropsychology nor art history is especially well placed (or has taken itself to be well placed) to address the hypothesis of neurovisuality, whether the reasons are theoretical, methodological, or ideological (most likely a mixture). Overall, vision science has approached visuality, if it has done so at all, by way of vision. Art history has approached vision, if it has, by way of visuality. But I have already noted that vision and visuality do not fully intersect, despite their essential recursion in ordinary human visual experience in history; what is visible is partly specific to each domain. Therefore we cannot predict which direction to follow analytically. From vision to visuality? From visuality to vision? Or both together, as I suggest?

In the remainder, I proceed on two levels. On one level, I will draw on research in three areas of vision science (physiological neuroaesthetics, computational psychology, and evolutionary aesthetics) in order to point out where neurovisuality *might* be active as a recursion in neural circuitry (with emphasis on the "*might*"). This is analytic: an attempt to get as clear as possible about concepts and arguments. On the other level, I will mention possible neurovisualities that have been suggested in the historical record of human art (namely, in artistic modernism, in making virtual coordinate space, and in adjustments to the vertical in built form). This is provisional and speculative.

IV. Neurovisuality and Physiological Neuroaesthetics

Though it has been defined in many ways, in general "neuroaesthetics" studies the neural correlates (if any) of aesthetic experience, and perhaps the *identity* of certain aesthetic experiences and certain material states of the visual brain. For my purposes in this essay, its most appealing general thesis has been well stated by the neurophysiologist Semir Zeki in his *Inner Vision*, published in 1999. [9]

The thesis has two parts. One part says that human visual imaging, or seeing, is *intrinsically aesthetic*: it *actively configures* the visual image (including any pictures presented to natural vision), like a painter painting a picture. (Zeki deploys this metaphor for all it is worth, and we might want to take it quite literally in a theory of neurovisuality—a theory of how the history of art, such as the history of painting as an art, may be "wired into" the visual brain.) Seeing, we might say, has "image structure" (to appropriate John Kulvicki's term) in the way that the painting might have "formal structure." [10] To quote Zeki: "the brain . . . is no mere passive chronicler of the external physical reality but an active participant in generating the visual image, according to its own rules and programs. This is the very role that artists have attributed to art, and the role that some philosophers have wished that painting could have." [11]

This is a familiar psychological claim (or at least the first sentence is). It is even a philosophical claim, recently reexamined by philosophers such as Alva Noë and Dominic McIver Lopes. [12] Its genealogy might (or can) include Kant's doctrine of the transcendental imagination, Ernst Cassirer's phenomenology of knowledge, and Nelson Goodman's constructivist psychology. (Indeed, Goodman's *Structure of Appearance* and *Languages of Art* provide powerful analytical resources for mapping "formal structure" onto "image structure" and vice versa.) Art historians do not usually endorse it explicitly. But they are often comfortable with it: as Zeki says, it attributes processes and functions to the human brain that are often attributed to artworks or pictorial representations (and possibly have been caused by imaging these artifacts). Indeed, this part of the thesis may simply be one way of stating the thesis of *visuality*—that human visual perception or seeing has active modes and forms, phases and styles—without building in any particular causal explanation, that is, without appealing, say, to visual skilling in carrying out social tasks and fulfilling social purposes (as in Baxandall's "social history of pictorial style") or alternately to habituation in environments of visual affordance (as in the "neuroarthistory" mentioned in a later section of this essay).

The *other* part of the thesis derives specifically from neurophysiology. Active visual-aesthetic configuration of the visible world has its own "rules and programs" in the brain, as Zeki puts it, whether we refer to electrochemical activity in the brain that materially *accompanies* our experience of a painting as an art or refer to activity that *produces* it in the sense that if we were to stimulate or simulate the activity in the brain—let's say by giving the subject an "art pill" or an "art injection"—we would *induce* just that aesthetic experience of just that

painting. Soon enough, artists will begin to administer art pills, if they do not already do so, and the neurophysiological claim in aesthetics will have come full circle. For according to the strongest version of neuroaesthetics any artwork simply *is* an art pill or an art injection. Why?

First, there is evidence for the *cortical localization* and *functional specialization* of neural-aesthetic activity, notably the "firing" (or heightened electrical activity) of specific cell-complexes in relation to stimuli to which they are specifically adapted or for which they are "selective." For example, in primate vision some neurons only fire when stimulated by light within certain wavelengths—the red range, say. One can also identify cells that fire in response to a vertical bar moving only from left to right in the visual field. Unresponsive to movement in the *other* direction, the cells can be said to be "directionally selective."[13] There are many similar findings. Hundreds of technical publications in primate neurophysiology and neuropsychology report them in detail.

For my purposes in evaluating the general thesis of neuroaesthetics, it should be possible to integrate these results—many dozens of them, many overlapped or intersecting—to give a full account of the neural identity of a given artwork or other item of visual culture, that is, of its subjective visual-aesthetic effect, of its "look" or "feel" and its "power" or "agency." If that subjective visual-aesthetic effect *includes* the beholder's awareness of aspects of the painting constituted in visuality—awareness of forms of likeness of the artifact that visibilize it in a particular way in a historical form of life—then the neuroaesthetics is *de facto* a neuroaesthetics *of neurovisuality* though it need not be strictly limited to it. (As an example of visibilizing forms of likeness, I have discussed the visibility of a building built to have a "color scheme" in a certain historical form of life, that is, in visuality. *Outside* the visuality, the colors of the building may be visible, but the "scheme" of the colors may not be. *Within* the visuality the visibility of the colors is specifically the visibility of the color scheme in the building.[14])

At the moment, as already noted, most neuroaesthetic research does not explicitly entertain the hypothesis of neurovisuality. Indeed, it may prefer to skip over it to move directly to putatively panhuman visual aesthetics—to supposed invariants in visual processing. At the moment, then, it is not easy to say which neuroaesthetic findings, if any, speak specifically to neurovisuality, if any such exists, though cross-cultural or comparative experimental research may be useful if carefully framed in terms of the hypothesis. Still, neuroaesthetics can assert as a point of its principle or general theory that the whole of the artwork (including its analogical aspectivity in visuality if any) is intelligible to vision in virtue of neural wiring, whether or not that wiring was neurally laid down in recursive interactions with visual culture (that is, as neurovisuality). On this account, then, neuroaesthetics would fully *replace* the art-historical analysis of the look or the feel of the painting as an art (including its aspectivity in visuality). Or at least it *would* fully replace it if neuroaesthetics does encompasses neurovisuality.

It hardly needs to be said, of course, that the neuroaesthetic analysis (if fully realized) probably would not look much like current art-historical or art-critical descriptions of pictorial artworks, that is, like the present-day advanced "artwriting" that putatively attends both to the (neuro)intentional order of the artwork and to the (neuro)aesthetic responses of its beholder/critic as well as to the ambiguities and uncertainties within both of these horizons. The neuroaesthetic analysis would be a read-out of the neuroelectrical activity specifically correlate with the perception of the painting as an artwork. Of course, some neural "firing" will not be specific to the visual perception and processing of just that painting as an artwork and *only* that painting. But the particular hierarchy, sequence, and recursion of firings—the overall pattern of neuroelectrical activity—will be specific to just those paintings that have that particular aesthetic order, whether one or many.

It also goes without saying that at the moment most art historians as well as art critics and other artwriters probably believe that this read-out could not possibly be as informative as an extended discursive description of individual works. (In artwriting, one does routinely acknowledge that words—or at least words of discursive analysis, explanation, and interpretation—tend to fail us in dealing with images, or some images at any rate. As T. J. Clark suggests in narrating his own sustained attempt to engage a particular single painting as a work of art, it may only be "the physical, literal, *dumb* act of receiving the array on the retina [that] will satisfy the mind," or perhaps, as he also suggests in the same book, the writing of a poem that in some way analogizes aspects of the painting or thoughts and feelings one might have in relation to it, direct or indirect. Still, the words proliferate: Clark's meditation on Nicolas Poussin's *Landscape with a Man Killed by a Snake* of 1648 as an aesthetic object for him—and a specifically visual one, as he repeatedly insists—is nearly two hundred and fifty pages long.[15]) In principle, however, the neuoraesthetic read-out and the extended discursive description can be fully translated into one another. Taken on their own terms, they are different representations of what we can see (or of what is seen by us) when apprehending the painting as an artwork. Our choice of the representation likely has as much to do with our disciplinary inheritances and professional territories as with any point of putative aesthetic principle. We can pursue them or not, or approve them or not, in light of what they allow us to do *with* our experience of the painting as an art, and to do *about* it, if anything. In some contexts we might reasonably prefer the extended discursive description (say, in describing the artwork to someone who has not seen it—one of the original and foundational roles of art criticism since the eighteenth century). In other contexts we might prefer the read-out (say, in determining whether the artwork has any causal role to play in arousing fear or stimulating aggression—one of the clinical arenas in which neurophysiological aesthetics might have a place). In practice, most art-historical description already is partly critical ekphrasis and partly

read-out—an analytic report of patterns in the data, that is, the observed aesthetic effects and attributed intentional orders of artworks and other items of visual culture. [16]

In fact, there may be *art-historically* salient uses of neuroaesthetic read-outs that would not be possible on the basis of extended discursive descriptions of individual works. The read-outs might make it analytically possible, for example, to identify patterns of similarity and difference in vast series of artifacts, pictures, or artworks—patterns of similarity and difference founded in their functions and meanings—that are invisible to the naked eyes, or to *our* naked eyes. (This point was accepted in "structural research" [*Strukturforschung*] in art history and archaeology in the earlier part of the twentieth century, which pioneered typological, seriational, and statistical methods of formal analysis. [17]) In the theory of visuality that I have proposed to defend, two morphologically indiscernible artifacts or artworks can be distinguished analytically—and may be distinguished in seeing, in visual use—in virtue of the different forms of likeness they relay (a *mere* multicolored building, say, as distinct from a color-*schemed* building). In principle, the neuroaesthetic read-out should capture this distinction, in turn enabling us to "excavate" complex networks of forms of likeness that may be inaccessible to introspection or ethnography—not visible, that is, *either* to the historical actors precisely because the forms of likeness in question are the very *grounds* of the visibility of visual culture for them *or* to the art historians situated outside this visuality.

Art history is a long way away—probably decades away—from fully actualizing research of this kind. Instead, and partly for this reason, it remains deeply bound to visualist and formalist prejudices—its claim of responsibility to "what we see" in and as individual art-objects—even when many historical questions about visual culture are questions neither of visibility nor of sensuous form and cannot be answered by focusing on individual art-objects. As I would like to put it, they are questions not (or not only) of how an artwork or artifact *looks* but (also) questions of what it is *like*. Still, we can predict that some art historians in the future may pursue a *post*-visualist and *post*-formalist phenomenology (paradoxical as that might sound) by way of neuroaesthetic investigation and its potential to identify—empirically to track—the forms of likeness that constitute visuality in the replication of series of artifacts, pictures, or artworks. [18]

Admittedly it may be premature to judge these matters. Here we need to stick to the question of neurovisuality in neuroaesthetics. As noted, neuroaesthetics is probably only relevant to art history, and art history to neuroaesthetics, if the hypothesis of neurovisuality is correct. Where exactly does it enter the story analytically?

Overall, cells in one region of the visual brain, known as V4, activate when colored arrays are viewed, that is, when color is neurally constituted. V5 activates when the subject engages *moving* affordances, maybe *by* moving. In Zeki's summary diagram of the confluence of color and motion processing in vision, then, a multicolored "Mondrian stimulus" of the kind introduced by Edwin H. Land engages V4, while a black-and-white televisual or digital-animated stimulus engages V5.[19] To be sure, configurations made by Piet Mondrian himself involved calibrations of figure, ground, edge, and frame that were *not* configured in Land's "Mondrian stimulus."[20] In turn, then, we might suspect that painters like Mondrian manipulated the routines of natural color vision (or other aesthetics of the visible) in their painting as an art, that is, in Mondrian's case, in making his versions of the "Mondrian stimulus." Neuroaesthetics not only *makes* this assumption. As noted, it tries to justify it neurophysiologically—to show how the subjective effects of artworks are produced in stimulating the "rules and programs" of the brain in ways that can be identified neurophysiologically.

Still, this raises the question of possible neurovisuality. Does Mondrian's painting—does any artifact, artwork, or picture—prod the brain to *reintegrate its circuitry*? We know that reintegration can occur when the brain compensates for loss of particular functions due to damage or disease; some of the research results reported by Zeki and other neurophysiologists and neuropsychologists writing about aesthetics are partly derived from clinical-medical studies of brain damage in major stroke or other injury.[21] Presumably artworks, unlike strokes, do not cause the brain to *lose* anything. But do they cause it to *gain* something? Something to be gained *by way of* the artwork?

One single painting by Mondrian likely cannot prod the brain to reintegrate the confluence of color and motion processing in V4 and V5. But the painting was generated, some art historians might want to say, in a historical visuality in which the configurative orchestrations of Mondrian and many other artists and other image makers (making productions in many domains of visual culture in many techniques and media) demanded the confluence of V4 and V5 in certain ways that maybe could *only* be stimulated by the integration relayed in just such works. The objective sensuous conditions of modernity, it has often been said, became its new subjective modern sensations as reprojected in its contemporary arts—a recursion debated by Walter Benjamin, Georg Simmel, and many others. Right or wrong, many artists and art critics and some art historians have treated certain modernisms in the arts as neurovisualities, though when their claim for the arts in question is stated this way they may disavow it.

To be sure, many critical and social historians of modernisms in modern art are sceptical of the claim. Certainly it can be treated critically as a historical formation in visual culture—an aesthetic theory—in its own right, like the correlate theories of nervous energy and

transformation.[22] As a positive hermeneutic assumption, it is most common (if often still latent as a material neurological claim) in aesthetics of modernism committed to strong claims *for* the aesthetics of modernism—for its material power to "alter perception," as one sometimes hears, or to "affect the senses in new ways." To quote Stephen Kern, "From around 1880 to the outbreak of World War I a series of sweeping changes in technology and culture created distinctive new modes of thinking about and experiencing time and space. Technological innovations including the telephone, wireless telegraph, x-ray, cinema, bicycle, automobile, and airplane established the material foundation for this reorientation; independent cultural developments such as the stream-of-consciousness novel, psychoanalysis, Cubism, and the theory of relativity shaped consciousness directly. The result was a transformation of the dimensions of life and thought."[23] To be fair, the proponents of the aesthetics in question usually blend a historicist approach to past ideologies of something like neurovisuality with their own unstated theories of neurovisuality. The latter may be universalist, referring to panhuman sensations constituted in or by aesthetic experience of the arts, or more specifically historicist or visual-culturalist in theoretical definition, referring to neural integrations in the experience of *certain particular* historical arts.[24]

I cannot possibly decide the empirical point, though deciding it is surely one of the outstanding projects for neurophysiology and art history. Instead I want to make a strictly analytic point. In Zeki's illustration of the confluence of color and motion processing in vision, supposedly the beholder of the Mondrian stimulus is neurally constituting color in V4: the diagram shows part of his cortex "lighting up" at the reflected luminance of the green patch in front of him. (In Land's experiments, and in his theory of "retinex" or the processing of retinal proprioception in the cortex, the question is the similarity or difference of that green patch, *qua* green, to other patches perceived to have the same or different colors.) But he is not seeing a *Mondrian*, as already noted. And not only because the pattern is not in Mondrian's style or by Mondrian. Even if it *were* a Mondrian, the beholder depicted in Zeki's diagram stands too close to it to see almost everything else: *bounded rectangular planes* of *discrete but uniform colors* partly *occluding one another* at *different apparent distances* from the imaging point and *regardless of the real variance of luminance* across the painting. If the beholder is to see *those* attributes of the painting (painting *them* in vision), that is, if he is to see a Mondrian, then he has to see the configuration *integrated by Mondrian in those very actions*—succeed to the colors, planes, and virtual depth configured by Mondrian to be visible to him in seeing the painting. In other words, when we look at things that have been *actively configured for our seeing as actively configuring what is seen* we aestheticize *twice over* or in a feedback loop, redoubling the aesthetic momentum of seeing: we paint the painting painted for our painting of it—*re*paint it. This recursion or redoubling is a necessary condition for neurovisuality even though it may not be sufficient for it.

I want, then, to supplement Zeki's point that "the brain is an active participant in generating the visual image, according to its own rules and programs—the very role that artists have attributed to art and the role that some philosophers have wished that painting could have." In some contexts, *art* (or other things made specifically to be visible to us) may be an active participant in generating the visual image, according to its own rules and programs—the very role that philosophers have attributed to the *brain*, and the role that some artists have wished that *vision* could have. In modern human lifeworlds, we are *alway*s in such contexts. Where might we look to find this recursive redoubling of actively-configuring vision by way of the actively-configured visual culture that it sees? In the next two sections I explore a possible example.

V. Neurovisuality and Visual Computation

Consider our visual inspection of a common natural thing. In his book of 1982, *Vision*, David Marr illustrated an early stage in the "computation" of information transmitted in reflected light to visual proprioception: a leaf on one stalk hanging in front of a leaf on another stalk, or as he put it an "image of two leaves." Marr's illustration models information at (or in) photoreception—what he called the "gray level" of the "image" (color has not yet been computed at this stage of visual processing). The table accompanying the simulation of the "image" at photoreception assigns numerical values to the discrete units of the image (not exactly pixels, they are discrete incidents of photoreception): the measurable "intensity value" of luminance at these locales in the image. *But where in the numbers can we find the distinct edge of the leaf, or the boundary or gap between the leaves, that we can see with just a bit of work?* As Marr wrote, "there is *not* a sufficient intensity change everywhere along the edge . . . to allow for its complete recovery from intensity values alone, yet we have no trouble perceiving the leaves correctly."[25] Marr explicated this observation in a complex model (what he called a "representational framework for vision") of the hierarchical computation of information in reflected light sequenced into three "representational stages" *beyond* the early and primitive gray-level image that "represents intensity" (modeled in his illustration of the "image of two leaves"): what he designated (1) the "primal sketch," (2) the "2½-D sketch" (a "viewer-centered coordinate frame" in which the edge is getting computed in the discontinuities in the surface and in "distance from the viewer"), and (3) the "3-D model representation" (an "object-centered coordinate frame" in which the edge gets fully computed as a *spatial* distance in depth).

Marr's model is complex, and he stated it in several ways. To use his own words, "The overall framework . . . divides the derivation of shape information from images into three representational stages . . . (1) the representation of properties of the two-dimensional image, such as intensity changes and local two-dimensional geometry [i.e., primal sketch]; (2) the

representation of properties of the visible surfaces in a viewer-centered coordinate system, such as surface orientation, distance from the viewer, and discontinuities in these quantities; surface reflectance; and some coarse description of the prevailing illumination [i.e., 2½-D sketch]; and (3) an object-centered representation of the three-dimensional structure and of the organization of the viewed shape, together with some description of its surface properties [i.e., 3-D model representation]." Marr took the primary *theoretical* problem to be the transition from (2) to (3) above. Given the information encoded in the image (by stereopsis, shading, texture, contours, or visual motion), the sequence of early visual computations from the image to the primal sketch and the 2½-D sketch (i.e., from image to [1] to [2] above) is "unsuitable for recognition tasks" (that is, insufficient in identifying what the shape is the shape of) *because it depends critically on the vantage point*. As Marr put it, "[i]t must be remembered that coordinates referring to the line of sight are not very useful to the viewer" precisely because "one must continually allow for the angle of the line of sight, . . . a difficulty that is compounded by the effects of eye movements." Therefore the crucial final step of visual computation (i.e., from [2] to [3] above) likely "consists of transforming the viewer-centered surface description into a representation of the three-dimensional shape and spatial arrangement of an object that does not depend upon the direction from which the object is being viewed." Seeing, we might say, is always subject to the visual angle; it is always coordinated in natural visual perspective. Nonetheless it extracts a recognition of an object by computing a representation *away* from the vantage point or as it were *around* it. Momentarily we will see why this theoretical problem (perhaps an artifact of Marr's own theoretical conceptualizations) might have a *historical* solution.[26]

Most important, we see the edge or gap between the two leaves more or less easily, Marr thought, because of what he called "consistency-maintaining processes in the 2½-D sketch."[27] Still, we can *see* the edge in several ways. (The image in Marr's sense is ambiguous.) I may see the leaf on the lefthand side of the image as "behind" the leaf or leaves on the righthand side of the image in virtue of the apparent continuity of its contour with the stretch of leaf to the right of the *middle* stretch of leaf—one of Marr's "consistency-maintaining processes." I see lefthand and righthand stretches of leaf, then, as the *same* leaf—recognizing the leaf behind the middle leaf. At the bottom of the leaf in "back," this continuity seems readily computable; the curve connecting them is smooth. At the top, however, no smooth continuity can be constituted. Moreover, there is a stark contrast in intensity values along *both* connecting curves ("bottom" and "top" in the image), smooth or not. Given this, we might compute the leftmost stretch of leaf as a *third* leaf arising from a stalk that is not visible—a leaf *abutting* the middle leaf, lying *in the same plane* across the line of sight. The boundary or "discontinuity in the surface" (supposedly seen as the *one* edge of the leaf "in front," silhouetted as contour against the leaf "in back") is where these leaves are *touching along*

both their edges—not *separated* by the distance from the vantage point that can be computed at any point on the edge as a quantity on the Z-axis. (The image is *two*-dimensional; it encodes information on the X and Y axes of the plane in a viewer-centered coordinate frame. As yet there is no Z-axis plane—no "third dimension"—coordinate with the X and Y axes.)

Whether there really *is* a third leaf can probably be resolved by moving around the objects in real space. (I say "probably" because it might be theoretically possible to design objects in real space that always remain ambiguous about their spatial relations in three dimensions at any and all possible visual vantage points, even if the ambiguity changes its visual particulars from vantage point to vantage point, each having its own ambiguity—and even if succeeding ambiguities partly resolve *preceding* ones.) But assuming no motion of the vantage point, in Marr's model the viewer-centered representation of the image *feeds into* the object-centered one, and helps constitute. And that representation could have *two* three-dimensional renditions computed from the intensity values of the image. One is objectively correct and the other is incorrect. To get us to the one and not the other, visual processing according to Marr prefers to integrate the intensity contrasts and primal (dis)continuities represented in the 2½-D sketch in order to give "rough depth" and "distance from the viewer"—thus two leaves, not three. This is the very idea of Marr's two-*and-a-half-dimensional* representation. And a strange animal it is: for some critics, too strange quite literally by half, an internally contradictory sleight-of-hand in Marr's model of three-dimensional visualization. [28]

But in a recursion in neurovisuality, the 2½-D representation in visual computation might be perfectly viable. As commentators on Marr's model of the representational framework of vision have pointed out, it is a widely-used technology of orthographic projection, usually designated as axonometric projection in "paraline drawing." [29] Equally important, it is a common way in which two-dimensional renderings on the plane three-dimensionalize when *the visual angle at vantage point* constructs what David Summers has called a "virtual coordinate plane," that is, a *Z-axis*-plane visibly coordinate with the plane of the X and Y axes—the "plane of the format" in Summers's account (equivalent to the "picture plane" if the picture in question is constructed in linear perspective) and the plane of the "image" in Marr's model. [30] If this rule and program of depiction loops into the rules and programs of vision, then Marr's problem could take care of itself in the modern human case—that is, in a neurovisuality. The Z-axis-plane would seem to be rarely if ever encountered *as a visible plane* in nature *outside* pictures. (Where, for example, is the flat "floor" in the arboreal space of the forest in which the leaves will likely be seen in natural primate vision?) It only becomes fully visible in *virtual pictorial spaces*. Hypothetically, once the brain computes visually (or in Marr's terms once it represents the image) by way of this plane, if it does, it can spatialize intensity contrasts, surface (dis)continuities, and so on, in terms of "rough depth" and "distance from

the viewer," just as Marr requires of the 2½-D sketch as one of the sequential representations of the gray-level image in visual processing.

Indeed, it might be possible to eliminate this mysterious stage in the overall representational framework, that is, to move directly from primal sketch to 3-D model representation. After all, the main theoretical job of the 2½-D sketch as Marr conceived it is to take the representation of the image from a viewer-centered coordinate frame (insufficient for object-recognition) to an object-centered coordinate frame (in which the shape is readily recognizable as the shape of a particular object-volume). But this can be done on the virtual coordinate plane *when it is visibly coordinate at right angles with the upright plane of the format or the picture*—something visible only in artificial architectural spaces architectonically configured to have just such a coordination. For this coordination sets up a what might be called a "box" or "quadration" that situates things virtually in the three-dimensional coordinate space they inhabit; regardless of visual angle (that is, of viewer-centered coordinates), we can see the relation *between* the depicted object and the coordinate frame, that is, the intersection of the plane of the format (or the picture plane in linear-perspective constructions) and the virtual coordinate plane (depicted or not as an optical plane in the picture). We can see the object, in other words, in what might be called "virtual coordinate space." When fully generalized or extended to its "notional abstraction," this virtual space might be called "metaoptical," to use Summers's terms, because the virtual coordinate space visibilized in pictorial architectonics becomes notionally identical with infinite homogeneous three-dimensional coordinate space (or Cartesian point space).[31] But any virtual coordinate space can be sufficient to three-dimensionalize a depicted object in natural visual perspective—that is, in natural visual perspectives *on* pictures in architectonics in which a virtual coordinate plane appears. In a recursion of neurovisuality, it might be that natural visual perspective enfolds this *pictorial* effect in its representations—its sequential and hierarchical recomputations—of the primordial *image*.

VI. Neurovisuality and Evolutionary-Ecological Aesthetics

The *history* of this recursion, if it has occurred, requires further analysis. The philosopher Marx Wartofsky urged the radical thesis that the "dimensionality of visual space" in visual perception (human abilities to apprehend and interpret ambient space as three-dimensonally coordinate and possibly as infinitely extended in a correlate metaoptical coordinate space) was a consequence of the "pictorialization of visual space" acquired through "practices and conventions of pictorial representation" that had been developed in Classical Greek and Renaissance Italian styles of depiction, notably the invention of linear perspective projections.[32] This proposal would seem to follow from Wartofksy's more general historicist thesis that "modes of our visual cognition change with changes in the modes of our pictorial

representations" and specifically that "canonical styles of representing the seen world change . . . and introduce transformations of vision."[33] Wartofsky himself did not invoke the *bio*historicist hypothesis of neurovisuality in my sense because he wanted to say that human vision has a history that "goes *beyond* the biological evolution of the hominid visual system and is part of that activity of self-creation and self-transformation which we call cultural evolution."[34] But if we set aside this reification of cultural evolution, Wartofsky's thesis is compatible with the hypothesis of neurovisuality, and in the end it may require it. What Wartofsky calls "self-creation and self-transformation" simply *is* part of the biological evolution of primate vision once any feedbacks were introduced into it by cultural activity—by using sticks, stones, teeth, and bones to do and to make things and especially to *depict* things. (This brute culture still needs to succeed to what I have called "culturality"—awareness of the forms of likeness of artifacts produced in cultural activity—in order for it to constitute a visuality in my sense. Brute or "osteodontokeratic" culture can be found among monkeys and great apes and it is bioculturally characteristic of hominid species in the human line. But the *visuality* of culture—and disjunct visual cultures—may be a more recent development in *Homo*.[35])

Restated as a historical identification of a supposed neurovisuality constituted in interaction with painter's perspective, Wartofsky's "dimensionality of visual space" may still seem untenable. As Arthur Danto has complained, there can hardly have been substantial neural evolution "in the bare six hundred years from Giotto to Ingres," or at least any evolution of the scope that Wartofsky's thesis would seem to entail.[36] For all art-historical intents and purposes, Danto would treat human vision as invariant since the Upper Paleolithic period. Indeed, he has argued that art historians categorically depend on treating vision as an invariant, for otherwise their identifications of pictorial styles (even as "ways of seeing" or "period eyes") cannot be possible in the first place.[37] Still, we should reserve judgment about the *pace* of biocultural evolution and therefore about the rate at which any recursions of neurovisuality could be disseminated.

In this regard, Wartofsky's *art-historical* chronology might be way off even if his historicism can (perhaps must) be accommodated to *evolutionary* histories. Painter's perspective in the Italian Renaissance was not the first place, or even the most important place, in which the "[three-]dimensionality of visual space" could be constituted pictorially. When visibilized, the virtual coordinate plane naturally three-dimensionalizes and spatializes depicted objects—"perspectives" them—without using the particular techniques of painter's perspective. As Summers has argued, it can be found in ancient Egyptian pictures made at the beginning of the third millennium BCE. In fact, he has suggested that it was *metrically* organized in Egyptian pictorializations—that the plane was segmented in bands of equal

width on the plane or of "depth" in the resulting virtual coordinate space. As he writes, "Egyptian painters and sculptors made choices that were to establish the basis of Western metric naturalism . . . by the development of planarity into the virtual dimension [i.e., the virtual coordinate plane], with consequences reaching to the present day." Summers treats the history of these long-term consequences as an *art* history—a history of successive styles and technologies of pictorial representation building on the visibilization of the virtual coordinate plane in Egyptian pictoriality, culminating in painter's perspective in the Italian Renaissance before its metaoptical generalization in Cartesian point space.[38] Still, Summers does not always undertake to show how the technology was transferred from one locale of visuality to the next—for example, from ancient Egypt to archaic Greece—despite an extensive discussion of the conceptual origins of painter's perspective in Arabic optics. I do not think that he would endorse the hypothesis of neurovisuality as I have tried to state it; his world art history depends on a strictly psychological (and Kantian) conception of the contribution of understanding (or the transcendental logic) to sensibility and its intuition of the sensible manifold (transcendental aesthetic) in a kind of transcendental deduction, or what he calls "abstraction to the notional." But the hypothesis of neurovisuality could help enable him to explain how the consolidation of the virtual coordinate plane was disseminated, ramified, and preserved in human visualities and pictorialities, some of which had little material intercultural interaction.

In this regard, the virtual space constructed in painter's perspective is a particular historical variant of spatiality constructed on the virtual coordinate plane; as Summers puts it neatly, "the orthogonals in a perspective construction are 'really' parallel lines perpendicular to the baseline, and all modules marked off by transversals in the grid are 'really' perpendicular to them."[39] These parallel lines can be constructed on the virtual coordinate plane, whether or not they are treated as modules. The ancient Egyptian examples given by Summers may be questionable. But it seems likely that some Greek architectural sculpture (such as the frieze of the Parthenon at Athens) was organized by explicitly planning the spatial relationships of depicted objects and figures *on the virtual coordinate plane* before laying them out as pictures on the plane of the format and carving them back to the secondary plane(s), even if these plans did not have to divide the virtual coordinate plane into bands of equal width in which the figures were located and even if the figures were not reduced in size on the plane of the format proportionate to their location in depth (as in perspective projection).[40]

Indeed, the virtual coordinate plane could well be found in any visual culture in which pictures are installed on flat upright surfaces axially organized as perpendicular to the line of sight (though permitting the oblique axis that naturally visibilizes the plane under certain visual angles allowed or enabled by the architectonics). It could be found, that is to say, in virtually

every large-scale or monumental architecture known to us in complex societies, in which planed planks of wood, dressed blocks of stone, and other flat, rigid materials have been used to construct what has been called a "carpentered" visual world of right-angled architectures or "cuboid" architectonic spaces into which the virtual spaces of pictures were integrated. Often associated specifically with the rise of state-level civilizations in the ancient Near East, the Nile Valley, and elsewhere, this monumental architecture and the pictorial architectonics correlated with it is both very ancient (Neolithic) and practically worldwide in distribution. Many different kinds of visual and virtual spaces and many different kinds of pictorial effects can be constructed within it. But all of them can dimensionalize visual space in the correlate pictorial architectonics; within well-defined limits of the visual angle, all of them permit *the visibilization of an artificial or man-made visual plane* coordinate with the plane of the image in a retinocentric or viewer-centered frame.

The notion of a carpentered (visual) world—of a visual world that has been carpentered—has a number of ancestors. But it achieved classic formulation in famous studies by a trio of psychologists and anthropologists, Marshall H. Segal, Donald T. Campbell, and Melville J. Herskovits, who examined cross-cultural responses to the Müller-Lyer Illusion, exploring whether perceivers sensitive to (visually sensitized in) effects of plane recession in carpentered architectural environments (such as receding walls at right angles to the groundplane and increasingly distant from the vantage point) would transfer this sensitivity or skill to spontaneous interpretation of the two-dimensional graphic stimulus.[41] The thesis is usually stated as a strictly psychological hypothesis about cultural relativity in visual perception, not a thesis about a historically evolved neurovisuality that is activated in contexts of visual affordance similar to the ones in which the neural circuits were laid down. Though not mutually exclusive, these hypotheses might be related analytically in a variety of ways. Onians has emphasized that the original study depended on an overly narrow (and ideologically shaped) hypothesis—namely, that perception can be influenced by culture—rather than a "broader" one, one that he says "goes further"—namely, that perception is influenced (neurally shaped) by environment, "whether cultural or natural."[42] But the more encompassing hypothesis must perforce include the narrower one. And the latter may require a special theory of particular recursions in vision: that is, of neurovisuality.

Still, problems abound. Many statements of the thesis as tested by the perception of geometric illusions (1) construe as possible effects of a carpentered world what could equally be described as effects of a "perspectived world"; (2) overlook possible culturalized interpretations of the illusion *other than* the "carpentered" ones, and in general downplay what I have called "radical pictoriality"[43]; (3) attribute carpentered worlds as a matter of real architectures only to urban and/or Western civilizations, often modern ones; and (4)

understand carpentered worlds overly literally as a matter of visual spaces in real architectures as opposed to visual-virtual spaces in man-made architectonics that might include natural vistas, landscapes, buildings, pictures, and other artifacts organized axially, or in terms of what Summers calls "paths" and "centers," and in terms of frontality and planarity (in the case of pictures installed in such architectonics). These limitations on statements of the thesis and cross-cultural experiments designed to test it mean that its cultural reach and historical depth, let alone its neurological implications, remain uncertain. For immediate purposes, I note here that the original hypothesis did not take the *virtual coordinate plane* in Summers's sense to be responsible for the interpretations of the geometric illusions preferred by urbanized subjects, even if the plane is visually constituted or pictorially constructed only in carpentered architectonics. Rather, it took the interpretations to be steered or partly caused by certain effects of *perspectival recession* in carpentered worlds. Though related, these visual calibrations are analytically distinct. The virtual coordinate plane in Egyptian pictorialization did not lead to *perspectival* treatment of depicted objects on the plane of the format—no recession and no diminunition—even if such phenomena were perfectly visible in natural visual perspective in ancient Egyptian architectures.

Before Summers, perhaps the most sustained visual-psychological discussion of the standpoints, sightlines, planes, and spaces constructed in the monumental architectures of the ancient world was attempted by the architectural theorist Sigfried Giedion. Giedion emphasized the verticals and "verticalization" constructed in the monumental dressed-stone architecture of Egypt and Sumer, which he contrasted with the "multi-orientationality" of Paleolithic cave painting and other rock arts.[44] "Adjustment to the vertical" is not quite the same thing, however, as visibilization of the virtual coordinate plane, though it may be correlated insofar as the virtual coordinate plane becomes visible in a picture organized on the plane of a format perpendicular to the observer's groundplane (notionally flat) and to his line of sight (when axialized to address the picture head-on). And anyway I would locate the virtual coordinate plane not only in monumental architectures of the ancient Near East, Egypt, and the Mediterranean world. It may visibilize in "megalithic" or large-scale post-and-lintel construction in Neolithic and Bronze-Age Europe and elsewhere. Probably it had independent visibilizations in rectangular architectonics and pictorial planarity elsewhere in the world. Despite the contributions of Giedion, Summers, and others, archaeologies of ancient visual-virtual spaces have yet to be compiled and compared in these terms.[45]

Here, and once again, I want to make an analytic point instead of an empirical one. The question of the virtual coordinate plane as possible neurovisuality inevitably brings us to evolutionary-ecological aesthetics: how aesthetic experience in Zeki's sense, or seeing that actively configures what it sees, has been shaped in natural selection in natural (wild) *and*

artificial (cultural) environments, however "second nature" for their inhabitants.[46] The logical synthesis of neuroaesthetics and evolutionary-ecological aesthetics might be called "neuroarthistory." It *has* been so called in an ambitious book by John Onians, published in 2007. Onians urges that the neural routines of vision, including the visual routines of making artifacts, pictures, and artworks, are evolutionary products of visual adaptation to distinct ecologies of visual affordance, such as seasonal illuminations of topography, typical local geology, and the growth or behavior of regional flora and fauna. These environments have their own histories: climatological; geomorphological; botanical and zoological; and, of course, hominid and human. To quote one of Onians's formulations, vision (and visuality if any) can be most economically and comprehensively understood in terms of "automatic responses generated by neural networks whose configuration has become more or less permanent as the result of frequent exposure to particular features of our environment."[47]

Neuroarthistory in Onians's sense need not invoke visual adaptation *to visual-cultural environments* as the explanation of neural-visual rules and programs—of the "automatic responses" of the brain habituated in "frequent exposure to particular features of our environment." Neuroarthistory does not *assume* neurovisuality, though it is open to finding it. In recent work on the Aurignacian painted cave of Chauvet, for example, Onians suggests that the painters configured a simulation of certain things they saw in a natural ecology to which they were long adapted. If we adopt the strongest version of his theory, they could *only* do so. If this is correct, it might suffice to say that cave-painting (that is, *this* cave painting) merely stimulated the routines of vision already habituated to the ecology it pictured. No recursion of neurovisuality has occured.[48] I set aside the question whether Chauvet or any painted cave in the Upper Paleolithic period in Franco-Cantabria had any kind of "frequent exposure" to viewing in a population—exposure frequent enough to habituate vision, as Onians's theory requires—or why the vision of those who *did* make and see it, however restricted their number, might have been preferred or "selected for" in the biosocial reproduction of the population if whatever could be seen in or about the painting by these special people could be seen equally well in the extra-pictorial world by anyone else in the population. In the most economical statement of Onians's theory, those people who did see the paintings in the cave could see and use them visually as presentations of things to which their "neural networks" were already habituated or disposed, with or without pictorial mediation.

Still, the paintings in Chauvet (on Onians's account of them) may be special cases of *trompes l'oeil*. Arguably pictoriality as such has little or no causal role to play in the visual perception and interpretation of such works. Indeed, one can defend the radical thesis that we should sharply distinguish "illusionistic imaging" from depiction—that *trompes l'oeil* are not pictures.[49] On this account, a *trompe l'oeil* might be able to shape vision neurally if it is frequently

encountered as a particular feature of a habitual environment so long as it is not a mere duplication of just those things that can be visible just as well outside its illusion (if it is, then its causal role in shaping vision is diminished or eliminated). But it would not do so *as a picture* visible as such. It would bring unnatural or artificial things into being in the visual world—things such as the flat groundplanes of virtual coordinate planes—simply in virtue of the illusion.

The recursions of neurovisuality, if any, do not require that they be recursions cycled though the perception of *pictures* specifically. Nevertheless, pictorial recursions would be dramatic instances of neurovisuality precisely because most pictures envision some aspects of a world that are not otherwise visible in the world (or about it) in any way to which the visual brain could have become environmentally habituated. And they do so as *visible* pictoriality. The difficulty lies in determining when neural adaptation occurs in relation to such depiction—neuro*virtuality*. Even more fundamentally, the difficulty lies in determining when pictoriality as such becomes visible. When in neuroarthistory does neurovisuality specifically coordinate as neurovirtuality in a pictorial ecology?

VII. Neurovisuality Now

Over the long term, it would be surprising if human vision were *not* adapted to virtualities generated specifically in picture-making and cognate activities (including the making of "artificial memory systems" and "compu-notations"), that is, if its circuitries were *not* reintegrated in having played "image games" for more than forty millennia in (and as) different visual cultures.[50] For all the reasons I have noted, however, it will be hard to detect these hypothetical successions and recursions in the past. And for this very reason, my suggestions have been analytical, not empirical. As remarked at the outset, they are intended to explore whether a general theory of visual culture can or should logically be accommodated to a general science of vision.

Of course, it is one thing to suppose that the human species is partly disjunct from ancestral species—that it is a historical variation in the hominid line—partly in virtue of its *species-wide* neurovisuality in picture-making activities or in the production and material management of particular aesthetic sensations. Clark, a historian of modern art, has been happy to identify the "*species*-defining" nature of the "form" that he thinks emerged in tool-making in Solutrean cultures of the Upper Paleolithic period—presumably an order of manual, visual, and mnemic order that (he thinks) indexes speciation.[51] And it is another thing altogether to suppose that in neurovisuality the human species is *continuing to vary*—to diversify in ways that could lead to speciation. Clark would hardly suppose, I would guess, that artistic modernism is *species*-defining, whatever else it defines. Modernist rhetorics of the creation of a "New Spirit" (or a

"New Man" or a "New Woman") in the regimes of modern sensation and its reintegrations and reprojections in modern visual and material cultures have rarely gone that far. If they have, the proximity of dubious eugenics—of sociogenetic engineering by means of art and architecture—is obvious. If "creative evolution" occurs at all, presumably it is not limited to the evolution of late-modern men and women.

It is striking, then, that the rhetoric of present-day new media routinely asserts their power in terms of neurovisuality: the rules and programs of the *soft*ware (sometimes conceived as having a self-autonomizing epiprogrammatic capacity) are getting wired up in those of the *wet*ware, the human brain. Maybe this is just a metaphor for addiction or other processes of habituation and acculturation that do not amount to neural reintegration, or could be said to cause it. The wetware voraciously consumes the software in part because it has produced it specifically to satisfy cravings for imaging not so readily released from human image banks by other technologies or by natural visual perspectives *un*modified by man-made extensions into virtuality—virtuality expressly tailored pictorially to be stimulating, often sexually. But in other times and places, in *any* time and place, it might well be that the then-contemporary "new media" exerted a similar grip or had a similar efficacy—that there is nothing *neurally* new about the effects in question. (Certainly the extraordinary expenditure of human energy in the Paleolithic visual cultures has long been taken to betoken a "creative explosion" in human media and even in human mind—a world-historical threshold.[52]) New-media enthusiasts point to new forms of community and subjectivity that emerge from personal and social interaction in new media. But there does not yet seem to be any clear evidence for infraspecific variation, let alone *interspecific* variation, driven by new-media adaptations of neurovisuality. Is it too soon to tell? Or simply unlikely?

How can we address this contradiction? In conclusion, I notice the analytic equation with regard specifically to the vexing *empirical* question. The many "old media" can be investigated in many ways, from ophthalmology to art history. As we have seen, however, recursions of neurovisuality, if any, are likely to be invisible analytically, at least in part. They are a "black box": we cannot make the relevant neuropsychological experiments; comparisons and controls are inaccessible; evidence is indirect, read out of uncooperative fossils that present many forensic difficulties and must be subject to intrusive interpretation, especially if they are pictures or artworks. In technosocial environments of the new media today, however, we would seem to have ideal scientific *and* hermeneutic conditions to investigate neurovisuality—for the very first time in history. For the first time, psychophysiological observations of the electrochemical activity of the human visual brain or other experimental and clinical investigations can be brought into *direct* relation with introspective, ethnographic, and sociological information about subjective experience *in light of* the historical thesis that

interactions with visual-cultural media generate new neural circuitry. Which media and what effects produced in them stimulate neural reintegration and adaptation, if at all?

In our own time, this question should provoke terrifying ethical and political excitements and doubts—inevitable excitements and essential doubts. But there is no way around that. And it may be just as well. Within visuality we might accept *neuro*visuality, or contest it—we *must* do so. For if one thing is certain it is that somewhere some people are now working very hard to bring neurovisuality into being.

NOTES

1. This essay is based on talks and lectures at a session on neuroaesthetics organized by Todd Cronan and Meredith Hoy at the annual meeting of the Pacific Division of the American Society for Aesthetics in April, 2010; at a colloquium on neuroaesthetics organized by Michael Kelly at the Arts Research Center at the University of California at Berkeley in May, 2010; at the Center for Advanced Study at the Ludwig-Maximilians-Universität München in May, 2011; and at the Forum Scientiarum at the Karl-Eberhards-Universität Tübingen in May, 2011. I am grateful to the organizers and to the highly engaged audiences at all these presentations for their comments, suggestions, and criticisms. Special thanks to Nima Bassiri, Todd Cronan, and John Onians for comments on aspects of the work that has found some of its way into this essay.

2. See Whitney Davis, *A General Theory of Visual Culture* (Princeton, 2011) (hereafter *GTVC*) and "The Archaeology of Radical Pictoriality," in *Images and Imaging in Philosophy, Science and the Arts*, eds. Elisabeth Nemeth, Richard Heinrich, Wolfram Pichler, and David Wagner (Heusenstamm bei Frankfurt, 2011), forthcoming.

3. For Wölfflin's and Panofsky's treatments of Dürer's engraving, see Davis, *GTVC*, pp. 230-74. Wölfflin included the experiment of removing the background in the engraving in later editions of his *Die Kunst Albrecht Dürers*, first published in 1905, probably in response to debates about rhythmic conformation and proportional configuration to which Panofsky and others had contributed in the meantime. In turn, Panofsky criticized Wölfflin's experiment in his own *Life and Art of Albrecht Dürer*, published in 1943. For visual rhythm as an object in psychophysiology and art-theoretical description at the time Wölfflin was writing about Dürer, see Hans Hermann Russack, *Der Begriff des Rhythmus bei den deutschen Kunsthistorikern des XIX. Jahrhunderts* (Weida, 1910).[ft num=3]

[ft num=4]See Michael Baxandall, *Painting and Experience in Fifteenth Century Italy: A Primer in the Social History of Pictorial Style* (Oxford, 1972). As John Onians has pointed out, Baxandall himself understood the "period eye" to have a neuropsychological basis in social history, that is, to be neurally shaped in social practices and relations, though many readers have taken his concept to be a *non*neurological and even an antinaturalistic one (see John Onians, *Neuroarthistory: From Aristotle and Pliny to Baxandall and Zeki* [New Haven, 2007], pp. 178-88, and "Michael David Kighley Baxandall 1933-2008," *Proceedings of the British Academy* 166 [2010], esp. pp 34-35). In addition to using Freudian concepts, Gombrich derived his model of "mental set" (changed to "period eye" by Baxandall) from the experimental zoological ethology of Konrad Lorenz and Niko Tinbergen, the environmental behaviorism of Egon Brunswik and Edward Tolman, and the proto-cognitivist psychology of Jerome Bruner. Gombrich's art history assumed that mental set in perception (the system of one's expectations and habits) has been shaped by the functions and purposes of depiction in social contexts. But the underlying *theory* of visual perception that he tried to coordinate with a history of depiction simply asserts that perceptual expectations are naturally shaped in a visual environment—possibly naturally selected. As we will see, this theory has reemerged in the "neuroarthistory" advocated by Onians, another student of Gombrich.

5. To stick to the intellectual genealogies mentioned so far, I cite the case of Emanuel Löwy, one of Gombrich's teachers. *Die Naturwiedergabe in der älteren griechischen Kunst* (Vienna, 1900), one of the most influential art-theoretical treatises ever written in any modern European language, acknowledged the psychophysics of Ernst Brücke (pursued in the same laboratory where Sigmund Freud, Löwy's lifelong friend, got his start in the 1870s) as well as the developmental psychology of James Sully, whose studies of children's drawing helped to suggest Löwy's concept of visual schemata (in turn adopted by Gombrich). Löwy's psychological theory did not directly appeal to *neurological* considerations, unlike Freud's pioneering "outline of a scientific [neuro]psychology" (prepared in the mid-1890s). But it was clearly intended to be compatible with them. I consider Löwy's art theory (and resulting history of the "earliest Greek art") in "Nature Returns: The Very Idea of Conceptual Images," in *Visuality and Virtuality: Images and Pictures from Ancient Egypt to New Media*, MS., 2011.

6. Guido Hauck, *Grundzüge einer allgemeinen axonometrischen Theorie der darstellenden Perspective* (Dresden, 1876), *Die Grenzen zwischen Malerei und Plastik und die Gesetze des Reliefs* (Berlin, 1885), *Über innere Anschauung und bildliches Denken* (Berlin, 1897), and other works, including treatments of optical refinements in Doric architecture. – Denman Waldo Ross, *A Theory of Pure Design: Harmony, Balance, Rhythm* (New York, 1905); see Marie Ann Frank, *Denman Ross and American Design Theory* (Hanover, NH, 2011). – Hans Prinzhorn, *Bildnerei des Geisteskranken: Ein Beitrag zu Psychologie und Psychopathologie der Gestaltung* (Berlin, 1922). – Henry Schaefer-Simmern, *The Unfolding of Artistic Activity: Its Basis, Processes, and Implications* (Berkeley and Los Angeles, 1948); *Sculpture in Europe Today* (Berkeley and Los Angeles, 1955); and *Eskimo-Plastik aus Kanada* (Kassel, 1958). – Erle Loran, *Cézanne's Compositions: Analysis of His Form with Diagrams and Photographs of His Motifs* (Berkeley and Los Angeles, 1943). – Rudolf Arnheim, *Art and Visual Perception: A Psychology of the Creative Eye* (Berkeley, 1954). – Roy Schafer, *Projective Testing and Psychoanalysis: Selected Papers* (New York, 1967). – Rhoda Kellogg, *Analyzing Children's Art* (Palo Alto, CA, 1969.) – Margaret Hagen, *Varieties of Realism: Geometries of Representational Art* (Cambridge, 1986). – John Willats, *Art and Representation: New Principles in the Analysis of Pictures* (Princeton, 1997); see Paul Smith, "Pictorial Grammar: Chomsky, John Willats, and the Rules of Representation," *Art History* 34 (2011), pp. 562-93. Of course, this is a very partial and personal list.

7. For valuable conspectuses, see *Expression vs. Compression: Explaining and Containing the World's Art,* ed. John Onians (Williamstown, MA, 2006), and *World Art Studies: Exploring Concepts and Approaches*, eds. Kitty Ziljmans and Wilfried van Damme (Amsterdam, 2008), with comment on the latter by Whitney Davis, "World Without Art," *Art History* 33 (2010), pp. 710-16. Before the rise of multidisciplinary "world art studies" in the past two decades, the hypothesis of neurovisuality (implied or explicit) played a role in art history chiefly in narratives of the so-called "survival of images," of their power to survive *in* imaging and for *re*-vision and of their agency in so doing—survival, power, and agency, that is, even when one can find no chain of artifact-replications that connects an earlier imagistic "source" and a more recent supposed copy, version, variant, allusion, quotation, or appropriation, no material history of configuration that explains the supposed psychological persistence or the consistent reactivation of the image. These theories—of empathy, "tactile values," *Pathosformel*, *imago*, archetype, engram, and schema among others—have sometimes motivated apologetics of historical anachronism, panhuman aestheticism, and invariant visual imagination. But they might be defended on neuropsychological grounds. Some of the intellectual innovators of the doctrines assumed or expected such rationales to be available.

8. It would require a full-length book to review the vast literature in these terms. The thesis seems to underpin many practices in art therapy: in one definition, "art therapy practices actively seek to integrate sensory experiences probably contributing to neural integration, strengthening mental imagery and . . . providing concrete and therapeutic visual feedback" (Noah Hass-Cohen and Nicole Loya, "Visual System in Action," in *Art Therapy and Clinical Neuroscience*, eds. Noah Hass-Cohen and Richard Carr [London, 2008], p. 92; in addition to its theoretical interest, this careful discussion of neural "habituation" in the clinical or therapeutic "art space" contains many useful references).

9. Semir Zeki, *Inner Vision: An Exploration of Art and the Brain* (New Haven, 1999). A fulsome review of recent literature (including evolutionary and archaeological studies not addressed by Zeki) can be found in Dahlia W. Zaidel, *Neuropsychology of Art: Neurological, Cognitive, and Evolutionary Perspectives* (Hove, Sussex, 2005).

10. John V. Kulvicki, *On Images: Their Structure and Content* (Oxford, 2006). My use of the term "image structure" is not intended to be faithful to Kulvicki's complex analytics of images. Instead it is intended simply to preserve the conceptual parallel between psychophysiological neuroaesthetics and phenomenological formalism.

11. Zeki, *Inner Vision*, p. 68.

12. Alva Noë, *Action in Perception* (Cambridge, MA, 2004); Dominic McIver Lopes, *Sight and Sensibility: Evaluating Pictures* (Oxford, 2005).

13. For these findings, see Zeki, *Inner Vision*, pp. 61-63 and Figs. 7.3, 7.4.

14. Davis, *GTVC*, pp. 277-321. My analysis is unavoidably somewhat technical, though the results are simple and straightforward. The example is built in part on Ludwig Wittgenstein's model of a "complete primitive language-game," namely, the "language of the builders" described in the early sections of Wittgenstein's posthumously published *Philosophical Investigations*.

15. T. J. Clark, *The Sight of Death: An Experiment in Art Writing* (London, 2006), quotation from p. 8. To some extent, as Clark acknowledges, the notion of incommensurability between word and image may be a holding action—a kind of resistance—within modern and contemporary visual cultures in which all "images" (including the images of words used to describe artworks in a script of a natural language) are produced as discursively coded in terms that can only be described as algorithmic, grammatical, lexematic-syntactic, and/or "digital." The incommensurability, then, need not be *essential*, in the very nature of the aesthetics of visible things. It may be a product of a historical disequilibrium or discoordination—an inequality—within which artwriting must operate now, and within which it often ends up "writing pictures to death" (ibid.).

16. My perspective on these matters differs considerably from many treatments of artwriting as *essentially* ekphrastic: as analytically all about (and morally best limited to) the subtle motions of our own consciousness—including its uncertainties—in interaction with the forms and figures projected by complex artworks. (For an illuminating review of the history and politics of this attitude, to which the authors are quite sympathetic, see Margaret Iversen and Stephen W. Melville, *Writing Art History: Disciplinary Departures* [Chicago, 2010].) This is sometimes described as a modesty, sensitivity, and tact pitched in reaction to—resistance of—scientisms that are supposed to be inherently inimical to visual-aesthetic understanding. It can also be elitist and obscurantist—the product of modern mandarin ideologies of the aesthetic.

17. These methods "can suggest to us that an artwork or artifact likely possessed a certain configurative aspect for its past makers and observers *even if the historical formalist cannot initially see it with his own eyes*" (Davis, *GTVC*, p. 73). When they became complex and mathematized, they branched off to constitute new disciplines of analytical archaeology that are no longer in dialogue with art history (see David Clarke, *Analytical Archaeology*, 2nd ed. [New York, 1980]), despite the efforts of such theorists as George Kubler.

18. It seems to be worth noting that vision science in neurophysiology and perceptual psychology sometimes describes and understands itself as "phenomenology," at least in part; see Stephen E. Palmer, *Vision Science: Photons to Phenomenology*

(Cambridge, MA, 1999). On art history that detaches itself analytically from merely visible objects such as artworks and pictures, see Whitney Davis, "Zukunft der Kunstgeschichte," in *Metzler Lexikon Kunstwissenschaft: Ideen, Methode, Begriffe*, ed. Ulrich Pfisterer (Stuttgart, 2011), forthcoming; on long-term and global series of replications, see Whitney Davis, "World Series: The Unruly Orders of World Art History," *Third Text* 25 (2011), forthcoming.

19. Zeki, *Inner Vision*, p. 63 and Fig. 7.5. For Land's original use of the "Mondrian stimulus" or "Mondrian pattern" (illustrated in ibid., p. 187 and Fig. 18.1) to demonstrate color constancy, as he thought, see Edwin H. Land and J. J. McCann, "Lightness and Retinex Theory," *Journal of the Optical Society of America* 61 (1971), pp. 1-11, and Edwin H. Land, "The Retinex Theory of Colour Vision," *Proceedings of the Royal Institute of Great Britain* 47 (1974), pp. 23-58.

20. The *locus classicus* of extended art-theoretical description of the subtle configurative order of Mondrian's paintings is Yve-Alain Bois, *Painting as Model* (Cambridge, MA, 1990). It was singled out in Richard Wollheim's critique of "Latent Formalism" because of its dependence, Wollheim said, on a misguided theory of "rules and programs" in Mondrian's painting as an art. For details, see Davis, *GTVC*, pp. 58-59.

21. In *Neuropsychology of Art*, Zaidel presents a thorough review of literature on "the effects of brain damage in established visual artists" (pp. 23-49) and on "special visual artists: the effects of autism and slow brain atrophy on art production" (pp. 75-86).

22. Among recent treatments, see Dorothée Brill, *Shock and the Senseless in Dada and Fluxus* (Hanover, NH, 2010), and *Neurology and Modernity: A Cultural History of Nervous Systems, 1880-1950*, eds. Laura Salisbury and Andrew Shail (Basingstoke, 2010).

23. Stephen Kern, *The Culture of Time and Space 1880-1918* (London, 1983), pp. 1-2. The most widely-read statement in English may be Robert Hughes's *The Shock of the New: Art and the Century of Change* (London, 1980). But see also, for example, Alfred Appel, Jr., *The Art of Celebration: Twentieth-Century Painting, Literature, Photography, Sculpture, and Jazz* (New York, 1992) and *Jazz Modernism: From Ellington and Armstrong to Matisse and Joyce* (New York, 2002).

24. Sometimes it is hard to tell. In several books the psychoanalyst Gilbert J. Rose has written about the "universal emotional appeal" of music and "abstract art" (musical or otherwise) and their capacity to "tap into a biological need to grow and develop by newly reintegrating thought and feeling" (*Between Couch and Piano: Psychoanalysis, Music, Art and Neuroscience* [Hove and New York, 2004], p. xvii). Abstract art may be universal in its appeal, but in one obvious sense it is surely a historical visual culture.

25. David Marr, *Vision: A Computational Investigation into the Human Representation and Processing of Visual Information* (New York, 1982), pp. 272-73 and Fig. 4.1.

26. In the order quoted, the quotations in this paragraph come from from ibid., pp. 37-38, 36, 284, 37.

27. Ibid., p. 273.

28. A number of objections to Marr's concept and evidence are registered by Yehouda Harpaz, "Critique of *Vision* by Marr" (https: www.human-brain.org/vision.html).

29. See Saleh Uddin, *Axonometric and Oblique Drawing: A 3-D Construction, Rendering, and Design Guide* (New York, 1997), and many other handbooks. The Wikipedia entry on Marr is incorrect in noting the "similarity in [Marr's] concept" of 2½-D representation in visual computation "to the stage in drawing where an artist highlights or shades areas of a scene to provide depth." Axonometric and isometric projections do not require highlighting or shading to lay out their representations of three-dimensional things. Marr's example (*Vision*, p. 278 and Fig. 4.2) is a pure "line drawing" of a cube (in axonometric projection) with a modeling of the surface orientations of the three visible faces in the projection and of their discontinuities (different orientations) at the line of intersection of the planes of any two of the faces.

30. David Summers, *Real Spaces: World Art History and the Rise of Western Modernism* (London, 2003), pp. 445-48 and Figs. 218-24. (For the sake of economy, I set aside the fact that the virtual coordinate plane is coordinate *both* with the plane of the format *and* with any "secondary plane," as Summers calls it, that might be established by material relief of the surface, in which figures are carved to stand out from a "back" ground.) The virtual coordinate plane is indefinite. Its visible area seems to be unbounded insofar as no limit to the plane is set up in the "distance" virtualized in the picture. More exactly, the plane seems to continue *beyond* the region of its visibility under the visual angle of the particular line of sight in which it virtualizes. And it seems to extend beyond the sides of the "frame" of the picture that have been established on the plane of the format or by the shape of the format. The virtual coordinate plane need not be depictively *marked* in any way. *One does not have to draw it in*: in certain pictorial architectonics, it just *appears* as it were. (For this reason we can avoid the fatal tautology of having to suppose that the image maker already knew how to draw in the virtual coordinate plane in making the picture before it could be visibilized by him in visual space when viewing the picture.) In this case, its apparent surface properties will be visible properties of the surface of the format, including its color and texture (though not, of course, its

orientation—the virtual coordinate plane as it were detaches from the plane of the format that constitutes it and "falls back" into virtual pictorial space). In the case of a drawing on a wooden panel, then, the virtual coordinate plane will have visible properties of the wood, however it has been treated materially, even though it is the "groundplane" on which depicted objects appear to be situated. (Of course, this duality can raise the problem of what Richard Wollheim has called "twofoldness": the virtual coordinate plane is visible as depth *in* the picture only when it is not visible as the color, texture, etc., of the surface *of* the picture. Or perhaps depth and surface are *simultaneously* visible.) But the plane can be marked if the pictorialist chooses to do so, typically as a pictorialization of the "ground" (the earth, floor, etc.) on which objects are situated (or as a pictorialization of sky, ceiling, etc.: a virtual coordinate plane can visibilize as a "skyplane"). If this pictorialization occurs, art historians usually call the plane an "optical plane"; Summers cites the depictions of stretches of grassy earth beneath the feet of figures depicted in Byzantine mosaics (ibid., 454-57 and Figs. 231-32). Summers's concept of the virtual coordinate plane is a major contribution to the theory of pictures and the virtual worlds they construct; for detailed comment, see Whitney Davis, "Immanent Virtuality: Disjunctions of Planarity in Ancient Egyptian Pictorialization" and "Emergent Virtuality: Disjunctions of Planarity in Classical Greek Sculpture," in *Visuality and Virtuality*, MS., 2011.

31. For metaopticality, see Summers, *Real Spaces*, pp. 555-64.

32. Marx W. Wartofsky, "The Paradox of Painting: Pictorial Representations and the Dimensionality of Visual Space," *Social Research* 51 (1984), pp. 877-82. Other kinds of world-historical claims have been made for linear perspective projection, notably that it has reorganized human subjectivity. Some may require (or amount to) a hypothesis about a recursion of neurovisuality, whether or not their authors make the claim.

33. Marx W. Wartofsky, "Perception, Representation and the Forms of Action: Towards an Historical Epistemology," in *Models: Representations and the Scientific Understanding* (Boston, 1979), p. 188; "Paradox of Painting," p. 877.

34. "Paradox of Painting," pp. 864-65, my emphasis. Wartofsky's theory, which he called "historical epistemology," was also set forth in "Sight, Symbol, and Society: Towards a History of Visual Perception," *Philosophical Exchange* 3 (1981), pp. 23-38; "Visual Scenarios: The Role of Representation in Visual Perception," in *The Perception of Pictures*, ed. Margaret Hagen, vol. 2, *Dürer's Devices: Beyond the Projective Model of Pictures* (New York, 1980), pp. 131-52; and "Art History and Perception," in *Perceiving Artworks*, ed. John Fisher (Philadelphia, 1980), pp. 23-41. For comments, see Davis, *GTVC*, pp. 12-14.

35. See Davis, *GTVC*, pp. 328-33. The term "osteodontokeratic culture" is owed to Raymond A. Dart, but I use it in my own way simply to refer to "brute culture," and I do not mean to endorse Dart's description of the hominid culture to which he applied it; see *The Osteodontokeratic Culture of Australopithecus Prometheus* (Pretoria, 1957).

36. Arthur C. Danto, "Seeing and Showing," *Journal of Aesthetics and Art Criticism* 59 (2001), p. 7. This essay was written as an explicit riposte to Wartofsky's "historical epistemology." Still, Danto has waffled. Elsewhere he was written that "perception itself undergoes relatively *little* change over the period in question—let's say from about 1300 to 1900" (*After the End of Art: Contemporary Art and the Pale of History* [Princeton, 1997], p. 49, my emphasis). As *any* change in the physiology of the eyes and the visual cortex could have consequences that might show up in visual culture, not to speak of the consequences of visual culture *for* vision, Danto's acknowledgement of some change (however little) could be taken theoretically to admit the historical possibility that in theory he had hoped to deny. Danto's most dramatic invariantist claim—that there has been "no human evolution in the past one hundred thousand years" ("Seeing and Showing," p. 7)—is certainly wrong. For further discussion, see Davis, *GTVC*, pp. 15-20.

37. See Danto, "Seeing and Showing," p. 7, and compare *After the End of Art*, pp. 49-51. This is an ingenious and powerful argument. But it is not the same as the argument that there has been "no human evolution" in the past hundred thousand years or even in the past six hundred; it need not entail that invariant *seeing* relative to a variable *seen* dates from the beginning of human history (or even from the time of the earliest depictions made by human or hominid creatures) to the present day (see Davis, *GTVC*, p. 19).

38. Summers, *Real Spaces*, p. 445. Summers emphasizes the intellectual origins of painter's perspective in Arabic optics (ibid., pp. 508-26). For the metric treatment of the virtual coordinate plane in Egyptian pictorialization, see ibid., pp. 447-48 and Fig. 224, with comments in Davis, "Immanent Virtuality," MS., 2011.

39. Summers, *Real Spaces*, p. 526.

40. For an Egyptian example of metric segmentation of the virtual coordinate plane, see Summers, *Real Spaces*, Fig. 224; the painting in question is anomalous and may be incorrect in terms of the "rules and programs" of depiction in ancient Egypt at the time of its production. For the planning of the Parthenon frieze on the virtual coordinate plane, see Ian Jenkins, *Greek Architectural Sculpture in the British Museum* (London, 2006), pp. 96-98 and Fig. 86, with discussion by Davis, "Emergent Virtuality," MS., 2011.

41. M. H. Segal, D. T. Campbell, and M. J. Herskovits, "Cultural Differences in the Perception of Geometric Illusions," *Science* 193 [1963], pp. 769-71, and *The Influence of Culture on Visual Perception: An Advanced Study in Psychology and Anthropology* (Indianapolis, IN, 1966). Compare V. M. Stewart, "Tests of the 'Carpentered World' Hypothesis by Race and Environment in America and Zambia," *International Journal of Psychology* 8 (1973), pp. 83-94: susceptibility to "carpentered" interpretations of the illusions was greater among children raised in urban contexts regardless of nationality or racial identification. In the copious literature commenting on the original hypothesis, I single out Jan Deregowski, *Illusions, Patterns, and Pictures: A Cross-Cultural Perspective* (London, 1980), and Onians, *Neuroarthistory*, pp. 150-58.

42. Ibid., pp. 156-57.

43. See Davis, "Archaeology of Radical Pictoriality," pp. 2-8.

44. Sigfried Giedion, *The Eternal Present: A Contribution on Constancy and Change*, vol. 1, *The Beginnings of Art* (Oxford, 1961), and vol. 2, *The Beginnings of Architecture* (Oxford, 1964). A third volume was published posthumously: *Architecture and the Phenomena of Transition: The Three Space Conceptions in Architecture* (Cambridge, MA, 1971). Giedion's idea may have had some impact on some statements of the carpentered world hypothesis. Its fascinating historiography needs comprehensive investigation.

45. Notable contributions, though very different one from the next, include George Kubler, *The Art and Architecture of Ancient America: The Mexican, Maya, and Andean Peoples* (Harmondsworth, 1962); Vincent Scully, Jr., *The Earth, the Temple, and the Gods: Greek Sacred Architecture* (New Haven, 1962); Robert L. Scranton, *Aesthetic Aspects of Ancient Art* (Chicago, 1964); John Onians, *Bearers of Meaning: The Classical Orders in Antiquity, the Middle Ages, and the Renaissance* (Cambridge, 1988); and Ian Hodder, *The Domestication of Europe: Structure and Contingency in Neolithic Societies* (Oxford, 1990). If the archaeology of pictorial virtuality in visual spaces is to get anywhere at all, it needs to be extremely painstaking about the parameters of the visual angle (standpoint). For one revealing investigation, see Christopher R. Lakey, *Relief in Perspective: Medieval Italian Sculpture and the Rise of Optical Aesthetics*, PhD dissertation, University of California at Berkeley, 2009.

46. The metaphor has been given an extended specification and philosophical contextualization by Robert B. Pippin, "Leaving Nature Beyond: Or Two Cheers for 'Subjectivism'," in *The Persistence of Subjectivity* (Cambridge, 2005), pp. 58-75, but it has also been deployed to powerful effect by Summers in *Real Spaces*.

47. Onians, *Neuroarthistory*, p. 158; also John Onians, "The Role of Experiential Knowledge in the Ultimate Design Studio: The Brain," *Journal of Research Practice* 6 (2010), pp. 1-21. It is assumed that environment always has local characteristics—rainfall typical of the region, unique stone outcroppings, distinctive fauna, and so on. For this reason "neuroarthistory" has close affinities with the "geography of art."

48. John Onians, "Neuroarchaeology and the Origins of Representation in the Grotte de Chauvet: A Neural Approach to Archaeology," in *Image and Imagination: A Global Prehistory of Figurative Representation*, eds. Colin Renfrew and Iain Morley (Cambridge, 2007), pp. 307-20.

49. See Susan Feagin, "Presentation and Representation," *Journal of Aesthetics and Art Criticism* 56 (1998), pp. 234-40 (the term "illusionistic imaging" is hers); for perspicuous discussion, see Lopes, *Sight and Sensibility*, pp. 34-39.

50. The term "image game" has been used by several writers in several ways. I use it to designate the "complete primitive languages" and "language-games" (in Wittgenstein's sense) of pictures and cognate configurations of marks, or more exactly those pictures and cognate configurations within which the forms of likeness enable the user (the "gamer") to apprehend what (virtual) objects are being depicted in (which) virtual worlds—indeed within which the network of forms of likeness can enable the user to constitute (new) virtual things visibilized by pictures and other marks (see Davis, *GTVC*, pp. 277-340, and "The Archaeology of Radical Pictoriality," in *Images and Imaging*, eds. Nemeth et al.). For Paleolithic "artificial memory systems" (a term coined by Francesco d'Errico) and "compu-notations" (a term I have coined to refer to certain possible functions of Paleolithic marking), see Davis, *GTVC*, pp. 120-49.

51. T. J. Clark, "More Theses On Feuerbach," *Representations* 104 (2008), pp. 4-7. Clark's comment was qualified because he knew that tool-making technologies (and perhaps the form and facture of the resulting material culture) long predate the modern humans of the Solutrean age. Several authors in *World Art Studies* (see note 7) confidently assert the panhuman (and therefore species-specific?) identity of art making, though others point with equal certainty to the *pre*human antiquity of aesthetic activity.

52. A well-organized statement by John E. Pfeiffer summarized research and speculation up to the date of its publication: *The Creative Explosion: An Inquiry Into the Origins of Art and Religion* (New York, 1982). More recently, both J. D. Lewis-Williams (*The Mind in the Cave: Consciousness and the Origins of Art* [New York, 2002]) and Barbara Olins Alpert (*The Creative Ice Age Brain: Cave Art in the Light of Neuroscience* [New York, 2008]) make neuroarthistorical claims in Onians's sense, sometimes requiring a narrower thesis of neurovisuality and possibly even in neurorvirtuality in my senses. I am mindful of recent critiques of strong claims for successive "revolutions" in human technoculture, especially by Clive Gamble (*Origins and Revolutions: Human Identity in Earliest Prehistory* [Cambridge, 2007]). Still, Gamble emphasizes the ways in which "human

identity" has evolved in human social relations in generative interaction with material culture. And this thesis could be taken to be a statement of the very hypothesis ventured in "new-media studies," albeit writ for the longest term by Gamble and in relation to populations, media, and visual cultures in which the recursion of neurovisuality must now be wholly inaccessible.

Whitney Davis is Professor of History & Theory of Ancient & Modern Art at UC Berkeley. He is the author of *The Canonical Tradition in Ancient Egyptian Art* (Cambridge, 1989), *Masking the Blow: The Scene of Representation in Late Prehistoric Egyptian Art* (1992), *Pacing the World: Construction in the Sculpture of David Rabinowitch* (Harvard, 1996); *Drawing the Dream of the Wolves: Homosexuality, Interpretation, and Freud's "Wolf Man" Case* (Indiana, 1996); *Replications: Archaeology, Art History, Psychoanalysis (1996)*; *Queer Beauty: Sexuality and Aesthetics from Winckelmann to Freud and Beyond* (Columbia, 2010); and *A General Theory of Visual Culture* (Princeton, 2010). Currently he is working on *Visuality and Virtuality: Images and Pictures from Ancient Egypt to New Media* (a companion volume to A General Theory of Visual Culture) and *Archaeologies of the Standpoint*. Recent articles and talks have dealt with eighteenth-century British portraiture, neuroaesthetics and "radical pictoriality," the photography of Massimo Vitali, sexual-selection theory in Victorian aesthetics, and the historiography of frontality in prehistoric and ancient arts.

RESPONSES TO DAVIS, "NEUROVISUALITY"

CHARLES PALERMO

Charles Palermo writes:

> Things remain visible to people outside the visuality within which they were intentionally produced, though what is visible in an artifact in this context (or what is visible about it) may differ from what is visible in the context of visuality. By the same token, people can succeed to *many* visualities, though both Wölfflin and Panofsky were somewhat uncertain (on different grounds) about just how far it is possible to do so when we are dealing with visualities constituted in the past and accessible to us only in things made to be visible within them that happen to have survived into our own visual world.

Whitney Davis elegantly lays out the relation of visuality to history in this passage, early in his impressive account of what he calls "neurovisuality." As his references to Heinrich Wölfflin and Erwin Panofsky suggest, there are important ways in which the problems he elaborates are continuous with old problems in the field of art history. Crucially, in the current context, he addresses himself to the problematic notion that people can look at a work of art made in

an earlier epoch and find that "what is visible" in those works is not what they were intended to make visible, and that what they were intended to make visible is no longer visible in them.

Davis takes for a concrete example a work of Albrecht Dürer's, which both Wölfflin and Panofsky discuss. Davis glosses their efforts. By "removing the background in Dürer's engraving of *Knight, Death, and the Devil* of 1513…to expose the outline silhouette of the Knight, to *visibilize* it, Wölfflin meant to show how his readers—that is, people today—can still *see* the primary rhythmic configuration of a pictorial artwork made five hundred years ago. That is, Wölfflin stands for the idea that we can still see Dürer's linear rhythm after all these centuries. Panofsky stands for the contrary: "In Panofsky's iconology, remember, we can only use a picture that was made in the distant past or in a different culture in *discursive* ways; we cannot fully use it *visually* in the way that its makers did." We can talk about how a sixteenth-century Lutheran would have seen it, but we can't see it ("use it *visually*") ourselves.

But what is "it"? Neither Wölfflin nor Panofsky (nor Davis) would claim that we can't see Dürer's *Knight, Death, and the Devil*. The complicated relation between cultural position and vision is the topic they address. But they all admit that we can look at the work of art. Panofsky might be a pessimist and Wölfflin an optimist, but they are concerned about the uncertain prospect of our succeeding to visualities intended for historically remote beholders.

Our best chance seems to be that offered by Wölfflin, who removed the background from the print, thereby enabling the latter-day beholder to "*see*" the rhythm of Dürer's linear work. But one might equally argue that Wölfflin is *at least* as pessimistic as Panofsky, because, in order to make it possible for us to succeed to the original work's visuality, he had to show us "an autonomous artwork, …one produced by Wölfflin rather than Dürer." We can "use it *visually*," but "it" is a new work, one Wölfflin produced for beholders who were his contemporaries. Or, perhaps we should say that, what we can finally see ("use…*visually*") is Dürer's print, but we see it by looking at Wölfflin's illustration. Either way, the object of our visualization is not in front of us. We can see Dürer's print, just not by looking at it.

To say that (neuro)visuality defines itself in terms of the effects an object of visual culture produces in the viewing subject calls into question the place of the work of art or of visual culture in it. If Wölfflin's altered image can afford me an equivalent for the experience of linear rhythm Dürer's print afforded its original audience, then the "succession to visuality in neural circuits" does indeed take place crucially "in natural history" and "in social life," but the specificity of such successions lies in the "neural correlate" or "causation" or at any rate in "the visual succession to visuality," and *not* in the work of art or visual culture. Ultimately, this means we're each of us his or her own Wölfflin: we experience neural correlates afforded

by images, *but the "succession to visuality" takes place "in neural circuits."* And looking at the work of art turns out to be irrelevant (if not inhibiting) to our success in seeing it.

Strange as it may sound, I think this is obviously right. Imagine looking at a badly damaged copy of Dürer's *Knight, Death, and the Devil*. Imagine tears, stains, vandalism, etc., obscuring the image. Perhaps even an inscription applied to the work in, say, the nineteenth century. (To enhance the thought experiment, let's imagine something inane written by some commentator whose understanding of Dürer's project was evidently limited.) Indeed, let's say it has been colored in.

An astute scholar of Dürer's work will still be able, we hope, to succeed to visuality by doing what Wölfflin taught us to do—namely, by responding to what we know rather than what we're looking at. This learned acculturation may, as I hope I rightly take Davis to speculate, become part of a recursive neurovisuality. That is just to say that our knowledge of history and our sense of what time's toll looks like may become part of the way we see old works of art at the neural level, thanks (I gather) to the plasticity of our brains. Whether this hypothesis is true, and regardless of the extent of that truth, this will justify me in doing what I have always done, as an art historian: attempt to interpret works of art.

But Davis refuses this point. In fact, he notes regretfully that "art historians can overlook neural causalities that might operate *outside* visuality—causalities that might explain why pictures or artworks can retain their visual 'power' or 'agency' (aesthetic or otherwise) far beyond their original contexts of making in a particular historical visuality, that is, why they can be globally transmitted *between* historical visualities despite tenuous material connection between the social groups or visual cultures in question." In other words, after convincing me that my knowledge should trump my vision, Davis tells me my vision should be counted on to transcend my knowledge. The object of my attention is now the object of my vision—the thing I'm looking at.

Can we have it both ways, or is this special pleading, now on behalf of interpretation, now on behalf of subjective experience?

One can imagine a way to reconcile the two commitments. Suppose those "pictures or artworks" that "retain their visual 'power' or 'agency'…beyond their original contexts of making in a particular historical visuality" and can therefore "be globally transmitted *between* historical visualities despite tenuous material connection between the social groups or visual cultures in question" are precisely those pictures or artworks that do not happen to raise the historical problem we began by discussing—that works from remote milieux are liable to afford us different visualities from those they were intended to produce. Let's say, they're works for which an all-knowing Wölfflin would make illustrations (such as his altered *Knight,*

Death and the Devil) that looked just like the original. If that is so, Davis has no contradiction to explain. But if that's so, it turns out that interpretation always precedes vision (if only logically). Art history needs no neuroanything.

Whitney Davis Responds to Charles Palermo:

Charles Palermo's response to my speculations about "neurovisuality" (let alone what I called "neurovirtuality") is right on target. Is the concept needed at all? Or does it needlessly proliferate art-historical ontology (whether at the level of method or theory or both) beyond essential categories? I believe in Occam's razor as much as the next hairy beast. To use Palermo's turn of phrase, then, does the hypothesis of neurovisuality simply ratify us in doing what he always does—"attempt to interpret works of art"? (For myself, I'm involved in a quite different project—explaining pictures. But we can be indifferent to that difference, I think.) And in an obfuscatory language to boot? Or does it bring something *to* that very enterprise? To give the hypothesis of neurovisuality its best shot, the answer to his final question is that "interpretation always precedes vision" *because of neurovisuality* or *as* neurovisuality, not *in spite of* it or *without* it, as he implies. More exactly, what he calls "interpretation [that] always precedes vision" *is* neurovisuality, the neural representation of the "knowledge" that he might use as a beholder to make sense of the intentional order of the artwork or picture, just as the effect that a "visual object produces in the viewing subject" simply *is* neuroaesthetics (though I tried to show that neuroaesthetics *without* an account of neurovisuality likely cannot handle the subjective effects of beholding an artwork or a picture insofar as its culturally particular intention is salient).

In both logical and material terms there may be no ontological difference between interpretive looking in Palermo's sense and neurovisuality in mine. As I said in my essay, our choice of analytic representation has little theoretical valence. It's instrumental. In talking about visual artworks or pictures made to be visible, you can talk about *interpreting* their intentions or you can talk about *seeing* them. Claims advanced in either terminology are fully interconvertible if they are indeed claims about the intentional autonomization of autonomic processes of vision or proprioception of any other kind. I have no truck with (and I try not to trade in) essentialist claims for verbal ekphrasis as the only way to represent the (neuro)intentional order of the objects in view. (Palermo plays his cards close on this score: he just "interprets works of art." But it's possible that this means he just doesn't want to learn to write differently.) If you don't like the specialist or mandarin terms of the one, move to the other. My hunch is that his intentionalism should best understand itself as materialism, and therefore as an archaeology of successions and recursions in (for example) the visual brain, with the phylogenetic and ontogenetic histories that are entrained by that analysis.

At a rhetorical level, however, there may be a salient difference between interpretation *in* visuality (and of it) and the neurovisuality *of* interpretation (and in it)—though ironically it's the difference that explains why neurological investigations and what seem to be ontologically more economical inquiries might well make epistemological common cause. Obvously interpretive "looking"—in a parallel to "reading"—is culturally bound, and historically particular. It confronts not only the problem of making sense of the productions of "historically remote beholders" (Palermo focuses on it as an art historian). It also confronts the question of people in one's time and place who do not share one's culture (this is the troubling case behind the scenes in this debate). Intentionalism has long been associated with exclusivistic hermeneutics—with having the right knowledge to look at things aright—and by circular appeal to intention it has long justified the teaching of the supposed knowledge that enables correct interpretation. (That's why intentionalism has fallen into such bad repute.) The hypothesis of neurovisuality dodges this defect without denying the principle. If visuality is exclusive to those who can "look" and "read," neurovisuality is open to anyone with a brain: intentionalism for everyone and anyone. Again, a point of intellectual tactics, not strategy.

I must clear up one misunderstanding, however. I did not mean to argue that art historians overlook "neural causalities that might operate outside visuality" because they ignore neurovisuality. That would indeed be a contradiction. Rather, I suggested that they might overlook one contribution of *neuroaesthetics* (distinct from neurovisuality), namely, that it might address such causalities. I'm agnostic about them as a point of science, but I'm interested in them as a matter of history. As I said, they could help explain the cross-cultural or transhistorical "power" and "agency" of artworks, pictures, and artifacts, possibly even their "interpretability"—one of the deepest unresolved questions in art history. Palermo notes a contradiction between neuroaesthetics and neurovisuality, between "subjective experience" and "interpretation" as represented neurally (and irrespective of their discursive representations in aesthetic and hermeneutic science). And so there is. But it's not *my* contradiction. It's the contradiction—or, more realistically, the uncertainty—between a neurology that does not find conventions and intentions wired or writ into the rules and programs of the brain (at least at some empirical level of recursion that could be modeled analytically) and one that does.

Art history may need no neuroanything. But Palermo may have missed the drift of my argument—my stated theme. Neuroeverything needs art history.

Charles Palermo's two current research projects are an account of the importance of authority in the work of Pablo Picasso and Guillaume Apollinaire before cubism and inheritance as a metaphor for understanding in and around photography, from Peter Henry Emerson to Douglas Gordon. His *Fixed Ecstasy: Joan Miro in the 1920s* (2008) appeared in Penn State University Press' Refiguring Modernism series. He has spoken and published on Cézanne, cubism, Michel Leiris, Picasso, Apollinaire, Eugène Carrière, P.H. Emerson, Eugene and Aileen Smith, and James Agee's and Walker Evans's Let Us Now Praise Famous Men.

FICTION: A DIALOGUE

BLAKEY VERMEULE

An essay written in the spirit of Montaigne: to find out what I think.

Suppose you become curious about fiction—the concept, its history, its reasons for being.

You decide to ask me, your friend the English professor, since I spend my days in fiction's deep thickets. While you worry that fiction's deep thickets have become, for me, a labyrinth, the request for information strikes you as reasonable. Even simple.

Thus when I ask you, with what sounds like a sob, what you mean by fiction, you cut me off: "All those books in the fiction section of the book store," you say. "Help me out here. Give me a line, a clue, a way in. I want the good stuff. You have been reading all this evolutionary psychology, right? Hit me with the big bang, the cheesecake, the telescope. Why do we make and consume so much of the stuff?"

"Okay," I say (eyes blinking warily in the sunlight). "I will. Darwinian thought is an enormously powerful tool for understanding our shared history and fate—a universal acid, as Daniel Dennett rightly says, capable of cutting through everything in sight. Since the 1960s, Darwinian thought has gained powerful support from game theory and mathematical modeling. The so-called modern synthesis has moved through the academic world like a slow flame, burning a little here, annealing a little there. It has now become part of the generally accepted background in experimental psychology, the discipline on which humanistic inquiry

nominally rests. Yet the arts and humanities have remained fortified against it. In fact I'd go further. Remember that scene in *Monty Python and the Holy Grail* where the knights try to ransack a French castle?"

"Um, the Pythons were a bit before my time," you say.

"The French soldiers inside hilariously taunt the invaders. Then a cow carcass comes hurtling over the wall from a catapult. That's generally been the response from the humanities. *Fetchez la Vache*! But literary Darwinism has not yet delivered much in the way of good literary criticism (and I include my own). Why not? Philosophers have an old joke. The objection to any philosophy paper can be boiled down to 'yeah right' and 'so what?' Literary Darwinism is immune to the first objection (at least among people who care about science) but it is vulnerable to the second. And this is for several reasons. The first one—the one before which all others tremble like a guilty thing surprised—is that aesthetic experience is enormously resistant to ultimate explanations. By which I mean explanations that lasso art from a great distance. I have, for instance, a passion for George Eliot's novel *Middlemarch*.There is some feeling in it that draws me in again and again and that sets off a depth charge in my soul. Every time I read it I learn a little bit more about its internal workings and language, which are like the harmonies in a Wagner opera. I see a bit more what George Eliot was trying to accomplish, the intensity and passion of her vision. I increase what the philosopher Richard Wollheim calls my 'cognitive stock.'[1]But the ulti mate horizon remains the novel itself, the beautiful enclosed organ beating inside its fragile casing."

"But surely," you object, "you can distinguish between how aesthetic experience feels to you and the interesting features of it that science can explain. Shouldn't the human obsession with fiction be a problem for Darwinism? A Yale psychologist recently claimed we spend roughly four minutes a day having sex and hours and hours a day absorbed in fictions.[2] I guess this includes everything from our private fantasies to the yarns we spin all day long to the mass-market stories we consume like that greedy boy Augustus Gloop in the candy factory. I read a news story about a young couple in Korea who spent so much time taking care of their vir tual infant in a simulation game that their own baby died of neglect. How could that contribute to their inclusive fitness?"

"Yes to both points," I agree. "Fiction-obsession is indeed a strange problem. Jared Diamond wrote a book a few years ago called *Why Is Sex Fun?* You would think that that was the only topic that needs no explanation, evolutionary or otherwise. Fiction probably does. The case of the Korean couple is most likely what the naturalist Niko Tinbergen called a 'supernormal stimulus,'—an exag gerated version of a stimulus that produces a maladaptive response. He first noticed it when his pet stickleback went into fight mode whenever the

red mail truck drove past the window outside his fish tank—red being the color that male sticklebacks use to signal aggression.[3] I have no doubt that media saturation creates ever stranger and more super normal stimuli for us to get hung up on—pornography and gaming being only two. Most Darwinians, when confronted with some apparently useless trait or practice, suspect that sexual selection is in play. You know—the peacock's tail, the handicap principle, an arms race of runaway selection pressures, that sort of thing. The fussy drab female driving the anxious plumed male to dance his ever more frantic jig. In his beautiful book *The Art Instinct*, Denis Dutton gives more or less that account of art's lavishness, excess, and ornament."

"What do you think?" you ask.

"I think he's right in the macro sense, but I also think there are a lot of details for fey little demons to lurk around in. So what are you curious about exactly? Fiction can mean stories we enjoy even though we know they aren't true, which covers a lot more than books. Or it can mean the forms those stories come packaged in. The history of movies, TV, novels, plays, and so on."

(Now you start to look worried. Academics, you think. Pretty soon she's going to tell me that what fiction means is up to me.)

"Or fiction can mean: the kinds of techniques that creators of fictions use to work their magic, in which case you need to settle on a specific medium. You know the technique in film called shot/reverse shot?"

"Well," you say, "I can imagine."

"You've seen it your whole life. When two characters are having a conversation, the camera cuts back and forth from one face to the other. Why do you think directors do that?"

"Obviously to mimic the back-and-forth of actual conversation."

"For a long time people thought so—they thought it was naturalistic," I explain. "One person holds the spotlight, then the other, then the first, and so on. But eventually people figured out that it isn't naturalistic at all. Cutting back and forth is nothing like conversing, which is all about connecting. So then people started to think of it as (merely) a convention. But the truth is more interesting. Shot/reverse shot is an artificial artistic code that seems naturalistic because it fits so well with our underlying cog nitive architecture. David Bordwell makes a very detailed and persuasive argument on this point. Shot/reverse shot is actually 'quite unfaithful to perceptual experience,' he writes. Simple panning from one speaker to the other would be much more realistic. Instead filmmakers cut quickly back and forth between

faces, using the 'transfer of attention' as a substitute for panning—'a substitute that has no exact correlate in ordinary perceptual experience.'[4]

"Other departures from ordinary perception are also noteworthy. For instance, one person's face is often shot from behind the shoulder of the other person. And the camera typically shows each face in three-quarter view. Shot/reverse shot delivers neither the experience of nor a faithful picture of a face-to-face conversation. Nevertheless we accept the overall effect without effort or protest. Bordwell claims, I think correctly, that the choice of some artistic conventions is 'weighted because human proclivities favor them.'[5]Shot/reverse shot is one such. Think of it as an alien spaceship gliding over a town and suctioning all the people and buildings into its belly. Different parts of our cognitive architecture are activated by the technique, but the technique itself is somewhat alien to us—at least it seems to be if you break it down into component parts."

"That's really smart," you say. "Can you tell me which features of our cognitive architecture are triggered by shot/reverse shot?"

"I could, but you could just as easily go and read Bordwell. He's a fantastic writer."

"Okay, I'll take the bait" (you sigh). "Does fiction do something similar?"

"Lots of things—and has done for much longer than film in a medium that grabs people far less obviously. Film is like Fred Astaire and fiction is like Ginger Rogers—she does everything he does, except she does it backwards and in heels."

"Please, just stop. But you're mixed up. Surely movies are also largely fictional—?"

"Of course they are. Movies have become fiction's preferred vehicle. Fiction means something broad and some thing narrow. Broadly it means 'something made up, that I know is made up, but that I am able to enjoy without worrying too much that it is made up.' Narrowly it means made-up dramatic realist stories organized into scenes. Those stories used to be told in prose. Now they are told in so many different media it makes your head spin. To those who love it, prose is muscular and fancy, robust and vibrant. But in the rushing stream of image-based stories, it is a stately moss-covered boulder."

"Wait, you said realist? Does that exclude, say, Harry Potter?"

"Harry Potter is made up, dramatic, and scene based," I respond. "And as for realistic—many of the techniques of realism are there—the scar of Odysseus—the scar of Harry Potter. Also it isn't as if anything goes in the wizarding world. The metamorphoses follow predictable laws of trans formation. But Harry Potter is missing a crucial element that so-called literary fiction now demands—"

"Oh dear, I'm really sorry I asked," you say. "Back to the question. Fiction has its own techniques—such as?"

"It depends on the medium. Films do one thing, serial TV shows another, high-end literary fiction and mass-market thrillers something else. But despite the vast array of styles and features, the architecture of fiction hasn't changed very much since the eighteenth century. It has just gotten more latticed. If anything, the pressure to create marketable characters has ratcheted up to an industrial level. And one technique that came online in the late eighteenth century and has never gone offline: free indirect style. The hallmark of fiction in the modern age."

"What is that?"

"A technique for narrating a character's thought from his or her point of view, but in the third person."

"What? That sounds strange and complicated."

"Well, when you try to break it down, it seems that way. But on the page, it looks so natural that you can barely detect all the funny business underneath."

"Can you give me an example?"

"I'll just take one from the critic James Wood. Here are two pieces of reported thought. The first one is in indirect speech of a character's inner monologue:

> "He looked over at his wife. She looked so unhappy, he thought, almost sick. He wondered what to say.

"The second is in free indirect style. Note the changes in tense and tone that free indirect style seems to demand:

> He looked at his wife. Yes, she was tiresomely unhappy again, almost sick. What the hell should he say?[6]

"Hmm, yes," you say. "A shift from the simple past tense to future conditional. Also the guy sounds like a jerk in the second passage; not so much in the first."

"Yes he does, rather, doesn't he? That seems to be a funny feature of free indirect discourse—the characters end up sounding whiny, self-deluded, and nasty. My colleagues hate it when I say this. They think I've got a corrupted soul. They also think that I'm cherry-picking

my examples when I point out the emotional patterns. They claim that free indirect style can be neutral—a way of reporting without bias or shadow. My friends have a trump card to play: the last line of Virginia Woolf 's *Mrs. Dalloway*."

"Now you're just showing off!"

"Nope! That's not the line! This is it: 'For there she was.' That's Peter Walsh thinking about Clarissa Dalloway as she appears on the stairs at her much-anticipated party. And actually it is the first time in the novel that his thoughts appear untwisted. Over and over again Woolf dips into Peter Walsh's thoughts to show him as a small, failed, jealous, bitter man. A man who soothes his anxiety by denigrating other more powerful men. He is a low-status primate in a slippery status hierarchy. Somehow the aggression and irony of free indirect style capture the feel of that."

"Can you remind me why we are talking about this exactly?" you ask.

"I'm trying to show you how certain techniques come to handle certain psychic material."

"I'll note the weaseling language," you say. 'Come to handle?' What's your claim about historical causation exactly? How does a technique 'come to handle' psychic material?"

"Okay, I'll be direct," I say. "My story mixes the infinitely popular 'geniuses-like-Jane-Austen-are-great-innova tors' theory of historical causation with ruthless pragmatism. But (and now shut your eyes because I'm going to whisper this to the reeds and I don't want you to see the asses ears springing out of my head), fiction has a task, a life, a service, a dedicated mission of its own. I mean that in every pos sible essentialist sense. Fiction is a switch we've collectively invented and refined and installed in the middle of our room. When we flip it, the current goes on. And we're addicted to the current."

"Careful! You're getting carried away!"

"No, really. Fiction is a device for getting plights into our midst. An extremely useful device. Because it gets behind our defenses. And we've got a lot of them."

"Such as?"

"In the spirit of Passover, I'll answer a question with a question," I say. "Last night you went out with your old work friends. What did you talk about?"

"Sports, of course. We had a big go-round about the World Cup Final, about whether Holland's aggressive tactics were legitimate or dirty. We also talked about how the Liverpool Football Club fell apart last year, how the coach is a blame-shifting egomaniac, how the

Portuguese striker Cristiano Ronaldo is a gelled tumbler, how we hate Chelsea but Manchester United is so much worse. That sort of thing."

"Holland made me ashamed of my heritage," I say. "Did you talk about anything else?"

"Our favorite TV shows. *Lost*. *Mad Men*. *The Office*. Movies we had seen. We kept it light."

"How about personal things—your families?"

"No. My friend's son has been in and out of rehab. Nobody wanted to bring it up," you admit.

"Right," I say. "We talk about sports and TV shows because most people find it difficult to talk directly about hard personal topics. So fiction is like the motor oil that keeps our emotional engines from overheating. Which fact has led intellectuals to shake their fists and cry 'bread and circuses' at the gladiatorial contests."

"Yeah," you respond, "you intellectuals really need to lighten up. *The Office* and *Mad Men* and Manchester United aren't some squid-like tendril of the repressive state appara tus. Why can't you people ever just enjoy entertainment?"

"You people? You mean professors? Well, we get paid to frame hypotheses about other people's fun. But let's get back to the problem of fiction. Consider this paradox. One of the best-attested psychology experiments of the last three decades shows that people are enormously sensitive to cheaters, people who promise to reciprocate fairly but who violate their promise."

"Yes I know all about that," you say. "Cosmides and Tooby have shown over and over again that humans have evolved a 'cognitive instinct' for detecting violations of social exchange.[7] It is like what the Supreme Court would call a super-precedent.You think fiction falls into that category?"

"It certainly has, on and off, in the three centuries of its official existence."

"Can you give me an example?" you ask.

"Okay. Remember James Frey, the guy
who wrote the fake memoir about his drug addiction? David Shields tells the story this way:

> In the aftermath of the *Million Little Pieces* out rage, Random House reached a tentative settlement with readers who felt defrauded by Frey. To receive a refund, hoodwinked customers had to mail in a piece of the book: for hardcover owners,

> it was page 163; those with paperback copies were required to actually tear off the front cover and send it in. Also, readers had to sign a sworn statement confirming that they had bought the book with the belief it was a real memoir, or, in other words, that they felt bad having accidentally read a novel. [8]

"Well that's pretty easy to figure out," you sniff. "Forget Cosmides and Tooby. Random House was just paying a ransom to System 2."

"What on earth are you talking about?" I ask.

"You've read Daniel Kahneman's Nobel laureate address, right? I know you have because you quoted some of it in your book."

"You've read my book?" (small incredulous yelp).

"I skimmed it. Actually, I read the acknowledgments. Anyway, Kahneman and Amos Tversky, his collaborator, pioneered a field called behavioral economics. [9] They show, basically, that *Homo economicus*, far from being a rational calculating machine, is really a goggle-eyed clown with red hair sprouting up in tufts and springs coming out of his neck. The standard model—rational agent theory, expected utility theory—held that people were more or less rational when they calculated risk. But we're not. We represent the world through all kinds of cognitive frames, and these frames deeply shape the information we take in and how we process it."

"I'm sorry, but I'm losing the thread here . . . assuming there is one," I say (my turn to get snippy).

"Kahneman and Tversky are part of a Copernican revolution in psychology that has been going on more or less unimpeded since Freud. I mean the revolution to decenter the rational self. Their contribution, prospect theory, is only a small piece of a very deep iceberg. The iceberg itself is the unconscious. And the rational bits really only select among different options."

"Okay, but remind me. What is System 1?"

"System 1 is all those processes that run outside of our conscious awareness. Intuitions of all kinds, gut feelings, snap judgments, and so on. Dual-process theories of the mind have been around for a very long time—in fact you can find a fully worked out version in Plato's *Phaedrus* if you want. But clearly System 1 doesn't distinguish all that well between fiction and nonfiction—hence the Korean couple and the baby. It is designed to make fast and frugal

judgments. So it is easily duped into thinking stories are true. System 2 is computationally costly and requires a lot more psychic effort."

"Look, this is all fascinating," I declare, "and I'd love to hear all your theories about Plato, but we're running out of space here and as far as I can see, we're going around in circles. So I might as well just cut to the chase and tell you what I think about fiction and evolution.

I am drawn to the macro views of William Flesch in his 2007 book *Comeuppance*. He's interested in how our complicated lives as reciprocal altruists shape narratives. So many of our stories are about punishment, revenge, malfeasance, and justice delivered that it seems as though part of their purpose is to sort out goodies from baddies. He gets to that conclusion by running a series of complex arguments about evolutionary game theory. One objection is that his model leaves out those stories, such as romances, that don't turn on anybody's being punished. He replies that if you zoom out a bit, you can see that even in stories that don't have anything obviously to do with revenge, narratives police antisocial motives and reward prosocial ones. That's why we like happy endings. And in romances, he said, people who don't think the whole thing is going to turn out well (that is, that the prosocial motivations will win out) are banished to the sidelines. He calls storytellers 'altruistic punishers,' meaning that they get worked up on our behalf to punish the baddies and reward the goodies. I think he's identifying large patterns, not saying every story has to have these features, though obviously a lot of them do. I also think he's on to something pretty deep about narrative."

"Take a breath," you say.

"OK, there's more. Flesch's ideas converge with those of a research team who studied how personality traits are distributed across character types in nineteenth-century fic tion. So protagonists are altruistic, non-selfish, reproductively viable, constructive, kin-oriented, optimistic, and conscien tious. Antagonists, on the other hand, are domineering, aggressive, bullying, and obsessed with money.[10] I read their work and I almost had a heart attack."

"Why?"

"Because I recognized so many of these antagonist traits in myself. But then I wrote to Joe Carroll, who is on the team, and he reassured me by saying that we all have to have antagonist traits or we'd be sitting ducks for sociopaths. Fiction has a stake in making it seem as though there are two separate groups of people with different traits. Anyway, putting the two views together, we could say that narrative evolved partly to police the antagonists among us and to punish displays of bullying."

"Is that your final answer?" you ask.

"Well, for now I guess that's what I think."

"I think you'd have a stronger case to make if you'd been paying attention earlier when I was talking about System 1 and System 2," you say. "The other day I was reading a bit of sports fluff in the local paper. The story was about poor old doddering Al Davis, legendary but now very elderly owner of the Oakland Raiders. A couple of years ago he drafted JaMarcus Russell, who is turning out to be one of the most expensive flops in NFL history. Al Davis and the fans and press are now in full-blown war over whose narrative is going to triumph. Al Davis has a story in his head about how failed quarterbacks can make good and worthy young men deserve second chances. The press and fans have another story in their heads about arrogant owners who don't listen to advice. And now we can make some popcorn and pull up our chairs and see whose version is going to win. If JaMarcus pulls himself together, then Al Davis' version wins and the story turns into a romance comedy about a visionary elder who keeps his faith in the misguided but goodhearted youngster. If JaMarcus screws up and has to be fired by the Raiders, then Davis is a *senex iratus* who is too cosseted to realize that his star quarter back is a lazy defector. Then the story becomes something else—not a tragedy exactly, but an occasion for the rest of us to sit around pointing fingers and saying 'I told you so.' "

"But what does that have to do with cognitive heuristics?" I ask.

After taking a deep breath of your own, you proceed. "System 1 is all about what moral philosophers call deontological judgments—fast and frugal judgments of good and bad. System 2 (reason) is capable of Jeremy Bentham-like subtleties and utilitarian calculations. These sports stories are perfectly designed to get behind reason and appeal to the gut," you say. "The barrier between the two systems is obviously quite porous—we can reason our way out of a deontological stance into a utilitarian one. In fact we moderns are called on to do that every day. But the cognitive load required to apply the brakes on our fast and frugal heuristics is intense. So the stories I love most offer some kind of relief from the rational self-restraint I'm forced to exercise all the time—on the road, in the office, at home. And frankly, no offense to you English professors, but I don't really want to know how it all looks under the hood— as long as the engine keeps purring along." You sit back, looking a bit triumphant.

"Gee," I say. "Thanks for all your help. We're really out of space now. But let me ask you a final question."

"Sure."

"What's the one thing that the international soccer federation could do to make soccer more appealing to American audiences?" I ask. "I mean apart from putting in breaks every five minutes for advertisements."

"Oh that's easy," you say. "I've thought lots about it. We need lots more scoring! The gut loves it when people score goals! All they have to do is put in a shot clock to limit each team's possession. And we should let the players use their hands, too. That would really help."

NOTES

BIBLIOGRAPHIC NOTE

The views expressed by my interlocutor have been generally acquired by reading the work of Marc Hauser and Joshua Greene of Harvard University. See, for instance, this statement on Greene's home page:

More specifically, I have proposed a "dual process" theory of moral judgment according to which characteristically deontological moral judgments (judgments associated with concerns for "rights" and "duties") are driven by automatic emotional responses, while characteristically utilitarian or consequentialist moral judgments (judgments aimed at promoting the "greater good") are driven by more controlled cognitive processes. If I'm right, the tension between deontological and consequentialist moral philosophies reflects an underlying tension between dissociable systems in the brain. Many of my experiments employ moral dilemmas, adapted from the philosophical literature, that are designed to exploit this tension and reveal its psychological and neural underpinnings. (http://www.wjh.harvard.edu/~jgreene/)

Obviously none of my interlocutor's mistakes or failings should be attributed to Greene or Hauser.

I am grateful to Joshua Landy for most of the football (soccer) references throughout, including (I believe) some version of mordantly ironic suggestion (widening the goal posts?). But while Landy inspired some of this dialogue, including some of the objections to Flesch, he is neither of the people in it.

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ENDNOTES

1. Wollheim, *Mind*, 134.

2. Bloom, "Pleasures."

3. Barrett, *Supernormal Stimuli*, 12.

4. Bordwell, *Poetics*, 59.

5. Bordwell, *Poetics*, 63.

6. Wood, *Fiction*, 8–9.

7. Cosmides and Tooby, "Neurocognitive Adaptations," 587.

8. Shields, *Reality Hunger*, 43–44.

9. Kahneman, "Maps."

10. Carroll et al., "Hierarchy."

EDITOR'S NOTE

Blakey Vermeule's research interests are cognitive and evolutionary approaches to literature, Philosophy and literature, British literature from 1660-1820, post-Colonial fiction, satire, and the history of the novel. She is the author of *The Party of Humanity: Writing Moral Psychology in Eighteenth-Century Britain* (2000) and *Why Do We Care About Literary Characters?* (2009), both from The Johns Hopkins University Press. She is currently working on a book about narrative and the conceptual unconscious.

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TWO PROBLEMS WITH A NEUROAESTHETIC THEORY OF INTERPRETATION

JENNIFER ASHTON

In a 1926 essay, "Science and Poetry," I.A. Richards, better known for his later book *Practical Criticism* and its influence on what would become the New Criticism, offers up a vivid analogy for what our bodies do in the presence of a powerful work of art:

> Suppose that…we carry an arrangement of many magnetic needles, large and small, swung so that they influence one another. As we move, the perturbations in this system will be very complicated. But for every position in which we place it there will be a final position of rest for all the needles in which they will in the end settle down, a general poise for the whole system. [1]

When Richards goes on to claim that "[o]ur interpretation of the poem is the movement of these interests," then if we follow his magnetic compass analogy, our "interpretation" requires above all something to measure those compass movements, and an understanding adequate to interpret the results (28). Richards himself identified the tools needed for the task, which,

as he put it, "until recently could only be very incompletely carried out; the psychology of instinct and emotion was too little advanced" (21). What Richards meant by this, of course, was that with its newest developments, the "psychology of instinct and emotion" was poised to deliver a rich and complete understanding of art's meaning, something that the discipline of criticism up to that point had been striving and failing to achieve.

No doubt the I.A. Richards who wrote those sentences would have found his own compasses spinning away at the prospects for literary criticism offered by the latest attempts to apply the sciences of instinct and emotion to art, namely what has been called most recently "neuroaesthetics."[2] For when we replace the galvanometers of the past with 21st-century functional Magnetic Resonance Imaging (fMRI) technology, or if we replace the "psychology of instinct" with the most recent developments in evolutionary psychology, we can get an even clearer picture of those "magnetic perturbations" that Richards imagined occurring in our bodies in the presence of the work of art. Evolutionary biology, for instance, tells us we're predisposed from a long pre-human and human history of surviving through cooperation and alliance by trying to read other people's minds to assess their trustworthiness. And fMRI, for another example, gives us a way of seeing how and when those mind-reading skills get put to use or what kinds of alterations in the brain can cause them to fail us. Interpreting works of art turns out, according to this research, to be a way of exercising all of these inclinations. But it's not only aesthetic philosophy or art history or literature, film, theatre, music or new media studies, whose scholars and theorists have sought to benefit from the research. The present forms of what Richards termed "the psychology of instinct and emotion" are regularly deployed in the service of ethics, marketing, business management, economics, political theory, anthropology, sociology, communications, and pretty much any other disciplines and practices that live by their accounts of human motivations. With an ever clearer picture of how our minds work and of the evolutionary developments, and bodily and environmental constraints that shape those workings, the argument goes, we get a clearer picture of everything. We're not just doing neuroaesthetics, we're doing neurowhatever, and we're apparently delighted with the results. This essay argues for why we should not just be delighted with the results, or rather, why we can't be delighted with the results and still maintain a coherent account of what we're doing when we're doing the interpretive work of literary or art history and criticism.

A few years ago, in a book partly devoted to criticizing the theoretical claims of the Language Poetry movement, a relatively influential (as poetry movements go) self-declared avant-garde that had its heyday in the 80s and 90s, I made passing reference to some literary criticism advanced during the same period by scholars drawing on the brain research of their contemporaries, including Jerry Fodor, Gerald Edelman, and Antonio Damasio.[3] And

I argued then that this prototype of what we now call neuroaesthetics was making the same theoretical mistake I saw being made by the Language poets in their own self-presentation, namely a confusion of the meaning of the work of art with, on the one hand, the effects of the work on the reader/listener/beholder, and on the other hand, what we might call its causes. In other words, the Language poets embrace the same idea of the meaning of the work of art that I.A. Richards had promoted in "Science and Poetry" a half a century earlier. And the tendency, from I.A. Richards on through Language poetry through the neuroaesthetic approaches to art that I discuss below – the tendency to conflate the meaning of a work of art with the experiences that go into making the work and the experiences said to arise from it – has gone hand-in-hand with a tendency to ignore the incoherent results of that conflation.

Mary Thomas Crane's *Shakespeare's Brain: Reading with Cognitive Theory* arrived just at the moment of the shift from the so-called "cognitive theory" approaches to literature to the neuroaesthetic.[4] In that work, Crane suggests that the field of Shakespeare studies will be forever altered once we recognize Shakespeare's brain as the most important "material site of production" for his plays (3). It's no longer the materiality of the theater, or the Elizabethan court or the invisible bullets of transatlantic trade that matter, in other words; it's the materiality of the neurons and the transmitters that make them fire. While Crane turned brain research into a fairly crude instrument for criticism only a decade ago, even our most sophisticated 21st-century appeals to the neuroscience and evolutionary psychology that succeeded "cognitive theory," share with their less persuasive counterparts of the last century the same basic logical mistake, and we don't need any science at all to see that mistake. Indeed, we can simply return briefly to the height of the New Criticism in the last century, and more specifically, to William K. Wimsatt's and Monroe C. Beardsley's soon-to-be widely read polemics, "The Intentional Fallacy" (1946) and "The Affective Fallacy" (1949). As I hope to show in light of our current attraction to all things neuro, we might better call them "The Causal Fallacy" and "The Effective Fallacy."[5]

Let's start with the causal problem. For Wimsatt and Beardsley, committing the intentional fallacy means mistaking for the meaning of the work of art a whole host of things the author might have experienced or thought about in the making of the work: "revelations," they explain, "(in journals, for example, or letters or reported conversations) about how or why the poet wrote the poem — to what lady, while sitting on what lawn, or at the death of what friend or brother" (10). Among the list of things that Wimsatt and Beardsley object to, the lawn seems especially representative of the problem, particularly when they turn to their chief example of misguided intentionalist criticism, John Livingston Lowes's *The Road to Xanadu* (1927). In it, they argue, Lowes treats the books Coleridge is known to have read as the basis for "clusters of associations, like hooked atoms, which were drawn into complex relation with

other clusters in the deep well of Coleridge's memory, and which then coalesced and issued forth as poems" (11). In other words, Coleridge's readings become just like the lawn on which the poet sat — or for that matter any place he might have been sitting or anything else that might have crossed his path, or his mind, while he was writing. These associations contribute, according to Wimsatt and Beardsley, to what they call the "gross body of life, of sensory and mental experience, which lies behind and in some sense causes every poem," but which "can never be and need not be known in the verbal and hence intellectual composition which is the poem" (12). The problem with everything from the lawn on which the poet sat to the hooked atoms of his associative memory has to do with their status as causes of the work, and however distant or proximate they may be, they are categorically distinct from the meaning of the work. Wimsatt and Beardsley's contemporary Cleanth Brooks put the point succinctly: we might as well inquire, "What porridge had John Keats?" [6]

My claim about neuroaesthetics is that whether we're pointing to our Pleistocene ancestors' predilection for climbable trees in landscapes or which region of an artist's brain is activated in the process of choosing a color array, we're essentially working off of related versions of Brooks's question, identifying the causes but not the meaning of the work. Neuroaesthetics is answering a set of questions about causes, while the interpretation of a work of art depends on having answers about its meaning.

Now of course Wimsatt and Beardsley in effect commit the very fallacy they mean to refute when they put intention on the same continuum with the "gross body of life, of sensory and mental experience" that they rightly identify as the causes of the work. It's exactly that conflation that leads them to misidentify their fallacy as having to do with "intention" in the first place. The problem is evident from the beginning of their essay, in one of the most compact statements of the argument that they put forward: "[T]o insist on the designing intellect as a *cause* of a poem is not to grant the design or intention as a *standard*" (4). The problem with the causes of a poem, as we've already seen, as that they're not dispositive; a large proportion of what goes on in the making of a work (porridge eaten, lawns sat on) is completely irrelevant to anything that counts as its meaning. And if it is relevant (Bartram's *Travels* to Coleridge, John Day's *Parliament of Bees* to T.S. Eliot), then whatever is relevant about it will be available in the poem itself. But the standard that Wimsatt and Beardsley offer as the corrective to a mistaken appeal to causes (and in their mind, to authorial intentions), namely the "internal" and simultaneously "public" evidence that consists in the fact that the poem is "embodied in language, the peculiar possession of the public," is no more dispositive than porridge or lawns (5). We can consult our "grammars, dictionaries, and all the literature which is the source of dictionaries…all that makes a language and culture," but we cannot, on the basis of that "public" information alone, decide what does and doesn't apply to the

poem's meaning.[7] We can only admit or rule out the evidence by appeal to the intention of the poem's maker. In this respect, the only standard that actually could serve in the ways that Wimsatt and Beardsley have in mind is intention, which has nothing to do with what they rightly understand as the causes of the work. Better, as I have already suggested, to call their essay "The Causal Fallacy." Indeed, if they had accepted the full entailments of the disjunction between meaning on the one hand, and causes and effects on the other, intention might never have emerged as a fallacy for them in the first place.

If "The Intentional Fallacy" misses its own point, failing to understand that the meaning we're after cannot be explained *except* by an appeal to authorial intention, Wimsatt and Beardsley are obviously not all confused about the fact that the meaning of a work cannot be explained by appeal to its causes. And by the same token, they also rightly understand that the meaning cannot be explained by appeal to the effects of the work. In "The Affective Fallacy," the "affective" critic in question is, in the simplest formulation, someone who mistakes the feelings inspired by a work of art — the work's emotional and physiological effects on the reader/beholder — for the meaning of the work. Coleridge again is the case in point for Wimsatt and Beardsley's argument: "The tourist who said a waterfall was pretty provoked the silent disgust of Coleridge, while the other who said it was sublime won his approval. This…was not the same as if the tourist had said, 'I feel sick,' and Coleridge had thought, 'No, I feel quite well'" (27). When we make claims about the value of a work of art, we take our claims to hold not just for ourselves, but for others as well — if I say the waterfall is sublime I think it should count as sublime for anyone. If we didn't have this normative expectation of our judgments, we'd have no basis for arguing that one work of art is better than another, much less disagreeing about their meaning, much less appealing to evidence to support our arguments for their meaning or their value.

For the most part, "The Affective Fallacy" is concerned with readers whom the authors identify as "affective" insofar as they, like the tourist viewing the waterfall, "testify[…] to what poetry does to themselves" (31). But another kind of "affective critic" comes to light when Wimsatt and Beardsley make brief mention of just the sort of laboratory research where the galvanometer – or fMRI — might offer insight into human responses to art. And what those who "testify to what poetry does to themselves" share in common with those who "coolly investigate what it does to others," is once again the impulse to treat the effects of the work of art as indistinguishable from its meaning (31). Wimsatt and Beardsley cite the researchers who "inquire what kinds of colors are suggested by a line of Keats, or [...measure] the motor discharges attendant upon reading it…. The affective critic," they write, "is actually able, if he wishes, to measure the 'psychogalvanic reflex' of persons subjected to a given moving picture" (31). Thus, in one experiment, "'Students have sincerely reported an 'emotion' at the

mention of the word 'mother,' although a galvanometer indicated no bodily change whatever. They have also reported no emotion at the mention of 'prostitute,' although the galvanometer gave a definite kick"' (31). Of course, Wimsatt and Beardsley are invoking these experiments in order to shore up their argument against affective criticism, claiming that these researchers are committing, as I have already begun to suggest, the same affective fallacy as readers who think a poem means the sadness or joy or whatever other "kick" it happens to give them.

Now it's easy to see how certain neuroscientific approaches to art could easily commit either of the fallacies — that is, how they mistake the causes of the work or the effects of the work for its meaning. Pointing to the fact that, as Mark Johnson explains in *The Meaning of the Body*, our bodies have a front and back, and much of our literature represents backwards and forwards movement, is certainly a way of talking about the material contingencies that in some very literal sense "cause" the work, but it by no means guarantees us an account of the work's meaning.[8] Take for example Michael Fried's argument in *Courbet's Realism* that the painter ever more relentlessly sought to make paintings in which through various manipulations of perspective and the picture plane it was as if the painter's own body could merge with the depicted world occupying the canvas.[9] Or Charles Palermo's reading of Joan Miró's *The Policeman* (1925) in *Fixed Ecstasy: Joan Miro in the 1920s,* where the hand of the policeman, with its ambiguously arrayed thumb and digits, allows us to imagine it both facing palmward, gesturing out of the painting toward the beholder, and simultaneously facing back into the painting, as if facing the canvas from the viewer's side of the picture plane, an "allegorization," as Palermo puts it, of the painter's "own actions."[10] Or, for that matter, take the famous comment Miró himself made about Courbet's painting, *The Stormy Sea* (1869): "One feels physically drawn to it as by an undertow. It is fatal. Even if this painting had been behind our backs, we would have felt it."[11]

On the one hand, to see the artists' commitments to rethinking the function of the picture plane in relation to both artist and beholder would be, following artists like Courbet or Miró, or critics like Fried or Palermo, to see those commitments as arising out of a set of problems about painting as such, problems which the work itself theorizes and displays. On the other hand, if we're thinking like Mark Johnson, we can simply add these examples to our bucket of evidence that the human mind is structured by our bodily orientation in space, and hence so is our art. Put that way, the difference between having an account of the meaning of the work and having an account of its causes is not only easy to see, but, I would argue, an easy strike against the kinds of neuro approaches I've been describing thus far. And it's an easy strike if only because the bucket of evidence for, say, our spatial orientation and its constraints on our imagination produces a general lack of differentiation between individual works of art, since presumably they're all going to index that spatial orientation in one way or another. In short,

we can as easily talk about one work or another if all we care about is understanding the shared human conditions that constrain them; whereas the spatial orientation that most humans share by virtue of our bodies (barring unusual discrepancies in ability or bodily function) will not help us understand why any given artist attempts to revise or ignore existing paradigms such as the picture plane or single-point perspective. But the question of whether something in the art functions as an allegorization, to recall Palermo's reading, necessarily goes beyond anything we can explain by appeal to our shared bodily conditions. Indeed, two different paintings looking exactly the same might produce the same effects, but if each allegorized something different, they would necessarily have two entirely different meanings.

So far I've been arguing that the causes and effects (or, say, inputs/outputs or trigger mechanisms — however one might choose to name them) that neuroscience and evolutionary psychology identify and explain for us are incommensurate with the fundamental interest we have in intention, one that is basic to even our most ordinary acts of interpretation. But of course one might make the argument that, even if we grant that intentions operate in a categorically distinct register from causes and effects, nevertheless our special interest in intention is itself best explained by appeal to its neurological and evolutionary functions. This I take to be one of the central claims Blakey Vermeule's recent book, *Why Do We Care about Literary Characters?*[12] Through a provocative and elegant array of evidence ranging from Chaucer's *Canterbury Tales* to Ian McEwan's *Atonement*, Vermeule argues quite forcefully for the myriad ways in which we like to pay attention to and practice interpreting the actions and motives of others. And it doesn't matter whether we're concerned about real people or fictional ones. Narratives involving particularly complex epistemological problems with respect to characters' motives entertain us because we need to practice detecting whether someone is deceiving us; it's essential to our survival. Given our fascination with discerning complex motives, and through them complex alliances, no wonder then that God and gossip are two of Vermeule's privileged examples. I won't address the fascinating work that Vermeule does with gossip, mainly because I want to devote the remaining space of this essay to what she calls "God novels" — novels usually involving an omniscient narrator and a certain degree of self-reflective commentary on the capacity of the fiction either to determine (or seemingly fail to determine) the lives of its characters. God-novels are key in what Vermeule calls the "high mind-reading tradition": "At the center of the high mind-reading novel is a narrator who adopts the standpoint of an agent with full access to strategic social information and who parcels out the information at markedly different rates, placing some characters and even the reader in a temporarily blinded position…A high mind-reading novel only makes sense in the presence of God, who stands as the final guarantor of full access to social information" (129). What we commonly imagine that God to be like is of particular interest to Vermeule.

What's especially striking about our imagination – and what is equally striking about the analogy Vermuele ends up drawing between the most common impressions of divine omniscience and our fantasies about what perfect access to social information would look like – is that the perfect and the imperfect, the divine and the human, the all-knowing and the ignorant, cleave precisely along the faultline of causality. In a psychological experiment cited by Pascal Boyer, Vermuele explains, researchers

> asked people to tell them what God is like. People gave a wide range of descriptions with certain features in common. For example, people said that God has the power to do many different things at one time, unlike humans, who are bound to do things sequentially. People were then given stories in which God is shown to be doing several things at once. However, when the people repeated the story again several hours later, they invariably described God as doing those things in sequence — first one, and then the other. People import specific narrative inferences from their own experiences to the story, even though they know, abstractly, that God is capable of doing all those things at once. Putting this finding more generally, people seem to have one set of logic centers for abstract ideas and another for what happens as their experience unfolds. I might want to write a novel. But the sheer difficulty of sitting down every day for five hours, feeling miserable, and struggling with my unruly tangle of sentences might prove too much for me. (145-6)

Another way of putting the claim that our experience unfolding belongs to one "logic center" in our brains while our abstract ideas belong to another would simply be to say that there is a fundamental logical difference between them. And that fundamental distinction plays out in the very next two sentences Vermeule writes, for it is precisely the breach between our intention ("I might want to write a novel") and our experience ("difficulty of sitting down," "feeling miserable," and "struggling" that will "prove too much").

Vermeule depicts this breach even more vividly in a brilliant reading of Ian McEwan's *Atonement*, in which a scene involving a young college-aged girl and boy who love each other but don't know it yet takes place in a garden where a third character, a 13-year-old girl, observes them and misinterprets their actions, initiating a chain of painful consequences. As Vermeule explains, the 13-year-old character is also a budding novelist, so that the scene she observes becomes the basis for a scene she imagines one day writing. And Vermeule is especially interested in a passage in which the mature character, having had a successful career as a novelist, reflects on the act of authorship and its relation to other kinds of acts:

> How can a novelist achieve atonement when, with her absolute power of deciding outcomes, she is also God? There is no one, no entity or higher form that she can appeal to, or be reconciled with, or that can forgive her. There is nothing outside her. In her imagination she has set the limits and the terms. No atonement for God, or novelists, even if they are atheists. It was always an impossible task, and that was precisely the point. (McEwan, cited on 135)

For Vermeule part of the fascination that McEwan's novel offers is its ability to deploy in ingenious ways "human social signaling" that can "'trigger inferences' about education, leisure time, communities of taste, and ultimately class background" (134). But we might say that another part of its fascination has to do with the ways in which the privileged vantage on that social information – not just in the sense of having privileged access to the signaler's intentions but in the sense of having intended them in the first place – itself displays the difference between intending and whatever actual effects might follow from the achieved intent. Like the difference between the God who achieves all at once and mortals who do things sequentially, the difference between the temporal unfolding of outcomes and the atemporality of intention is for McEwan's Godlike novelist precisely the difference between causes and effects on the one hand, and "the attempt that was all" on the other. And it's easy to thread this back through the question of atonement that McEwan's character raises: outcomes and the causes that bring them about are the sorts of things for which one might atone, but the logic of atonement does not apply for intentions, assimilable to neither cause nor effect.

The great puritan theologian, Jonathan Edwards, saw the difference between divine and human agency precisely in terms of the logical distinction between intentionality and causality.[13] In his 1758 treatise, *The Great Doctrine of Original Sin Defended,* Edwards's defense hinges on defining divine creation logically rather than phenomenologically and on distinguishing intended effects from actual ones.[14] The larger argument of Edwards's treatise, as we shall see, is an effort to justify holding human beings accountable for their sin while at the same time insisting on God's absolute sovereignty and omniscience as their creator. The problem, as Edwards imagines it, is that Adam's posterity is held responsible for something Adam himself actually did. Or as Edwards puts it, some might think that "imput[ing] Adam's sin to his posterity…is unjust and unreasonable, inasmuch as Adam and his posterity are not one and the same" (220). Because we are not Adam, and because Adam is the one who sinned, the argument goes, conferring Adam's guilt on us is "unjust and unreasonable," and thus inconsistent with the intentions of a just God. Edwards refutes the claim by contradicting the very idea that "Adam and his posterity are not one and the same," arguing that they are only

as different as the "root of the tree" is from its "branches." In short, the mistake is to focus on the parts without taking account of the whole. "God," by contrast, according to Edwards, "looked on [Adam's] posterity as being one with him. And though he dealt more immediately with Adam, it yet was as the head of the whole body, and the root of the whole tree; and in his proceedings with him, he dealt with all the branches, as if they had been then existing in their root" (220).

For Edwards, the way that humans make mistakes about the relationship between God's creative agency and Adam's sin, and between Adam's sin and the sins of his posterity is by treating contingencies as necessities (and vice versa). The decisive mistake, according to Edwards, is not so much thinking that because our condition is a contingent effect of Adam's sin (and his sin, in turn, a contingent effect of God's creation) it would be unjust to impute Adam's guilt to us. Rather, the problem has to do with treating the relevant relation between Adam's sin (or further back, God's creation) and our condition as causal in the first place. When Edwards writes that "it does not at all necessarily follow, that because there was sound, or light, or colour, or resistance, or gravity, or thought, or consciousness, or any other dependent thing the last moment, that therefore there shall be the like at the next," he is emphasizing the degree to which nothing is guaranteed to follow from any given moment (224). And there's an equally important corollary to that claim, as Edwards explains: "the present existence, either of this, or any other created substance, cannot be an effect of its past existence" (223). It is here that Edwards reveals the fundamental condition of discontinuity between cause and effect that characterizes his descriptions of nature and that for him, defines temporal existence: "The existences (so to speak) of an effect, or thing dependent, in different parts of space or duration, though ever so near one to another, do not at all coexist one with the other; and therefore are as truly different effects, as if those parts of space and duration were ever so far asunder" (223). The connection to the argument for original sin is now easier to see, though it only emerges in reverse. According to Edwards, to see Adam's sin as a cause of our condition (and to see our guilt as unjustified), we also have to believe that Adam's sin and our condition do not "coexist": "The force of the reasons brought against imputing Adam's sin to his posterity (if there be any force in them) lies in this, That Adam and his posterity are not one" (226).

For Edwards, however, Adam and his posterity do "coexist," ontologically united in an expression of divine will: "the derivation or the evil disposition to Adam's posterity, or rather, the co-existence of the evil disposition, implied in Adam's first rebellion, in the root and branches, is a consequence of the union that the wise Author of the world has established between Adam and his posterity" (221). The "world" of Edwards's divine "Author" is complete from the start. Rather than unfolding in a chain of causes and effects, as Edwards

explains, "its existence in each successive moment, is altogether equivalent to an *immediate production out of nothing*" (224).

I've taken this long theological detour not to make a point about God, but rather about the logic of intentionality that common ideas about God and Vermeule's deployment of them lay bare. Moreover, it's a logic that's explicit in Vermeule's own efforts to bring our aesthetic fascination with social information into line with scientific research. My objection to that line of inquiry isn't an objection to the research as such, although Ruth Leys's work on the uses of neuroscience in affect theory make clear that there are serious problems in the research methodology of a number of recent and highly influential experiments, and that those problems extend precisely from a set of mistakes about intention.[15] Rather it's that if we are interested in giving a good account of the meaning of any work of art, then focusing strictly on what kinds of emotional or instinctual or bodily triggers move its maker, or on what kinds of responses the work in turn triggers in its receivers focuses us on inputs and outputs in a way that simply cannot compel our interest in any given work over any other given work – or for that matter, in art as opposed to anything else that might yield similar results. If what I care about is what my brain does when certain social information makes me anxious or filled with love or with loathing, it's not clear why a novel of manners (or a poem or a painting) would be any more privileged object of study than a middle-school cohort. What does compel our interest in the work of art as opposed to the middle-school cohort is the set of concerns that make us care about the form it takes, the decisions the author made to make it work one way rather than another – in short, we care about the intention. To have an account of what our brains do in making the work or in responding to it is to have an account of the causes and effects of the work. To have an account of its author's intentions – without which, we have no aesthetic interest in the work – is to have an account of something that cannot be assimilated to causes or effects.

NOTES

1. I.A. Richards, "Poetry and Science," reprinted in *Poetries and Sciences* (New York: W.W. Norton & Company, 1970), 26. All further references cited in parentheses in the text.

2. See, among others, Mark Turner, ed., *The Artful Mind: Cognitive Science and the Riddle of Human Creativity* (New York: Oxford University Press, 2006); Lisa Zunshine, *Why We Read Fiction: Theory of Mind and the Novel* (Columbus: The Ohio State University Press, 2006); John Onians, *Neuroarthistory: From Aristotle and Pliny to Baxandall and Zeki* (New Haven and London: Yale University Press, 2007); Denis Dutton, *The Art Instinct: Beauty, Pleasure, and Human Evolution* (New York, Berlin, London: Bloomsbury Press, 2009); and Semir Zeki, *Splendors and Miseries of the Brain: Love, Creativity, and the Quest for Human Happiness* (West Sussex: Wiley-Blackwell, 2009).

3. Jennifer Ashton, *From Modernism to Postmodernism: American Poetry and Theory in the Twentieth Century* (Cambridge: Cambridge University Press, 2005).

4. Mary Thomas Crane, *Shakespeare's Brain: Reading with Cognitive Theory* (Princeton: Princeton University Press, 2001).

5. William K. Wimsatt and Monroe C. Beardsley, "The Intentional Fallacy" and "The Affective Fallacy," reprinted in Wimsatt, *The Verbal Icon* (Lexington: The University Press of Kentucky), 10. All further references cited in parentheses in the text.

6. Cleanth Brooks, *The Well-Wrought Urn* (1947; New York: Harcourt Brace, 1970), 153.

7. See Stephen Knapp and Walter Benn Michaels, "Against Theory," *Critical Inquiry* 8.4, Summer 1982, 723-742 and Michaels, *The Shape of the Signifier* (Princeton, NJ: Princeton University Press, 2006) for extended analysis of "The Intentional Fallacy" and the problem of using the "rules" of language or "what the words mean in the language in which [the poet] wrote" to pin down the meaning of the poem (Michaels, *Shape* 107). What happens if you try to pin the meaning of "vegetable love" in Andrew Marvell's "To His Coy Mistress" to linguistic rules without recourse to intention makes the point clearly (*Shape* 107 ff.).

8. Mark Johnson, *The Meaning of the Body: Aesthetics of Human Understanding* (Chicago and London: The University of Chicago Press, 2007).

9. Michael Fried, *Courbet's Realism* (Chicago: The University of Chicago Press, 1990).

10. Charles Palermo, *Fixed Ecstasy: Joan Miró in the 1920s* (Pennsylvania State University Press, 2008), (2, 177). Joan Miró's *The Policeman* is at the Art Institute of Chicago. A reproduction can be found on the museum's website: http://www.artic.edu/aic/collections/artwork/111654?search_id=1.

11. Miró's comment is cited by Fried (215) and Palermo (182). Gustave Courbet's *The Stormy Sea* is at the Musée d'Orsay in Paris. A reproduction can be found on the museum's website at: http://www.musee-orsay.fr/fr/collections/oeuvres-commentees/recherche/commentaire/commentaire_id/la-mer-orageuse-8986.html?no_cache=1.

12. Blakey Vermeule, *Why Do We Care about Literary Characters?* (Baltimore: The Johns Hopkins University Press, 2010). All subsequent references cited in parentheses in the text.

13. In what follows I am borrowing my account of Edwards from the final chapter of *From Modernism to Postmodernism*, 169-176.

14. The full text of Jonathan Edwards, *The Great Christian Doctrine of Original Sin Defended* is available online in the Christian Classics Ethereal Library at Calvin College: http://www.ccel.org/ccel/edwards/works1.vi.html.

15. See Ruth Leys, "Surveying the Emotions," *Emotion Review* 2.2 (April 2010), 109-110; "How Did Fear Become a Scientific Object and What Kind of Object Is It?" *Representations* 110.1 (Spring 2010): 66-104; and "The Turn to Affect: A Critique," *Critical Inquiry* 37.3 (Spring.2011): 434-472.

Jennifer Ashton teaches at UIC. She is the author of *From Modernism to Postmodernism: American Poetry and Theory in the Twentieth Century (Cambridge UP 2005)* and edited *The Cambridge Companion to American Poetry Since 1945* (Cambridge UP 2013). She is currently finishing a new book, tentatively titled *Labor and the Lyric: Contemporary American Poetry and Its Politics*. She also serves on the Contract Action Team for UIC United Faculty, AFT-IFT-AAUP-AFL-CIO Local 6456.

nonsite.org is an online, open access, peer-reviewed quarterly journal of scholarship in the arts and humanities affiliated with Emory College of Arts and Sciences. ISSN 2164-1668.

RESPONSE TO ASHTON, "TWO PROBLEMS"

BLAKEY VERMEULE

Cognitive scientists have found out quite a lot about the psychology of intention. We humans are intentional to our core. Do we come into the world trailing clouds of glory? Maybe. But we definitely come trailing clouds of concepts. Far from experiencing the world as "one great blooming, buzzing confusion," babies start detecting patterns only a few hours after birth. They segment, they process, they subdivide. They prefer their native language to a foreign tongue. They know about object solidity and object permanence. And by the age of roughly a year old, they have a fully developed Cartesian worldview, seeing objects and agents as distinct.

Why should this matter to literary theorists? (Is the baby father to the man?) After all, by the time they go to graduate school, babies have long since become immune to the brute lure of intentionality. They have laid down complex pathways on their innate concepts. They reason counterfactually, wreath their ideas in the flowers of prosody, willingly suspend their disbelief, and wrinkle their brows in ironic suspicion. And by the time they are middle aged and have come to appreciate that the world is, in fact, a great blooming, buzzing confusion, their infant categories are like multiply overwritten hard drives. So why appeal to what science has discovered about our earliest selves? Surely that is just the naturalistic fallacy.

I take this to be Ashton's point: art can't be explained by appealing to some Archimedian point in the pineal gland or an image from an fMRI. I most definitely agree. In fact, I agree with her entire paper. Her diagnosis of Wimsatt and Beardsley is incredibly helpful. I do not, however, think that I could just as fruitfully write about theory of mind in a middle school cohort as in a novel: for one thing, the clamor would be too much for me. For another, while form is not an end in itself, it is a guide for helping us know more about what we're really interested in, which is the artist's intention. There is no intention in a middle school cohort.

In Ashton's view, cognitive poetics makes two kinds of mistakes. One error is easy to spot and Ashton critiques it beautifully. Here's how she puts it:

> The present forms of what Richards termed "the psychology of instinct and emotion" are regularly deployed in the service of ethics, marketing, business management, economics, political theory, anthropology, sociology, communications, and pretty much any other disciplines and practices that live by their accounts of human motivations. With an ever clearer picture of how our minds work and of the evolutionary developments, and bodily and environmental constraints that shape those workings, the argument goes, we get a clearer picture of everything. We're not just doing neuroaesthetics, we're doing neurowhatever, and we're apparently delighted with the results.

Neurowhatever, neuromania, neurosgonewild—my inner scold feels the need to sing a prim, shrill aria: the entire trend towards neuroscientific explanations in intellectual and popular culture is grossly premature from a scientific point of view. Such pseudo-explanations amount to little more than hand-waving. After all, everything we do—from wriggling our toes to having thoughts about God—is visible in our brains. So what? Nothing is thereby explained. Perhaps Pinker's dictum that "the mind is what the brain does" is confirmed, but again, so what? The question of how the brain does the mind is still devilishly hard to figure out (see, e.g., John Searle's review of Antonio Damasio's *Self Comes to Mind* in the June 9, 20011 issue of the *New York Review of Books* for an overview of some of the difficulties).

The current outbreak of "neuro" explanations is like a bad case of intellectual hives. Fighting it with logic is like treating a rash with steel wool. A quick google of "neuro-marketing" yields a number of true head bangers—explanations with the following form: "in the general vicinity of hoc, therefore propter hoc (and the mere existence of the word 'neuro' is a stun gun that freezes everyone's capacity to notice that what I'm peddling is total BS)." In the face of this onslaught from the neuro-explainers, we are all roughly in the position of Diderot when he went to debate the Swiss mathematician Leonhard Euler about the existence of God. As

his opening gambit, Euler cried out: "Sir, (a+b^n)/n = x; hence God exists, answer please!" leaving Diderot to retreat in confusion. (Alas, the tale is probably spurious). (See *A Concise History of Mathematics* by Dirk Jan Struik, p. 128).

The second mistake is trickier, though again Ashton cuts to its heart with a fine scalpel. Any theory courts the danger of turning its objects into mere instances of that theory. The theorist says: here is how art works and this is another instance of art working like this. It would be as though some Platonist spent her time pointing out that each and every chair in the room participates in the form of the chair. The cognitivist's mistake, Ashton argues, is to say "we can simply add these examples to our bucket of evidence that the human mind is structured by our bodily orientation in space, and hence so is our art." In which case, the critic isn't explaining art but using it to explain features of human cognition—features that could be just as easily explained—perhaps even more easily—by other materials. The cognitivist critic needs to ask herself: am I really trying to get at something fundamental about the artist's intention? Or am I trying to use this piece of art to illuminate some feature of how the mind works? This is really a question about whether the criticism is any good. Crudeness is crudeness, whatever banner it waves.

Having said all of this, I want to turn briefly to a problem I see with the whole line of approach that says that the meaning of a work is what the author intended—even though I believe, fundamentally, that that is true. The problem can be best brought out by looking not at Ashton's paper but at the work of her UIC colleague, Walter Benn Michaels. I certainly do not mean to conflate her work with his. But insofar as she reminds us that the problems we should be interested in "arise out of [art] as such," she pursues an argument that he too has been pursuing. And it is worth trying to bring out what is peculiar about his pursuit of this argument.

Follow me along here for a moment if you will. You are walking along a beach beneath some sheer white cliffs. The sea is calm tonight and you can hear the grating roar of pebbles, which the waves draw back and fling up the high strand, bringing, with a tremulous cadence, what sounds like an eternal note of sadness. Suddenly a giant wave rolls in and rolls back out, leaving the following marks etched in the sand:

> So much depends
> upon
>
> a red wheel
> barrow

glazed with rain
water

beside the white
chickens.

Startled, you look around to see whether someone is playing a trick on you, but all you hear is the distant hoot of a screech owl. The screech owl's hoot wings you back to a poetry class you once took. You dimly remember having studied these lines. There was something rather interesting about them. What was it? What do they mean? Instantly another wave rolls in and leaves the following mark under the poem:

—Karl Marx (1848).

Aha, you think to yourself. Now it all makes sense. The red wheelbarrow and the white chickens represent the eternal struggle between the proletariat and the bourgeoisie. Why does so much depend on the red wheelbarrow? Because the rise of a classless society depends on workers. Who are the white chickens? Cowardly capitalists loitering lazily beside the red wheelbarrow. But wait, you think, why is the red wheelbarrow glazed with rain water? You furrow your brow. Maybe the poem alludes to the crop failures of 1846 that brought about the European upheavals of 1848? As you try to puzzle out the connection and remember what you can about European economic history, another wave rolls in and as it rolls out you see that Karl Marx (1848) has been erased and replaced by

—Martin Luther King, Jr. (1965).

Your mind whirls, the cliffs seem to stalk after you, they even seem to pant. What could this mean? 1965: two years after the March on Washington and "I have a Dream"; the year of the Selma to Montgomery marches and the infamous Bloody Sunday march in which protesters were viciously beaten by police. Could that be what King had in mind? Now everything in the poem means something different. The red wheelbarrow. The white chickens. Could they signify King's nonviolent struggle for equality and the gruesome force with which it was suppressed? Do white chickens stand in for white people?

Before you know it, though, the waves start coming really fast. In and out, in and out. First you see—

—Henry Kissinger (1975)

then

—Le Bron James (2010)

then

—George W. Bush (1999)

What is the point? Simply this. The default setting, overwhelmingly so, when we encounter another human being or a human artifact, and that includes language, is to adopt an intentional stance—a stance of psychological charity. We are innately charitable towards signals that we take to originate with some intending agent. There are all kinds of ways of filling out this claim, and all kinds of complexities to it, one of which I will get to in a moment. But the basic claim is that when our environment includes something that we take to be an agent, we impute agency to it and treat its movements, utterances, actions and so on as meaningful. We would treat the wave poem as meaningful and under someone's conscious control—indeed we would try to make sense of what the wave poem meant—until it became overwhelmingly obvious that these marks were laid down by chance.

Here's one of the complications. We are enormously cognitively sophisticated and one of the effects of that is that we have evolved a broad-banded response to ambient information streams. In fact the breadth of responses we are capable of is massive and apparently unique to our species, though there is a relatively tightly constraining belt in the middle: we err on the side of over-attributing agency and hence meaning to the ambient information streams rather than under-attributing it. Widespread agency attribution is a deep feature of our conceptual armature—very young children regularly translate spatio-temporal movements between objects into stories about agents with goals that are either achieved or thwarted (see Susan Carey, *Origin of Concepts*, 171).

So we are capable of a broad-spectrum multi-variate response to information, but in the center of the broad spectrum is a deep channel of intentionalism and indeed charity towards signals we take to be meaningful. To put it another way, we are more likely to mistake noise for signal than we are to mistake signal for noise, though we are certainly capable of doing the latter too.

Okay so this is a pretty banal claim—why bother to make it? Because literary theory—that fascinating perhaps now largely historical discipline devoted to extracting general laws of interpretation—has taken full advantage of the broad-band flexibility of our response to information streams. Theory, of many different stripes, is united in governing general theories of interpretation by laying a marker down just slightly outside the intentionalist channel, in the far rough of the surrounding noise. I realized this accidentally because I happened to be teaching a literary theory class and the book on the syllabus that day was *The Shape of The Signifier: 1967 to the End of History* by Walter Benn Michaels, a book that seems to form part

of a dyad with *The Trouble with Diversity* which he published a couple of years later. The idea jumped out at me thanks to a diagram I was drawing on the board in my class. The diagram was simple. I divided the board into two halves. On one side of the board I wrote "authorial intention" and under it I wrote "belief," "argument" and eventually "Juicy Lucy and the Lesbian S/M Coming to Power Collective." (The last term was a bit puzzling). On the other side of the board I wrote a dizzying array of words and concepts—so many that the right side of the board looked like Chicago in a blizzard. These terms included "Mark," "identity," "Derrida," "Wimsatt/Beardsley," "de Man," "the affective fallacy," "the intentional fallacy," "the shape of the signifier," "identity," "post-structuralism," "materialism" and about a hundred other words including the names of every major literary and cultural theorist of the 20th century. What did any of them mean? Michaels has made a career of tracking the woolly-headed convictions of his tribe back to their lair. Once he hunts them down, he does not so much finish them off as make them sit through ever more ingenious explanations of just how woolly-headed they are. The whole procedure is vastly entertaining to watch especially as every person in sight—not just every person but every living entity (Martians, trees) and even a few merely carbonate entities (rocks, stones) get lassoed into the ever-growing corral of the woolly-headed.

Michaels's argument is that any time you interpret a text by appealing to something other than what the author intended, all you are really talking about is what the text means to you. And this is about as woolly-headed as you can get. Why? Because you thereby take the first step down a steep and slippery road to a world in which nobody can ever argue with each other because everybody is inherently right about what texts mean to them. And once you arrive in that world, all you can do is make assertions about your identity and group yourself with people who share it—a procedure that will surely make you feel virtuous but which will mask the fact that you are no longer making arguments but merely asserting your identity. And a world in which, to put it baldly, people choose to assert their identity rather than argue with each other is a world in which the only thing you can do when you encounter someone whose identity is different from yours is either appreciate him, or respect him, or perhaps try to annihilate him, or in some other way swerve from thinking about his beliefs. Michaels gets downright apocalyptic about the geopolitical consequences of a world so ordered but I'm going to stay away from his political vision for now. The important thing is to see that this Borgesian world of chattering and occasionally messianically violent identitarians follows inexorably from the original sin of stepping outside the intentionalist channel. So for instance if, when that wave poem washes in, instead of worrying about what Karl Marx might have meant by the red wheelbarrow and the white chickens you grew interested in the pattern of the marks on the sand or the fancy sans serif font in which the wave poem was written, you start down the road to massively parallel non-intersecting assertions of identity. Or as

Michaels puts it, "once the text is turned into an object of perception, it is made literally uninterpretable but also literally inexhaustible since how it is perceived—not only what it looks like but what it makes you feel like, what it makes you think of—must be a function not only of what it is but of who you are" (113).

My objection to Michaels and the intentionalist school is this. High theory, as I've recently argued elsewhere, was unified by exhorting people to hold beliefs that people have a hard time holding. The difficulty of holding those beliefs was the point. For the real point of theory was theological, or perhaps I should say, Providentialist. It depended on the ongoing intervention of the theorist to steer the wavering believer, the doubter, back in the direction of these hard beliefs. Intention was crucial to the enterprise. The theorist often moved his or her interpretive marker outside the deep intentionalist channel through which we interpret information. But if the theorists clothed themselves in priestly garb by taking advantage of our inherent cognitive flexibility about intention, Michaels and the intentionalists in a way has taken just as much advantage of our cognitive flexibility by moving the interpretive marker back inside the intentionalist channel. If theory made a career by exhorting people to hold beliefs they couldn't actually hold, at least not for very long, Michaels has made a career of exhorting people to hold beliefs they mostly already hold.

Blakey Vermeule's research interests are cognitive and evolutionary approaches to literature, Philosophy and literature, British literature from 1660-1820, post-Colonial fiction, satire, and the history of the novel. She is the author of *The Party of Humanity: Writing Moral Psychology in Eighteenth-Century Britain* (2000) and *Why Do We Care About Literary Characters?* (2009), both from The Johns Hopkins University Press. She is currently working on a book about narrative and the conceptual unconscious.

CARL EINSTEIN, DANIEL-HENRY KAHNWEILER, CUBISM, AND THE VISUAL BRAIN

CHARLES W. HAXTHAUSEN

Even as the body of scholarship on the art historian Carl Einstein (1885-1940) continues to grow, he has up to now been almost wholly ignored by art history itself.[1] To be sure, he has been the subject of essays and books by art historians, yet these have so far had limited resonance beyond the scholarly subculture of Einstein studies.[2] When I say that Einstein has been ignored by art history what I have in mind is art-historical research that is *not* primarily about Einstein but that has drawn productively on his writings—a phenomenon that is, for example, quite common in the case of Einstein's contemporary Walter Benjamin, who wrote comparatively little about visual artifacts.[3]

Einstein's absence is most telling in the literature on cubism, the art on which he wrote prolifically and for which he is one of the most important early commentators–indeed, his chapter on cubism in his *Die Kunst des 20. Jahrhunderts* (1926), his most developed treatment of the subject up to then, had the distinction of being the longest, most intellectually ambitious text on this art to have yet appeared in either French or German.[4] Yet that account, his revised and expanded versions of it in the second and third editions of the book (1928, 1931),

his *Georges Braque* (1934), and his numerous other shorter writings on cubism and cubist artists are rarely noted in the literature on this art. [5]

Einstein's marginal reception contrasts markedly with that of his friend, Daniel-Henry Kahnweiler, the transplanted German who was the Paris dealer of Braque and Picasso during their cubist phase and knew their work more intimately than anyone else. His book *Der Weg zum Kubismus* (*The Rise of Cubism*), which appeared in 1920 under the pseudonym Daniel Henry, is still taken seriously, still debated within cubist scholarship. The art historian Yve-Alain Bois has hailed Kahnweiler as the only early commentator "to give an intelligent account of cubism," "a passionate critic" with a "fantastic eye," "whose breadth we have only begun to appreciate." Indeed, he has praised Kahnweiler's theoretical account of cubism as "one that in many respects remains unequaled today." [6]

What then of Einstein? Could we not say much the same of him? I believe we could and should. I say this even though I regard Kahnweiler's account of the formal development of Braque's and Picasso's cubism as the more concrete, nuanced, and persuasive one, because more attentive to the evolving formal problematic of their painting. Einstein's interpretation of cubism may be flawed as an explanatory model, yet it is the only early writing on this art that does justice to the radical implications of cubist representation, as painting that can fundamentally alter not only our conception of art but our intuition of the visual world, and in so doing alter our subjectivity. But here, rather than exploring the different interpretations in detail, I wish to focus on one issue that is central to both authors' interpretations of cubism—the role played by memory in the act of viewing cubist pictures. On this question Einstein and Kahnweiler held diametrically opposed positions. Moreover–and this is my main interest–their respective positions correspond to successive phases in the developing neuroscientific understanding of the visual brain. Kahnweiler's interpretation of cubism was shaped by the neuroscience of his day while, remarkably, Einstein's account of seeing, as he believed it to be embodied in cubist paintings, anticipates by half a century a fundamental breakthrough in the neuroscientific understanding of vision.

The differences between Kahnweiler and Einstein take on added interest in light of the work of Semir Zeki, a neurobiologist who has done major research on the visual brain and has proposed a neurological explanation of cubism. He does this in his pathbreaking book, *Inner Vision: An Exploration of Art and the Brain* (1999), the first extensive attempt to apply the new neuroscience to the study of art. Moreover, Zeki offers an account of the functioning of the visual system, the parts of the brain engaged in processing data from the retina and producing our images of the world, that has certain striking affinities with Einstein's account of cubist perception, even as it helps us more precisely to locate the radicalism of Einstein's conception of art in relation to the current neuroscientific understanding of the visual brain. Yet there

is irony here. Einstein's theory of art, as we shall see, was founded on the idea that vision was an active process, long before neuroscientific research corroborated this fact. Cubism was the pictorial embodiment of that truth. Yet Zeki's interpretation of cubism is closer is some respects to Kahnweiler, whose understanding of vision was based on the old neuroscience.

One may legitimately ask why this matters—what do we gain by relating Einstein to a scientific discourse that postdates his death by more than three decades? In my view, it is a matter less of what neuroscience can do for Einstein than what Einstein might offer to neuroscience. While Einstein anticipates current understanding of the visual brain, he also offers an important corrective to efforts by neuroscientists to apply their knowledge to art.[7] The applications of the neuroscience on the visual brain to visual art have up to now been overwhelmingly concerned with ostensibly universal aspects of visual perception and aesthetic response; in general these neuroscientists have shown little interest in the specificity of art-historical cases, and this also remains largely true in the nascent fields of neuroaesthetics and neuroarthistory. I am less interested in 'universal' neurobiological responses to art than in understanding how historically specific artistic practices, and historically specific interpretive accounts of those practices, can be understood in neuroscientific terms and how in turn they might enrich neuroscientific research on the visual brain. Here I will argue that Einstein's interpretation of cubism has notable implications for these emerging fields and productively complicates the current understanding of the relationship between artistic activity and the functioning of the visual brain. As such, his writing deserves consideration in the emergent discourses of neuroarthistory and neuroaesthetics.[8]

Kahnweiler's early writing on cubism dates from his five-year exile in Bern during the First World War and its aftermath. When Germany declared war on France in August 1914, Kahnweiler and his wife were on holiday in Italy. As a German national he was barred from returning to France, and, at the invitation of his friend and client Hermann Rupf, he opted to sit out the war in neutral Switzerland. During his Swiss exile, forced into suspending his work as a dealer, Kahnweiler had dedicated himself to reading philosophy, psychology, and art history in an effort to "explain to myself and to others what had happened, what cubism was."[9] In 1915 he wrote a long theoretical essay, "Der Gegenstand der Ästhetik" ("The Object of Aesthetics"). In this text, which remained unpublished for more than a half-century, Kahnweiler treated cubism in the broadest historical trajectory as a decisive shift in the practice of plastic representation and of viewer response.[10] His short book on cubism, *Der Weg zum Kubismus*, he developed from the last chapters of this manuscript. It was destined to become the classic early critical text on the movement.[11]

For Kahnweiler the fundamental problem facing Cubist painting was a strictly pictorial one that had emerged with impressionism: the conflict between *Darstellung* and *Aufbau*, between illusionistic representation and an increasingly autonomous pictorial structure (Kahnweiler, *Rise of Cubism*, 1). One of the fundamental tasks of painting, as he formulated it, was "to represent three dimensions and color on a flat surface, and to comprehend them in the unity of that surface" (7). In the first phase of cubism Braque and Picasso attempted to resolve this conflict by adapting three-dimensional objects to the painting surface through extreme distortions of form. Yet this discrepancy between the beholder's generic memory images of such objects and their deformed pictorial representation was deeply disturbing. In the summer of 1910, writes Kahnweiler, Picasso found a solution to this conflict. It was then that he took "the decisive step that detached cubism from the previous language of painting. . . . He had pierced the closed form" (10).

Fig. 1. Pablo Picasso, Woman with Pears (Fernande), 1909

Figure 2. Picasso, Guitarist, 1910

Comparing Picasso's *Woman with Pears* (fig. 1) with his *The Guitarist* (fig. 2) we can see the effects of this radical step. Even in the abstract, faceted forms of the woman we can still perceive closed contours; line and color are synthesized to create a sense of volume by means of modeling. In *The Guitarist* there are no closed forms; planes are suggested but not consistently defined; line and color now began to function as independent entities. As a result brushstroke, largely subordinated to modeling in the earlier work, becomes more individuated and texturally varied. This piercing of the closed form eliminated perplexing deformations of the motif—indeed, without the title, which Kahnweiler deemed essential for these more abstract works and which he himself usually provided, we would scarcely if at all be able to identify it. As Kahnweiler described it, following this step the subordination of parts to the unified pictorial structure "can take place without producing disturbing deformations, since the object in fact is no longer 'present' in the painting, that is, since it does not have the least resemblance to actuality" (12). At the same time, these highly abstract works came to include selected "real details," as Kahnweiler called them—lettering, clay pipes, bottles, tassels, etc.—integrated into the structural whole (fig. 3) (11). Such details, augmented by the painting's title, were, in his words, "a stimulus which carries with it memory images (*Erinnerungsbilder*). Combining the 'real' stimulus and the scheme of forms, these images construct the finished

object in the mind. . . . There is no possibility of conflict here, and yet the subject 'recognized' in the painting is now 'seen' with an intensity of which no illusionistic art is capable" (12). Ultimately, for Kahnweiler the painting is reconciled with the known, familiar world as given.

Figure 3. Picassso, The Architect's Table, 1912

In 1923, before Einstein had himself written anything of substance on cubism, he praised Kahnweiler as "the only one in Germany who described and explained cubism correctly."[12] Yet, in his long letter to him from that same year it becomes clear that Einstein's views on what was at stake in cubism went far beyond Kahnweiler's narrowly circumscribed aesthetic interests. "I have long known that the thing one calls 'cubism' goes far beyond painting," he declared. "Cubism is tenable only if one creates equivalents in the mind. "[13] In these two sentences, Einstein opened up a wide gulf between his conception of cubism and Kahnweiler's. First, that it goes beyond visual art; secondly, that ideally its impact will ultimately be a radical refiguring of the mental world of viewers and their intuition of visual phenomena. The experience of cubism is no mere theory, he insists, but leads to a "gradual modification of sensations," in which "a person waxes and wanes . . . in the sensation of himself or his feeling for objects, in the harnessing of time," so that what is represented is "the very history of the sensations, experiences brought close up, whose symptoms are at

best so-called things" (140, 141). Kahnweiler had written of the cubists' desire to glorify "the beauty of things" (1); for him cubism was about a new form of aesthetic pleasure; it was not about changing human subjects and their mental representations of self and world. He did not respond to Einstein's letter, but we can easily imagine that it must have struck him as alien to his own conception of cubism.

Three years later, in *Die Kunst des 20. Jahrhunderts*, Einstein presented his own account of cubist painting. The most critical point about Einstein's cubism is that, in contrast to Kahnweiler, he understood it as an "example of a subjective realism" rather than as an abstract art—realist, because as Einstein interprets it, cubism is based on "the direct experiences of the human subject"; it seeks to reconnect to a direct phenomenological perception of objects as experienced in time and space (63). What is represented is not, as in illusionistic art, ostensibly stable objects that exist apart from perceiving subjects, but rather our own unfolding subjective *process* of vision as we apprehend and mentally construct the volume of objects in moving toward and around them in space. In short, a cubist painting presents us with a synchronic image of a diachronic process, a process Einstein called *das vorstellende Sehen,* envisaging seeing (59). These different viewpoints, these discrete moments of envisaging an object or objects, rather than being abstracted into a single motif as in previous painting, are synchronically represented as planes and juxtaposed on the two-dimensional picture surface. What Einstein describes here fits the style of Braque's and Picasso's cubism of the period 1908 to early 1910; it is harder to reconcile with the subsequent phases of their cubism up through 1914, when their paintings often began as "pure paintings," furnished only toward the end of the process with "attributes," figurative details.[14] It is noteworthy that he says nothing about the fundamental shift that came with the puncturing of the closed form later that year, which Kahnweiler regarded as *the* fundamental strategic shift in cubist painting. Yet it follows from Einstein's interpretation of cubism that for him there was no problem with deformation, so there was no need of a solution—"We can speak of deformation," he wrote, "only if we declare imitation to be the task of art." Our normal habits of perception were deformed, but not objects, which were but "signals and symptoms" of our own visual and cognitive functions (63, 64).

Einstein's interpretation of the significance of multiple viewpoints in cubist paintings, a focal point of most of the early commentary, was radically original within cubism criticism itself. For Kahnweiler this feature was motivated by the quest for plasticity in representing a three-dimensional body in space on a two-dimensional surface (Kahnweiler, *Rise of Cubism*, 11, 12). The most influential explanation, however, was that of Maurice Raynal, a friend of Picasso's, which was widely embraced and repeated. According to Raynal, writing in a 1912, if art is a means of "augmenting knowledge," he declared, "its function will only be served by painting

forms as they are conceived in the mind." This interpretation was directly related to multiple viewpoints. "We never see an object in all its dimensions at once." "We must fill in the gaps. Conception gives us the means."[15] Yet despite their shared focus on multiple viewpoints, Raynal's understanding of cubism is diametrically at odds with Einstein's.[16] For Raynal what is painted is the world as already known. The objects are seen from multiple viewpoints, but it is information-gathering, not a dynamic process of *generating* an object sequentially out of the viewing subject's movements in space. For him and most other early cubist critics, including Kahnweiler, the object exists before the painting; for Einstein the painting is the product of the object's genesis in the mind of the artist.

Yet it is on the issue of visual memory, crucial for both Einstein and Kahnweiler in their respective theorizations of cubism, that the most fundamental difference between them emerges. For Kahnweiler, as we have seen, Braque and Picasso solved the conflict between representation and structure by abandoning deformation of the object in favor of an abstract geometric grid into which realistic details and sometimes words were inserted as clues. These realistic details, aided by the picture's title, triggered memory images in the viewer, memories of the familiar object world. For Einstein it is precisely such memory images that prevent us from seeing concretely and directly: "in reality," he writes, "we do not at first see purely, with optical directness, but quickly associate a cumulative memory image with some known optical stimulus that obscures the genetic stimulus with a supposedly stable and comprehensive image. We conceal from ourselves that this memory image is a reconciliation of temporally as well as optically (qualitatively) distinct actions, and this image seems to endure because as something latent, mechanized, and rather unspecific . . . it is fused with visual function," namely the present act of perception. Cubism disrupts these well worn mnemonic circuits. "We discover," Einstein writes, "that the object is a nodal point of functions, the result also of subjective activity, that its rigidity is effected above all by linguistic habit and the desire of enabling extremely easy–i. e., conformist—actions; thus it is a matter of biological memory" (Einstein, *Kunst des 20. Jahrhunderts*, 58, 64). Cubism displaces and overwrites that memory by painting phenomenological optical experience. It is important to note the distinction between two kinds of memory—the biological memory formed by long-term perceptual experience, i.e. the kind that Kahnweiler has in mind when he refers to *Erinnerungsbilder,* and what I would call instantaneous short-term memory that accompanies a single event of perception as it unfolds in space and time. This latter form of memory is what Einstein refers to with the term *simultané* (63, 68).

The function of visual memory and its role in object recognition—the final step in the complex physiological and neurological process of seeing—is not only central to the differences between Einstein and Kahnweiler, it also figures in Semir Zeki's treatment of

cubism. He relates current knowledge of the visual brain to cubism, and finds this interpretation supported by some of the earliest interpretations (50-57).

As Zeki relates in his earlier book, *A Vision of the Brain*, until recently science understood vision as an essentially *passive* process; the image, it was thought, is received whole by the retina as though on a photographic plate,[17] and is then transmitted through nerve fibers to the primary visual cortex at the back of the brain, and analyzed and interpreted by another, surrounding and distinct cortical area, which was known as the "association cortex." There "received visual impressions are associated with previous visual impressions of a similar kind, resulting in recognition."[18] Kahnweiler was at least superficially familiar with this neuroscience on the visual brain. In a chapter of his *Der Gegenstand der Ästhetik* entitled "Das Sehen" ("Seeing"), he quoted from the recent book *Gehirn und Auge,* in which its author Robert Bing describes the primary visual cortex as a "Wahrnehmungszentrum," a center of perception, which through the "Assoziationsfasern," association fibers, connects to the occipital lobe, which contains "die optischen Vorstellungszentren," the centers of mental representations, "in which the memory images (*Erinnerungsbilder*) for establishing the meaning of a seen object are stored." *Erinnerungsbilder,* we recall, is the term Kahnweiler would use in *Der Weg zum Kubismus*, and Bing was almost certainly his source.[19]

Since the 1970s neuroscientists have discovered that the visual brain is much more complex than the old model of the primary visual cortex and an association cortex. Most importantly, they have now established that vision is an active rather than a passive process. The visual brain does not receive *images* from the retina, as was previously believed; rather the retina transmits to it unfiltered, unprocessed visual data from which the brain *actively* produces images, synthesized from stimuli processed by geographically and functionally distinct areas of the visual brain, in temporally discrete stages separated by milliseconds. The neurons in each area have the specialized function of responding to a different attribute of the visual scene, such as form, color, and motion. The primary visual cortex, V1, has been compared to a post office, where information gets sorted and distributed to other visual centers with specialized functions. V3 processes information related to orientation and, it is believed, dynamic form. V4 deals with hue discrimination and color constancy; V5 processes information on motion and stereoscopic depth.[20] There is further specialization within these areas; some cells are sensitive to vertical lines, others to horizontal or diagonal lines in specific directions; other neurons respond to particular colors, and so forth. All of this data must be coordinated and matched with items in the cumulative catalogue of our visual memory, which is believed to be localized, at least in part, in the area anterior to V4.[21]

This process of object recognition is crucial to the cognitive function of the visual brain, for the information we receive from the visual domain is, in Zeki's words, in "a continual state of flux" (Zeki, *Inner Vision*, 5). We see objects in different lighting conditions, which affect the appearance of their color, from different angles and distances, distorting their shape. This means that the visual brain has work to do if we are to make sense of what we see. Zeki explains: "Vision must . . . be an active process requiring the brain to discount the continual changes [of visual phenomena]and extract from them only that which is necessary for it to categorize objects." The brain acquires "knowledge about the enduring and characteristic properties of the world; the brain is consequently interested only in the constant, non-changing, permanent and characteristic properties of objects and surfaces in the external world, those characteristic that will allow it to categorize objects"(6).

The major premise of Zeki's book is that "the function of art and the function of the visual brain are one and the same or at least that the aims of art constitute an extension of the functions of the brain" (1). Art, like the brain, seeks "to represent the constant, lasting, essential and enduring features of objects, surfaces, faces, situations, and so on, and thus allow us to acquire knowledge, not only about the particular object, or face, or condition represented on the canvas but to generalise from that to many other objects and thus acquire knowledge about a wide category of objects or faces" (9-10). This quest for "the constant, lasting, essential and enduring features" of visual phenomena is central to Zeki's interpretation of cubism. As he proposes, the cubists, like the visual brain, seek to grasp the "constant and essential elements" of the visual field, disregarding the fugitive accidents of appearance (50). Zeki really believes that objects have constancy and stability; for Einstein that is a convenient fiction of "biological memory," born of the practical necessity of our functioning in our visual environment.

Zeki's theorizing is not completely unmoored from history, however. He cites some of the earliest French commentary on cubism, which supports his conviction of the common function of the visual brain and of visual art. He cites statements by, among others, Picasso and Juan Gris and the critic Jacques Rivière, whom he quotes: "The true purpose of painting is to represent objects as they really are, that is to say differently from the way we see them. It tends always to give us their sensible *essence*, . . . this is why the image it forms does not resemble their *appearance*" (11). Zeki probably also found confirmation for this view in Kahnweiler, whose book on Juan Gris he cites. According to Kahnweiler, the cubists "strove to produce a complete image of the objects signified . . . which should be at the same time devoid of everything ephemeral and accidental, retaining only what was essential and permanent." "Unsatisfied by the fortuities of a single visual impression, [cubism]endeavored to penetrate to the very essence of an object by representing it, not as it appeared on a

given day at a given time, but as it exists ultimately composed in the memory."[22] Later in the chapter, Zeki again cites a passage by Rivière that fits neatly with a neurobiological perspective: "Contrary to what is believed," writes Rivière, "sight is a successive sense; we have to combine many of its perceptions before we can know a single object well."[23] What the cubists were trying to do, Zeki now asserts, "was to try and mimic what the brain does. . . . They decided to depict all the different views and unite them on a single canvas, much as the brain unites what is seen from all different views" (51).

Figure 4. Picasso, Man with a Violin, 1911-12

This may sound a lot like Einstein, but when Zeki turns to Picasso's *Man with a Violin* (fig. 4), a funny thing happens: the painting is so abstract, with so many points of view "that the final result is only recognisable as a violin player through its title. A brain ignorant of that title can hardly construe that this is a violin player. The brain of course regularly views objects and people from different angles, but it is able to integrate those different views in an orderly way,

allowing it to obtain knowledge about what it is viewing. The attempt by Cubism to mimic what the brain does was, in the neurobiological sense, a failure—an heroic failure perhaps, but a failure nonetheless."[24]

Now what Zeki sees as a failure is precisely what Einstein, with a radically different understanding of cubism's agenda, saw as cubism's triumph. But before I elaborate this point let us, now that we are familiar with Zeki, revisit a passage from *Die Kunst des 20. Jahrhunderts* that I earlier quoted in part, in which Einstein describes what he calls cubism's *Gegenstandsgenetik*, its genesis of the object. It is even closer to contemporary neuroscience's understanding of the visual brain than the statements by Jacques Rivière cited by Zeki. Addressing the hermetic abstraction of cubist painting, Einstein writes:

> One might perhaps object, this is not how we see in reality; yet in reality we also do not at first see purely, with optical directness, but quickly associate a cumulative memory image with some known optical stimulus that obscures the genetic stimulus with a supposedly stable and comprehensive image. We conceal from ourselves that this memory image is a reconciliation of temporally as well as optically (qualitatively) distinct actions, and this mental image seems stable because as something latent, mechanized, and rather unspecific —specificity comes from the linkage of the memory image [i.e., the "biological memory"]with the individual stimulus–it is fused with visual function. (Einstein, *Kunst des 20. Jahrhunderts*, 58)

This is a much more nuanced account of the visual process than we find in other writers on cubism. Moreover, Einstein's emphasis on perception of an object as comprising "temporally as well as qualitatively distinct actions" anticipates current neuroscientific knowledge. Even if he doesn't know of the functionally distinct regions of the visual brain, he seems to intuit that the image is a result of an active neural process unfolding in discrete stages. In Einstein's words, "Cubism put an end to the laziness or fatigue of vision. Seeing had again become an active process" (Einstein, *Die Kunst des 20. Jahrhunderts* [1931], 107). This is what I meant by cubism's triumph, as Einstein saw it. In his "Notes on Cubism" (1929) he illustrated *Man with a Guitar*, a work from the same year as *Man with a Violin*, which so perplexed Zeki.[25] "It was," Einstein writes there, "the cubists who undermined the object forever identical with itself, in other words they undermined memory, in which mental images are reconciled with one another. Their chief merit is having destroyed mnemonic images." The cubist painting becomes "the distinguishing sign of the visually active human being, constructing his own universe and refusing to be the slave of given forms."[26] In other words, for Einstein cubism short-circuited the normal operations of the visual brain, allowing us to discover vision as

a creative act to make the world new. Einstein summed it up concisely in his *Die Kunst des 20. Jahrhunderts*: "Painting or sculpture become necessary to a critique of visual intuition. . . . For the sensory is not some fixed, limited material that is altered only when interpreted through concepts; visual intuition and seeing change and exhaust themselves, and optical dissatisfaction forces such change; . . .what is at stake is not reproducing [*Abbilden*] but forming [*Bilden*]" (57).[27]

The notion that visual art precisely does not parallel the operations of the visual brain, but is rather continually unsettling and refiguring our construction of the visual world is not unique to Einstein—one finds it as early as 1876 in the writings of Conrad Fiedler. "Artistic activity begins," wrote Fiedler, "when man finds himself fact to face with the visible world as with something immensely enigmatic; when, driven by an inner necessity and applying the powers of his mind, he grapples with the twisted mass of the visible world which presses in upon him and gives it creative form. . . . What art creates is the world, made by and for the artistic consciousness." This is not a world, Fiedler insists, that existed prior to its realization through art: "What excites artistic activity is that which is as yet untouched by the human mind" (Fiedler, *On Judging Works of Visual Art*, 48-49). In that same year Stephane Mallarmé wrote of impressionism: "the eye should forget all else it has seen, and learn anew from the lesson before it, should abstract itself from memory, seeing only that which it looks upon, and that as for the first time."[28] This is consistent with how Claude Monet described his practice to Lilla Cabot Perry:

> "When you go out to paint, try to forget what objects you have before you—a tree, a house, a field, or whatever. Merely think, here is a little square of blue, here an oblong of pink, here a streak of yellow, and paint it just as it looks to you . . . until it gives your own naive impression of the scene before you."
>
> He said he wished he had been born blind and then had suddenly gained his sight so that he could have begun to paint in this way without knowing what the objects were before him.[29]

It is noteworthy that the young Wassily Kandinsky, not yet a painter, experienced bafflement when he saw a Monet *Haystack* for the first time: "That it was a haystack, the catalogue informed me. I didn't recognize it. I found this non-recognition painful. . . I had a dull feeling that the object was lacking in this picture." And yet this strange picture "gripped me" revealing "the unsuspected power of the palette."[30] There are countless such examples.

In other words, effective visual art does not, as Zeki claims, parallel the operations of the visual brain, which always favor generalized repetition of the previously seen; rather art is continually unsettling and refiguring our construction of the visual world, working against the brain's reproductive and classificatory operations. Vision has the potential for *agency*. As Einstein puts it: "In the act of looking we change man and the world."[31] He wrote these words with reference to cubism, and it is in his writings on cubism that we find his ideas most fully developed.

Current neuroscience, even as it acknowledges the 'plasticity' of the brain, its capacity to be structured by experience, treats vision as purely neurobiological. The situation described by the philosopher Marx Wartofsky nearly four decades ago is little changed today: ". . . the *historical* development of modes of perceptual action is not yet mapped into accounts of neurophysiological structure."[32] The leading neuroscientists who work on vision have shown no acknowledgment of the historicity of vision, or of how artworks and other visual representations might alter the structures and influence the cognitive activity of the visual brain. Yet, as Wartofsky eloquently argued, "Human vision is itself an artifact; with the advent of human culture the visual system breaks loose from its previous biological domain, and acquires a history; and . . . in this history, it is we who shape and transform the modes of visual praxis, of visual cognition and perception."[33] This has clear implications for art: "with the development of representational practice, we come to see by means of the forms and styles of visual representation that we create; and . . . our modes of visual perception change with changes in these modes of representation" (Wartofsky, "Sight, Symbol, and Society," 28). This idea, that art had the capacity to shape human vision, was, as we have seen, a central tenet of Einstein's writing.

As a young man, Einstein defined the task of art in these words: "Negation says nothing at all, and affirmation just as little. The artistic begins with the word 'otherwise'."[34] It is this concept of art that Einstein can offer to neuroscience, and so enrich our understanding of the visual brain and the neurobiological foundations of human aesthetic response.

NOTES

1. Thanks to Charles Palermo, John Onians, Michael Kelly, Andreas Michel, Nicola Creighton, and David Quigley for critical comments on earlier versions of the paper.

2. Two recent book-length studies by art historians are especially noteworthy: Uwe Fleckner, *Carl Einstein und sein Jahrhundert: Fragmente einer intellektuellen Biographie* (Berlin: Akademie Verlag, 2006) and Sebastian Zeidler, "Defense of the Real: Carl Einstein's History and Theory of Art" (Ph.D. diss., Columbia University, 2005).

3. Two recent rare examples of Einstein breaking through into that larger discursive world are: Charles Palermo *Fixed Ecstasy: Joan Miró in the 1920s* (University Park, Pa.: Pennsylvania State University Press, 2008), which not only derives its title from Einstein's *Negerplastik*, but cites him repeatedly throughout a book on an artist about whom Einstein wrote almost nothing; and Christopher Green, *Picasso: Architecture and Vertigo* (New Haven and London: Yale University Press, 2005).

4. Carl Einstein, *Die Kunst des 20. Jahrhunderts* (Berlin: Propyläen Verlag, 1926),56-86. The 1926 cubism chapter was surpassed in length only by Vincenc Kramár's 88-page study in Czech, published in 1921. Vincenc Kramár, *Kubismus* (Brno: Moravsko-slezská revue, 1921), Translated into French: Vincenc Kramár, *Le Cubisme*, ed. Hélène Klein, Erika Abrams, and Jana Claverie (Paris: École nationale supérieure des beaux-arts, 2002).

5. To cite one recent example, in David Cottington's study of the literature on cubism, which includes a close analysis of some the most influential early writing on the movement, Einstein gets fewer than two pages, and true to what has become a pattern, the text cited is "Notes sur le cubisme," the short essay from 1929; *Die Kunst des 20. Jahrhunderts* is not even mentioned. David Cottington, *Cubism and Its Histories* (Manchester and New York: Manchester University Press distributed in USA by Palgrave, 2004), 175–76. T. J. Clark refers briefly to Einstein in the cubism chapter of his *Farewell to an Idea: Episodes from a History of Modernism* (New Haven and London: Yale University Press, 1999), 186, 223. On the debit side Elizabeth Cowling, in her massive study of style in Picasso's work, which offers an extensive chronological survey of the critical commentary on Picasso as "a painter without style," cites only a minor 1928 essay by Einstein (one translated into English), without noting the originality of his viewpoint on this issue or his most important writing on Picasso, in the 1928 and 1931 editions of *Die Kunst des 20. Jahrhunderts*. Elizabeth Cowling, *Picasso: Style and Meaning* (London: Phaidon, 2002), 458. A notable exception à propos *Georges Braque* is a footnote by William S. Rubin in his indispensable *Picasso and Braque: Pioneering Cubism* (exh. cat., Museum of Modern Art, New York, 1989), 55–56, n23: "Except for its occasional appearance in bibliographies Einstein's long monograph on Braque has been entirely overlooked, to the best of my knowledge, in the literature on Cubism. This is all the more surprising since–despite its occasional Marxist clichés, its disorganized character, and its repetitiousness (not to say logorrhea)—it contains some brilliant insights that one would have thought worthy of interest (especially to Marxist scholars, who often purse a path much narrower and less interesting than Einstein's in the matter of Cubism)."

6. Yve-Alain Bois, "Kahnweiler's Lesson," in *Painting as Model* (Cambridge, MA: MIT Press, 1993), 65–97, here 65–66, 67. Bois wrote this before he had read Vincenc Kramár. As is clear from his introduction to the French translation of Kramár's *Kubismus*, he clearly would add him to Kahnweiler as an early commentator who gave "an intelligent account of cubism."

7. Margaret Livingstone, *Vision and Art the Biology of Seeing* (New York: Abrams, 2002); Anjan Chatterjee, "Neuroaesthetics: A Coming of Age Story," *Journal of Cognitive Neuroscience* 23. 10 (2010): 53–62; V. S. Ramachandran, *The Tell-Tale Brain: A Neuroscientist's Quest for What Makes Us Human* (New York: W.W. Norton, 2011), 193–244. For a critical view, see John Hyman, "Art and Neuroscience" in R. Frigg and M.C. Hunter, eds., *Beyond Mimesis and Convention*, Boston Studies in the Philosophy of Science 262 (Dordrecht: Springer, 2010): 245-61.

8. For an informative summary of this literature, see John Onians, *Neuroarthistory from Aristotle and Pliny to Baxandall and Zeki* (New Haven and London: Yale University Press, 2007), 1–17.

9. Daniel-Henry with Francis Crémieux, *My Galleries and Painters*, trans. Helen Weaver (New York: Viking, 1971) 50-51.

10. Daniel Henry Kahnweiler, *Der Gegenstand der Ästhetik* (Munich: H. Moos, 1971). This was the first publication of the work, accompanied by a 1970 afterword by the author.

11. Daniel Henry Kahnweiler, *Der Weg zum Kubismus* (München: Delphin, 1920); English ed., Daniel Henry Kahnweiler, *The Rise of Cubism*, trans. Henry Aronson (New York: Wittenborn, Schultz, 1949). On Kahnweiler's readings and writings from this period, see Yve-Alain Bois, "Kahnweiler's Lesson," in *Painting as Model* (Cambridge, Mass.: MIT Press, 1993), 65–97 and Licia Fabiani, *Daniel-Henry Kahnweiler: Eine Werkbiographie* (Hildesheim: Olms, 2010).

12. Carl Einstein, "Gerettete Malerei, enttäuschte Pompiers," in *Werke Band 2. 1919–1928*, ed. Hermann Haarmann and Klaus Siebenhaar (Berlin: Fannei & Walz, 1996), 334–39, 334.

13. *Carl Einstein, Daniel-Henry Kahnweiler: Correspondance, 1921–1939*, ed. and trans. Liliane Meffre (Marseille: A. Dimanche, 1993), 139.

14. This is how, according to Françoise Gilot, Picasso described his work process in these years. Françoise Gilot and Carlton Lake, *Life with Picasso* (New York: McGraw-Hill, 1964), 72-73. On this point a commentary by William Rubin on the 1912 Picasso painting *The Architect's Table*, merits quotation: "Speaking of the transformations of motifs in this picture Picasso observed that he possibly could not have surely identified the point of departure in reality for all its shapes even at the time it was painted—and certainly cannot now. 'All its forms can't be rationalized' he told [me]. 'At the time [Picasso continued]everyone talked about how much reality there was in cubism. But they didn't really understand. It's not a reality you can take in your hand. It's more like a perfume—in front of you, behind you, to the sides. The scent is everywhere, but you don't quite know where it comes from.'" In a footnote Rubin adds: "Picasso would not have used such an image for the more tactile cubism of 1908-10"—precisely the cubism that best fits Einstein's interpretation. William S. Rubin, *Picasso in the Museum of Modern Art* (New York: The Museum of Modern Art, 1972), 72, 206 n 3 (*The Architect's Table*).

15. Maurice Raynal, "Conception and Vision," in Edward F. Fry, *Cubism* (New York: McGraw-Hill, 1966), 95. For a discussion of the early interpretation of cubism as an art of conception, see Lynn Gamwell, *Cubist Criticism* (Ann Arbor, Mich.: UMI Research Press, 1980), 30–31, 43–48.

16. In his later book on Picasso, published initially in German, Raynal abandons this explanation and moves toward a position that is closer to Einstein. Picasso, he writes, is engaged in creating new objects. In this later publication his primary focus is synthetic cubism of 1912-14. In his earlier writings he had focused on analytical cubism of 1908-10. Maurice Raynal, *Picasso* (München: Delphin-Verlag, 1921).

17. A metaphor that was used, for example, by Hermann von Helmholtz in "Optisches über Malerei," in *Vorträge und Reden*, 4th ed. (Braunschweig: Friedrich Vieweg und Sohn, 1896), 2: 98.

18. Semir Zeki, *A Vision of the Brain* (Oxford Boston: Blackwell Scientific Publications, 1993), 91–92.

19. Robert Bing, *Gehirn und Auge* (Wiesbaden: J. F. Bergmann, 1914), 39. Kahnweiler also used the term in *Gegenstand der Ästhetik*, 24.

20. Martin J. Tovée, *An Introduction to the Visual System*, 2nd ed. (Cambridge, UK. and New York: Cambridge University Press, 2008), 62–73.

21. For a diagrammatic illustration of the functionally specialized areas of the visual brain, see Zeki, *Inner Vision,* 16, fig. 3.1(b).

22. Kahnweiler, *Juan Gris: His Life and Work*, trans. Douglas Cooper (New York: Curt Valentin, 1947)*,* 71. Zeki quotes a statement by Gris included in an appendix in Kahweiler's book: "painters felt the need to discover less unstable elements in the objects to be represented. And they chose that category of elements which remain in the mind through apprehension and *is not continually changing*" (144, Zeki's italics). He does not note that a few paragraphs later Gris goes on to distance himself from this position as purely descriptive.

23. Zeki, *Inner Vision*, 50–51. The entire text, "Sur la tendance actuelle de la peinture," can be found, in English translation, in Mark Antliff and Patricia Dee Leighten, eds., *A Cubism Reader: Documents and Criticism, 1906–1914*, trans. Mark Antliff (Chicago: University of Chicago Press, 2008), 249–67.

24. Zeki, *Inner Vision*, 54. Kahnweiler, let us recall, had claimed that such a painting as this was representative of Picasso's and Braque's solution to the conflict between mimetic representation and pictorial structure. That an abstract, autonomous pictorial structure embellished with details such as the bridge and sound holes of a violin, an ear, etc., would allow the beholder to conjure up a memory image, to complete the representation in the mind. But then Kahnweiler did not subscribe to the interpretation of cubist abstraction as "conceptual realism," nor did he accord central importance to the representation of multiple viewpoints as did Rivière and Maurice Raynal.

25. Philadelphia Museum of Art. http://www.philamuseum.org/collections/permanent/51090.html?mulR=11487|2.

26. Carl Einstein, "Notes on Cubism," trans. Charles W. Haxthausen, *October* 107 (Winter 2004): 165, 168.

27. Einstein's view of cubism evolved in the later 1920s beyond the phenomenological interpretation of the first edition of *Die Kunst de 20. Jahrhunderts*. A change becomes evident in the book's second edition. He rewrote the Picasso section, expanding the text to five times its original length. Although the account of cubism in the chapter's introductory section remained essentially unchanged from 1926, the new Picasso section that immediately followed it told a different story. Now the cubist painting of Picasso and of Braque offered not merely a simultané, "a deformation of our experience of three dimensions, generated through our movements, into two-dimensional form," as Einstein had interpreted it in 1926, but was in part internally generated by "dreamlike visions," by states of "formal ecstasy" with a "hallucinative basis." Carl Einstein, *Die Kunst des 20. Jahrhunderts*, 2nd ed. (Berlin: Propyläen-Verlag, 1928), 73. Einstein's encounter with surrealist ideas was the

major catalyst for this re-interpretation. André Breton had declared Picasso "as one of us"; cubism had pointed the way to surrealism, as it "dared break openly" with "tangible entities . . . and the facile connotations of their everyday appearance." André Breton, "Le Surréalisme et la peinture," in *La révolution surréaliste*, no. 4 (July 15, 1925), 26-30, 29-30. English translation in André Breton, *Surrealism and Painting* (London: Macdonald and Co., 1972), 9.

28. Stephane Mallarmé, "The Impressionists and Edouard Manet," reprinted in Penny Florence, *Mallarmé, Manet & Redon: Visual and Aural Signs and the Generation of Meaning* (Cambridge: Cambridge University Press, 1986), 12.

29. Linda Nochlin (ed.), *Impressionism and Post-Impressionism, 1874-1904* (Englewood Cliff, NJ: Prentice-Hall, 1966), 35.

30. Wassily Kandinsky, "Reminiscences" (1913), in Kenneth C. Lindsay and Peter Vergo, eds., *Kandinsky: Complete Writings on Art* (Boston: G. K. Hall, 1982), 1:363.

31. Carl Einstein, *Die Kunst des 20. Jahrhunderts (1931)*, ed. Uwe Fleckner and Thomas W. Gaehtgens (Berlin: Fannei & Walz, 1996). Or, as Marx Wartofsky would formulate it several decades later: "Perception is a mode of outward action. . . . In this sense, it is perceptual activity *in* the world, and *of* a world as it is transformed by such activity." Wartofsky, "Perception, Representation, and the Forms of Action," in *Models: Representation and the Scientific Understanding*, Boston Studies in the Philosophy of Science (Dordrecht/Boston: D. Reidel, 1979), 188–210, 194.

32. Wartofsky, "Perception, Representation, and the Forms of Action," 199.

33. Marx W. Wartofsky, "Sight Symbol, and Society: Toward a History of Visual Perception," *Philosophic Exchange* 3 (summer 1981), 23-40, 28.

34. Carl Einstein, *Bebuquin oder die Dilettanten des Wunders* (1912), *Werke Band 1. 1907–1918*, ed. Hermann Haarmann and Klaus Siebenhaar (Berlin: Fannei & Walz, 1994), 101.

Charles W. Haxthausen is Robert Sterling Clark Professor of Art History at Williams College. His current and recent research has focused on the painters Paul Klee, Ernst Ludwig Kirchner, and Sigmar Polke, the filmmaker Fritz Lang, and the critics Carl Einstein and Walter Benjamin. Currently he is completing a book of translations of selected art theory and criticism by Carl Einstein.

MUSIC, IMAGE SCHEMATA AND "THE HIDDEN ART"

BRIAN KANE

At the center of Kant's first *Critique* lies the schematism. The problem Kant faces concerns the relationship between pure concepts of the understanding and empirical intuitions. "How," Kant writes, "is the *subsumption* of intuitions under pure concepts, the *application* of a category to appearances, possible?" [1] Because the pure concepts of the understanding are different in kind from empirical intuitions, Kant's theory requires some "third thing" which is homogeneous to both concepts and intuitions. He famously proffered the schematism as the solution to this problem; for, "the schemata…are the true and sole conditions for providing [the pure concepts of the understanding] with a relation to objects, thus with *significance*." [2] Although Kant requires a homogeneous mediator if his theory is to remain intact, he is famously vague about the schematism's nature and operation. In a notorious sentence, he was forced to admit, "This schematism of our understanding with regard to appearances and their form is a hidden art in the depths of the human soul, whose real modes of activity nature is hardly likely ever to allow us to discover…" [3]

Despite Kant's inability to offer an explanatory mechanism, the schematism found a surprising reception in the work of philosopher Mark Johnson. Johnson often invokes research in cognitive science in order to defend a monist theory of the mind, where *image*

schemata, derived from ongoing interaction between the organism and the environment, are posited as structures that organize and ground experience at an embodied, non-propositional, pre-conceptual level. In 1987, when Johnson elaborated his theory in *The Body in the Mind*, the schematism was explicitly invoked because Kant's theory of the schematizing activity of the imagination, "offers us the most promising foundation for an adequate theory."[4] Although Johnson's account ultimately diverges from Kant's, a connection is intentionally drawn. He writes, "My use of the term [schema] derives from its original use as it was first elaborated by Immanuel Kant."[5]

While acknowledging the derivation and divergence of Johnson's theory from Kant, a problem still remains. Johnson's theory of image schemata, much like the Kantian schematism that inspired it, is compromised by a theoretical demand that relies on an inexplicable, but necessary, hidden art. Although Johnson's task will no longer be the synthesis of concepts and intuitions in some homogeneous "third thing," his account of image-schemata, which are instantiated in patterns of neural activation and claimed to structure and organize experience, relies on its own "hidden art."

Rather than raise my objections at the general level of Johnson's theory, I will follow Johnson into the realm of musical analysis in order to draw out my critique in a specific context. In Johnson's most recent book, *The Body in the Mind*, music is a privileged domain because of way that music offers "exemplary cases of embodied, immanent meaning."[6] "When we turn to music…we will see just how much…embodied meaning is operating below the level of words and propositional content."[7] In particular, my critique focuses on the relation between description and explanation in Johnson's account of *musical meaning-making*.

Johnson claims that image-schemata are relevant for shaping musical meaning. Generally, schemata are necessary because, "in order for us to have meaningful, connected experiences…there must be a pattern and order to our actions, perceptions and conceptions. *A schema is a recurrent pattern, shape, and regularity in, or of, these ongoing ordering activities.*"[8] More specifically, certain kinds of schemata, which Johnson calls *orientational metaphors*, are useful for addressing a classic problem of musical perception: why do we refer to pitches as being high and low when frequencies are in reality fast and slow, and (moreover) our means of producing pitches may run completely counter to this conceptualization?

According to Johnson, orientational schemata, like the VERTICALITY schema, "arise from the fact that we have bodies of the sort we have and that they function as they do in our physical environment."[9] Thus, despite culturally distinct ways of applying this schema, orientational schemata are non-propositional, embodied, and fundamental in structuring concepts and experiences with respect to one another. According to music theorist Larry

Zbikowski, whose work is methodologically indebted to Johnson, the VERTICALITY schema is "invoked by the various conceptual metaphors that use vertical space as a source domain through which to structure target domains…[such as] musical pitch."[10] The VERTICALITY schema is grasped "repeatedly, in thousands of perceptions" and reinforced daily in such experiences as, "perceiving a tree, our felt sense of standing upright, [or] the activity of climbing the stairs."[11] The pervasiveness of these experiences is intended to account for the pervasiveness of VERTICALITY as a structuring schema for pitch perception.

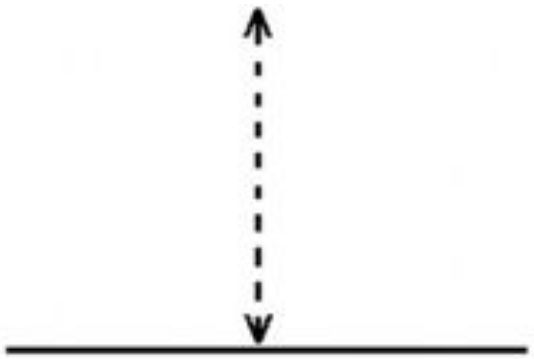

Figure 1. The VERTICALITY schema

The schema presented in Figure 1, used to map the source domain VERTICALITY onto the pitch domain, possesses three salient aspects that are not explicitly addressed by Johnson but are necessarily entailed in any perceptual correlation of pitch with verticality. The three aspects are:

- First, *one-dimensionality*, in that pitches are structured in terms of a one-dimensional Euclidean line.
- Second, *unique correspondence*, meaning that each pitch corresponds to a particular point on the line.
- And third, *the preservation of equivalence*, meaning that pitches perceived to stand in the same psychological relation correspond to points separated by the spatial distance.[12]

Johnson relies on all three of these aspects of the VERTICALITY schema when offering his first example of the process of "musical meaning-making", the melody of "Over the Rainbow."[13]

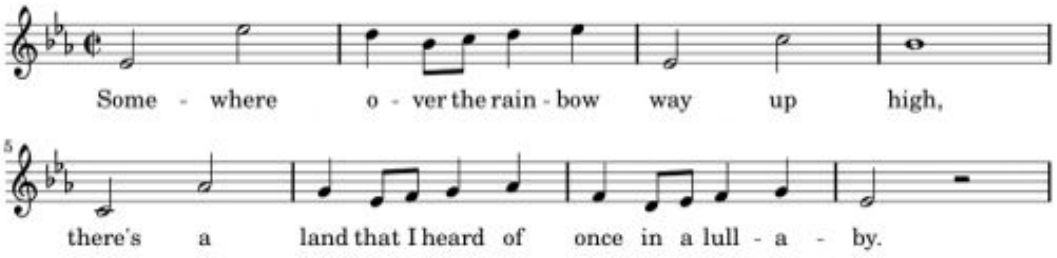

Figure 2. Arlen and Harburg, "Over the Rainbow," opening phrase.

The first aspect, *one-dimensionality*, is invoked when Johnson describes the opening octave leap as a "move from the lower pitch to the higher pitch";[14] the second aspect, *unique correspondence*, is invoked when describing the motion of the melody back to the original, unique starting point, the lower E-flat. Finally, the third aspect, *preservation of equivalence*, is invoked when Johnson points out how measures 5 and 6, "structurally mirror the pattern of the opening two measures."

Johnson adds one other aspect to the VERTICALITY schema: tension. Johnson claims, "The slide from 'Some' (E-flat) up to 'where' (the octave) creates a tension, the felt tension as we move from the lower pitch to the higher pitch and feel the strain and increased energy required to reach the higher note."[15] The addition of musical tension introduces the kinds of bodily entailments that Johnson wants, for not only do pitches move from low to high, they are felt to do so in a gravitational field where lifting an object requires work and where the potential energy stored in such efforts demands release. Johnson claims that the tension of the melody is not fully resolved until the end of the phrase, when the E-flat returns to its original position. Perhaps one could say that musical tension is being understood as a conceptual metaphor for the buildup and release of potential energy.

As an experiment, say I were to alter just one note of the melody, and change the low E-flat with which the melody begins up one semitone, to E-natural.

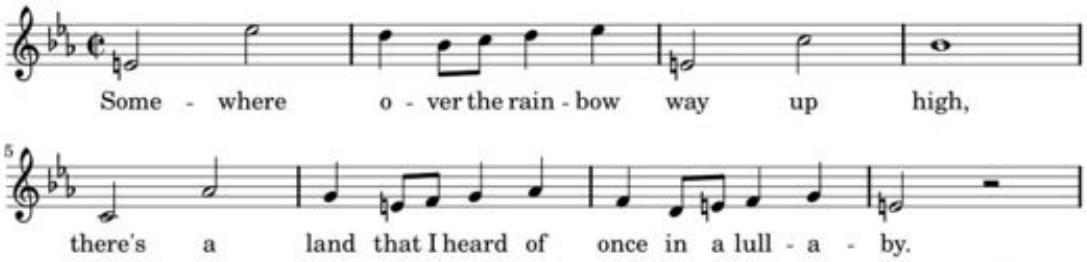

Figure 3. "Over the Rainbow," with E-natural replacing E-flat.

In terms of distance, the opening interval is barely altered—reduced from 12 semitones to 11 (a reduction of roughly 8 percent). But listen to how the whole melody has been altered in terms of tension.

Yet, this change in tension cannot be accounted for in terms of the VERTICALITY schema and its association of musical tension with potential energy. Listen to the opening interval in isolation.

We still have a leap, yet the leap is now *tenser* than before, although it requires less work to leap there. Moreover, you may now feel that the leap wants to resolve the tension by moving upwards (like so…).

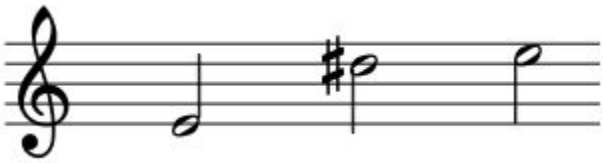

Figure 4. Resolution of modified opening interval.

According to Johnson's entailments, this opening interval should feel less tense because the potential energy has been decreased by one semitone. But that is not the case. Doesn't the felt tension of the altered interval directly contradict the *structuring* role of the VERTICALITY schema, by contradicting thousands of everyday experiences of potential energy and gravitational pull? I would argue that melodic tension is not sufficiently explained by conceptual metaphors of verticality and entailments of gravitation alone.

Similarly, Johnson's account of "Over the Rainbow" also founders on the problem of octave equivalence. When I changed the opening note of the melody, I changed the opening interval from a perfect octave to a diminished octave, or (if I had spelled it differently, a major seventh). There is something important in the fact that this alteration now makes the opening interval leap from pitch class E-natural to E-flat, and not remain on the pitch class E-flat. In other words, the original opening leap has both sameness and difference about it–the pitch class (E-flat) remains the same (E-flat) but the register changes; verticality alone does not capture the sense of sameness and difference. Moving upwards along a chromatic scale is not merely an ascent; the chromatic scale, when heard in relation to a tonic, produces the experience of circularity—or so it could be conceptualized. Perhaps we could say that our understanding of pitch chroma (which is technical name for the phenomenon at issue here) is based on a CIRCULARITY schema, where a listener perceives pitches as if they move around a wheel, returning again and again to a their starting point. Music psychologist Roger Shepard

offers a more robust spatial model than the VERTICALITY schema alone, one that captures both the phenomenon of the circularity of pitch chroma *and* the verticality of pitch height by combining both schemata into a simple helix.

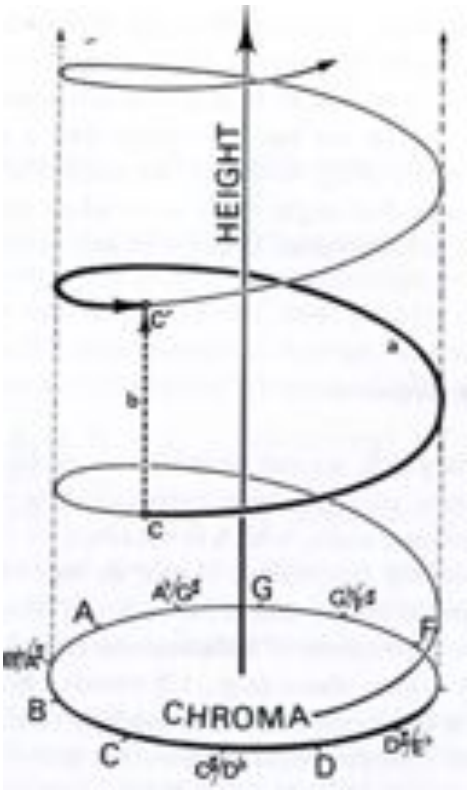

Figure 5. A helix representing pitch height and chroma.
(From Shepard 1982: 353.)

I will return to Shepard in a moment, but not before noting one further insufficiency of Johnson's account. When describing measures 3 and 4 of the opening phrase, Johnson understands the melody's tension according to his gravitational model, so the repose on B-flat "resolves the tension somewhat, but not completely…"

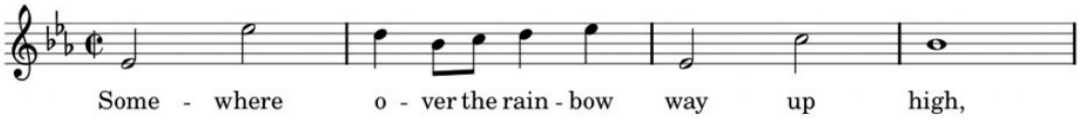

Figure 6. "Over the Rainbow," first half of opening phrase.

What if I, acting as an arranger, wanted to improve the melody by slackening the tension a bit; according to Johnson's reasoning, I might think that A-natural would be a better note upon which to repose than B-flat, because it is a semitone lower. Yet upon hearing it, I might be disappointed in the results.

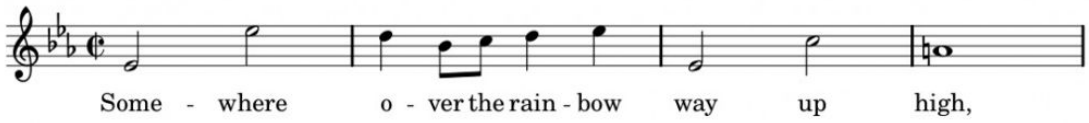

Figure 7. "Over the Rainbow," first half of first phrase, with A-natural replacing B-flat.

Johnson's dependence on the VERTICALITY schema cannot explain why B-flat is a better note that A-natural—because the VERTICALITY schema and its gravitational theory of tension cannot account for the role played by fifth-relations in tonal music. In other words, it cannot account for the unusual fact that notes separated by the interval of a perfect fifth are perceived to be more closely bound together than notes separated by other intervals. Fifth-relations can be represented on another circle, like the pitch chroma circle, known commonly as the circle of fifths.

Again, Shepard offers a model. By combining the circularity of fifth-relations with the salient verticality of pitch height, Shepard offers another helix. (Note that the helix Figure 8 is double because Shepard is tracing two pitches on opposite sides of the circle.)

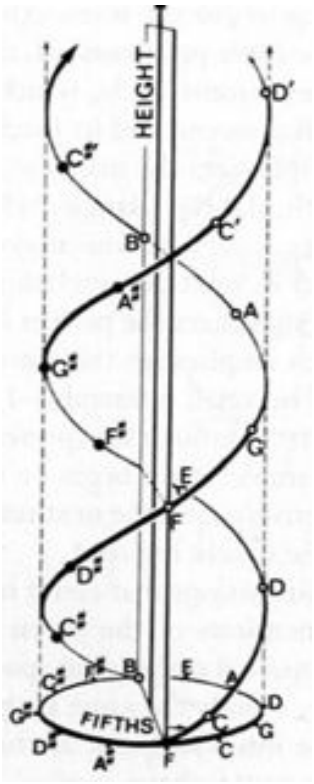

Figure 8. A double helix representing pitch height and fifth-relations (From Shepard 1982: 362.)

This model captures the perceptual proximity of B-flat to E-flat, which is only one hour apart on the clockface, but this new model no longer represents the circularity of pitch chroma. To capture all the features addressed simultaneously (that is verticality, chroma, and fifth-relatedness) requires a much more complicated, but much more robust model. The first helix would get wrapped around the second, resulting in a helix wrapped around a helical cylinder, in five dimensions!

Figure 9. A helix wrapped around a helical cylinder in five dimensions, representing pitch height, chroma and fifth-relations. (From Shepard 1982: 364.)

Shepard's final model captures the perceptual saliencies at work in "Over the Rainbow" that Johnson addresses, yet the proponent of image-schemata would hardly feel comfortable arguing that this model is embodied in the way the VERTICALITY schema is embodied. What kind of everyday experiences could *ever* support this five-dimensional model? However, as a spatial representation, it is far more accurate at modeling the relevant aspects of pitch perception that concern Johnson.

How would an image-schematic theorist respond to this challenge? He or she would likely respond by saying that, unlike Shepard, who is interested in representing as much of the phenomenology of pitch perception as possible in a single model, they have a different goal in mind. Their theory claims not that there is a single unified schema, but that cognition is based on multiple, overlapping and simultaneous embodied metaphors. Johnson argues that image-schematic theory depends on a pluralistic ontology of metaphors—that "typically there are multiple inconsistent metaphors for any given phenomenon…Each of these different, and often inconsistent, metaphorical structurings of a concept gives us different logics that we need in order to understand the richness and complexity of our experience." [16]

I could agree with Johnson, if his claim were simply *descriptive* in character. That is, I would find nothing objectionable if he were only claiming that we require multiple, often inconsistent structures (or habits, or preferences, or norms) to describe musical works, given the overdetermined multiplicity of aspects inherent in even in the simplest of musical phenomena.[17] But Johnson's claim is not intended to be descriptive; image-schematic theory is intended to *explain* how such experiences are conceptualized in the first place, i.e. how they are structured.

In Johnson's original theory of 1987, he claimed the term schema was derived from the Kantian schematism. Like Kant, Johnson's could not locate a mechanism for explaining his schemata; both placed all responsibility for their respective schemata under the governance of the imagination. But the story had changed by 2007, the year Johnson's *The Meaning of the Body* was published. With the intervening rise of research in cognitive science, the imagination was discarded in favor of neural origins. Johnson often cites the work of Antonio Damasio to justify the neural basis of image-schemata. Although Damasio's work addresses "images" and does not refer to image-schemata *per se*, Johnson elides this difference. At one point Johnson writes of his own work, "Image schemas appear to be realized as *activation patterns* (or 'contours') in human topological neural maps."[18] And later, when describing Damasio's images, "images…are *patterns of neural activation* that result from ongoing interaction of organism and environment."[19] Thus, for Johnson, image-schemata, "do not so much 'picture' or 'represent' objects and events as they simply *are* the patterns of our experience of those objects and events. Consequently, when we talk about meaning in music, it will be in terms of the way auditory images and their relations evoke feeling-thinking responses in us."[20]

To bring these statement to bear on the musical example above, one might reconstruct Johnson's claims as follows: when we experience variations in pitch, those variations *evoke feeling-thinking responses in us*; in particular, those variations evoke patterns of neural activation that are also shared, or related to, or somehow associated with, other patterns of neural activation that are bound to experiences of verticality, such as "perceiving a tree, our felt sense of standing upright, [or] the activity of climbing the stairs." But if the perception of pitch triggers the brain into habitual patterns that are associated with verticality, how does it pick or choose which parts of those total experiential patterns will be relevant? For instance, why is gravitational pull not consistently relevant to pitch perception, e.g., why can we alter one pitch and now defy all of those overwhelmingly repeated feelings and experiences? What mechanism constrains which features of the neural pattern are to be exploited and which are neglected? What makes one aspect of the source domain salient when transferred (or associated, or compared, or related…) and another one irrelevant?

As an explanation, Johnson's theory is *ad hoc*. A critical reader is not offered principles for how distinct instances of neural activation patterns are related to one another, nor how such patterns can be responsible for justifying Johnson's ostensible phenomenological evidence for cross-domain mapping. Rather, Johnson offers a hand waving appeal to neural patterns as some sort of explanatory catch-all. If Johnson constrained image-schemata to operating as descriptions of musical works, I would be less troubled by its *ad hoc* character. For, I could take that bit of description and compare it to my own understanding of the work. I could treat it as a claim, demanding a certain way of hearing some stretch of sound. And I could also reject this description as inaccurate, or proffer forth my own description. But, qua explanation, Johnson's theory oversteps its legitimacy by claiming that it is an account of how that phenomenon *is structured*. For all of Johnson's monistic revision of the Kantian schematism, in the end we are forced to accept a bit of the old hidden art: a mechanism, *concealed in the depths of the human soul*, demanded by the exigencies of the theory; a mysterious third term, which mediates the materiality of neural activation and the phenomenality of lived experience; and an explanation that amounts to little more than a solicitation of the reader's faith.

NOTES

1. Immanuel Kant, *Critique of Pure Reason*, tr. Norman Kemp Smith (Bedford: St. Martin's Press, 1969), A138/B177.

2. Ibid., A146/B185.

3. Ibid., A141/B180.

4. Mark Johnson, *The Body in the Mind* (Chicago: University of Chicago Press, 1987), p. 140.

5. Ibid., 19.

6. Mark Johnson, *The Meaning of the Body* (Chicago: University of Chicago Press, 2007), p. 234.

7. Ibid.

8. Johnson, *The Body in the Mind*, p. 29

9. George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980), p. 14.

10. Lawrence M. Zbikowski, *Conceptualizing Music* (New York: Oxford University Press, 2002), 69.[/ft1]

[ft num=11]Ibid., 68.

12. These aspects of the perception of musical height are borrowed form Roger Shepard, "Structural Representations of Musical Pitch," in *The Psychology of Music*, ed. Diana Deutsch (New York: Academic Press, 1982).

13. Johnson, *The Body in the Mind*, p. 239.

14. Ibid., 240.

15. Ibid.

16. Ibid., 258-9.

17. The complexity of Shepard's model registers something of music's perceptual complexity, and it must be noted that it only captures *three* aspects of pitch perception, to say nothing of harmonic motion, dissonance and consonance, duration, rhythm, meter, timbre, form, phrasing, genre, style, etc.

18. Johnson, *The Body in the Mind*, p. 143, my emphasis.

19. Ibid., 243, my emphasis.

20. Ibid.

Brian Kane is Assistant Professor of Music at Yale University. He is currently writing a book on acousmatic sound.

FEATURES

TERRENCE MALICK'S NEW WORLD

RICHARD NEER

Figure 1. The New World: opening shot.

I don't feel that one can film philosophy. —Terrence Malick [1]

Terrence Malick's fourth feature, *The New World* (2004), is a costume drama about Pocahontas, Captain John Smith and the Jamestown colony.[2] On its release it divided reviewers and earned mediocre receipts; some of Malick's former admirers have been downright dismissive.[3] Although one goal of this paper is simply to make a case for *The New World*, its concerns are larger than the single film. For Malick has, in recent years, emerged as a key point of reference for a burgeoning, post-Theory philosophical criticism; he is, for example, one of only three directors to receive a monographic chapter in *The Routledge Companion to Philosophy and Film* (2009).[4] Disagreement about one of his films, therefore, provides an opportunity to clarify the commitments and aversions of a dynamic field of inquiry. That his fifth film, *The Tree of Life*, has won the Palme d'Or at Cannes while provoking sharply divided reactions amongst critics only adds urgency to the question.

Malick's relation to academic discourse has always been complex. He began his adult life as a student of Martin Heidegger and Stanley Cavell, a Rhodes scholar under Gilbert Ryle, a translator of Heidegger's *Vom Wesen des Grundes*, and, while still in his mid-20's, a replacement for Hubert Dreyfus in the philosophy department at MIT.[5] But he threw it all over to become a filmmaker. However one construes this change, it should certainly give pause to commentators. It seems clear that, to this director, film can do things that professional philosophy cannot—which means that any attempt to recoup his work for the academy risks nothing short of travesty.

Many in the professoriate, however, have simply assumed that Malick's œuvre must be susceptible of exegesis in philosophical terms.[6] A good example is a much-reprinted essay by Simon Critchley on *The Thin Red Line* (1998), in some ways a manifesto of recent work in the film-as-philosophy genre. Tellingly, Critchley focuses on plot, dialogue and the movie's adaptation of a novel; he discusses only one camera movement and one shot, the latter of interest for its purported symbolic meaning (a coconut = Life). Despite his essay's many merits, it is hard to avoid the sense that, in this case, redeeming film for philosophy means reducing it to its most comfortably "literary" elements. That such reductivism runs exactly counter to Critchley's stated intent only makes the outcome more striking.

Another popular view of Malick, meanwhile, would have him as a post-Sixties mystic, trafficking in the ineffable through parabolic narratives and gorgeous shots of Nature. Robert Silberman speaks for many in praising Malick's "mystical, poetic strain and his powerful sense of romantic longing."[7] Cinematography is particularly prominent in these accounts, which are pervasive in the media and on the blogs. To be sure, Malick the poetic visionary would not necessarily be inconsistent with Malick the *philosophe manqué*. As the *Tractatus* puts it, "There

are indeed things that cannot be put into words. They make themselves manifest. They are what is mystical."[8]

Of course, it is by no means clear what, if anything, to make of Wittgenstein's lines—which would make a "Tractarian" Malick seem a particularly hopeless proposition.[9] But this difficulty only points to a larger problem. What exactly are these ineffable truths for which Malick is allegedly "longing," but that he cannot put into words? Answers will hardly be forthcoming. The very premise is insidious: that there exists some special critical language into which films ought in principle to be translatable, such that any one that resists such translation may be said to express "longing," or to be in the business of "manifestation." As though there were some *better* way to describe these ideas or feelings than the film itself.

In short, the idea of Malick as a mystic, swapping philosophical discourse for a mythopoesis in which things "make themselves manifest," is the symmetrical counterpart to a reductive method that sees him as a purveyor of philosophical profundity in narrative form, a sort of modern-day Voltaire. And here we get to the crux.

Although the emerging philosophical criticism has the potential to make good some of the promises (and redeem some of the failures) of High Theory, it can never do so if it simply quarries movies for exemplary narratives susceptible of moral evaluation, or for illustrations of arguments elaborated in canonical texts—still less, if it conflates movies with screenplays.[10] If this is hardly news, still Malick's fate is instructive.[11] He may be the most academically-credentialed director in Hollywood history, and has come to function as a "best case" for the film-and-philosophy genre. Yet it is merely tendentious to assume that the director's pedigree should guarantee the accessibility of his films to academic philosophy; after all, Malick *quit the field*. Acknowledging that fact entails getting beyond thematics and taking seriously the look and sound of his films—which has proved surprisingly difficult, as Critchley can attest. Conversely, an invocation of mysticism would amount to a cop-out, suggesting the existence of some determinate content that cannot be named—and so justifying the gnawing suspicion of certain critics (like Pauline Kael, David Thomson, and Dave Kehr) that Malick is, in the end, a bullshit artist.[12]

Fortunately, Malick himself might offer some instruction on how to approach his movies. He writes:

> They are not strictly arguments or descriptions, one suspects, but are designed to make such procedures, and the proper application of them, possible. They assume that we have learned where to look for their relevances … and that, insofar as we have, we necessarily share his purposes and need not depend on his arguments. [13]

This passage comes from Malick's one published piece of academic prose, the "Translator's Introduction" to *The Essence of Reasons*; he is talking about Heidegger, not himself. That fact, however, only makes it more appealing to set these lines alongside Malick's directorial work. For, in these lines, we see Malick himself trying to describe an alternative to the standard devices of American philosophy. The passage thus suggests a possible way to connect his two careers non-reductively.

It doesn't get us far—nor should it. But it's a start. Malick's movies, let us imagine, may not be "arguments or descriptions," but they might help us to see what makes such procedures possible; they may not be illustrations of Heidegger (or Wittgenstein, or Cavell, or Thoreau) but, so to speak, companions to them. In this light, the question of whether his films are or are not philosophy, are or are not mystical, loses its power to distract. Instead, the question becomes where to look for Malick's own "relevances," that we might "share his purposes." A good place to start might be in a movie theater, with eyes on the screen. What does *The New World* look like?

"Dogma"

To answer this question is to talk about technique, something that philosophical commentaries tend assiduously to avoid. But in Malick's case it is essential. The director does not give interviews—the film should speak for itself—but his crew has no such scruples and the trade publications are full of information, useful guides to the eyes.

For example, the cinematographer on *The New World*, Emanuel Lubezki, reports that he and Malick adopted a restrictive working procedure that they called their "dogma," in joking reference to Lars von Trier's *Dogme95*. "This was our set of rules," says Lubezki, "but like many dogmas it has some contradictions." [14]

> We wanted to avoid lighting, dollies, tripods, cranes, high-speed work, long lenses, filters and CGI [computer generated imagery]. … We didn't want any "postcards," pretty shots of sunsets. … The most important article for Terry [Malick] was "Article E—E for exception!" We could break any rule, and indeed we broke them all, but we had these guiding ideas. [15]

The rules did not represent self-imposed limitations so much as a matrix within which certain effects would become possible.[16] "Dogma" in this sense does duty for a theoretical paradigm, while the humor of the term relieves some of the *gravitas* that can attach to Malick's work. Theory, here, is subject to light irony and realized in and through the techniques that, in aggregate, comprise the film's style.

In particular, Malick and Lubezki made a special effort to combine three elements: a widescreen format, natural lighting and deep focus.[17] This combination posed a technical challenge. A widescreen format tends to diminish the available depth of field, as does the wide aperture required for low-light shooting. The diminished depth of field, in turn, makes deep focus a problem. The team obtained a special lens from Panavision that helped resolve the difficulty, but even so it was not always possible to keep foreground, middle distance and distant background in focus simultaneously.[18] But Malick was determined to stage in depth: in *The New World*, backgrounds are full of incident even when they are not in crisp focus. [Fig. 2] To energize these deep, wide, full shots, the team favored long camera movements (handheld or with a Steadicam) and long movements of actors toward or away from a stationary camera.

Figure 2. First Contact

Natural lighting was also important. *The New World* contains few of the "magic hour" dawn/sunset shots that characterized Malick's earlier work in *Badlands* and *Days of Heaven* (1978). Instead, the light source is consistently behind the figures. There may have been some technical advantages to backlighting—it gets as much light as possible to the camera, while its uniformity makes it easier to combine material from multiple shoots—but the chief visible effect is to separate figures from their backgrounds. Since Malick and Lubezki used no other lights at all, it was necessary to overexpose the film in order to prevent figures in

the foreground from showing up as mere silhouettes.[19] The result was a blank, white sky through much of the film (e.g, Fig. 2). The figures stand out against this screen.

In other respects the film's palette is earthy, mostly browns and greens and blacks. The goal seems to have been to avoid any hue that would draw the eye or signal importance. "Bright was the special enemy," says the costume designer, Jacqueline West. "So, no primary colors."[20] It is a non-hierarchical color scheme, in that there are no obvious chromatic cues to tell you what is important in any given shot; no eyecatching reds, for example. These rich earth tones contrast with the overexposed skies, and the juxtaposition of a white heaven with a dark earth is one of the most distinctive, and slightly unsettling, elements of *The New World*.

Lastly, compositions are often, but not always, offset (see, again, Fig. 2). Malick did not storyboard each shot, but he did lay down some basic principles of selection. "Terry likes the eccentric frame," notes Richard Chew, the editor.

> Nothing can be right on. In editing, he was always telling us not to use too perfectly framed shots. He wanted to be on a shoulder or see part of the face or cut the face in half. Or he'd like being behind the person. One of his favorite angles is over the shoulder to relate distance and relationship between two characters.[21]

Instead of a single, central focus to each frame—a hallmark of younger Americans like Wes Anderson and Spike Jonez—Malick composes his shots to emphasize internal relations. When they do appear, centered shots are jarring (an effect emphasized by a wide angle lens), as when a wild-eyed Puritan rants into the camera. [Fig. 14a] Most of the time what matters is not an individual figure, but the dramatic and spatial relationships between that figure and others in the same frame. Chew's way of putting it, "to relate…relationship," nicely captures the self-reflexive element of this practice.

In sum, Malick pursued a consistent set of onscreen effects, even in the absence of storyboards. His "dogma" yields *internally differentiated shots in which relations between elements are the major sources of visual interest.*[22] Figures inhabit broad, deep spaces from which they are nonetheless clearly distinct; within these spaces, even a protagonist is but one element out of several. In any given shot, an earthy lower half will tend to contrast with a blank white upper; color, like composition, will tend to homogenize the actors while accentuating their relations to their surroundings (all of these features are on display in Fig. 2). In this film, a disjunctive relation of figures to their surroundings is the paramount visual fact, the enabling condition of everything that transpires.

Reverting to Malick's vocabulary: surely there are the film's "relevances," if it has any. But what are its "purposes"? Technical description alone leaves the film's dogma unmotivated, even capricious. Sharing the purposes entails looking at how, in the event, the rules issue in a dramatic narrative.

The Plot

When *The New World begins*, the year is 1607, the place Virginia. English ships arrive, to the astonishment of the indigenous people. As the Jamestown colony struggles to establish itself, Captain John Smith (Colin Farrell), idealistic and headstrong, is sent on an expedition to the local chieftain. Suspicious, the chief orders Smith's execution, but his daughter Pocahontas (Q'orianka Kilcher) pleads successfully for his life. Smith and the princess fall in love and spend an idyllic season in the woods. Ultimately, however, Smith returns to Jamestown, where he seizes command. Pocahontas helps the Englishmen through a tough winter, but when fighting breaks out between the colonists and her own people, her father banishes her and she winds up at Jamestown as a hostage. Smith, however, abandons her to go in search of the Northwest Passage, instructing the English to tell Pocahontas that he is dead. Isolated in Jamestown, the princess falls into despair. She is rescued by John Rolfe (Christian Bale), who loves her but keeps her in the dark about Smith. Baptized under the name Rebecca, the Princess marries Rolfe and they have a child. They are summoned to England to meet King James, passing through an outlandish-looking London. Even before they leave Virginia, however, the Princess learns that Smith's death was a lie. She encounters him again in the garden of an English estate. Smith renews his ardor but, without rancor, the princess breaks with him, embraces the companionship of Rolfe and, in the English garden, plays with her young son in a scene of great tenderness. She dies immediately thereafter. Rolfe and the boy set sail for America, and the film closes with shots of the streams and forests of the New World. The story is tolerably faithful to the historical record, but no more than that; this is myth, not history, a new version of an old tale.

That, at any rate, is one way to describe the film's narrative. Others are available. For instance, an increasing complexity in the combination of basic elements—wide screen, deep focus, backlighting, eye-level camera, offset compositions and a contrast of earth and sky—itself constitutes a narrative arc.[23] Malick lays out themes and then develops them, almost in the manner of a Classical composer. To relate in detail how he does so would make for tedious reading, but since—as I hope to show—the opening ten minutes function as a prelude to the entire work, it will be useful to give them sustained attention. Following this exposition, further developments and recapitulations become possible. The challenge will be to see how these two descriptions—in terms of dramatic action and technique—might relate to one

another onscreen. Much of what follows is a simple description of these relations, in all their astonishing complexity and thoroughness—which is not the same thing as "formal analysis."

The First Ten Minutes

§1. Invocation

In the film's opening sequences, Malick assembles the materials from which he will build *The New World*. Even before the titles, the film opens with a shot of trees and sky reflected in still water, with the song of cicadas in the soundtrack. [Fig. 1] Picture and voice, two constitutive elements of Hollywood cinema, appear here in archetypical form.[24] Then, like a third theme, movement enters: the camera heads slowly toward shore. Even in the absence of actors and dialogue, this camera movement is sufficient to produce a narrative, however rudimentary: we are landing. But we never actually reach the shore, nor is it specified whose point of view, if anyone's, this is.

A girl's voice says:

> Come, Spirit. Help us sing the story of our land. You are our mother, we your field of corn. We rise from out of the soul of you.[25]

This invocation announces at least three things. First, that the movie we are about to see is a song, or a singing drama. Second, that it is an epic, with a "Spirit" doing duty for a Muse. With nice economy, Malick invokes epic tradition by narrating a traditional invocation—as if the novelty of this film should consist in its way of acknowledging its debt to, and difference from, its antecedents. Third, that this song, or film, is to be seen as though in the first person plural ("help us sing the story of our land"). Who is this "we," and who is speaking for whom, and by what right?[26] Eventually it will become clear that the voice belongs to Pocahontas, but at the film's opening the claim to community remains indeterminate. The "we" that sings might even include the audience; "our land" should refer to America, but at this point in *The New World* it is not settled who can claim ownership of it. We no more arrive at a specification of the "we" than the camera makes landfall.[27]

Although it precedes the title credits, the invocation is part of the dramatic action, spoken by a character, not a poet or a chorus. Just so, the sheer vagueness of the "we" underscores that America is not a nation-state, but not quite a "nation of immigrants" either, so that nobody is excluded in advance from its commonwealth. So far from simply offering a national epic, therefore, the film puts epic up for discussion.

§2. Titles

From these elements—picture, sound, movement, speech—the film builds a visual language. Immediately following the invocation is a title sequence that lists cast and crew while narrating the history of early Virginia through CGI animations of seventeenth century prints.[28] [Fig. 3a-d; Clip I] A blank map of Virginia fills in magically, as bits of clip art seem to float before it; we also see seventeenth-century prints of ships crossing the sea, and colonists battling Indians. Diegetic sound, creaking timbers and wind and birdcalls, helps to suture the sequence into the stream of the film. Before the titles are over the *Vorspiel* to Wagner's *Das Rheingold* starts to rumble on the soundtrack. A print of a sunfish gives way to an underwater shot of the same species, and the movie is launched.

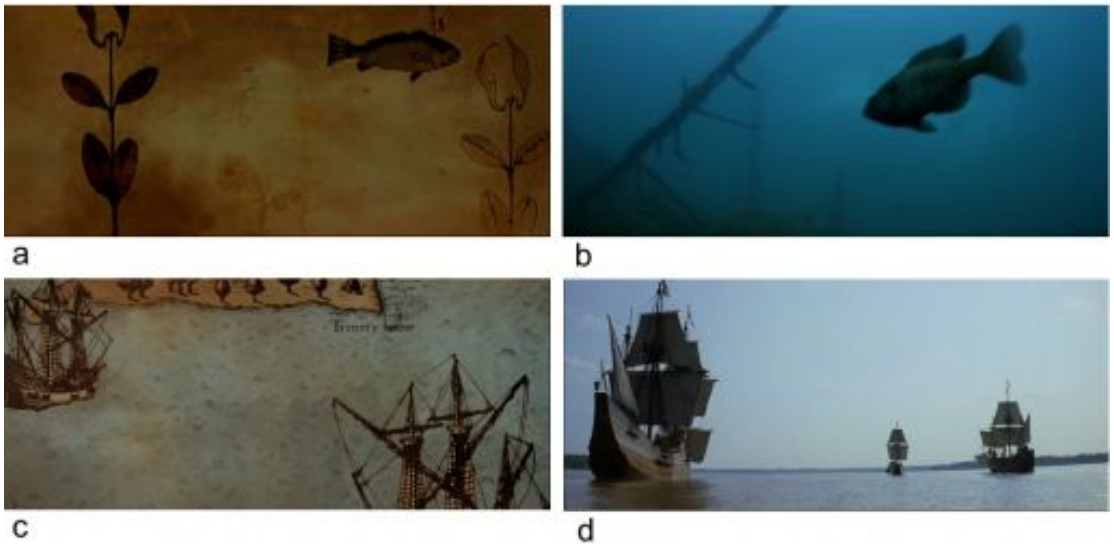

Figure 3a-d. Matches between Title Sequence and Prelude

Following immediately upon the opening shot of mirroring water, the title sequence provides the medium of cinema with a capsule history. Credited to Kyle Cooper, it combines an archaic form of mechanical reproduction—prints—with a futuristic one—CGI. Two facts cement the connection between these technical flourishes and cinema itself: first, that the title sequence, like the movie as a whole, narrates the settlement of Virginia; second, that the printed pictures match so strikingly with the filmed ones. The first connection shows that the title sequence is providing historical context for the onscreen narrative to follow; the second, that it is providing historical context for the medium of film as well. One difference between map and film as forms of representation is between a schematic overview and immersion; Malick allegorizes the switch by immersing us in a stream to start his film.

Clip 1: Title Sequence to Prelude. Duration: 1' 27".

§3. Wagner

The presence of *Das Rheingold* on the soundtrack develops this theme. Historically, Wagnerian *Gesammtkunstwerk* was another antecedent to cinema, even as Wagner's explicit aspiration in the *Ring* was to provide a national epic for the Germans.[29] So music-drama represents another historical resource, much like printmaking. Malick could scarcely be more explicit in this comparison. He has already told us that his film is a song. Soon after the *Vorspiel* strikes up, however, the underwater shot of the sunfish—the very shot that connects the film to early modern print technology—tilts to reveal three Rhinemaidens, or rather three Powhatan girls, swimming in the depths of the River Rhine, that is, the River James. [Fig. 4; Clip I] This allusion to the *Ring* is the first of many in *The New World*—a topic to which we shall return.

Figure 4. The "Rhinemaidens"

But the relationship is complex. Within the context of *Das Rheingold*, the *Vorspiel* likewise assembles the constitutive elements of the drama to follow. That is, the function of this music for Wagner is analogous to its function for Malick. Famously, the monotonous Eflat major of the *Vorspiel* will develop into a triad, which will split into increasingly swift arpeggios until, at the climax, the cries of the three Rhinemaidens take over, and words enter the domain of music. This exposition and elaboration of first principles is part of what makes Wagner modern. Malick's use of the *Vorspiel* to accompany his own, parallel articulation of a filmic system is therefore doubly significant. Even as he historicizes the conditions of possibility of his medium and his narrative, he also historicizes the quintessentially modern impulse to clarify and specify those conditions of possibility in the first place. Malick is historicizing not just his medium, not just his epic aspiration, but *his own historicizing gesture as well*. At issue, in short, is not just history or technology but the conditions that must be in place for the history of a medium to become visible as such.

§4. Apparatus

After the opening invocation there is no dialogue for nearly ten minutes. With Wagner's arpeggios looping on the soundtrack, the camera rises from the river's depths, first with underwater shots looking through the surface tension to the princess and others on dry land. [Fig. 5; Clip I] The ultra-low vantage point is conspicuous—they are flashy shots—but it corresponds to the point of view of nobody in particular: on offer is not dramatic characterization or POV, but the simple fact that the camera is situated, that it takes a point of view (another point to which we shall return). The limpid medium of rippling water, bending light and so distorting the world that it registers, is as frank a statement as one could want of the role of lenses in any movie, not least one shot in anamorphic widescreen. Not for

the last time, Malick makes the camera's constitutive enframing of what it registers—the fact that without a frame there is no photographic picture at all—inescapable. Of course, this is standard modernist stuff. But that is no criticism, insofar as the film has demonstrated willingness to historicize its own modernism, its own historicism.

Figure 5. Water bends light

And so it goes, step by step. We rise from the depths into a pair of matching shots. The first looks down at the waves and tilts up to show the English ships, the next looks up at a ship's rigging and tilts down to show the crew: down, up…up, down. [*see the end of* Clip I] Such tilts take the place of traditional establishing shots throughout *The New World.*[30] Where an establishing shot gives an overview of a location and then cuts to the action itself, these "establishing tilts" keep the camera in the thick of things while establishing continuity between action and environment—and, in so doing, drawing attention to everything the camera leaves out, the way a mobile frame necessarily occludes or crops.

From these elements—picture, diegetic sound, music, lensing, camera angle, camera movement—the film charts a course to a version of "continuity style."[31] A montage of busy English and astonished Indians gives way to waving green grass against a line of trees.[32] [Clip II] The wide-angle lens bows the horizon sharply; the shot seems calculated to dramatize the distortion.[33] An English soldier enters the frame from the bottom left; walking away from the camera, his body cropped by tall grass, he proceeds to the right edge of the frame and seems to rebound off it, changing course back into the center of the visual field. More soldiers enter from the lower corners, first one and then the other. It is a shot in which almost nothing happens except a declaration of the literal shape of the screen and the constitutive role of the lens.

Clip II: Lenses, edges, corners, frames. Duration: 20".

§5. The Social Contract

Now, at last, Malick has everything in place: the basic technical elements of Hollywood film, the resources of historicism, and the building blocks of style. Gusting wind drowns out Wagner, there is a cutaway to tossing grass, a drumroll, and we enter a world of over-the-shoulder, shot/reverse-shot dialogue. In *Das Rheingold*, the arpeggios of the *Vorspiel* end with the Rhinemaidens bursting into song, language emerging from the depths of music. In *The New World*, at the identical musical climax, Malick includes no song and yet the film enters into language all the same—literally, in the sense that dialogue appears, and figuratively, in the sense that the medium is now capable of articulating his version of music-drama.

History and the claim to community remain very much at issue. Captain Newport (Christopher Plummer) is admonishing John Smith,

> Now remember, Smith, you come to these shores in chains. You're under a cloud, which will darken considerably if I hear any more of your mutinous remarks. Is that understood?

Smith, his head in a noose, nods once, and is freed from his shackles. The reference to Rousseau has been widely remarked. Man is born free, and everywhere he is in chains: so is America the place to renew the social contract? Smith's coerced, voiceless assent hardly instills hope, and in fact the remainder of the film will show the poverty of such pieties. Political conversation is yet to be achieved.

It took the whole introductory sequence even to get to this point, at which the question of community and contracts could acquire cogency. The implication is that Rousseau's problem emerges immediately once a filmic world, its apparatus and its grammar, have come into place and up for discussion. So by detailing the architecture of that world in its historical dimension, Malick shows the enabling condition not just of his medium, but of his own interrogation of it (the historical antecedent being Wagner); not just of a community, but of its theorization (the historical antecedent being Rousseau). And he stages the question: how can such a world be habitable, which is to say, how can it give its inhabitants a voice and a hearing, when they are bound and silent?

The World on Film

One point of the preceding description was simply to show how Malick operates, where to "look for his relevances." Throughout this film, everything that transpires onscreen or in the soundtrack is at least potentially of the highest significance. More specifically, there is at any given moment in *The New World* a reciprocal relation between the narrative of discovery on the one hand, and the declaration of the film's own possibilities on the other. The former recounts the attainment of new truths about entities in the world, like Virginia or London, maize or mirrors. The latter reveals the truth of the medium in the broadest possible sense, truth about the (filmic) world itself—about what has to be in place even to speak of a diegesis, a diegetic world, narrative time, and so on.

Clearly, the world in this latter sense is something other than place (like, say, Virginia).[34] In this light it seems fair to ask: what should we make of the fact that *worldhood* is a central concern of Heidegger's *Vom Wesen des Grundes,* the very essay that Malick translated in his previous career? Probably nothing at all; at this stage in particular, to invoke Heidegger would be little more than crass.[35] Malick's own glosses, however, seem more promising, if only insofar as any author's statements might have purchase on his or her works. "The world," writes Malick,

> is not the "totality of things" but that in terms of which we understand them, that which gives them measure and purpose and validity in our schemes. What leads Heidegger to offer the definition is not obvious, but it may well be related to explaining why we must, and no less how we can, share certain notions about the measure and purpose and validity of things. And presumably it is important to have that explanation because sometimes we do not, or do not seem to, share such notions.[36]

Malick then goes on to distinguish this understanding of "world" as the condition of possibility of meaningfulness from a mere subjectivism or worldview, what he calls an "interpretation": "Instead of an interpretation, the 'world' is meant to be that which can keep us from seeing, or force us to see, that what we have is one."[37] In this regard, he remarks, it has much in common with Wittgenstein's term, "form of life."

Here the risk of reductivism is acute. In adducing this passage, my claim is *not* that *The New World* can be decoded as a gloss on the Heideggerian conception of worldhood; Heidegger should be so lucky.[38] It is, rather, that Malick's own distinction between the world as a place and the world as the constitution of a human form of life, between "'the totality of things'" and "that in terms of which we understand them," might help to clarify the relation of narrative thematics to cinematic technique in his film. But the test of this passage's relevance will not be the circumstance of its authorship but the extent to which it helps us to see the film. It is, in this regard, analogous to the testimony of Malick's crew: a guide to the eyes.

Malick's "dogmatic" technique, his "relating of relations," might be described as a way of articulating two understandings of the world, hence two approaches to it.[39] Within the diegesis, characters discover new worlds, understood as places like Virginia and England, and they discover (or turn a blind eye to) their own "worldliness" in encounters with new forms of life and the formation of new affective attachments. To show these discoveries and encounters, and to detail their stakes in the characters' lives, takes up most of the film's running time: we see them sharing, and failing to share, "certain notions about the measure and purpose and validity of things," along with the various pathologies—aggression, exploitation, mystification—that attend these failures. Throughout, Malick's relational style illuminates the way in which a world on film comes to be at all, even as the presence of Wagner and Rousseau shows the historical determination of that genesis and the political and ethical stakes of the enterprise. In this way, the film's narrative of empirical exploration is itself an exploration of the grounds of world-making both onscreen and off.

Much of the film's artistry consists in the patience and thoroughness with which it relates these relations. To show how this is the case takes some doing. I am not sure if the description that follows will convert anyone to the film who hasn't already seen it; but part of my point is that Malick's movies demand a certain attentiveness, for which neither philosophy nor ineffability can substitute.

Sounds

One avenue of development is in the use of sound, both diegetic and non-diegetic. For example, one of Malick's best-known stylistic devices is the establishment of an ironic relationship between voice-over and onscreen action.[40] Examples abound from *The New*

World, as when Smith states his utopian dreams ("None shall eat up carelessly what his friends got worthily, or steal that which virtue has stored up. Men shall not make each other their spoil.") over shots of the English looting a Native village; or when Rolfe says that the desolate Pocahontas "seemed barely to notice the others about her," over a shot of the Princess looking sidelong at gawkers. The critical literature tends to describe such ironies as subjectivizing devices, bringing out a particular character's point of view.[41] Yet, while true enough, that is only half the story; the other half is that the technique renders inescapable the world's separateness from any character. The relation of world to voice is disjunctive, such that the former is the function of no subjectivity, even as the latter presses upon us particular ways of inhabiting that world. The result might best be understood as the antithesis of a POV shot; what we see is *not* how things appear to any character.

Less widely remarked is a symmetrical counterpart to this dissociation of picture from voice: Malick's use of music to cast the events onscreen in a particular mood. Two highly recognizable pieces of music recur through *The New World*: the aforementioned *Vorspiel* to *Das Rheingold*, and a solo/tutti passage from the Adagio of Mozart's Piano Concerto no. 23 (A major, K. 488). These fragments appear at highly charged moments in the film: Wagner marks the film's beginning, its end, and key transitions; Mozart enters at moments of particular emotion for the characters, often associated with architectural scaffolds, as if to emphasize its role in articulating the narrative. [Fig. 6] But the music is also part of what establishes the importance, and the affective charge, of a given scene in the first place—so that is not always obvious what the first appearance of Mozart or Wagner has in common with the second beyond a general pathos.

Figure 6. Frames in the diegetic world (Mozart)

It might be tempting to say that Wagner and Mozart color the scenes in question, but music does not function here as some non-representational system running parallel to the imagery onscreen. Picture and soundtrack come to us together, and the repetition of the identical musical passages in different situations makes this holism conspicuous. Malick always introduces the music a few heartbeats into a shot: the music starts up just after the cut, with the result that its power to shape everything we see, and conversely the power of the picture to shape what we hear, becomes inescapably obvious. It is as though Malick were coolly demonstrating that under certain conditions, the world will come to us *this* way, and under other conditions it will come to us *that* way; one and the same musical passage can sound different at different moments, one and the same shot can look different under different conditions. The world (on film) comes to us under a mood, and there is no world (on film) that is not "moody" in this sense.[42]

In short, Malick is "relating relationships" once again. As we have seen, the "dogmatic" shooting technique produced internally differentiated shots in which relations between elements were major sources of visual interest. Music and voiceover work to similar effect: they render conspicuous the lineaments—the cuts and splices and mixes—that make up a world on film in its specific affect.

Mise-en-scène and Action (Frames and Metrics)

This relational thematic also organizes the mise-en-scène and the dramatic action. The opening sequence provides some examples, such as Fig. 5, in which water dramatizes the fact of the camera lens, or Clip II, in which a soldier seems to ricochet off the edge of the screen. Similar devices abound throughout the film. Certain types of shot recur through *The New World*—and, for that matter, in Malick's other films as well.[43] Many emphasize framing: shots through windows and doors [Fig. 7a-d]; shots of figures in tall grass, which crops them at half length [Clip II], or weaving their way between tree-trunks; and a continual recurrence of architectural frameworks, cages, stocks, and half-built dwellings, which emphasize framing as an ongoing structuring of the habitable world.[44] [Figs. 6, 8a–d] Other shots seem to literalize the principle of relationality, notably close-ups of hands clasped across the length of the screen—various iterations of which appear at least six times in *The New World*, and also in *The Thin Red Line*. [Fig. 9a–f]

Figure 7a-d. Some frames-in-frames

Figure 8a-d. Some scaffoldings and cages (see also Fig. 6)

Such motifs might be understood as symbols, but not in any simple sense. For they really do organize the shots in which they appear; Malick encourages a certain plodding literalism. Without in any way denying, for instance, the meaningfulness of the handclasp as a narrative device and even as an emblem of Malick's relational style, it is equally important that the motif literally bisects the screen with a shallow arc or a chevron. The motif arranges what we see onscreen into a pattern. Just so, the architectural frames tend to appear at dramatically significant moments: when Smith decides that his forest idyll was a dream, there is half-built church in the background [Fig. 8b]; when Pocahontas first doubts him, there is a framework watchtower; when she learns that he was alive all along, there its the skeleton of a cottage; etcetera. [Fig. 8c] The symbolism is obvious, but by the same token the grids really do segment and regularize the shots in question. It would be a perfectly literal description to say that they structure the world as it appears onscreen.

Figure 9a-f. Some handclasps

Structuring and framing are integral to the dramatic action as well. The English impose metrics on both time and space, taking soundings of the James River, marking off tracts of land and even, at one point, fighting over whether the date is the 15th or the 17th of October (at which point Smith, newly returned from the forest, says to himself, "Damnation is like this"). Initiation into this way of life is part of Pocahontas' formation as an Englishwoman. "What is a day? What is an hour?" she asks; "An hour is sixty minutes," answers Rolfe, taking her very literally indeed. The English also dig frantically for gold, plunder the Indians and generally treat the New World as a standing resource in need of effective management: "This place will serve," says Captain Newport soon after their arrival. Their instrumental outlook goes hand in hand with the establishment of metrics. It is practically a literalization of Malick's earlier formulation of worldhood as "the measure and purpose and validity of things."

The Native peoples have their own ways of dividing up the world and representing it. The English turn trees into palisades, but the Indians turn them into dwellings; the trunks of the forest can structure a shot just as well as a ship's rigging; the English have mirrors and print technology, but the Indians make wood statues and perform mimetic dances; it is an Indian who sells Pocahontas for a kettle, and Rolfe who rescues her from isolation. Smith idealizes the Indians, and Newport refers to them contemptuously as "Naturals," but their all-too-human behavior belies such fantasies; Powhatan's people put a noose around Smith's neck

just as Newport did, and their village has its share of shots framed in windows and doors, its share of stark architectural frames. Nature is not a given in this film and its denizens are not Noble Savages, Rousseau notwithstanding.

In short, Malick's mise-en-scène "relates relations" both literally and thematically, the first by articulating the shot, the second by suggesting the activities of framing and constructing. As if by extension, both Colonists and Powhatans find ways to enframe and articulate their worlds; such activities take up a small but significant part of the onscreen narrative. This is the world that the characters inhabit.

Character and Camerawork

Malick, however, never suggests that this mise-en-scène, or these articulating actions, express the inner states of the characters. If anything, *The New World* is an anti-psychological and anti-cognitivist film.[45] Malick does not cast characters' actions and utterances as externalizations of inner affects or intentions or psychic forces at all. Instead he uses two techniques to de-psychologizing his characters: he blocks or attenuates traditional means of focalizing the camera's gaze as POV, and he uses allusion to alienate characters from the words they use.

We can begin with camera and POV. Since Malick and Lubezki eschewed dollies and cranes, the mobile shots in *The New World* tend to be either handheld or Steadicam. An oft-touted virtue of the Steadicam is that it allows the camera to become an "additional character," invisible yet present in the midst of things.[46] In Malick's case, however, it is often unclear whether a given shot does or does not correspond to a character's point of view. In one particularly spectacular instance, Malick confounds the basic device of the eyeline match, whereby a character looks and the next shot reveals what he or she is looking at. [Clip III] As John Smith walks through an Indian village in search of Pocahontas, we see his questing face. Cut to a long, forward-moving handheld shot: this should be Smith's point of view. But then Smith himself emerges from behind a building and crosses our field of vision. It was not Smith's view, after all; it was nobody's view, or that of the phantom "additional character." In moments like these, technique and persona disengage; the viewer's expectations are cultivated in order to be frustrated.

Clip III: Confounding POV and eyeline match. Duration: 16".

But Malick is rarely so showy. A shot can begin literally in midstream, the camera moving slowly up a river as if from the viewpoint of someone in the bows of a boat—only to have the boat itself enter from screen left. Or he can riff through multiple kinds of camera movement in montage. In quick succession, we can get a handheld camera that suggests POV, and one that does not; a Steadicam shot that is focalized, and one that is not; a low camera angle that suggests an embodied character's point of view, and one that does not; and so on. To be sure, contemporary cinema imposes no requirement that a film be particularly consistent about such things, and, as Gilberto Perez insists, a POV shot is neither necessary nor sufficient to establish the narrative point of view of a character.[47] Yet Malick's juxtapositions are so pervasive as to be conspicuous, even jarring. By consistently asserting and confounding the basic devices of narrative focalization, they render obtrusive the various ways in which camerawork and sound produce a diegetic world. The result is a clarification of the principle of combination itself, of the narrative rules by which characters come into being.

These ways of relating characters to camera movement bear comparison with the principles of shot composition and editing that emerged in the first few minutes of the film. As argued earlier, each shot of *The New World* is an internally articulate whole, the enabling conditions of which are frankly acknowledged in the apparatus of cinema, in history, and in the essential fact of the human body. The presentation of character develops the same principle (a bit like the way the arpeggios in the *Rheingold* prelude develop the opening Eflat major). If ever a center of consciousness should determine our perspective and perceptions, it is always presented as a function of the techniques on which Malick has founded *The New World*—such that Malick's characters are all, so to speak, creatures of the larger world they inhabit.

Character and Words

Malick's second de-psychologizing device is specific to the screenplay: he alienates his characters from their own words by appropriating their dialogue from earlier sources.[48] These allusions come in two types. The first involves primary source material. A good deal of the speech associated with the Jamestown colony derives from seventeenth-century documents.[49] For example, when Smith ruminates over the possibilities of the New World the script combines a line from Gerrard Winstanley, the radical Leveller ("The blessings of the earth shall become common for all") with an extended passage from Smith's own *Generall Historie of Virginia, New England and the Southern Isles.*[50] Quotations of this sort can be seen as gestures toward authenticity, like getting period dress just so.

But the second kind of allusion has the opposite effect. In these cases, characters mouth words that have no historical bearing on the plot. Pocahontas' opening invocation, for instance, comes from a poem by Vachel Lindsay, "Our Mother Pocahontas"—of Pocahontas herself, Lindsay writes, "We are her fields of corn…We rise from out the soul of her…." When Capt. Smith describes his first sight of the Princess, he quite literally speaks of her as a character in a fairy tale, paraphrasing the first line of "The Frog-King, or Iron Henry," by the Brothers Grimm.[51] When the Princess is in reverie over Smith, she recites a poem by Sappho.[52] And so on, with Virgil, Montaigne, Thomas Campion, Rousseau, Hawthorne, Melville, Dickens, Whitman and Hart Crane all making verbal cameos (there may be some I have missed).[53] A significant proportion of the film's dialogue comes at second hand in this manner.

These allusions may flatter the audience and elevate the general tone; they may inflect scenes, as when Pocahontas becomes a fairy-tale princess. But they also render characters curiously shallow: even their most heartfelt utterances, their most confessional soliloquies, are often as not in the public domain. It is tempting to call it a Godardian device—and, as with Godard, nobody can be expected to catch all the allusions, at any rate without a search engine and lots of patience. What matters, therefore, must be the general fact of allusiveness, more than any particular instance of it; the general fact that these characters speak words that are not their own and yet are all the more meaningful for that.

In this respect, the borrowed words simply render conspicuous the basic condition of a genre picture. *The New World* is, after all, a costume drama, with the requisite heartthrob, ingénue, battles, escapes, pageantry, tacky costumes, swelling Germanic music and inconsistent accents; it is not any more savvy in its manipulation of these resources than, say, *Pirates of the Caribbean*. But Malick acknowledges the salient fact of genre—that the characters are not autonomous, that they are in some sense fated to act as they do, subject to rules

they cannot articulate—without ever sliding into knowingness. If Godard aspires to escape characterization entirely, to film what he calls "statues that speak," while a franchise like *Pirates* trades in winks and nudges, Malick still wants the affective involvement of traditional dramatis personae even as he hollows them out.[54]

Of course, that is not how it appears to Pocahontas et al. For the lovers in the film, each means the world to the other, such that losing the other is losing everything.[55] This much is clear from Pocahontas' breakdown following the departure of John Smith: her loss is total. When she re-locates herself with Rolfe it is specified as a re-grounding: she sinks into muddy soil and he lifts her up and sets her down on terra firma. Smith for his part could not be more explicit: he calls Pocahontas "My true light, my America," which means that her loss is that of the New World itself.

The characters voice these passions in terms readily susceptible of highbrow exegesis. Smith employs the classic vocabulary of skepticism, first characterizing his idyll in the woods as a dream come true ("Real, what I thought a dream"), then justifying his betrayal of Pocahontas in the same terms ("It was a dream, now I am awake"), and at last realizing the inadequacy of the terms ("I thought it was a dream, what we knew in the forest; I see now that it's the only truth").[56] Pocahontas seems more exercised by other minds, gazing at Smith and wondering things like "Who is this man?" and "Can love lie?" or reconciling with Rolfe by affirming, "You are the man I thought you were, and more." She meets Smith while frolicking with a youth in the grass, each pretending to be a deer to the other. [Fig. 10] So if Pocahontas addresses the world as a "Spirit" or, let's say, *ein* Geist, Smith imagines another mind as a world, specifically a *new* one ("My America"). For both, significantly, their doubts present as erotic desire. Doubt, that is, is experienced as a perceived lack, which in turn powers their romance, so that their courtship consists of flirtatious games and coquetries. [Fig. 11] But Smith goes on to try to map the physical world (to find the Northwest Passage), as though the New World really were a place after all, while the Princess, abandoned, has to re-establish her relations with others.

Figure 10. Amorous pursuit I

Figure 11. Amorous pursuit II

It might seem the most natural thing in the world to describe Malick's dogmatic technique in terms of these characters and their motivations. One might want to say, for instance, that the style "expresses" the characters' mental states, like doubt or wonder. On this view, Smith's sense of being in a dream might be "expressed" in, among other things, those disjunctive eyeline matches, such that his position in and perspective on the world might take concrete form in a surprising bit of editing. But this inference seems unwarranted. After all, we know Smith only in and through the broader cinematic world in which he appears—and, crucially, Malick has expended no little ingenuity to make this "worldly" determination conspicuous. So far from reaffirming romantic subjectivity, that is, *The New World* shows the condition of being in a world, understood as the open field of assignment relations that comprise a human form of life. In its "dogmatic" technique, its shot composition and framing and focus, in its editing

and mise-en-scène and music and soundtrack, in the words the characters utter, the actions they perform and the sentiments they harbor, the film shows worldhood as an essential condition of the filmed narrative, determined historically and technically by the resources of the medium in the broadest sense. No thematic criticism could ever see this aspect.

New and Old: Wagner

But there is more to it than that. The dramatic action of the film consists in the collision of different worlds, the English and the Indian, exemplified in Pocahontas, Smith and Rolfe, a relation that can be described in cultural, economic, affective and erotic terms. What would a new world be like, how if at all can one form of life, one world, be attuned to another?

"Is the idea of a new world intelligible to mere philosophy?" asks Stanley Cavell.[57] He goes on to identify this question with Emerson, for whom the possibility of thinking a radically new world, a radically new order of understanding, comes down to the possibility of a conversion of the self in its relation to words. "[I]f the world is to be new, then what creates what we call the world—our experience and our categories ("notions" Emerson says sometimes; let us say our every word)—must be new, that is to say, repronounced, renounced."[58] This might involve, say, quitting your teaching job back East and lighting out for the territory in California. For Cavell, however, it involves a renovation of literary form, the genres in which words are cast.

> Emerson's [version of Kant's] schematism, let me call it, requires a form or genre that synthesizes or transcendentalizes the genres of the conversion narrative, of the slave narrative, and of the narrative of exploration and discovery. For Emerson, the forms that subsume—undertake—subjects under a concept (the world under a genre) become the conditions of experience, for his time.[59]

Emerson identifies the possibility of this newness with America itself, yet it is integral to what Cavell terms his perfectionism that this turn should never be encompassed, the New World never be attained: "I am ready to die out of nature, and be born again into this new yet unapproachable America I have found in the West."[60]

What Cavell calls "mere philosophy" has limited resources compared to movies. *The New World* casts this matter in and through the question of its own newness, its own transcendentalization of "the narrative of exploration and discovery." We have already seen that its characters often speak with old or borrowed words. This fact then formed the basis of three claims. First, that it puts an obligation on viewers even as it flatters them, that it is one route of access into a sustained relation with the film. Second, that Malick, like Godard, gives

language priority over psychology and expression: the self is not a point of origin. Third, that the borrowings acknowledge the condition of a genre picture. But the fact of allusion will not be confined to such talking points, because allusion turns out to organize the entire plot.

Across the running time of *The New World*, Malick establishes a series of loose but unmistakable analogies between his film and Wagner's *Ring*. The opening sequence announced this fact, with three "Rhinemaidens" swimming in the James River to the music of *Das Rheingold*. [Fig. 4; Clip I] This echo is only the first of many. A few moments later, Smith emerges crouching from a dark hidey-hole below decks and reaches up toward gleaming light, just as, at the beginning of Wagner's music-drama, the dwarf Alberich crawls out from under a rock and reaches up toward the bright Rhinegold. [Fig. 12] Later, Smith will play Siegmund to Pocahontas' Brunnhilde and Powhatan's Wotan: like the Valkyrie, Pocahontas will save the hero by hurling herself between him and her royal father. In Die Walküre, Wotan condemns Brunnhilde to sleep behind a wall of fire; Powhatan exiles his daughter, and as he pronounces her doom Malick shows her asleep on a bed of fiery red leaves (a shot with no dramatic rationale, existing solely to nail down the allusion). [Fig. 13] Later, Smith has become Siegfried, renouncing the love of Brunnhilde/Pocahontas for the lure of adventure to the Rhine, or in his case the Northwest Passage. Believing him dead she in turn marries the unheroic and less-than-forthright Gunther, that is Rolfe, and travels to the royal court of the Gibichungs, that is the English. There she encounters Siegfried again, or rather Smith, but refuses to be swayed by his protestations and dies soon after. [61]

Figure 12. Smith as Alberich

Figure 13. Asleep in the magic fire

This is an extremely dangerous game, especially for a film that purports to renovate the idea of a national epic. Malick's aspiration has to be measured against Wagner's own, and its catastrophic consequences in Germany. Which means that the catastrophe in Germany has to be measured against the prior catastrophe in America, specifically the genocide of the native population, the origins of which Malick is narrating. Yet the fact that the question of community has been at issue since the film's beginning—in the indeterminacy of the "we" in opening invocation, and in the ironic allusion to Rousseau—establishes a difference between the probing of nationhood in *The New World* and the nationalism of the *Ring*. The possibility of a debased or false renewal is raised and rejected near the end of the film, when Smith tries, too late, to win back the Princess by claiming to be a new man: "I seems as if I was speaking to you for the first time," he says, which elicits something of a sneer from the Princess; newness here is the shoddiest of alibis. Insofar as the film itself seems to make a bid for renewal, the implication is that there exists an analogy between the invocation of Wagner and the invocation of America as the location of the new: either one of these invocations brings down such weight that it can seem unsayable, yet to evade the analogy would, it seems, be to evade one's own historical conditions.

It is therefore significant that the film does not end with Valhalla going up in flames, à la *Götterdammerung*. Pocahontas dies, but not the death of Brunnhilde, riding into the pyre. She dies in bed, with her weeping husband (not her lover) by her side, leaving a child behind; as her acousmatic voice began the film, so her silence ends it. Is it coincidence that, in its scenario and its silence, this is the death of the great anti-Wagnerian heroine, the dénouement of the great anti-Wagnerian opera: the death, that is, of Debussy's Mélisande? As though the death scene were a release from Wagnerism, or rather from the implication that film is condemned to Wagnerism, condemned to its past, as America itself might be condemned.

We might say that *The New World* represents a renewed attempt at what Thoreau, in Walden, called "repeopling the woods"—no less than an effort to refound the country. As with Thoreau, that ambition is literally *epic*—and more than a little skeptical of academic philosophizing.[62] To that end it proceeds by way of the Old—reflections, prints, music-dramas, costume-dramas, romances, epics—and, more specifically, by old approaches to the New. Although this procedure might leave Malick open to a charge of conservatism, the Old is not an end in itself but a necessary condition of renewal. Not conservation but renovation, not the faithful recounting of an historical narrative but the reshaping of one, is the project.

Conversion of the Gaze

We are now, at last, in a position to see what is at stake in Malick's elaboration of style and technique into a Hollywood genre picture—and, by extension, to assess his openness to academic philosophy. *The New World* is not just a narrative of exploration and discovery, but also one of conversion. During its course both Smith and Pocahontas undergo ceremonies of rebirth: the former after Powhatan spares his life, the latter in her baptism under the name Rebecca. Neither ceremony has much effect; Smith reverts to his former ways, and "Rebecca" continues to pray to a Mother Spirit even after she becomes a Protestant. Matching POV shots of a Puritan fanatic and an Indian priestess—each tightly framed, facing the camera with palms forward, threatening—rule out any sentimentalization of either Christian or Native American spirituality. [Fig. 14a-b] What might seem to be needed is some sort of inner rebirth, a "true" conversion, and yet the whole film has militated against any simple myth of the inner. The language of spirituality seems inapt—yet more hawking of ineffability—yet I hope to show that the final minutes of the film do narrate a conversion and, moreover, that they do so in order to effect a similar conversion in viewers.

Figure 14a–b. Religious authorities

Characteristically Malick figures conversion in and through movements external to the characters. The plot itself describes a circle, a literal *conversio* or turning-about, from Virginia to England and back. But, as we know, the world in this film is not a place, and movement across the Atlantic is not the real issue. Near the film's end, Pocahontas asks Smith if he ever found his Indies (the way she talks, they could be Marvell's Bermudas); he replies that he may

have sailed past them. For him the volte-face does not quite succeed, but for Pocahontas, hence for at least some viewers, the film's final moments visibly and audibly return to earlier ones, visibly and audibly effect the conversion of the Old World into the New. To see how this is the case requires a final return to details.

Figure 15. Chase

After parting with Smith, the Princess wanders the English garden as she did the Virginia woods. She reconciles with Rolfe and reaffirms her marriage to him. With the romantic storyline at an end, the *Vorspiel* strikes up—announcing that this is a new beginning, or rather a new iteration of an old beginning. Now the Princess is playing chase with her son amidst the hedges, a pure image of happiness and its pursuit. [Fig. 15] But the game terminates with the child casting about for his mother, who has vanished. Rolfe's voice describes her death at Gravesend in Kent, and we see her deathbed in a convex mirror. Now a series of cross-cuts renders the narrative sequence obscure: past and present interfuse, both within the diegesis and between the diegetic world and the present day. The child searches the garden for his mother (so was the deathbed scene proleptic? But it was cast as Rolfe's recollection); the deathbed reappears, empty (does it await Pocahontas or has she already died?); an anonymous Powhatan dashes out of the English manor house.[63] Pocahontas runs and dances alone in the garden, presumably while her son looks for her but also, just possibly, after her death, as a spirit. She splashes water on her head, a self-baptism. Her grave appears, not freshly dug but overgrown with centuries of weeds, as it might look today if its location were known; like the film itself, it is a memorial in the here-and-now. Rolfe and the child set sail for Virginia, in a harbor scene that could have been painted by Claude Lorrain. The final shots are of the trees and brooks of the New World. [Fig. 16; for the full sequence, see Clip IV]

Clip IV: Finale. Duration: 4' 09".

We have seen all this before, and heard it too. Wagner's music is one of the oldest things in the film; it signals that everything is beginning again. The garden setting matches the wilderness—even the cicadas are chirping once more on the soundtrack—and the pursuit of mother and child transfigures the love-games that Pocahontas played earlier, first with a Powhatan youth and then with Smith. [Figs. 10–11] The difference is between a chase that mimes the hermeneutics of desire, and one that instantiates a different sort of coexistence. The pursuits in the forest were flirtations, toying with the absent or a perceived lack—"romantic longing," indeed. Although yielding pleasure, the pursuit of Smith brought endless questions ("Who is this man?"), utopian fantasies ("My America") and ultimately abandonment. The pursuit in the garden, by contrast, has nothing of coyness. Neither mother nor child is, or is pretending to be, absent to the other as they run amidst the hedges; they could hardly be more present, both to each other and to us. Hence the game begins with an embrace, not a withdrawal, and it ends with an abandonment of a different kind: the mother's abandonment of the child in death, which is not a breach of faith as per Smith, so much as the attainment of a limit.

The camera is restless. Sometimes it accompanies mother and child, sometimes it holds still, sometimes it takes a POV, sometimes not; often it will seem to follow the figures, pursuing them after its own fashion. Such participation establishes an affinity between game and movie. After all, showing and hiding, sudden occlusion (as by a hedge, or the edge of a screen) and sudden appearance (as around a corner, or in a panning shot), are constitutive elements both of a game of chase and of a cinematic world. Onscreen, that is, *the whole world* is shown and hidden, occluded by edges and revealed by movement. We have already seen Malick making these facts conspicuous with his use of "establishing tilts," tall grass, and so on, but now these

technical procedures find narrative thematization. Of course, that is not how it seems to the characters within that world, even when they seem to bounce off the edge of the frame, or crop their own faces from another's view. We see the limits they live.

These limits are not mere formalities. Part of the brilliance of the cross-cutting at this moment is its indication of what can be at stake in an everyday pursuit—the way that, particularly for a child, a game of chase can hold real terrors. Playing hide-and-seek, the boy really does lose his mother: we see him casting about, and then she is gone for good. Which is to say that one way to account for the considerable affective power of this sequence is to recognize the affinity it establishes between the game, the constitutive limitation of a world on film (which the film has so painstakingly set forth), and the equally constitutive limitation of death. That this revelation should come under a mood that can only be called joyful, that it is joyful exactly insofar as it goes some way to salvage some of the most compromised music in the Western canon, and one of the most compromised myths in American history, is a measure of the film's audacity.

It is here that the movie leaves us. In these final minutes, neither game nor film offers anything to decipher, anymore than the characters do to one another; metaphysical dilemmas like "Who is this man?", colonial fantasies like "My America!" and virtuous questions like, "What is the relation of this film's thematic of worldhood to Martin Heidegger's *Vom Wesen des Grundes*?"—all are set aside in the eupathic play of mother and child in which the New World returns transfigured. There is no dialogue in the film's final moments, ultimately no human presence at all.[64] Having confounded narrative sequence, Malick picks up the pace of the editing, so there is simply no time for the audience to be quite sure what is happening. [Clip IV] One shot of the New World forests is in Steadicam speeding through the trees, a POV of nobody; others are strongly centered with recessive lines, producing an oscillation of perspectival rush and flat pattern. In the last shot of the film [Fig. 16], the internally disjunctive composition attains an extreme: the trees comprise a two-dimensional lattice even as they recede toward a white sky, so that what we see has two aspects, flat and deep. The Wagner cuts abruptly and instead of words there are just "forest murmurs."

The whole film is preparation for this ending, in which the intelligibility of a New World simply ceases to be a question, because a myth of newness—perhaps the American myth—has been renounced. No photograph, no film, can ever lay claim to radical newness thus conceived, anymore than mere philosophy can render intelligible the absolutely new. Malick's film stages various hungers for that that sort of newness, everyday yearnings to know the ineffable—political, erotic, operatic, cinematic, philosophical—that is taken to lie on the far side of things. In staging them, the film shows their attraction and their danger, for both historical actors (Smith, Pocahontas, Rolfe) and contemporary ones ("us," or "we").

I have tried to suggest that some of the current critical orthodoxies about Terrence Malick might exemplify such yearnings. But it simply *doesn't matter* if this film has a cogent relation to Heidegger, Emerson or Cavell, or whether it should or should not count as "philosophy," any more than it is coherent to assert that it delivers any particular ineffable wisdom. Such interpretative pseudo-problems instantiate the very affliction that the film works to treat, proposing a relation of knowledge that is simply inapt. To recur to Malick's own words, "there is no more sense in speaking of an interpretation when, instead of an interpretation, the 'world' is meant to be that which can keep us from seeing, or force us to see, that what we have *is* one."[65]

To help us to *see* in this way, the film narrates the constitution of a world—that which establishes "measure and purpose and validity in our schemes"—on film and off. Lenses, color, lighting, editing, staging, camera movement, *mise-en-scène*, motifs, soundtrack, script, plot, allusions—all cohere in this regard. Insofar as it has guided viewers to see, literally *to see*, these relevances, the film's final shots can abandon both Romantic yearning and philosophical profundity—and not just as exegetical tools, but as ways of seeing. This is not, I admit (or rather: I insist), a thesis.

Figure 16. The closing shot

NOTES

For help and advice I thank Adrian Anagnost, Darren Aronofsky, Arnold Davidson, Erika Dudley, Tom Gunning, Dan Morgan (especially), Marin Sarvé-Tarr and Joel Snyder. All errors are my own.

1. Quoted in James Morrison and Thomas Schur, *The Films of Terrence Malick* (Westport, Connecticut: Praeger 2003), p. 97.

2. This film currently exists in three cuts: a 150-minute version, released in time for Oscar consideration in the United States in 2005; a 130-minute theatrical release; and a 172-minute Extended Cut. All are on DVD, although the 150-minute version seems to be available only in Italy. In this essay I shall consider the 130-minute theatrical release. The Extended Cut tends to hammer points home, notably through the use of intertitles to punctuate the narrative. More is not always better. For a systematic comparison of the 130- and 170-minute versions, see http://www.movie-censorship.com/report.php?ID=799765 (accessed September 2010). For a breakdown of shot lengths, posted by Jonah Horowitz on Yuri Tsivian's Cinemetrics site, see http://www.cinemetrics.lv/movie.php?movie_ID=2539 (accessed September 2010).

3. The film precipitated a flame war on the blog of the critic Dave Kehr (davekehr.com), archived at http://web.archive.org/web/20060426101318/davekehr.com/?p=70 and http://web.archive.org/web/20060426101437/davekehr.com/?p=71 (both accessed November 2010). Although *The New World* eventually wound up on the end-of-decade Top Ten lists in *Cahiers du cinema* and *Film Comment*, it was not selected as one of *Sight & Sound*'s Top 30. Dismissive admirers: "The less said about [it] the better," writes Simon Critchley, in "Calm: On Terrence Malick's The Thin Red Line," in David Davies, ed., *The Thin Red Line* (New York: Routledge 2009), p. 11–27, at p. 27 n. 1.

4. David Davies, "Terrence Malick," in *The Routledge Companion to Philosophy and Film*, ed. Paisley Livingston and Carl Plantinga (New York: Routledge 2009), pp. 569–80. The other honorees are Tarkovsky and Bergman.

5. There is a capsule biography in David Davies, ed., *The Thin Red Line* (New York: Routledge 2009), pp. xi–xii. Studies with Heidegger are reported in Stanley Cavell, *Little Did I Know: Excerpts from Memory* (Palo Alto: Stanford 2010), p. 426 but cannot be independently verified. Translation: Martin Heidegger, *The Essence of Reasons: A Bilingual Edition, Incorporating the German Text of Vom Wesen des Grundes*, trans. Terrence Malick (Evanston: Northwestern 1969). For bibliography, see Hannah Patterson, ed., *The Cinema of Terrence Malick: Poetic Visions of America*, 2nd ed. (New York: Wallflower 2007), pp. 224–29, to which add Kaja Silverman, "'All Things Shining,'" in *Loss: The Politics of Mourning*, ed. David L. Eng and David Kazanjian (Berkeley: University of California 2003): 323–42; Francesco Cattaneo, *Terrence Malick: Mitografie della modernità* (Bergamo and Pisa: Cineforum 2006) and Lloyd Michaels, Terrence Malick (Bloomington: University of Indiana 2009). For overviews of the philosophical literature, see Davies, "Terrence Malick," pp. 570–72; John Rhym, "The Paradigmatic Shift in the Critical Reception of Terrence Malick's Badlands and the Emergence of a Heideggerian Cinema," *Quarterly Review of Film and Video* 27 (2010), pp. 255–66.

6. Reported and endorsed in Davies, "Terrence Malick," p. 570. For a more cautious assessment of Malick's relation to professional philosophy, see Iain Macdonald, "Nature and the Will to Power in Terrence Malick's *The New World*," in Davies, ed., *The Thin Red Line*, pp. 87–110, at p. 89.

7. Robert Silberman, "Terrence Malick, Landscape and 'What Is This War in the Heart of Nature?'" in Patterson, ed., *The Cinema of Terrence Malick*, pp. 164–88, at p. 172. See also Ron Mottram, "All Things Shining: The Struggle for Wholeness, Redemption and Transcendence in the Films of Terrence Malick," in Patterson, ed., *The Cinema of Terrence Malick*, pp. 1–26. For a critique of this general tendency, with representative quotations from newspaper reviews, see James Morrison, "Making Worlds, Making Pictures: Terrence Malick's *The New World*," in Patterson, ed., *The Cinema of Terrence Malick*, pp. 199–211, at p. 199.

8. Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, 2nd edn., trans. David Pears and Brian McGuiness (New York: Routledge 2001), §6.522. In a related vein, some commentators have suggested that Malick might be "Emersonian." See Mottram, "All Things Shining," and Richard Power, "Listening to the Aquarium: The Symbolic Use of Music in *Days of Heaven*," in Patterson, ed., *The Cinema of Terrence Malick*, pp. 103–111.

9. See, inter alia, Alice Crary and Rupert Read, eds., *The New Wittgenstein* (New York: Routledge 2000); Alice Crary, ed., *Wittgenstein and the Moral Life: Essays in Honor of Cora Diamond* (Cambridge, Mass.: MIT 2007).

10. For a programmatic statement of one such method see Thomas Wartenberg, "Beyond *Mere* Illustration: How Films Can Be Philosophy," *Journal of Aesthetics and Art Criticism* 64 (2006), pp. 19-32.

11. For a previous generation's statement of this problem, see Richard Wollheim, "Flawed Crystals: James's *The Golden Bowl* and the Plausibility of Literature as Moral Philosophy," *New Literary History* 15 (1983), pp. 185-191.

12. Cf. Pauline Kael, *Reeling* (Boston: Atlantic Monthly 1976), pp. 300–306 (a negative review of *Badlands*); ibid., *When the Lights Go Down* (Boston: Houghton Mifflin 1980), p. 447 (a negative review of *Days of Heaven*). Thomson: David Thomson, *The New Biographical Dictionary of Film*, 4th ed. (New York: Knopf 2009), s.v. "Terrence Malick," pp. 566–67 (a negative review of the whole career). For Kehr, see above, n. 4.

13. Terrence Malick, "Translator's Introduction," in Heidegger, *The Essence of Reasons*, pp. xvii–xviii. The text has been neglected in the critical literature on Malick.

14. Benjamin B, "Uncharted Emotions," *American Cinematographer* 87.1 (2006), pp. 48–57, at p. 50. Along with this article, the most informative account of the production of *The New World* is Pauline Rogers, "Once Upon A Time In America: Emmanuel Lubezki, ASC and Team Recreate the Early 17th Century for *The New World*," *International Cinematographers Guild Magazine* 76.11 (2005), available at http://web.archive.org/web/20060629103439/www.cameraguild.com/, accessed July 2010.

15. B, "Uncharted Emotions," p. 50.

16. In fact, they permitted an unusual degree of improvisation: because the technical options had been so drastically constrained, the look of the individual shots was fairly homogenous, allowing for a certain looseness in the actual shooting. Technicians who have worked with Malick often remark on his improvisational approach. See B, "Uncharted Emotions"; Rogers, "Once Upon a Time in America"; and Michael Kunkes, "Cutting with a Conscience: Richard Chew Is an Ambassador for the Underrepresented," *Editor's Guild Magazine* 27.6 (2006), available online at: https://www.editorsguild.com/Magazine.cfm?ArticleID=382 (accessed July 2010).

17. The film was shot in anamorphic 35mm (see B, "Uncharted Emotions," p. 50; Rogers, "Once upon a Time in America"). That is, a special lens was used to squeeze a widescreen image onto a 35mm frame of film; when projected, a corresponding lens is used to reverse the process, yielding a widescreen picture.

18. As Lubezki put it, the lens "solved the anamorphic contradiction between resolution … and depth-of-field," enabling Lubezki to obtain a relatively small aperture (f/11 or f/16), hence a relatively deeper field and a deeper focus. Quoted in Rogers, "Once upon a Time in America."

19. Lubezki reports that the film stock helped to solve this problem: B, "Uncharted Emotions," p. 51.

20. Quoted in Rogers, "Once upon a Time in America."

21. Quoted in Rogers, "Once upon a Time in America."

22. For related discussions of *The Thin Red Line* and *Badlands*, see Leo Bersani and Ulysse Dutoit, *Forms of Being: Cinema, Aesthetics, Subjectivity* (London: British Film Institute 2004), pp. 124–78; also Manny Farber, "Manny Farber examines *Badlands*, *Mean Streets* and *The Wind and the Lion*," quoted in *The Last Great American Picture Show: New Hollywood Cinema in the 1970s*, ed. Thomas Elsaesser, Alexander Horwath and Noel King (Amsterdam: Amsterdam University Press 2004), pp. 100–101.

23. On "technique arcs," see David Bordwell, "Lessons from BABEL," http://www.davidbordwell.net/blog/2006/11/27/lessons-from-babel/ (accessed December 2010).

24. The cicada as a figure of pure voice goes back to Plato; see G.R.F. Ferrari, *Listening to the Cicadas: a Study of Plato's Phaedrus* (Cambridge, England: Cambridge University 1987).

25. On such "acousmatic" voices see Michel Chion, *The Voice in Cinema*, trans. Claudia Gorbman (New York: Columbia 1999), pp. 15–57; ibid., *Audio-Vision: Sound on Screen*, trans. Claudia Gorbman (New York: Columbia 1999), pp. 71–73.

26. On the question of community in Malick see Bersani and Dutoit, *Forms of Being*, pp. 124–78, especially pp. 154–55 and p. 165; Macdonald, "Nature and the Will to Power," p. 94.

27. Contrast the opening of the Inuit-language film *Atanarjuat, the Fast Runner* (Zacaharias Kunuk, 2001), a work that, for better or for worse, takes a firmer view of these matters: "I can only sing this song to someone who understands it." On community in *Atanarjuat*, see Arnold Krupat, "*Atanarjuat, the Fast Runner* and Its Audiences," *Critical Inquiry* 33 (2007), pp. 606–31.

28. The use of prints seems to derive from *Black Robe* (Bruce Beresford, 1991), a well-regarded film about a Jesuit missionary in Quebec. See Michaels, *Terrence Malick*, p. 79.

29. See Jeongwon Joe and Sander Gilman, eds., *Wagner & Cinema* (Bloomington: Indiana University Press 2010), with further bibliography.

[30.] I do not mean to suggest that these tilts are unique to *The New World*, only that this film makes such insistent use of them that are conspicuous and noteworthy.

[31.] See David Bordwell, *The Way Hollywood Tells It: Story and Style in Modern Movies* (Berkeley and Los Angeles: University of California 2006).

[32.] Tall grass is another signature Malick image, but the astonished reactions of the Indians might have been influenced by *First Contact* (Bob Connolly and Robin Anderson, 1982)—a documentary that incorporates footage taken by the first whites to enter the New Guinea highlands in 1930.

[33.] The effect is strongly reminiscent of Caspar David Friedrich's *Large Enclosure* of c. 1832. See Joseph Koerner, *Caspar David Friedrich and the Subject of Landscape* (New Haven: Yale 1990), p. 117, where Friedrich's bowed horizon is said to suggest "simply the return to, or recuperation of a being in, this world."

[34.] Lest this point be missed, the Extended Cut of *The New World* opens with the following quotation ascribed to John Smith, printed in white upon a black ground: "How much they err, that think that everyone that has been at Virginia understands or knows what Virginia is." This intertitle is a good example of how the Extended Cut tends to belabor a point.

[35.] Significantly, Heidegger himself was dismissive of the very idea of a world on film, seeing it as a quintessential example of the inauthentic and technological: movies, he asserted, "feign a world *which is no world."* Martin Heidegger, *Discourse on Thinking*, tr. J.M. Anderson and E.H. Freund (New York: Harper & Row 1966), p. 48, italics added. One can scarcely imagine a more devastating rejoinder to any Heideggeran ambitions that *The New World* might entertain. Malick would have to be a very heterodox Heideggerian!

[36.] Terence Malick, "Translator's Introduction," in Heidegger, *The Essence of Reasons*, pp. xiv–xv.

[37.] Malick, "Translator's Introduction," p. xv. Clearly the world in this sense could not be analyzed in terms of the perceptual or cognitive bases of spatial or temporal continuity; e.g. Ira Konigsberg, "Film Studies and the New Science," *Projections* 1 (2007), pp. 1-24. For a recent call for non-cognitivist inquiry into cinematic worlds, see Victor F. Perkins, "Where is the World? The Horizon of Events in Movie Fiction," in *Style and Meaning: Studies in the Detailed Analysis of Film*, ed. J. Gibbs and D. Pyle (Manchester: Manchester University Press 2005), pp. 16-41.

[38.] For Heideggerian "readings" of Malick, see Marc Furstenau and Leslie MacEvoy, "Terrence Malick's Heideggerian Cinema: War and the Question of Being in *The Thin Red Line*," in Patterson, ed., *The Cinema of Terrence Malick*, pp. 179-91; Cattaneo, *Terrence Malick,* pp. 16–19, 66–70; Robert Clewis, "Heideggerian Wonder in Terence Malick's *The Thin Red Line*," *Film and Philosophy* 7 (2006), pp. 22–26; Hubert Dreyfus and Camilo Salazar Prince, "*The Thin Red Line*: Dying without Demise, Demise without Dying," in Davies, ed., *The Thin Red Line*, pp. 29–44. For an alternative, see Robert Sinnerbrink, "A Heideggerian Cinema?: On Terence Malick's *The Thin Red Line*," *Film-Philosophy* 10 (2006), pp. 26-37. <http:/www.film-philosophy.com/2006v10n3/sinnerbrink.pdf>. Accessed 01 August 2010. See also Rhym, "The Paradigmatic Shift." More nuanced are Silverman, "All Things Shining"; Bersani and Dutoit, *Forms of Being*; and Morrison, "Making Worlds, Making Pictures."

[39.] Cf. Martin Heidegger, *Being and Time*, tr. J. Macquarrie and E. Robinson (New York: Harper & Row 1962), pp. 105, 118 (on "discovery," Entdeckung, and "disclosure," Erschlossenheit).

[40.] On the voice-over in Malick see Chion, *The Voice in Cinema*, p. 56; Chion, *The Thin Red Line*, pp. 53–60; Anne Latto, "Innocents Abroad: The Young Woman's Voice in *Badlands* and *Days of Heaven*, with an Afterword on *The New World*," in Patterson, ed., *The Cinema of Terrence Malick*, pp. 88–102.

[41.] See for instance, Latto, "Innocents Abroad."

[42.] As Stanley Cavell puts it, a propos of Emerson, "The idea is roughly that moods must be taken as having at least as sound a role in advising us of reality as sense-experience has; that, for example, coloring the world, attributing to it the qualities 'mean' or 'magnanimous,' may be no less objective or subjective than coloring an apple, attributing to it the colors red or green. Or perhaps we should say: sense-experience is to objects what moods are to the world." Stanley Cavell, "Thinking of Emerson," in *The Senses of Walden*, 2nd ed. (Chicago: University of Chicago 1992), p. 125.

[43.] There is a handy, if somewhat overly inclusive, list at http://www.eskimo.com/~toates/malick/simlist.html (accessed October 2010); posted in 2001, it does not include *The New World*.

[44.] On the motif of frames see Mark Cousins, "Praising the New World," in Patterson, ed. *The Cinema of Terrence Malick*, p. 193; Macdonald, "Nature and the Will to Power," p. 93. On Malick's shot framing in general, see Bersani and Dutoit, *Forms of Being* pp. 144-46. For Bersani and Dutoit, the camera's imposition of a frame "subjectivises its registering" (p. 144), but it

is not clear why this should be the case, and indeed this position seems out of keeping with the critique of subjectivity that animates Bersani's and Dutoit's argument overall.

45. For a related discussion see Bersani and Dutoit, *Forms of Being*, p. 146. For a contrary view, with regard to *The Thin Red Line*, see David Davies, "Vision, Touch and Embodiment in *The Thin Red Line*," in Davies, ed., *The Thin Red Line*, pp. 45–64, which addresses the film's representation of "the visual and the tactile, as inflections of our cognitive engagement with the world" (p. 50).

46. Camera as "additional character": see, e.g., Blain Brown, *Cinematography: Theory and Practice. Imagemaking for Cinematographers, Directors and Videographers* (Burlington, Mass.: Focal Press 2002), p. 76.

47. Cf. Gilberto Perez, *The Material Ghost: Films and Their Medium* (Baltimore: Johns Hopkins 1998), p. 75.

48. There is a helpful YouTube clip collecting some of these allusions, posted by one "autochthonous88": <http://www.youtube.com/watch?v=uERc0C7LlqY&feature=related>, accessed July 2010.

49. The main sources are Arthur Barlowe's *Discourse of the First Voyage* (1584), Richard Hackluyt's *Instructions for the Virginia Colony* of 1606, Edward Maria Wingfield's *A Discourse of Virginia* (1606–1607), and Smith's own *Generall Historie of Virginia, New England and the Southern Isles*. Most of these texts are collected in James Horn, ed., *Captain John Smith: Writings, with Other Narratives of Roanoake, Jamestown, and the First English Settlement of America* (New York: Library of America 2007).

50. On the political utopianism of the historical Smith, see J.A. Leo Lemay, *The American Dream of Captain John Smith* (Charlottesville: University Press of Virginia 1991). Even John Rolfe's account of Pocahontas' death derives from a letter that the historical Rolfe wrote to Sir Edward Sandys, a founder of the Virginia Company.

51. Malick: "All the children of the King were beautiful but she, the youngest, was so exceedingly so that the sun himself, though he saw her often, was surprised whenever she came out into his presence" Grimm: "In den alten Zeiten…lebte ein König, dessen Töchter waren alle schön; aber die jüngste war so schön, daß die Sonne selber, die doch so vieles gesehen hat, sich verwunderte, sooft sie ihr ins Gesicht schien" ("In olden times…there lived a king whose daughters were all beautiful, but the youngest was so beautiful that the sun itself, which has seen so much, was surprised whenever it shone in her face").

52. Sappho fr. 31 *PLF*, most English translations of which begin, "Like a god he seems to me" (in abbreviated form in the theatrical release, the full text in the extended version).

53. Specifically, the sources are: Sappho, fr. 31 *PLF*; Virgil, *Aeneid*; Montaigne, "Of Cannibals"; Thomas Campion, "What Is a Day?"; Rousseau, *The Social Contract*; The Brothers Grimm, "The Frog-King, or Iron Henry"; Hawthorne, *The Scarlet Letter*; Melville, *White Jacket*; Dickens, *David Copperfield*; Whitman, "One Hour to Madness and Joy"; Hart Crane, "The Bridge"; Lindsay, "Our Mother Pocahontas."

54. "Des statues qui parlent." See Jean-Luc Godard, "Le droit d'auteur? Un auteur n'a que des devoirs," an interview with Jean-Marc Lalanne in *Les Inrockuptibles*, May 2010. http://blogs.lesinrocks.com/cannes2010/2010/05/18/le-droit-dauteur-un-auteur-na-que-des-devoirs-jean-luc-godard/ (accessed September 2010).

55. For a related discussion see Dreyfus and Salazar Prince, "*The Thin Red Line*: Dying without Demise, Demise without Dying," arguing for a theme of Heideggerian "world-collapse" in *The Thin Red Line*.

56. Noted in Morrison, "Making Worlds, Making Pictures," p. 207.

57. Stanley Cavell, "Finding as Founding: Taking Steps in Emerson's 'Experience,'" in *This New Yet Unapproachable America: Lectures after Emerson after Wittgenstein* (Albuquerque: Living Batch 1989), p. 94. The essay may show Malick's influence. Cavell's use of the word "founding" has much in common with Heidegger's term *Begründen*, which Malick had somewhat idiosyncratically translated as "founding" in *The Essence of Reasons* (a more recent translation, intended presumably to correct Malick's perceived infelicities, uses the word "grounding"; see "The Essence of Ground," in Martin Heidegger, *Pathmarks*, ed. William McNeill [Cambridge, England: Cambridge University 1998], pp. 97–135). It is not unlikely that Cavell referred to his former student's translation (and the facing-page German), and that Malick's idiosyncratic use of "founding" was, in particular, productive for "Finding as Founding."

58. Stanley Cavell, "Finding as Founding," p. 94.

59. Cavell, "Finding as Founding," p. 102.

60. Emerson, *Essays*, p. 255.

61. In much the same way, *Days of Heaven* retells the story of Abraham and Sarah in *Genesis* 12:10–20 and 20:1–16, 21:22–34, and that of Isaac and Rebecca in *Genesis* 26: 1–33—a point I owe to Joel Snyder. On Malick's related habit of "quoting" paintings, see Cattaneo, *Terrence Malick*, pp. 127–30.

[62.] We might even compare Malick's Wagnerism with Thoreau's account, in "Walking" (1862) of his visit to a pair of panoramas, those great pre-cinematic attractions consisting of long painted scenes mounted on rollers. The first that Thoreau saw represented the Rhine, and it transported him into a musical dream of an age of chivalry and knights errant. The second showed the Mississippi, which brought him to the heroism of the New World and the everyday. "I saw that this was a Rhine stream of a different kind; that the foundations of castles were yet to be laid, and the famous bridges were yet to be thrown over the river; and I felt that this was the heroic age itself, though we know it not, for the hero is commonly the simplest and obscurest of men." Thoreau's discovery of New World heroism by way of the Rhine anticipates Malick's own integration of *Das Rheingold* into *The New World*. An updated panorama, Malick's film shows us "a Rhine stream of a different kind."Henry David Thoreau, "Walking," in *Collected Essays and Poems* (New York: Library of America 2001), p. 239. Thoreau may have seen John Banvard's *Mississippi from the Mouth of the Missouri to New Orleans*, a popular "moving panorama" of 54 scenes some 400 m. in length; it came to Boston at about the time he wrote "Walking." The Rhine panorama, however, seems to have been Thoreau's invention, based on a famous example in Breslau; apparently American audiences would not pay to see European rivers. See Bernard Comment, *The Panorama* (London: Reaktion 1999), pp. 63–64.

[63.] The man has been glimpsed earlier, disembarking in London with Pocahontas; he is apparently a shaman, but his identity is never made clear.

[64.] Jonah Horowitz's breakdown of shot lengths on Cinemetrics.lv confirms that the overall pace of editing increases consistently over the last few minutes of the film. See above, n. 3.

[65.] Terrence Malick, "Translator's Introduction," p. xv. I cannot resist quoting here as well the final sentence of the final page of notes for the final session of the final course that Michel Foucault ever delivered at the Collège de France—a line he did not live to speak: "*Il ne peut y avoir de vérité que dans la forme de l'autre monde et la vie autre*." Michel Foucault, *Le courage de la vérité: Le gouvernement de soi et des autres II. Cours au Collège de France II. 1984* (Paris: Seuil 2009), p. 311.

Richard Neer is David B. and Clara E. Stern Professor of Humanities, Art History and the College, and an affiliate of the Departments of Classics and Cinema & Media Studies. He is also Executive Editor of *Critical Inquiry*. He works on the intersection of aesthetics, archaeology and art history, with particular emphasis on Classical Greek and neo-Classical French art. His most recent books are *The Emergence of the Classical Style in Greek Sculpture* (University of Chicago Press, 2010) and *The Art and Archaeology of the Greek World: A New History, 2000–100 BCE* (Thames & Hudson, 2011). He has published on the politics of architectural sculpture in Greece, the history of connoisseurship, French painting and recent cinema.

EDITORIALS

INTERVIEW WITH WALTER BENN MICHAELS ON PHOTOGRAPHY AND POLITICS

WALTER BENN MICHAELS

nonsite.org wishes to thank the editors at I Heart Photograph for allowing us to republish the following interview. The interview was conducted by the editors at I Heart Photograph from a series of email exchanges during May 23 – May 29, 2011. The interview is in response to Michaels's recent essay for nonsite.org, "Neoliberal Aesthetics: Fried, Rancière and the Form of the Photograph."

How did you come to understand photographic form as possessing a strategy for working through the problems of what you call neoliberal aesthetics and politics? I'm very curious as to how you developed this given your background as a literary theorist and critic.

I've always been interested in photography, or at least I have been since I first saw some of Jim Welling's work at Metro Pictures and then got the University of California Press to commission the cover for my first book, *The Gold Standard and the Logic of Naturalism*, from him. I could see right away that some of the theoretical questions that interested me in that book – the question of what made some event count as an action and some thing count as

a representation – were questions his pictures were engaging. In literary theory, one way to raise these questions was by asking what made sounds in the air or marks on a page count as words – what, in other words, was the relation between the materiality of the signifier and its meaning, what made it a signifier? In photography, it was what made the photograph – importantly understandable as the outcome of an essentially mechanical set of procedures, weak in intentionality, as writers like John Berger put it – count as a work of art.

In a certain sense and especially for photography, this problem has always been around. In the period I was writing about in *The Gold Standard*, for example (the late 19th and early 20th century), it was raised as the question of whether photography could count as an art if all the photographer did, as the famous ad suggested, was press a button. And the characteristic response was simply to assert the photographer's agency – the importance of her eye, her sense of composition, her technical skill, etc. The idea was that photography was a medium like any other, like writing even.

But in the period not about which but during which I began to write, this question of the photographer's agency was being raised in a different tone of voice. Now writers like Berger and Rosalind Krauss were valorizing precisely what earlier critics had attacked. Indeed, photography was increasingly understood in terms of the broader critique of intentionality (associated above all with deconstruction) and with what Krauss thought of as the critique of Art. It was precisely the way in which the photographer's control was necessarily compromised – by the mechanical nature of the process and above all by the photograph's causal connection to the thing it was a photograph of (its indexicality) – that seemed (for many photographers and writers) to make the photograph exemplary. But not for me, or for the photographers in whom I became interested.

For them, neither the idea that the photograph was Art nor the idea that it wasn't was interesting. What was interesting instead was the opportunity or necessity to establish or assert the photograph as a work of art. Paintings, after all, were obviously and irreducibly works of art, their meanings more or less inevitably a function of the intentions of their makers. You could say, and people do say all the time, the painting means different things to different people at different moments. But the theoretical argument in favor of that position is a catastrophically weak one, whereas with respect to objects in the world, precisely because no one means anything by them, the idea that their meaning is a function of how different people see them is much more seductive. And from this standpoint, it's the photograph's indexicality – the thing that ties it to and makes it an object in the world, the thing that induces someone like Sugimoto to call fossils the first photographs – that must be acknowledged (paintings have no necessary indexical relation to the things they're paintings of) and that can be overcome. So one easy way to put it would be to say that for many people, photography

perfectly embodied the theory and practice of the postmodern, whereas for some people, it created the possibility or felt necessity for a critique of postmodernism. Or, to put the point in terms of intentionality: for many people, the photograph embodies the critique of the intentional that we find in theorists as different as Barthes and Derrida, Crimp and Rancière; for others it embodies something like the opposite – the opportunity to re-imagine intentionality.

If the indexical or causal function of photography is crucial – where a thing in the world becomes depicted in a photograph – are there then forms of photography outside the art context (i.e., fashion, portraiture, editorial, architectural, photojournalism, etc.) that can also serve as a model for working through these problems? Is it photography in general that's exemplary for what you call neoliberal aesthetics? Or, is intentionality within photography as art primarily the domain in which this model is most effective?

I think it's only in its claim to be art that photography is crucially important. Of course, there are lots of wonderful photographs, made to convey information, or to sell things, and many of them are very beautiful. But it's the attempt to make art with photography that seems to me theoretically central and politically important. The theoretical interest is the one I've described; precisely because the photograph need not be art and because it need not be (and in crucial ways isn't) even a representation, it has become the site of the most powerful thinking about what representation is, about what it means to make art and about what art is. And at the center of this is the assertion of the intentionality of the photographer.

Which is also, I think, the political interest of photography. If we think of postmodernism as the cultural expression of neoliberalism, it's not hard to see that the photograph – understood as necessarily meaning different things to different people – embodies both the commitment to the commodity that's at the heart of neoliberalism and the commitment to the subject position that's at the heart of neoliberal models of social justice.

Things that are made to sell are made for – determined by – the buyer; they're made for the market. And because social justice in the market consists of equality of access to it, anti-discrimination is central to neoliberal justice. Your race or sex or sexuality should not limit your access to the labor market. Hence neoliberal societies are increasingly alert to the ways in which we see each other and seek to prohibit what Rancière calls "hierarchies of vision" – racism, sexism, heterosexism. But they're not much worried about the hierarchies that have nothing to do with vision – the hierarchies produced not by inequality of access to markets but by the markets themselves. That's why our efforts to make society more equal with respect to race and sex have happily coexisted with greater inequalities of class.

And the inequality of class, of course, is not dependent on how people see us. So the difference I outlined above between two ways of thinking about the photograph – its meaning determined by the way the beholder sees it or its meaning determined by the intentionality of its maker, regardless of how the beholder sees it – is paralleled by two models of inequality. The inequalities of discrimination are determined by how we see each other; the inequalities of exploitation are not.

What this means is that the photograph's claim to autonomy, its claim to be something other than a commodity, has a kind of political value. It's not that you don't want the work to sell – you can't live if you can't sell. It's that the price may be determined by the buyers but the meaning isn't determined by the beholders.

The importance of indexicality and causality between the thing that is photographed and the photograph itself seems to be crucial in how you conceive of form. Your conception of form is not the one typically associated with physical characteristics – frame, surface, color, size, etc. – but with the intentionality of the artist. Could you elaborate on this concept?

Yes, you're right but it's not that form isn't physical, it's that it isn't just physical. Everything in the world has a shape, everything has color, but the work only has form when shape and color begin to mean something. Everything either looks pretty good or not so good, but it's only when the way it looks begins to signify that you have form. So in a way, it begins to make sense to think of form as invisible, by which I mean not that you can't see it but that it's not reducible to what you can see. Which is, I think, why a lot of really interesting younger photographers (Viktoria Binschtok and Arthur Ou, for example) are interested in different ways in what can't be seen or in the photograph as an obstacle to the visible. And that's why, today, it also makes sense to associate form with class, since the materiality of your class position consists precisely in its irreducibility to what you look like or how you are seen.

In 1981 the artist Martha Rosler wrote that documentary photography developed to become representative of the social conscience of liberal sensibilities as presented in visual imagery, where its rhetoric was most suited for moralism rather than the possibility for actual change in the subjects that it strove to depict. Is there a relationship where certain forms and discourses around photography contributed to the intensity and edification of neoliberalism as we know it today?

It's probably true that even the most powerful documentary photographs are more likely to induce gratifying feelings of moral superiority in their beholders than changes in the situations of their subjects. And it's probably also true that photography has played some role in the more general collapse of politics into ethics. But that's another way of getting at the fact

that photography has more political meaning as art than as documentary, more political significance when it seeks to be beautiful than when it seeks to be relevant. (That's why work like Michael Fried's on why photography matters as art is more politically interesting than most of the work on why it matters as politics.) On the one hand, it's perfectly true that if what you want is changes in policy, you're not likely to get them from art. On the other hand, if what you want is a vision of the structures that produce both the policies we've got and the desire for alternatives, art is almost the only place you can find it.

Walter Benn Michaels is currently at work on a manuscript called *The Beauty of a Social Problem*. His books include *The Gold Standard and the Logic of Naturalism: American Literature at the Turn of the Century*; *Our America: Nativism, Modernism, and Pluralism*; *The Shape of the Signifier: 1967 to the End of History*; and *The Trouble with Diversity: How We Learned to Love Identity and Ignore Inequality*. Recent articles—some on literature, some on photography, and some on politics—have appeared in such journals as *PMLA*, *New Labor Forum*, and *Le Monde diplomatique*.

POETRY

THREE POEMS

MICHAEL FRIED

THE DIVERGENCE

for Robert Pippin

There is no more arresting moment in Hegel's Lectures on Fine Art than the one at which his evocation of classical Greek sculpture unexpectedly discovers a divergence between "the blessed loftiness of the gods, which is a spiritual inwardness, and their beauty, which is external and corporeal." As he also writes: "The spirit appears entirely immersed in its external form and yet at the same time immersed thence into itself. It is like the wandering of an immortal god among mortal men." So far so good — without that all but undetectable divergence there would be no content, no unfolding, no philosophical import to any narrative concerning art. (There would be no proper history of art.) But he at once proceeds to compare it with the effect made on him by Christian Daniel Rauch's celebrated portrait bust of the great Goethe, in which the noble brow, nose, and eyes are contrasted with the toothless mouth and the aging flesh starting to slip from the cheeks and neck. "It is the firm,

powerful, and timeless spirit which, in the mask of encircling mortality, is on the brink of letting this veil fall away and still lets it just hang freely around itself," Hegel writes as if gazing fixedly at Rauch's bronze.

The transition is startling — from the youthful gods and marble masterpieces of ancient Greece to the aged poet — and leads the most conscientious reader to wonder whether she has quite succeeded in following Hegel on this point. But perhaps the point is precisely to bring the reader to a halt, so that she might better grasp the simple but profound thought that no plastic or indeed sensuous manifestation of spirit in the modern epoch comes closer to the ancient Greek ideal than Rauch's Goethe, failing flesh, toothless gums, and all. As so often reading Hegel, it is hard for a modern like herself to know whether to laugh or to cry.

AN ESSAY IN AESTHETICS

Anna at four and a half seated securely in the back during a car ride from Florence to Borgo San Sepolcro drew a magnificent picture of a hat with a broad brim and a deep crown. The hat was monochrome: although she had a box of sixty-four Crayolas by her side she made it all dark brown, only varying the strength and direction of her strokes as they followed the form. When we arrived and she showed us the drawing I was amazed. Every mark felt motivated, the placing of the image on the sheet could not have been improved, the point of view (from the side, a little toward the front, looking sharply down on the brim) was ideal, and the hat itself — I am a severe critic — seemed to me the most enchanting specimen of its kind I had ever come across in life or art. Not that Anna's drawing quite belonged to the latter category. Nothing counts as art unless you can do it again.

AKHMATOVA LOOKS UP

> I question her: "And were you Dante's guide,
> Dictating the Inferno?" She answers: "Yes."
> – Anna Akhmatova, Muse

Akhmatova hears something and looks up. Or perhaps she doesn't hear anything but subliminally registers a peculiar tremor in the oil-lamp's yellow illumination falling on the notebook page beside her writing hand. In any case, she looks up and sees stepping from the far corner of the drably furnished room a young woman wearing a veil and holding a flute whom she instantly recognizes as a Muse — the selfsame, the visitor confirms in response to a direct question, who six hundred years earlier in one temporary housing arrangement after another, though now and then in an orchard or on horseback or within sight of the Adriatic, murmured indefatigably to the great Florentine. Akhmatova's quietly exalted poem says nothing more about what took place between them. Probably very little: the poet after all was under strict surveillance, the young woman's arrival was undoubtedly noted by observers, and we may some day learn that even their terse exchange (with its tantalizing reference to Dante's Hell) was recorded, analyzed weeks or months later by paranoid functionaries, and carefully filed away against the danger of a future visit.

Michael Fried is J. R. Herbert Boone Professor of Humanities and the History of Art, Johns Hopkins University. His many books of art criticism, art history, literary criticism, and poetry include *Absorption and Theatricality*; *Courbet's Realism*; *Manet's Modernism*; *Art and Objecthood*; *Menzel's Realism*; *Why Photography Matters as Never Before*; *The Moment of Caravaggio*; and, most recently, *Four Honest Outlaws: Sala, Ray, Marioni, Gordon*.

RESPONSES

RESPONSES TO *NEOLIBERAL AESTHETICS*

NONSITE

*Editor's note: Walter Benn Michael's "*Neoliberal Aesthetics: Fried, Rancière and the Form of the Photograph*," published in our first issue, has generated responses from Michael Clune, Nicholas Brown, and Todd Cronan.*

Michael Clune writes:

Walter Benn Michaels' "Neoliberal Aesthetics" centers on a powerful, and to my mind largely persuasive, argument about the compatibility of antiformalist aesthetics with neoliberal politics. My reservation concerns Michaels' surprising characterization of the work of postmodern artists like John Cage as the outcome of the "radicalization" of absorptive aesthetics. This seems right only insofar as absorption is understood as subjective experience. If absorptive art simply tries to defeat theatricality in order to provide the beholder with a certain subjective experience, then it is easy to see how a complete liquidation of theatricality could entail the complete subordination of the work to the beholder. But it seems to me that Fried's understanding of absorption is essentially phenomenological. That is, at least in his work through *Absorption and Theatricality*, Fried relies on the anti-Kantian tradition of phenomenological aesthetics in which the experience of art is precisely not the submission of

the object to the subject, but a mode of experience in which both are subsumed by the work. This kind of experience has traditionally been described by analogy to the phenomenological logic of the 'world,' and is so indifferent to subjectivity, and so reliant on non-subjective structures to determine its features, that Ned Block, commenting recently on work by Alva Noe, has accused phenomenology of being essentially 'behaviorist' on this score.

While, like Block, I have serious reservations about phenomenology as an account of mind, I find it compelling as an account of artworks. It might be objected that if the phenomenological account of experience as such is incoherent, then its account of aesthetic experience must also be without value. My own impulse here is to return to Fried, and to suggest that while modernist art's effort to defeat objecthood is not achievable in principle, the conviction of its success is obtainable in practice. This practical success is always contingent, often non-repeatable, and requires the kind of constant recalibration of artistic strategies that Fried's history of French art illuminates. Things may be possible in art that are impossible without it.

I think this dimension of Fried's criticism may be relevant to our political situation. Michaels diagnoses our situation as characterized by a conceptual lack: we lack a plausible economic analysis of class that can be made to serve a compelling vision of social transformation. Indeed, as Michaels demonstrates, the humanities model of social transformation has often proceeded by abandoning economic considerations entirely. Traces of the economic are still visible, to be sure, in the work of critics like Fredric Jameson. But this is an economics so disengaged from progressive left social science that its primary value is as a symptom of the ghettoization of the humanities, rather than as an instance of meaningful critique. (Only someone whose knowledge of economics comes primarily from the literature department, like Benjamin Kunkel in his recent *LRB* piece on David Harvey, could be shocked by the absence of reference to *Capital* in the left's response to the recession.)

What can art do? I am a little skeptical that a solution to the current conceptual impasses will emerge from artistic practice and criticism. But if art has limited value in the analysis of the actual economy, its creation of absorbing virtual economies–and above all the demarcation of lines separating virtual from actual economies–does seem promising. What would happen if this line were made clearer, for example, in the tea party vision of the free market? Republicans and big business are already nervous enough about their ability to exploit these energies. What would happen if it could be made clearer that the vision of the free market that fascinates and energizes is a vision of a world that does not include unions, but that also does not include companies? In other words, is it an accident that the fiction of the free market should become so absorbing in the midst of the cataclysmic social destruction of the latest

market failures? Isn't this an index that something interesting is happening in the gap between actual and virtual economies?

It seems to me that these are the kind of urgent political questions that critics *can* answer. I pose them simply to suggest that the political work of art is not reducible either to the falsely egalitarian anti-formalist subjectivity Michaels criticizes, nor to the analytical objectivity he urges. One might radicalize Friedan absorption, both politically and aesthetically, without abandoning the commitment to form.

Nicholas Brown writes:

Michael Clune is right not to be surprised that progressive economists have not been more interested in Marx. Consider the first chapter of *Capital*, the one most often returned to — for better and for worse — by literary and cultural critics. The central question there (or at least the question that becomes central for literary and cultural critics) is, speaking a bit casually, ontological: how does an object as commodity differ from the same object outside the field of large-scale exchange? The question is one of interpretation, a question that economists, when they are being economists, are not particularly concerned with; but questions of interpretation are what cultural critics, when they are being cultural critics, think about much of the time. This is not to say that Marx's "strictly economic" analyses, inasmuch as these can be disentangled from Marx's other concerns, are without value. Far from it. But even there Marxist analysis and, say, left Keynesianism (which are in fact, here and there, in productive conversation with each other, though largely outside the U.S.) are oriented towards entirely different ends. The Keynesian solutions to our current crisis — a mass of uninvestable capital confronting a mass of unemployable labor, which can be forced back together by means of a taxing and borrowing state — are abundantly available in Marx. But Marx was, of course, not interested in managing crises, but in demonstrating why they are inevitable and, in the very long run, unmanageable. The point I am trying to make is that if there is nothing very surprising in mainstream economics's lack of interest in Marx, there is nothing particularly embarrassing about it, either on the part of Marxism or on the part of contemporary economics.

But to return to the first chapter of *Capital*. One way of understanding Marx's analysis there is to say that in large scale commodity exchange, the site of intention shifts. If I make a bowl, it is a bowl because I wanted to make a bowl, and I will be concerned about all kinds of concrete attributes the bowl might have. If it is deep rather than shallow, metal rather than wood, these attributes are as they are because I intend them to be that way. If I make ten thousand bowls, I am primarily concerned only with one attribute, their exchangeability: that is, the demand for bowls. And that demand, and therefore all of the concrete attributes

that factor into that demand, are decided elsewhere, namely on the market. So while I might still make decisions about my bowls, those decisions no longer matter as intentions even for me, because they are entirely subordinated to more or less informed guesses about other people's desires. This is a dramatic simplification, but it will do for our present concerns, and it has obvious repercussions for cultural interpretation. If a work of art is not (or not only) a commodity, then it makes entirely good sense to approach it with interpretive tools, since it is intended to mean something. If a work of art is only a commodity, interpretive tools suddenly make no sense at all, since the form the object takes is determined elsewhere than where it is made, namely on the market. So it is not really that interpretation as such no longer makes any sense, so much as that interpreting the artwork no longer makes any sense. It is rather the desires represented by the market that are subject to analysis and elucidation.

It might seem absurd to say the art commodity is uninterpretable, but think for a moment of an industrial spectacle like *Avatar*. Of course the sight of critics producing a welter of completely incompatible (but also generally justifiable) interpretations was an amusing one that did not go unnoticed by the critics themselves. This empirical profusion is insignificant in itself: all of these interpretations could be wrong. But it is also possible that since the film is only concerned with producing a set of marketable effects, it cannot at the same time be concerned with producing the minimal internal consistency required to produce a meaning. And in fact, James Cameron himself is pretty clear that this is the case. When asked why female Na'vi have breasts, Cameron replies: "Right from the beginning I said, 'She's got to have tits,' even though that makes no sense because her race, the Na'vi, aren't placental mammals." Cameron is more precise than he probably means to be when he says that "makes no sense." When pressed further, Cameron says the female Na'vi have breasts "because this is a movie for human people." In other words, people — enough of them anyway — will pay to see breasts, so the breasts go in. But this "makes no sense": there is no point in interpreting it, because the salient fact is not that Cameron wanted them there but that he thought a lot of other people would want them there, and the wildly inconsistent ideology of the film is likewise composed of saleable ideologemes that together make no sense. This is not to say that all art commodities are similarly inconsistent: some audiences will pay for ideological or narrative or aesthetic consistency, so we have Michael Moore, middlebrow cinema, and independent film. But this consistency doesn't add up to a meaning, since what looks like meaning is only an appeal to a market niche.

This is of course a very old line, the one taken by Adorno in his work on the culture industry and radicalized in Jameson's thesis on postmodernism: Cameron's ideological mishmash is Jameson's "grab bag or lumber room of disjointed subsystems and raw materials and impulses of all kinds." "The economic" in these Marxist analyses is, for better and for worse, not so

much a question of distribution as it is of history: in the former case it is a matter of the increasing dominance of the market and in the latter case a matter of the closure of the market, which is to say its absolute dominance. The reason this might be interesting here is that this line can be translated into the terms of the present discussion: the late Marxist description of the distinction between artwork and art-commodity maps onto the Friedian description of the distinction between art and objecthood: the difference being simply that there is no internal contradiction in the avowed art-commodity's claim to objecthood. At this point, if nowhere else, the Fried-Michaels and Adorno-Jameson critiques of postmodernism (by whatever name) coincide.

But a difficulty arises if we take the Jamesonian analysis seriously. As we saw above, the artwork requires, to be an artwork, a certain distance from the market. Even if the artwork is ultimately a commodity, it cannot be produced as a commodity if it is to remain an artwork. There must be some mechanism of insulation from the market in order for meaning to be produced in the work, and the Jamesonian claim is that this insulation has disappeared. The moment of "real subsumption," to use a Marxian term of art, has arrived. That is, production processes, like the production of art, that were formerly only tributary to ("formally subsumed" under) capitalism as the dominant mode of production have become transformed into directly capitalist relations of production. Both Jamesonian and Friedian accounts of the history of form are roughly dialectical, assuming a tacit agreement among producers about what formal problem is central to a given medium. These accounts are then leapfrogging ones, in which each new work of art "solves" the problem by presenting it again in a new form. But this leapfrogging history also depends on upon a certain distance from the market. What is central is the problem to be addressed — a problem in which the general market has no interest — and all the old solutions are ruled out of bounds not because they are not nice to hang on a wall or to read, but because they have been absorbed into the game of producing new ones. Once market relations dominate all artistic production, as Jameson suggests, not only does meaning, even purely formal meaning or intention as such, become impossible, but a new kind of flat or null historicism becomes possible. All of the old "solutions," each one of which had been invalidated by subsequent solutions, suddenly become available for use. ("Objecthood" is also liberated at this same moment: the reaction of the spectator assumes importance as the formal problem confronted by the artist recedes). But if artworks can now make use of all the old styles (or become objects), it is not clear why one would call them artworks at all, since the art commodity, precisely because it was more interested in the appeal to a market (the effect on an audience) than on formal problems, was able to make use of the old styles (or be an object) all along.

Of course, this is the point. And there is nothing implausible about a scenario in which artworks as such disappear, to be entirely replaced by art commodities, and in which the study of artworks would have to be replaced with the study of reception, of desires legible in the market, and so on. And indeed there is a deeply egalitarian promise in such a scenario, precisely because the formal concerns addressed by artworks are in general the province of a few — in the absence of a strong public education system, are necessarily the province of a few. The problem is that this is the world neoliberalism claims we already live in and have always lived in, a world where everything is a market. The old vanguardist horizon of equivalence between art and life reverses meaning and becomes deeply conformist.

Under these conditions, the claim to aesthetic autonomy is, in itself, a political claim. (A minimal one, to be sure.) This was not always the case. In the modernist period, for example, the assertion of autonomy produces, as it does now, the space for a critical distance on the social. But there is no natural political valence to this distance, since modernism does not make its way under anything like the dominance of market ideology that we experience today. Modernism is hostile to the culture market, but all kinds of politics (Heidegger as much as Adorno) are hostile to the market. Modernist hostility to the market only acquires a definite valence when (both to arrive at the economic as such and to use a few more Marxist terms of art) the claim of the universality of the market is, as it is today, the primary ideological weapon wielded in the class violence that is the redistribution of wealth upwards. If the claim to autonomy is today a minimal political claim, it is not for all that a trivial one. A plausible claim to autonomy is in fact the precondition for any politics at all other than the politics of acquiescence to the dictates of the market. The redistribution of wealth upwards in the current conjuncture would be unthinkable without precisely this acquiescence: the entire ideology of neoliberalism hinges on the assertion that this redistribution is what the market both produces and requires as a precondition.

But how to make the claim to autonomy plausible? In fact, it is the claim to total heteronomy that is implausible. Even actual markets — and this was recognized in some of the precursors to neoliberal discourse — depend on a host of non-market actors and institutions. And the whole point of Bourdieu's discovery of the "restricted field" was to show how the valorization of cultural commodities depends on a complex set of non-market economies. If the old modernist autonomy has been revealed to be an aesthetic ideology, there is no reason to believe that the new heteronomy therefore represents the truth. Like modernist autonomy, it is a productive ideology: it frees artists to do something other than the old modernist games, and it allows them to work in the culture industry without facing the accusation of selling out, which now seems like an anachronistic accusation indeed. But that doesn't mean that aesthetic heteronomy corresponds to the actual state of affairs, though it must refer to something real

in order to be effective. And at any rate, it takes half a second to realize that both heteronomy and autonomy are, taken separately, deeply contradictory positions that could not be occupied by any actual cultural production worth talking about. Pure autonomy would have no interface with the world; pure heteronomy would be identical with the world. Rather, the question is: how and where is autonomy asserted, what are the mechanisms that make it possible? How, in short, does heteronomy produce or presume the autonomous?

I will suggest two answers, though of course both Fried and Jameson have their own solutions, with which readers will already be familiar. The first is what I will call, in search of a better term, positive historicism, as a necessary logical advance from null historicism or pastiche. As long as an artwork is making a claim to be an artwork, the very heteronomy proclaimed by historicism can only be the appearance of heteronomy. The "grab bag or lumber room" is only an apparent grab-bag or lumber-room; it is in fact governed by a principle of selection. If it is an actual grab bag or lumber room, it is the internet or an archive or simply everyday experience itself, and we don't need artists for those. So in this case the legible element of form, its meaning — the moment of intention, in the terms of the present discussion — is not so much in the formal reduction of an art into the problem of its medium as it is in the process of framing: in the selection a particular formal or thematic problem as central, and the rewriting of the history of the medium or genre or even socio-cultural aesthetic field as the history of that problem. Possibly because of the one-time dominance of the album form, this solution is most abundantly audible in popular music. (Meanwhile, in large-format photography, precisely because it does open up an entirely new arena to be formally reduced to the problem of medium, this solution is less urgent). One of the best examples in music is the Brazilian Tropicália movement, one of the first pastiche postmodernisms. But it becomes obvious almost immediately that Tropicália's "lumber room" is a national lumber room, and that the materials it cobbles together are only those materials that register formally what had been the thematic center of Brazilian modernism. Brazilian modernism had been concerned with the perverse coexistence of the archaic and the hypermodern typical of Brazil's insertion into the world economy as a relatively wealthy peripheral economy. Tropicália, in turn, will scour the cultural landscape for forms that embody that perverse coexistence: for example, slave culture electrified in *trio eléctrico* or submitted to modernist compositional technique in *bossa nova*. The same historicist solution can be seen in the U.S. in, for example, the project of the White Stripes, which was essentially a theory of rock in musical form, and Cee-Lo Green's latest album, which produces a history of that sliver of black music that for a time assumed a dominant presence in the mass market, from the girl groups of the early 1960s to Prince and Michael Jackson even Lionel Richie in the early 1980s.

A second possibility, which bears a family resemblance to the first but is closer in structure to Fried's version of the problem than to Jameson's, is the aestheticization of genre. In a recent discussion (not coincidentally, one in which Walter Benn Michaels also participated), David Simon points to genre fiction as the one place where stories other than the now-standard, character-driven, middle-to-highbrow family narratives can be reliably found. But why should genre fiction be a zone of autonomy? Isn't genre fiction the quintessential art commodity? In an interview, this time with Nick Hornby, Simon repeatedly says, in various ways, "Fuck the average reader." This is, of course, a completely modernist statement, an assertion of autonomy from the culture market. But how can someone who writes for TV possibly imagine himself autonomous from the culture market? Because a genre, already marketable or it wouldn't be a genre, is also governed by rules. The very thing that invalidates genre fiction in relation to modernist autonomy opens up a zone of autonomy within the heteronomous space of cultural commodities. The requirements are rigid enough to pose a problem, which can now be thought of as a formal problem like the problem of the two-dimensionality of the canvas or the pull of harmonic resolution. "Subverting the genre" means doing the genre better, just as every modernist painting had to assume the posture of sublating all the previous modernisms. Simon's only concession to the market is to the genre itself: Simon has to "solve the problem" of the police procedural — in other words, to produce a new way of satisfying the requirements of the genre — and he is free within that genre to use what narrative materials he likes. Ultimately, he is free to orient the entire work towards a plausible left project, namely a classically realist mapping of social space.

The assertion of autonomy implied in positive historicism, above, can lead to an attractive politics, as it does (not without ambivalence) in Tropicália, but it can also produce no legible politics at all beyond the minimal one entailed in the claim to autonomy (The White Stripes, Cee-Lo). Similarly, even when the aestheticization of genre doesn't lead to an obviously attractive politics, it does lead to better art, or rather to the possibility of art as such — a possibility which, I have tried to show, today itself entails a minimal politics. A time-travel narrative can only have one of two endings: either history can be changed, or it can't. So the problem of the time-travel flick is how to keep these two incompatible possibilities in play until the end, and if possible even beyond the end, so you can have a sequel. And James Cameron can, within this genre, make all kinds of intentional choices that can only be read as intentional choices, because they can only be understood as manipulations of a formal problem. And *Terminator II* can be a work of art, while *Avatar* is only an art commodity.

Todd Cronan writes:

The question remains how or why (artistic) autonomy is virtual. Is it because works are so compromised by their standing in the market that any autonomously inspired gesture will automatically find its fulfillment in commodity form? That's to put the bar on "free action" pretty high. If a Jackson Pollock or Morris Louis is not an instance of autonomy (and not a virtual model of it), what is? Clune characterizes or replays a position made popular in the 1920s by Mondrian and El Lissitzky–an alternately pessimistic and euphoric moment–wherein works of art were construed as "models" for living (or for the economy, see Malevich) and not the living itself (the "actual"). The risk this position holds, and it's a similar problem to the one I raise with Brown below, is to conceive a work as *devoid of risk*. What's the challenge, what's the difficulty, of imagining a work as a utopian model? The danger is always in succeeding in one's aim (the aim being, not having one) and therefore always failing.

Brown suggests that modernist autonomy was the pursuit of "critical distance on the social" and that autonomy is still a good thing if we're not to "acquiesce to the dictates of the market." That is, if our society were a bit more autonomously minded we would not capitulate so easily to neoliberal orthodoxies. Brown mainly wonders how autonomy can be possible (again) given the near total heteronomy by the market. For Brown, autonomy is a historicist question (market expansion makes it more difficult today than in the past) and bears a historicist answer (only a few options remain, but they're important to sustain).

Brown's analysis rests on the view that artworks and markets are not only at odds with one another but that this conflict generates the problem of autonomy to begin with. This is, of course, a guiding assumption in the work of Greenberg (early on, at least), Adorno and Jameson. That a work "cannot be produced as a commodity if it is to remain an artwork" assumes that a work is something defined by its negative relation to exchange. But if we assume this "dialectical" rule, the game is ceded in advance to historicism. The "subsumption" thesis and everything that follows from it—"market relations dominate all artistic production" as well as the idea there's a little space left for self-legislation—can only follow if we take it as a motivating factor of modernism that artists were defining their practices (consciously or not) against the market. Fried, for instance, makes no claim, as far as I can tell, about "what formal problem is central to a given medium" nor about the dialectical 'solving of artistic problems'—that's Greenberg and Fried sharply disagreed with him (and by extension, Adorno) on this very point. That's to say, there's no medium based problem that historically unfolds or (quasi)determines the moves from Chardin to Douglas Gordon. Brown's account assumes a historicist logic of modernist problem solving (as modes of attaining autonomy) and if we do assume that aim then it will indeed fail in advance—the expansion of capitalist markets will and have destroyed the sequence of naïve wishes to stay free of the market—and postmodernism, and limited responses to it, are the result.

The old medium-specific problems are all "absorbed" into the market (if artists assumed some externality to begin with) and a "flat or null historicism" emerges as the neoliberal dream/nightmare. And then finally there's some flicker of possibility—Brown's got two of them—left for those of us still with a pulse.

But what if autonomy is not a historical question, but a human one? One that might entail a kind of new pressure in the modern period, but that was a standing issue for Rousseau as it is for anyone today? What if it doesn't obey any specific logic (openings and closures, etc.), but constantly threatens action? That is, what if historicism is exactly another word for heteronomy—a (classical) way to defeat the burden of making decisions for oneself? And theatricality is another word for the way we make the world autonomous to our intentions.

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REVIEWS

ON CATHERINE MALABOU'S *WHAT SHOULD WE DO WITH OUR BRAIN?*

RUTH LEYS

In her book *What Should We Do with Our Brain?* (Fordham University Press, 2008) Catherine Malabou suggests that that we have not yet assimilated the revolutionary discoveries made in the neurosciences over the last fifty years. She shares with the French neurobiologist Pierre Changeux the idea that "neuronal man" has no consciousness of his brain, with the result that "we are still foreign to ourselves . . . 'We' have no idea who 'we' are, no idea what is inside 'us'" (3). Above all, we have failed to grasp the constitutive historicity of the brain, a historicity that is "really nothing other than its plasticity" (4). As she puts it: "*Our brain is plastic, and we do not know it*" (4). "What must we be conscious of (and not merely acquainted with) concerning brain plasticity? What is the nature of its meaning?" (9) Malabou asks, and replies: "We will respond, without playing on words, by saying that the consciousness we want to raise on the subject of plasticity has to do with its power to naturalize consciousness and meaning" (9).

Malabou's book thus has something in common with other recent attempts to naturalize contemporary politics and culture by linking them to the brain sciences. She also shares with many scholars a burgeoning interest in the phenomenon of the brain's plasticity. But what

does her argument amount to? This is what she says: There is a plasticity to the brain, which people have mistaken for "flexibility." The true potential of neuronal man has been missed because the neo-liberal world of global capitalism endorses the idea of a flexible, de-centered, networked, yet docile neuronal man. Neuroscientists such as Antonio Damasio, Joseph E. LeDoux and others are valuable because they have explained the nature of neuronal man. But they are also mistaken because, while accepting the fact of the brain's plasticity, they have misunderstood its potential for indeterminacy and creativity in the formation of the self by subordinating the fact of plasticity to the notion of flexible adaptation and biological survival. Above all, they have obfuscated the difficulty of theorizing the transition from the neuronal to the mental. The challenge for us is to accept the position of neuronal materialism without succumbing to a false reductionism and hence for us to find a way to think through the transformation of the brain's plasticity into the mental, into "freedom." The goal of Malabou's analysis is thus to show us how knowledge of the plasticity of the brain can help us realize our (or our brain's) potential for freedom and creativity. She suggests that to ask "What should we do with our brain?" is to "refuse to be flexible individuals who combine a permanent control of the self with a capacity to self-modify at the whim of fluxes, transfers, and exchanges, for fear of explosion" (78) and instead to "visualize the possibility of saying no to afflicting economic, political, and mediatic culture that celebrates only the triumph of flexibility, blessing obedient individuals who have no greater merit than that of knowing how to bow their heads with a smile" (79).

It is hard to assess Malabou's proposed solution to the mind-body problem, or to the problem of the transition from the neuronal to the mental, because it is offered as the merest sketch. Her way out appears to take the form of some sort of deconstructive move, though Derrida is not mentioned (Malabou previously co-authored a book with the philosopher). Her message seems to be that there is difference in the same and that this is good. There is difference in the same because there is always already the emergence and the disappearance of form, or the exposure of constancy to accident. Since according to Malabou this tendency to accident or change is ineluctable, we don't have to worry about bringing about self-transformations or alterations or resistance. As she states, "every form carries within itself its own contradiction" and "precisely this contradiction, makes transformation possible" (71). Or as she also puts it: "The word *plasticity* thus unfolds its meaning between sculptural molding and deflagration, which is to say explosion. From this perspective, to talk about the plasticity of the brain means to see in not only the creation of form but also an agency of disobedience to every constituted form, a refusal to submit to a model" (6).

In short, Malabou claims that recognizing that the neuronal self is structured by difference or contradiction can solve the problem of the transition from the neuronal to the mental. "The transition from the neuronal to the mental supposes negation and resistance," she writes. "There is no simple and limpid continuity from the one to the other, but rather transformation of the one into the other out of their mutual conflict. We must suppose that mental formation draws its being or identity from the neuronal, born of a sort of blank space that is the highly contradictory meeting point of nature and history"(72). (But do these words say anything? Don't they just repeat the mind-body problem by suggesting that the mental emerges from the neuronal, or culture from nature, by virtue of a kind of gap or aporia? For the question posed is: how does this transition or emergence occur?) Or as Malabou also puts it, "only an ontological explosion could permit the transition from one order to another, from one organization to another, from one given to another. The neuronal and the mental resist each other and themselves, and it is because of this that they can be linked to one another, precisely because—*contra* Damasio—they do not speak the same language" (72).

But this is almost laughable, we seem to be back to square one: the neuronal and the mental are—or "speak"– different languages. (And didn't the philosopher Paul Ricoeur say more or less the same thing some time ago in his debate with Changeux? Yet Malabou dismisses Ricoeur's position as "untenable" (82). I am not here defending Ricoeur, although it does seem to me that he repeatedly gets the better of Changeux in their exchange. I am only pointing out how little difference there seems to be in this regard between Malabou's position and that of Ricoeur.) [1]

Everything Malabou goes on to say about the formative effects of energetic discharges and creative bursts in the brain that "progressively transform nature into freedom" (74) or about explosions (or types of "plastique") that transform identity involves an appeal on her part to a metaphorics of the sort she deplores in the work of Damasio and others.

One of the most puzzling moments in Malabou's book is when she quotes the neuroscientist Marc Jeannerod to the effect that the "biological function" of intentional action is not to maintain constancy but to generate new properties (75). In the central nervous system, Malabou writes, "the formative contradiction—formation/explosion—proceeds from a more original contradiction: that between the maintenance of the system, or 'homeostasis,' and the ability to change the system or 'self-generation'" (74). She cites Jeannerod as stating in this regard that "'the biological function of intentional action ought . . . to be investigated, not as maintaining a constancy, but rather as generating new properties . . . [O]nly a structure capable of self-generated activity could impose its own organization. Intentional movement thus becomes the means by which the organism and the environment reciprocally interact, and by means of which the subject constructs its own representation of the real.'" To which

Malabou adds: "But this transition from 'homeostasis' to 'self-generation' is not made without rupture or gap" (75). It thus seems as if the very problem which is at the center of the mind/brain debate, namely, the nature of intentionality, is now being offered as the solution: the claim is that intentional agency just *is* the biological process that can produce the desired-for "gaps" or differences that characterize freedom.

NOTES

[1.] Jean-Pierre Changeux and Paul Ricoeur, *What Makes Us Think? A Neuroscientist and a Philosopher Argue About Ethics, Human Nature, and the Brain* (Princeton: Princeton University Press, 2000).

Ruth Leys is the Henry Wiesenfeld Professor of Humanities at the Humanities Center, Johns Hopkins and the author of *From Sympathy to Reflex: Marshall and His Critics* (Harvard, 1991), *Trauma: a Genealogy* (Chicago, 2000), *From Guilt to Shame: Auschwitz and After* (Princeton, 2007), and editor of *Defining American Psychology: The Correspondence Between Adolf Meyer and Edward Bradford Titchener* (Johns Hopkins, 1991). She is currently writing a book on the history of approaches to the affects from the 1960s to the present.

THE LABYRINTH OF INTERPRETATION: ON CATHY GERE'S *KNOSSOS AND THE PROPHETS OF MODERNISM*

MARNIN YOUNG

At the center of Picasso's *Guernica*, a woman's arm thrusts an illuminated candle over a screaming horse in the direction of a bull's head. Long recognized as a mirror-reversal of the artist's *Minotauromachy* etching of two years earlier, this compositional arrangement and its mythological reference at a certain point came to structure interpretations of this canonical representation of the horrors of war. Anthony Blunt, for one, sees the confrontation of Ariadne and the Minotaur in terms that resonate powerfully with the perceived significance of *Guernica*: "The exact meaning of every symbol may not be clear, but Picasso has rarely given such forceful expression to the general theme of the checking of evil and violence by truth and innocence."[1] Although the broad understanding of this theme has remained fairly consistent in readings of *Guernica*, the "exact meaning" of the bull's head, for instance, has sparked much dispute: on the one hand it has been interpreted as a symbol of fascism, on the other hand as

a symbol of the invincibility of the Spanish people. As early as 1939, Picasso dismissed such quibbling, stating, "The bull is a bull…It's up to the public to see what it wants to see." [2]

However disingenuous he might have been, the artist's stated insistence that the public could determine the meaning of the painting fits squarely within an anti-intentionalist hermeneutic tradition that is all too familiar to readers of this site. [3] The meaning of the bull, I think we agree, cannot be a meaning at all if the viewing public can just "see what it wants to see." Given his other statements on this problem—"I don't want there to be three or four or a thousand possibilities of interpreting *my* canvas. I want there to be only one…" [4]—Picasso should probably be understood here as simply dismissing reductive readings of his iconography. You're not understanding the painting at all, he seems to say, if you think it matters what the bull symbolizes. It strikes me, however, that the specific case of the bull's head in *Guernica* raises a key problem for any intentionalist account of a work's meaning. That problem is the public.

By deep convention, artworks are made to be beheld. Consequently they lack meaning outside a shared set of symbolic coordinates, for instance a language game or a mode of representation. As such, the interpretation of an artwork by its historical beholders can function as one key measure, although not an arbiter, of the meaning of that work—see Diderot on Chardin or Alfred Sensier on Manet's *Olympia*. To put it another way, an artist's address to a public, however narrowly defined, forms a necessary condition for the successful production of (intentional, meaningful) works of art. And yet, under certain historical circumstances, artists have faced the risk that political and economic agents would misconstrue their meanings—"the future that works of art envisage is…very often one of misuse and misunderstanding"—and one account of modernism sees the spiraling retreat from the public sphere as part of an attempt "to annihilate the very ground of misreading." [5] *Guernica* seems an exceptional case: it is a major modernist work clearly meant for a broad public, and its recent adaptation as an icon of anti-imperialist politics suggests that the reception and interpretation of the work is ongoing. Could Fallujah, for example, have been part of the meaning of *Guernica*? [6] It could if the public can "see what it wants to see." And even if we take the artist's intentions seriously, Picasso must certainly have imagined some kind of public—either when the work first appeared at the 1937 Exposition Internationale in Paris or sometime after—who could correctly interpret the painting. What are we to make, then, of the meaning of the bull's head, of Ariadne and the Minotaur, of the public's ability or inability to see what Picasso intended it to see?

Cathy Gere's recent book, *Knossos and The Prophets of Modernism* (University of Chicago Press, 2009), offers some new ways of thinking about this specific question and its broader implications. It is first of all an account of the explosion of different, complexly overlapping

adaptations of a certain phantasmatic interpretation of the historical and archaeological sites of ancient Crete. Beginning in 1900, Sir Arthur Evans oversaw the excavations of the palace of Knossos, and in various publications elaborated a new account of the Minoan world in which a peaceful island kingdom was ruled by goddess-worshipers. A pacifist and matriarchic utopia thus emerged into view at the very moment that Crete and the wider world became gripped by warfare and the domination of instrumental reason. What Gere unearths then is a genealogy of the modern understanding of Ariadne and the Minotaur, of Theseus, Minos, Pasiphae, Dionysus, Daedalus, and the labyrinth at Knossos. Evans concretized these old mythologies for a post-Nietzschean twentieth century. *Knossos and The Prophets of Modernism* demonstrates how this new history of ancient Crete entered into the work of such figures as Giorgio De Chirico, James Joyce, H.D., Sigmund Freud, Robert Graves, Henry Miller, and more recently the historians Henriette Groenewegen-Frankfort and Martin Bernal. Gere's account of Picasso takes up only three pages, but the logic of Ariadne as a symbol of peace (a pacifist if not a matriarch) crystallizes against the backdrop of a widespread embrace of the modernist myth of Knossos. Picasso's use of Cretan iconography in etchings and paintings is, according to Gere, "clearly indebted to Evans's excavations."[7] In this light she offers a variant on the iconographic reading of *Guernica*: "The imploring woman in the center of the mural who holds out a candle is the descendant of the Ariadnes of the earlier images—the feminine principle who might momentarily tame the Minotaur of human violence, but who can now do nothing but helplessly beseech the unstoppable forces hurtling the world toward war."[8]

Perhaps more interesting than this admittedly thin iconographic gloss is Gere's articulation of the wider ideological structures that enabled the widespread adaptation and transformation of the theme of the Cretan Labyrinth. That Knossos and its mythology could be recruited for anti-fascist cultural productions is not, for instance, arbitrary or coincidental. Evans's discovery of the peaceful rule of King Minos took form as a willful dialectical inversion of the slightly earlier and equally powerful myth of an Aryan warrior-society in Mycenaean Greece. Here and elsewhere Gere points out that the swastika itself entered proto-Nazi racial ideology only through archaeological discoveries from Bronze Age Greece presented by Heinrich Schliemann and others in the 1870s and 1880s.[9] For a certain generation in the late nineteenth century, the swastika stood first as a sign of the origins of European culture in Greece and only secondly as a marker of a racial lineage. In 1914, a Cambridge classicist even proposed "the swastika as the earliest ascertainable form of the [Cretan] Labyrinth."[10] Openly racist himself, Evans nonetheless reconstructed evidence of, among other things, the cultural dialogue and social mixing of Minoans with sub-Saharan Africans, successfully prying Crete apart from the supposed Aryan mainland. And yet, the conclusion Gere points to in her subtle and deeply researched analysis is that the pacifist myth of Knossos was not, in its

historical origins or methodological justification, any different from the Nazi myth of Aryan Greece.

At the core of *Knossos and The Prophets of Modernism* lies the problem of historical interpretation. The excavation and reconstruction of the palace at Knossos—paid for and overseen directly by Evans—unveiled extraordinary murals and colorful columns to the public. But as Gere makes clear, the palace was in fact rebuilt in modern concrete, the first such structure on the island. What at first glance appears to be the oldest monument on Crete, turns out to be one of its most modern. Similarly, modern artists simply reimagined many of the famous artworks in the palace taking small fragments of originals as their inspiration. Emile Gilliéron—De Chirico's onetime drawing instructor, astonishingly enough—oversaw these recreations and originated their stylistic template. Although not a recent revelation, all this comes as a something of a surprise to those outside the field, so influential is Evans's vision of ancient Crete. Nonetheless, visitors have long intuited the modernism of the paintings at Knossos. Evelyn Waugh, for one, thought Evans's team had "tempered their zeal for accurate reconstruction with a somewhat inappropriate predilection for covers of *Vogue*."[11] That Gilliéron's son, who collaborated on these projects, seems to have been implicated in forgeries of Cretan artifacts suggests a bizarre circularity between fakes and the "accurate" reconstructions based on those seemingly authentic works. All this calls into question Evans's overarching interpretation of Minoan culture. We now know that he failed to acknowledge evidence that contradicted his view, and no archaeologist today would be satisfied with the elaboration of whole worldviews out of small fragments of artworks and buildings. It comes as no surprise that the pacifist and matriarchic interpretation of Knossos has largely sunk from view.

As Gere demonstrates, however, Evans was by no means alone in his fanciful projections of modern aesthetics and ideologies onto the distant past. Indeed, she characterizes his endeavor in terms borrowed from an 1880 essay by Thomas Henry Huxley as "retrospective prophecy," an approach Carlo Ginzburg finds saturating the methods of the Victorian detective, the psychoanalyst, and the art historian, all of whom share a belief that the task of interpretation was (and is?) the reconstruction of an otherwise invisible image of the past through the collecting and filling in of fragmentary clues.[12] For Evans, rebuilding the entire palace of Knossos from its shattered remains presented no more problems than Morelli's attributing a painting to Botticelli based on a single ear. There is something distinctly modern about this synecdochic method, and the fact that in this case it seems to have got so much wrong does not, in itself, undermine its internal logic. Still, what Gere wants us to make of Evans and the method of "retrospective prophecy" never comes into sharp relief. She accepts the most recent archaeological skepticism about the early-twentieth-century view of ancient Crete, but

at the same time she revels in the rich afterlife of Evans's misreading to such an extent that the reader begins to lose touch with the problem of interpretation that the entire account lays out. Ultimately, this ambiguity flows, I think, from the nature of the problem Gere comes to diagnose.

At its core, *Knossos and the Prophets of Modernism* unveils a tension between a certain wild misreading and its fruitful re-use in a variety of cultural productions that followed. The tension is unsettling, not so much because the misreading undoes the richness of the art, but because the art remains rich despite or even because of the misreading. That Evans got the reading of Knossos wrong is one thing; that Picasso found a use for what he got wrong is quite another thing. The bull's head in *Guernica* might or might not be a Minotaur. It might or might not be a sign of "human violence." But for a public deeply saturated in the modernist fantasy of Knossos, the possibility that such interpretations might match the intentions of the artist seems less and less farfetched. The epistemologically flawed sometimes provides a frame for a self-contained cultural logic that functions perfectly well within it. The challenge, as *Knossos and the Prophets of Modernism* paradoxically sets it, is to spool out a historical interpretation that concretizes the difference.

NOTES

1. Anthony Blunt, *Picasso's Guernica* (Oxford: Oxford University Press, 1969), 25-26, as quoted in Cathy Gere, *Knossos and The Prophets of Modernism* (Chicago and London: The University of Chicago Press, 2009), 152.

2. Picasso, as quoted in Edward Kern, "Cry of Anger: *Guernica*," *Life*, 27 December 1968, 93. For more on the wide array of interpretations, see Ludwig Ullmann, *Picasso und der Krieg* (Bielefeld: Karl Kerber, 1993), 146-47.

3. See Todd Cronan, "Paul Valéry's Blood Meridian, Or How the Reader became a Writer," *Nonsite.org* 1 (January 2011), http://nonsite.org/issue-1/paul-valery-from-author-to-audience

4. Picasso, as quoted in ibid.

5. T.J. Clark, *Farewell to an Idea: Episodes from a History of Modernism* (New Haven and London: Yale University Press, 1999), 305. Here Clark evokes Mikhail Bakhtin's claim for the social nature of discourse. See M.M. Bakhtin, "Discourse in the Novel" (1934-35), *The Dialogical Imagination*, ed. Michael Holquist (Austin: University of Texas Press, 1981), 259-422.

6. See Pepe Escobar, "From Guernica to Fallujah," *Asia Times*, 2 December 2004, http://www.atimes.com/atimes/Middle_East/FL02Ak02.html; Jonathan Steele and Darh Jamail, "This is Our *Guernica*: Ruined, cordoned Falluja is emerging as the decade's monument to brutality," *The Guardian* (UK), 27 April 2005, http://www.guardian.co.uk/world/2005/apr/27/iraq.iraq5; and, Christopher Hitchens, "Abu Ghraib isn't Guernica," *Slate.com*, 9 May 2005, http://www.slate.com/id/2118306/.

7. Gere, *Knossos*, 151.

8. Ibid., 153.

9. See Gere, *The Tomb of Agamemnon* (Cambridge, MA: Harvard University Press, 2006).

10. Arthur Bernard Cook, *Zeus: A Study in Ancient Religion* (Cambridge: Cambridge University Press, 1914), 478, as quoted in Gere, *Knossos*, 46.

11. Evelyn Waugh, *Labels: A Mediterranean Journal* (London: Duckworth, 1930), 136-37, as quoted in Gere, Knossos, 149.

12. Thomas Henry Huxley, "The Method of Zadig: Retrospective Prophecy as a Function of Science," *Collected Essays, Volume Four: Science and the Hebrew Tradition* (London: Macmillan, 1898), 6, as cited in Gere, *Knossos*, 8. See also Carlo Ginzburg, "Morelli, Freud, Holmes: Clues and Scientific Method," *History Workshop* 9 (Spring 1980): 5-36.

Marnin Young is assistant professor of art history at Stern College for Women of Yeshiva University. He has published articles and reviews on nineteenth-century painting and contemporary photography in journals such as *The Art Bulletin*, *Nineteenth-Century Art Worldwide: A Journal of Nineteenth-Century Visual Culture*, and *Afterimage: The Journal of Media Arts and Cultural Criticism*. He is presently completing a book to be titled *Against Impressionism: Later Realism and the Politics of Time, 1878-1882*.

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ISSN 2164-1668