

that the truth lies not in one or the other attempt, but in the movement that passes indefatigably from one to the other. One must refuse neither the vertigo of distance nor that of proximity; one must desire that double excess where the look is always near to losing all its powers.⁵²

It is, let me end these introductory remarks by emphasizing, such a willingness to risk this loss that ultimately empowers the intellectual historian to enter the discursive field itself in a critical way. How successful the present effort will be in this regard remains, of course, very much to be seen.

52. Ibid.

CHAPTER ONE

The Noblest of the Senses: Vision from Plato to Descartes

Except among heretics, all Western metaphysics has been peephole metaphysics. . . . As through the crenels of a parapet, the subject gazes upon a black sky in which the star of the idea, or of Being, is said to rise.

THEODOR W. ADORNO¹

The eyes are the organic prototype of philosophy. Their enigma is that they not only can see but are also able to see themselves seeing. This gives them a prominence among the body's cognitive organs. A good part of philosophical thinking is actually only eye reflex, eye dialectic, seeing-oneseelf-see.

PETER SLOTERDIJK²

All the management of our lives depends on the senses, and since that of sight is the most comprehensive and the noblest of these, there is no doubt that the inventions which serve to augment its power are among the most useful that there can be.

RENÉ DESCARTES³

"Clearly outlined, brightly and uniformly illuminated, men and things stand out in a realm where everything is visible; and not less clear—wholly expressed, orderly even in their ardor—are the feelings and thoughts of the persons involved."⁴ So Erich Auerbach described the world of Homeric Greece in the celebrated opening chapter, "Odysseus' Scar," of his classic study of literary realism, *Mimesis*. In the dominant reading of Greek culture that has so influenced the West, this assumption of the Hellenic affinity for the visible has enjoyed widespread popularity. Hans Blumenberg, for example, expresses a typical judgment when he

1. Theodor W. Adorno, *Negative Dialectics*, trans. E. B. Ashton (New York, 1973), pp. 139–140.
2. Peter Sloterdijk, *Critique of Cynical Reason*, trans. Michael Eldred (Minneapolis, 1987), p. 145.
3. René Descartes, *Discourse on Method, Optics, Geometry, and Meteorology*, trans. Paul J. Olscamp (Indianapolis, 1965), p. 65.
4. Erich Auerbach, *Mimesis: The Representation of Reality in Western Literature*, trans. Willard R. Trask (Princeton, 1953), p. 2.

writes, "The light in which the landscape and things that surrounded the life of the Greeks stood gave to everything a clarity and (in terms of optics alone) unquestionable presence that left room for doubt regarding the accessibility of nature to man only late and only as a result of thought's experience with itself."⁵ Although there have been dissenting voices—William Ivins's was the most persistent⁶—it is generally agreed that classical Greece privileged sight over the other senses, a judgment lent special

5. Hans Blumenberg, *The Legitimacy of the Modern World*, trans. Robert M. Wallace (Cambridge, Mass., 1983), p. 243.

6. William M. Ivins, Jr., *Art and Geometry: A Study in Space Intuitions* (Cambridge, Mass., 1946), which says the Greeks were more tactile than visual. Ivins's argument is based on the claim that vision is inherently relational, relativist, and continuous, moving as it does through a process of gradual transitions from focused attention to peripheral inattention. Touch, in contrast, is based on the immediate, discontinuous, unrelational contact with the discrete objects it can grasp in the here and now. It lacks, so Ivins contends, the capacity to deal with duration or becoming and fails to get a full "picture" of the whole. Greek art, he then argues, was itself cold, static, and lacking in any sense of history or development. Greek geometry was also based on touch, as shown by its metrical bias, which derived from what could be measured by hand. As such, it lacked a true sense of perspective with a converging vanishing point at infinity, believing instead with Euclid that parallel lines never converge. Ivins attempts to clinch his argument that the Greeks were more tactile than visual by noting Plato's hostility to sight and speculating that this negative attitude toward the mimetic arts was due to their failure to deal satisfactorily with becoming and growth.

Although Ivins's point about tactile versus visual qualities in geometry is suggestive, his general argument is unconvincing. First, vision is just as likely to lead to a frozen and static appropriation of the world as touch; in fact, we will see that many commentators damn it precisely for that reason. Second, touch can certainly give the experience of continuity over time through an exploration of a surface. Although, to be sure, it is far less capable than vision of giving a sense of the whole with which it comes into contact, such a synoptic view is more likely to lead to a synchronic denial of becoming than touch's probing movement. Nor is touch as foreign to relational, interactional experience as Ivins assumes. What, after all, is the meaning of the lovers' caress? His characterization of Plato's hostility to sight depends on a very restricted notion of vision. In fact, whatever hostility Plato did harbor against sensual vision was directed at precisely what Ivins claims vision cannot do, but Plato thought it could: register becoming. For Plato, becoming was the realm of illusion.

weight by the contrast often posited with its more verbally oriented Hebraic competitor.⁷

There is, in fact, ample warrant for this generalization in Greek art, religion, and philosophy. Even linguistic evidence has been adduced to show that the scattered verbs employed during the Homeric period to designate aspects of visual practice coalesced into only a few during the classical era, suggesting an essentializing of vision itself.⁸ The Greek gods were visibly manifest to humankind, which was encouraged to depict them in plastic form. They were also conceived as avid spectators of human actions, as well as willing to provide the occasional spectacle themselves. The perfection of idealized visible form in the Greeks' art accorded well with their love of theatrical performance. The word *theater*, as has often been remarked, shares the same root as the word *theory*, *theoria*, which meant to look at attentively, to behold.⁹ So too does theorem, which has allowed some commentators to emphasize the privileging of vision in Greek mathematics, with its geometric emphasis.¹⁰ The importance of optics in Greek science has also been adduced to illustrate its partiality for sight. Even the Greek idealization of the nude body, in con-

For all of these reasons, Ivins's argument about the Greek attitude toward vision has not become the dominant view, although it is not without influence. See, for example, William Kuhns, *The Post-Industrial Prophets: Interpretations of Technology* (New York, 1971), p. 130; and Walter J. Ong, *The Presence of the World: Some Prolegomena for Cultural and Religious History* (New Haven, 1967), p. 4.

7. See Thorlief Boman, *Hebrew Thought Compared with Greek* (Philadelphia, 1954); and Susan A. Handelman, *The Slayers of Moses: The Emergence of Rabbinic Interpretation in Modern Literary Theory* (Albany, N.Y., 1982).

8. Bruno Snell, *The Discovery of the Mind: The Greek Origins of European Thought*, trans. T. G. Rosenmeyer (Oxford, 1953), p. 4.

9. For a history of the word, see David Michael Levin, *The Opening of Vision: Nihilism and the Postmodern Situation* (New York, 1987), pp. 99f.

10. Abel Rey, *La science dans l'antiquité*, 5 vols. (Paris, 1930–1948), esp. vol. 2, pp. 445f, and vol. 3, pp. 17, 389. It can, however, be argued that the importance of proofs in Greek geometry involved a shift from the purely visual to propositional language instead.

trast with the Hebrew stress on clothing, has seemed consonant with a bias for visual clarity and transparency.¹¹

But nowhere has the visual seemed so dominant as in that remarkable Greek invention called philosophy. Here the contemplation of the visible heavens, praised by Anaxagoras as the means to human fulfillment,¹² was extended to become the philosophical wonder at all that was on view. Truth, it was assumed, could be as "naked" as the undraped body. "Knowledge (*eidenai*) is the state of having seen," Bruno Snell notes of Greek epistemology, "and the *Nous* is the mind in its capacity as an absorber of images."¹³

In a seminal essay entitled "The Nobility of Sight," Hans Jonas has outlined the implications of this visual bias both for Greek thought and for the subsequent history of Western philosophy.¹⁴ Because of their favoring vision, a number of its apparent inclinations influenced Greek thinking. Sight, he contends, is preeminently the sense of simultaneity, capable of surveying a wide visual field at one moment. Intrinsically less temporal than other senses such as hearing or touch, it thus tends to elevate static Being over dynamic Becoming, fixed essences over ephemeral appearances. Greek philosophy from Parmenides through Plato accordingly emphasized an unchanging and eternal presence. "The very contrast between eternity and temporality," Jonas claims, "rests upon an idealization of 'present' experienced visually as the holder of stable contents as against the fleeting succession of nonvisual sensation."¹⁵ Zeno's paradox, which so perplexed Greek thought, shows how beholden it was to a

detemporalized notion of reality (a central target, as we will see, of the French antiocularcentric discourse that began with Bergson's critique of Zeno). Greek science, which was crowned by optics, was also incapable of dealing successfully with motion, in particular with the problem of acceleration.¹⁶ Its understanding of vision was itself basically reduced to the geometry of light rays in Euclidean terms.

Jonas's second contention is that the externality of sight allows the observer to avoid direct engagement with the object of his gaze. Thus, the very distinction between subject and object and the belief in the neutral apprehension of the latter by the former, a distinction so crucial for much later thought, was abetted by the ocularcentrism of Greek thought. "The gain," Jonas writes, "is the concept of objectivity, of the thing as it is in itself as distinct from the thing as it affects me, and from this distinction arises the whole idea of *theoria* and theoretical truth."¹⁷ Perhaps lost by this "dynamic neutralization," as Jonas calls it, is a clear sense of causality, because the constitutive link between subject and object is suppressed or forgotten.

Finally, the advantage given sight in the apprehension of great distances, Jonas claims, had several consequences. The Greek idea of infinity was encouraged by contemplating the vast reach of our ocular range.¹⁸ So too the pull of the eye into a distant landscape seemed to grant the viewer the all-important "prospective" capacity for foreknowledge, which was the premise of instrumental and adaptive behavior. Because the Greeks often depicted their seers as blind (Tiresias, for example) and had their oracles deliver verbal rather than pictorial predictions, it would be problematic to contend that they always "saw" the future. But if seeing the open landscape in front of one provided a spatial experience of appre-

11. Mario Perniola, "Between Clothing and Nudity," in *Fragments for a History of the Human Body*, part 2, ed. Michel Feher with Ramona Naddaff and Nadia Tazi (New York, 1989), p. 238.

12. For a discussion of the Greek contemplation of the skies, see Hans Blumenberg, *The Genesis of the Copernican World*, trans. Robert M. Wallace (Cambridge, 1987).

13. Snell, p. 198.

14. Hans Jonas, "The Nobility of Sight: A Study in the Phenomenology of the Senses," in *The Phenomenon of Life: Toward a Philosophical Biology* (Chicago, 1982).

15. *Ibid.*, p. 145.

16. For a discussion of later attempts to set it right, see Amos Funkenstein, *Theology and the Scientific Imagination from the Middle Ages to the Seventeenth Century* (Princeton, 1986), pp. 165f.

17. Jonas, p. 147.

18. In contrast, Ivins in *Art and Geometry* claims that because of their tactile bias, the Greeks never "made use in proof of the idea of infinity" (p. 50).

hending what was likely to come next, foresight could be and was translated into temporal terms as well.

To these arguments, other commentators like Eric Havelock and Rudolf Arnheim have added that visual primacy helps account for the Greek penchant for abstraction, its awareness of the dialectic of permanence and change, and even the general supplanting of Mythos by Logos in classical thought.¹⁹ Once the battle against Sophism, which defended rhetoric and the ear, was won, Greek philosophy could elevate a visually defined notion of disinterested, monologic, epistemic truth over mere opinion or *doxa*. Although the Sophist alternative was never entirely forgotten—indeed it lingers in the very form of Plato's dialogues—its reputation remained low until figures like Lorenzo Valla and Giambattista Vico revived it many centuries later.

The importance of sight is evident throughout Plato's writings. In the *Timaeus*, for example, he distinguished between the creation of the sense of sight, which he grouped with the creation of human intelligence and the soul, and that of the other senses, which he placed with man's material being.²⁰ For Plato, truth was embodied in the *Eidos* or Idea, which was like a visible form blanched of its color.²¹ The human eye, he contended, is able to perceive light because it shares a like quality with the source of light, the sun. Here a similar analogy holds between the intellect, which he called "the eye of the mind," and the highest form, the Good. Although at times he was uncertain of our ability to look directly at the sun (or the Good),²² in *The Republic*, Plato claimed that the just man can indeed face it squarely and "is able to see what is, not by reflections in water or by fantasies of it in some alien abode, but in and by itself in its own place."²³

19. Eric Havelock, *A Preface to Plato* (Oxford, 1963); Rudolf Arnheim, *Visual Thinking* (Berkeley, 1969).

20. Plato, *Timaeus*, 61d–68e.

21. For a discussion of Plato's elevation of form over color, see Havelock, p. 274.

22. Plato, *Phaedo*, 99e.

23. Plato, *The Republic*, 516b.

A closer examination of Plato's celebration of sight will, however, correct too one-dimensional an assessment of Greek ocularcentrism. For in his philosophy, "vision" seems to have meant only that of the inner eye of the mind; in fact, Plato often expressed severe reservations about the reliability of the two eyes of normal perception. We see *through* the eyes, he insisted, not *with* them. The celebrated myth of the cave, in which the fire is substituted for the sun as the source of a light too blinding to be faced directly, suggests his suspicions of the illusions of sense perception. Ultimately, the prisoners in the cave do escape and find their way into the world, where after an initial dazzlement they can face the sun. But their normal sense perception in the cave is of the fleeting and imperfect shadows cast on its wall. Whatever the implications of this founding myth of Western culture—and we will later encounter criticisms of it by antivisual French feminists like Luce Irigaray—it is clear that it demonstrates Plato's uncertainty about the value of actual sense perception, including vision.

From this distrust followed Plato's notorious hostility to the mimetic arts—most notably painting, which he banned from his utopian state in *The Republic*.²⁴ Theater was equally suspect for its fictitious simulation of true action.²⁵ Of all the arts, only music with its mathematical rather than imitative relationship to the higher realm of forms (a relationship grounded for Plato in Pythagoras's discovery of the numerical nature of musical intervals) was not dangerously deceptive. Thus, the Plato who tells us in the *Timaeus* that vision is humanity's greatest gift²⁶ also warns us against the illusions of our imperfect eyes. True philosophers, he insists, are not mere "sight-seers," advice taken very much to heart by later thinkers like Democritus, who was said to have blinded himself in order to "see" with his intellect.

Although one can certainly find a more positive attitude toward the

24. For a general discussion of Plato's hostility to mimetic art, see Iris Murdoch, *The Fire and the Sun: Why Plato Banished the Artists* (Oxford, 1977).

25. For an account of Plato's criticism of the theater, see Jonas Barish, *The Anti-Theatrical Prejudice* (Berkeley, 1981).

26. Plato, *Timaeus*, 47b.

actual eyes in Greek philosophy, most notably in Aristotle's defense of induction and the power of sight to discriminate among more pieces of information than any other sense,²⁷ it is thus apparent that Greek culture was not as univocally inclined toward celebrating vision as may appear at first glance. Indeed, a certain anxiety about vision's malevolent power is expressed in many of the central Greek myths, most notably those of Narcissus, Orpheus, and Medusa.²⁸ And the all-seeing Argus, nicknamed Panoptes, is ultimately undone by Pan, whose enchanting music lulls him to sleep.²⁹ The very appearance of the Gods in anthropomorphic images was, in fact, called into question by one critic, the sixth-century B.C. philosopher Xenophanes. The frequent existence of apotropaic amulets and other devices to disarm the evil eye (which the Greeks called the *baskanos ophthalmos*) also suggests how widespread the fear of being seen existed here as elsewhere.³⁰

And yet, having thus demonstrated that the Greek celebration of sight was more equivocal than is sometimes claimed, it must still be acknowledged that Hellenic thought did on the whole privilege the visual over any other sense. Even in its negative guises, its power was evident. Indeed, it might be argued that the very ambiguities that we've noted in Plato's thought were instrumental in elevating the status of the visual in Western

27. Aristotle's considerations of vision appear most notably in *De Anima* and the *Metaphysics*. For an account, see John I. Beare, *Greek Theories of Elementary Cognition from Alcmaeon to Aristotle* (Oxford, 1906). For a history of the reception of his famous dictum that "nothing is in the intellect which was not first in the senses," see P. Cranfield, "On the Origins of the Phrase *Nihil est in intellectu quod non prius fuerit in sensu*," *Journal of the History of Medicine*, 25 (1970).

28. For a suggestive interpretation of their significance, see Hartmut Böhme, "Sinne und Blick. Variationen zur mythopoetischen Geschichte des Subjekts," in *Konkursbuch*, vol. 13 (Tübingen, 1984).

29. For a suggestive analysis of the implications of this struggle, see Michel Serres, "Panoptic Theory," in *The Limits of Theory*, ed. Thomas M. Kavanagh (Stanford, Calif., 1989).

30. For a discussion of Greek apotropaic reactions to the evil eye, see Albert M. Potts, *The World's Eye* (Lexington, Ky., 1982), chap. 4.

culture. For if vision could be construed as either the allegedly pure sight of perfect and immobile forms with "the eye of the mind" or as the impure but immediately experienced sight of the actual two eyes, when one of these alternatives was under attack, the other could be raised in its place. In either case, something called vision could still be accounted the noblest of the senses. As we will note in the case of Cartesian philosophy, it was precisely this creative ambiguity that lay at the origins of modern ocularcentrism.

It was an ambiguity that also had a correlate in the way light itself was conceptualized for a long time in Western thought. Light could be understood according to the model of geometric rays that Greek optics had privileged, those straight lines studied by catoptrics (the science of reflection) or dioptrics (the science of refraction). Here perfect linear form was seen as the essence of illumination, and it existed whether perceived by the human eye or not. Light in this sense became known as *lumen*.³¹ An alternative version of light, known as *lux*, emphasized instead the actual experience of human sight. Here color, shadow, and movement was accounted as important as form and outline, if not more so. In the history of painting, as well as optics, these two models of light vied for prominence.

This dual concept of light nicely complemented the dual concept of vision, even if they weren't perfectly congruent. What might be called the alternating traditions of *speculation* with the eye of the mind and *observation* with the two eyes of the body provided fertile ground for the varieties of ocularcentrism that have so deeply penetrated Western culture. In fact, if we divide them further, we can discern still other opportunities for privileging the visual. Speculation can be construed as the rational perception of clear and distinct forms with the unclouded eye of the mind or as the irrational and ecstatic dazzlement by the blinding light of God, the "vision" of the seer. Here a metaphysics of light could turn into a full-

31. For an account of the *lux/lumen* distinction, see Vasco Ronchi, *Optics: The Science of Vision*, trans. Edward Rosen (New York, 1957), chap. 1.

fledged mysticism of light.³² Observation could be understood as the unmediated assimilation of stimuli from without, the collapse of perception into pure sensation. Or it could be construed as a more complicated interaction of sensations and the shaping or judging capacity of the mind, which provided the Gestalt-like structures that made observation more than a purely passive phenomenon. And within these broad categories, many differentiated variants could proliferate. In all of them, however, something called sight was accorded a fundamental place in our knowledge of the world.

If the Greek ambiguities about speculation and observation and the two types of light created opportunities for ocularcentrism to take root, so too did the complicated relationship between the eye and its object implicit in the idea of *theoria*. As already noted, commentators like Jonas have emphasized the distancing function of sight in creating the subject/object dualism so typical of Greek and later Western metaphysics. A closer examination of what the Greeks meant by theory suggests a second possible inference that might be drawn. If Plato argued that the eye and the sun are composed of like substances, and the Greeks believed that the eye transmitted as well as received light rays (the theory of extramission), then there was a certain participatory dimension in the visual process, a potential intertwining of viewer and viewed.³³

32. See Hans Blumenberg, "Licht als Metapher der Wahrheit," *Studium Generale*, 10 (1953), p. 434, where he denies the existence of a light mysticism in Plato, calling it instead a light metaphysics.

33. According to Böhme (p. 29), this communion-oriented notion of vision was especially evident in pre-Socratic thought. Support for this interpretation comes from F. M. Cornford, *From Religion to Philosophy: A Study in the Origins of Western Speculation* (New York, 1957). He notes that the Orphic version of *theoria* involved emotional involvement, whereas its Pythagorean replacement did not (pp. 198f.). In another sense as well, *theoria* seems to have suggested more than the isolated gaze of a subject at an object. According to Wlad Godzich, the word designates a plural collective of public figures, who as a group provided certain knowledge for the *polis*. As such, *theoria* was the opposite of the individual perception known as *aesthesis*. See Godzich, "Foreword: The Tiger on the Paper Mat," in Paul de Man, *The Resistance to Theory* (Minneapolis, 1985), p. xiv.

Mindful of this possibility, Hans-Georg Gadamer has in fact contended that *theoria* was not as completely disengaged and spectatorial as was more modern scientific epistemology. Instead, it contained a moment of "sacral communion" beyond mere disinterested contemplation. "Theoria," he argues, "is a true sharing, not something active, but something passive (pathos), namely being totally involved in and carried away by what one sees. It is from this point that people have tried recently to explain the religious background of the Greek idea of reason."³⁴ Residues of such reciprocity in the notion of theory may well in fact have persisted until the late Middle Ages, when belief in extramission was finally laid to rest.

From this beginning—which led in a different direction from the more spectatorial tradition stressed by Jonas—arose an especially important strain in the tradition of speculation, which was to be a particular target of the antivisual discourse in twentieth-century France. That strain we might call the argument for specular sameness. The Latin *speculatio*—along with *contemplatio*, the translation of *theoria*—contained within it the same root as *speculum* and *specular*, which designate mirroring.³⁵ Rather than implying the distance between subject and object, the specular tradition in this sense tended to collapse them. As Rodolphe Gasché has argued in *The Tain of the Mirror*, the reflection of the *speculum* was potentially an absolute one.³⁶ That is, speculation could mean the pure knowledge of self-reflection, a mirror reflecting only itself with

34. Hans-Georg Gadamer, *Truth and Method* (New York, 1975), p. 111.

35. It was Cicero who seems to have derived *speculatio* from *specularis*, which may have been a mistake. See Rodolphe Gasché, *The Tain of the Mirror: Derrida and the Philosophy of Reflection* (Cambridge, Mass., 1986), p. 43. If wrong, it was nonetheless a very suggestive etymology.

36. Gasché, p. 54, where he contends that "unlike reflection, which, as a function of understanding, perpetuates division and absolutely fixed opposition, absolute reflection, or speculation, deliberately pursues a totalizing goal." Interestingly, Nietzsche claimed that mirrors defeat the ideal of specular sameness. In aphorism 243 of *Daybreak*, he wrote, "When we try to examine the mirror in itself we discover in the end nothing but things upon it. If we want to grasp the things we finally get hold of

no remainder. Later in medieval Christianity, the materiality of the human mirror, or the mirror of creation, as it was known, could be subordinated to the divine mirror in which only perfect truth was reflected. Dante in the *Paradiso* was able to describe his journey as a transition from the *speculum inferius* of man (the glass through which we see only darkly) to the *speculum superius* of heavenly illumination.³⁷ And in the great speculative philosophies of the modern era, most notably nineteenth-century German Idealism, speculation as self-reflection was given a secular expression. As Gasché notes, this process was designed to reveal the same amidst all apparent diversity.

Speculative thought is grounded in this reflecting mirroring of what is positively in opposition. It coincides with the reciprocal mirroring and unification of the conflicting poles. The mirroring that constitutes speculative thought articulates the diverse, and the contradictions that exist between its elements, in such a way as to exhibit the totality of which this diversity is a part. Speculation, then, is the movement that constitutes the most complete unity, the ultimate foundation of all possible diversity, opposition, and contradiction.³⁸

In short, the faith in the nobility of sight bequeathed to Western culture by the Greeks had many, often contrary implications. It could mean the spectatorial distancing of subject and object or the self-reflective mirroring of the same in a higher unity without material remainder (the mirror's tain in Gasché's metaphor). It could mean the absolute purity of geometric and linear form apparent to the eye of the mind or it could mean the uncertain play of shadow and color evident to the actual senses.

nothing but the mirror.—This, in the most general terms, is the history of knowledge." *Daybreak: Thoughts on the Prejudices of Morality*, trans. R. J. Hollingdale (Cambridge, 1982), p. 141. I am indebted to Allan Megill for drawing my attention to this passage.

37. For a discussion of mirrors in Dante, see James L. Miller, "The Mirrors of Dante's *Paradiso*," *University of Toronto Quarterly*, 46 (1977).

38. Gasché, p. 44.

It could mean the search for divine illumination or the Promethean wresting of fire from the gods for human usage. And it could mean the contest for power between the Medusan gaze and its apotropaic antidote (a contrast with gender implications occluded until recent feminist critiques made them explicit).³⁹

One final point needs emphasizing before we leave the classical world. The Greek privileging of vision meant more than relegating the other senses to subordinate positions; it could also lead to the denigration of language in several respects. Outside of the often maligned tradition of Sophism, language was deemed inferior to sight as the royal road to the truth. It was the realm, as we have noted, of mere *doxa* (opinion) instead. Rhetoric was thus banished from genuine philosophy. Even when the Greeks discussed verbal phenomena like metaphors, they tended to reduce them to transparent figures, likenesses that were mimetic resemblances, not the interplay of sameness and difference. "To produce a good metaphor," Aristotle claimed in his *Poetics*, "is to see a likeness."⁴⁰

Not surprisingly, when recent French commentators on metaphor examined their Greek predecessors, they condemned precisely this Hellenic inclination toward pure specularity.⁴¹ Other contributors to antiocularcentric discourse made similar accusations against the specular implications of Greek tragedy, claiming that it recuperated indigestible horror in a theatrical economy of the same.⁴² Greek metaphysics and Greek poetics, they charged, were at one in their oculo-centric bias. If the Jews could begin their most heartfelt prayer, "Hear, O Israel," the Greek philosophers were in effect urging, "See, O Hellas."

39. On the links between femininity, vision, and Greek epistemology, see Genevieve Lloyd, *The Man of Reason: "Male" and "Female" in Western Philosophy* (Minneapolis, 1984), pp. 2f.

40. Aristotle, *Poetics*, 1459a, 7–8.

41. Jacques Derrida, "White Mythology: Metaphor in the Text," in *Margins of Philosophy*, trans. Alan Bass (Chicago, 1982); and Paul Ricoeur, *The Rule of Metaphor* (Toronto, 1978). For a helpful summary of their arguments, see Handelman, pp. 15f.

42. Philippe Lacoue-Labarthe, *La césure de spéculatif* (Paris, 1978). He contends that the key link between tragedy and speculative thought is mimesis (p. 195).

Western culture has often seemed like a struggle to respond to one or the other of these two injunctions, even if, as we have argued, the opposition can be too starkly drawn. One of the major battlefields of that contest was medieval Christianity. This is certainly not the place to rehearse in detail the history of the Christian attitude toward vision or the complex intertwining of Hellenic and Hebraic impulses in that history. But it will be necessary to spend some time with it, if only to caution against a widely influential but oversimplified version that has had special importance in France. Its perpetrators are Lucien Febvre and Robert Mandrou, two of the most distinguished historians of the late medieval, early modern period, both of them luminaries of the celebrated *Annales* school.

In his much-admired study of *The Problem of Unbelief in the Sixteenth Century*, Febvre argues,

The sixteenth century did not see first: it heard and smelled, it sniffed the air and caught sounds. It was only later, as the seventeenth century was approaching, that it seriously and actively became engaged in geometry, focusing attention on the world of forms with Kepler (1571–1630) and Desargues of Lyon (1593–1662). It was then that vision was unleashed in the world of science as it was in the world of physical sensations, and the world of beauty as well.⁴³

In his *Introduction to Modern France, 1500–1640*, Mandrou makes a similar assertion: “The hierarchy [of the senses] was not the same [as in the twentieth century] because the eye, which rules today, found itself in third place, behind hearing and touch, and far after them. The eye that

43. Lucien Febvre, *The Problem of Unbelief in the Sixteenth Century: The Religion of Rabelais*, trans. Beatrice Gortlieb (Cambridge, Mass., 1982), p. 432. Although I will be taking issue with his argument about the medieval hierarchy of the senses, I do not want to leave the impression that this work is unimportant. To the contrary, it was among the first attempts to take seriously the challenging task of writing a history of the senses. For an appropriate acknowledgment by one of the more recent practitioners of this genre, see Alain Corbin, *Le miasme et la jonquille: L'odorat et l'imaginaire social 18^e–19^e siècles* (Paris, 1982), pp. ii and 271, where he also praises Mandrou.

organizes, classifies and orders was not the favored organ of a time that preferred hearing.”⁴⁴ To buttress his argument, Mandrou adduces the Lutheran recourse to the Hebraic tradition of privileging the ear and analyzes the poetry of Pierre de Ronsard, Joachim Du Bellay, and Daniel Marot to the same effect. He concludes, “Until at least the eighteenth century, touch remained therefore the master sense; it tests, confirms what sight could only perceive. It assures perception, gives solidity to the impressions provided by the other senses that do not present the same security.”⁴⁵

In addition to a certain waffling about what the master sense of the early modern era actually was—hearing or touch—these generalizations are based on only a smattering of evidence. Nonetheless, they have enjoyed widespread currency. Roland Barthes, for example, reports in his essay on the Counter-Reformation theologian and founder of the Jesuit order Ignatius Loyola that “in the Middle Ages, historians tell us, the most refined sense, the perceptive sense *par excellence*, the one that established the richest contact with the world was hearing: sight came in only third, after touch. Then we have a reversal: the eye becomes the prime organ of perception (Baroque, art of the thing seen, attests to it).”⁴⁶ Many other commentators, English-speaking as well as French, echo this appraisal of the antivisual Middle Ages.⁴⁷

In all these cases, there is an assumed contrast, sometimes explicitly stated, sometimes not, between medieval and modern visual cultures.

44. Robert Mandrou, *Introduction à la France moderne 1500–1640: Essai de Psychologie historique* (Paris, 1974), p. 76. Still another defense of this argument can be found in José Antonio Maravall, “La concepción dá saber en una sociedad tradicional,” in *Estudios de historia del pensamiento español*, ser. 1: *Edad Media*, 2d ed. (Madrid, 1973).

45. *Ibid.*, p. 79.

46. Roland Barthes, *Sade, Fourier, Loyola*, trans. Richard Miller (New York, 1976), p. 65.

47. See, for example, Donald M. Lowe, *History of Bourgeois Perception* (Chicago, 1982), p. 24; and Ian Hacking, *Why Does Language Matter to Philosophy?* (Cambridge, 1975), p. 32.

There is much to be said for emphasizing the ocularcentrism of modern Europe, although, as we will see, not for homogenizing its manifestations. It would be a mistake, however, to contrast it too rigidly to an ocularphobic Middle Ages. For medieval Christian culture was not as hostile to the eye as Febvre and Mandrou—on rather thin evidence—suggest.

Its Hellenic and Hebraic impulses, if we want to stay with that typology, were often in an uneasy balance. One of the major differences between Judaism and Christianity, after all, was the latter's faith in the corporeal incarnation of the divine in human form, which meant that the Mosaic taboo against graven images could easily be called into question.⁴⁸ In its place, there arose a very non-Jewish belief in the visible sacraments and the visible church. This tendency culminated in the late medieval practice of elevating the consecrated host for all worshipers to see.⁴⁹ Although the earliest Church fathers like Origen, Tertullian, and Clement of Alexandria distrusted the pagan residues in images and feared an overly anthropomorphic notion of the holy, their successors soon recognized the power of sight in making the Christian story available to the hoards of new believers from non-Jewish backgrounds. As early as the Hellenization of Christian doctrine begun by the converted Jew Philo of Alexandria in the first century, biblical references to hearing were systematically transformed into ones referring to sight.⁵⁰ The Gospel of Saint John had said that "God is Light," and medieval thinkers like the Pseudo Dionysius took the expression literally. "By the fourth century," the theologian Margaret Miles has recently argued, "there is abundant evidence of the importance of vision in worship."⁵¹ Churches built by the converted

48. For recent accounts of the medieval Christian struggle over images, see Margaret R. Miles, *Image as Insight: Visual Understanding in Western Christianity and Secular Culture* (Boston, 1985); John Phillips, *The Reformation of Images: Destruction of Art in England, 1535–1660* (Berkeley, 1973), chap. 1; and Leo Braudy, *The Frenzy of Renown: Fame and Its History* (New York, 1986), chap. 4.

49. For a discussion of its implications and the reaction against it, see Heather Phillips, "John Wyclif and the Optics of the Eucharist," in *From Ockham to Wyclif*, ed. Anne Hudson and Michael Wilks (Oxford, 1987).

50. For a discussion see Hans Blumenberg, *The Legitimacy of the Modern Age*, p. 286.

emperor Constantine were filled with light, a residue of his earlier cult of the sun.

The neo-Platonic strain in medieval thought meant that the contrast between a higher *lumen* and an inferior *lux* was often redescribed in religious terms. Even a critic of ocular desire like Augustine still staunchly defended the higher light of God in which the pious man would ultimately stand bathed. "Thanks be to you, O Lord," he came to say near the end of the *Confessions*, "for all that we see!"⁵² In his thirteenth-century treatise *De Luce*, Robert Grosseteste developed a complicated ocular metaphysics in which a divine primal light was contrasted to a lesser visible light available to human perception.⁵³ The distinctions between superior and inferior mirrors mentioned earlier paralleled this dichotomy.

The symbolic importance of the *speculum sine macula* became particularly keen with the spread of the Virgin's cult in the twelfth century. The positive value accorded to mirrors was so great that manuals for devotion were sometimes called specula because they were assumed to reflect the truth. Christian theologians in fact often resorted to the mirror to solve their most troubling questions: Why did a perfect God descend into an imperfect world of matter? How could He love a creature less perfect than Himself? According to Paul Zweig,

The image of the mirror, and the corresponding vision of God's generosity as an act of self-delight, allowed these questions to be answered. God came down into the world as into a mirror. He

51. Miles, *Image as Insight*, p. 5.

52. Saint Augustine, *Confessions*, trans. R. S. Pine-Coffin (London, 1983), chap. 13, p. 343. The neo-Platonic residues in Augustine's thought have occasioned widespread discussion. For recent reassessments of their importance for the question of sight, which he understood as the intermingling of rays from and to the eye, see Margaret Miles, "Vision: The Eye of the Body and the Eye of the Mind in Saint Augustine's *De trinitate* and *Confessions*," *The Journal of Religion*, 63, 2 (April, 1983); and Georges Didi-Huberman, "Le paradoxe de l'être à voir," *L'Écrit du temps*, 17 (Winter, 1988), pp. 79–91.

53. Robert Grosseteste, *On Light (De Luce)*, trans. Clare C. Riedl (Milwaukee, 1942).

came down in order to possess an image of His own divinity. And He will allow man to be "saved," in order to save that fragment of His image captured in the divine soul.⁵⁴

Here the power of specular sameness, which we have noted earlier, was given an ingenious twist: human salvation was but a device for the self-reflection of God.

In more secular terms, vision was also of great significance for medieval thought, especially when Aristotelian respect for the senses was restored in the thirteenth century. If optics had been one of the most developed of the Greek sciences, it continued to have pride of place among their medieval successors. The fourth-century translation of the first half of Plato's *Timaeus* by Chalcidius meant that most medieval theories of optics were strongly Platonic with overlays of Euclid's geometry and Galen's physiology of the eye. The story of the progress made in understanding how vision actually works, a story told in detail by Vasco Ronchi and David Lindberg,⁵⁵ shows how important the advances of medieval thinkers like Roger Bacon, John Peacham, John Dee, and especially the Islamic thinkers Al-Kindi and Alhazen were in preparing Kepler's great synthesis of the seventeenth century. Although the way to that achievement had to be cleared by dropping certain misconceptions from the Greek heritage, such as the alleged transmission of "visible species" from the object to the eye,⁵⁶ the continuities between the Hellenic science of optics and its me-

dieval successors cannot be underestimated. As Lindberg has put it, "all early natural philosophers acknowledged that vision is man's most noble and dependable sense, and the struggle to understand its workings occupied large numbers of scholars for some two thousand years."⁵⁷ The importance of this struggle in Christian culture has, in fact, led another commentator to argue that the fundamentally iconic basis of modern science itself can be traced to the privileging of vision in medieval thought.⁵⁸ Faith in beatific vision led to a belief, expressed by William of Ockham among others, in intellectual cognition based on intuition (from the Latin *intueri*, "to look at"), which still remained potent in the innate idea doctrine of Descartes.⁵⁹

In addition to the theological and scientific emphasis on sight, medieval religious practice also bore witness to its importance. The visionary tradition—based in part on a theatricalized interpretation of the injunction to imitate God (*imitatio Dei*) and in part on the neo-Platonic search for the colorless "white ecstasy" of divine illumination⁶⁰—had numerous

Response to Ockham's and Aureol's Epistemology (1320–1340)," in *English Logic in Italy in the 14th and 15th Centuries*, ed. Alfonso Maierù (Naples, 1982); and *Vision and Certitude in the Age of Ockham: Optics, Epistemology and the Foundations of Semantics 1250–1345* (Leiden, 1988).

57. Lindberg, p. x. Tachau also notes with reference to the fourteenth century, "The prototypical sense was vision, and the prototypical formulation of this process [cognition as the abstraction from sense experience] was achieved by thinkers concerned specifically with explaining vision, namely, the perspectivists" ("The Problem of *Species in Medio*," p. 395). The perspectivists, it should be noted, included figures like Roger Bacon, John Peacham, and Witelo; only later did the term come to mean the Albertian model of vision rather than optics per se.

58. Steven Louis Goldman, "On the Interpretation of Symbols and the Christian Origins of Modern Science," *The Journal of Religion*, 62, 1 (January, 1982). He explicitly contrasts medieval Christian attitudes with those of Jewish thinkers of the period, who subordinated the visual imagination to discursive reasoning.

59. For an account of its importance, see Funkenstein, *Theology and the Scientific Imagination*, pp. 139, 185–186, 294.

60. The injunction to imitate God was, however, not exclusively mimetic in visual terms, but could also mean imitating His likeness in the more metaphorical sense of doing His work. See the discussion in W. J. T. Mitchell, *Iconology: Image, Text, Ideol-*

54. Paul Zweig, *The Heresy of Self-Love* (Princeton, 1980), p. 30. For other accounts of the medieval fascination with mirrors, see Benjamin Goldberg, *The Mirror and Man* (Charlottesville, Va., 1985), chaps. 6 and 7; and Herbert Grabes, *The Movable Glass: Mirror-Imagery in Titles and Texts of the Middle Ages and the English Renaissance*, trans. Gordon Collier (Cambridge, 1982).

55. Vasco Ronchi, *Optics: The Science of Vision*, trans. Edward Rosen (New York, 1957); David C. Lindberg, *Theories of Vision from Al-Kindi to Kepler* (Chicago, 1976).

56. Normally, William of Ockham is credited with ending belief in "visible species." For a nuanced account of its stubborn persistence in the years after his efforts to undermine it, see Katherine H. Tachau, "The Problem of *Species in Medio* at Oxford in the Generation after Ockham," *Mediaeval Studies*, 44 (1982), pp. 394–443; "The

adepts, such as Meister Eckhardt.⁶¹ In the *Divine Comedy*, Dante spoke of *abbaglio*, "the dazzling glare of paradise, which like the sun could only be stared at by a 'novella vista.'"⁶² Here the goal was often an unmediated vision of the divine without the interference of textuality. One can contend that such religious virtuosi were always a small minority, but their existence could allow later observers like Nietzsche to sarcastically characterize medieval humanity's highest aspirations in ocular terms. "Throughout the whole Middle Ages," he wrote in *Daybreak*, "the actual and decisive sign of the highest humanity was that one was capable of visions—that is to say, of a profound mental disturbance! And the objective of medieval prescriptions for the life of all higher natures (the *religiosi*) was at bottom to make one capable of visions!"⁶³ Indeed, the subtle refinement of visionary techniques continued up to and well beyond the dawn of the modern era, as shown by such works as Nicholas of Cusa's *On God's Vision* of 1413.⁶⁴

For less exalted souls, the medieval Church also knew the power of visual stimulation. As Frances Yates has shown, the classical art of memory invented by Simonides, elaborated by Cicero and other rhetoricians, and important as late as the Renaissance, relied preeminently on visual aids, such as wheels, ladders, and theatrical plans.⁶⁵ During the High Middle Ages, even the Scholastics, with their penchant for abstract rea-

soning and general distrust of "mere" metaphor, granted sight an important role. Thomas Aquinas, who called it the "*sensus magis cognoscitivus*" in his *Summa*,⁶⁶ defended the use of images by distinguishing between a good iconolatri and a bad idolatry. The former correctly venerated images, whereas the latter wrongly worshiped them.⁶⁷ In a society still overwhelmingly unable to read, the veneration of images was a useful tool in educating the faithful, as Gregory the Great recognized when he called statues "the books of the illiterate." The widespread use of stained glass, bas-reliefs, frescoes, altarpieces, wooden carvings, and so on, to tell biblical stories and to illuminate—often literally—the lives of saints and martyrs shows how popular it was.⁶⁸ So too does the visual spectacle of mystery plays designed to awaken devotion in the unlettered.⁶⁹ If we add the brilliant light suffusing the great Gothic cathedrals (a light whose metaphysical importance was stressed from the Abbot Suger on),⁷⁰ the cult of visual relics, and finally the vivid illumination of manuscripts, we can appreciate the vital role played by vision in the culture Febvre and Mandrou claim was more dependent on hearing or touch.

It has in fact been argued by Jacques Ellul that a great burst of idolatrous ocularcentrism came upon the Church in the fourteenth century in response to the crisis produced by the Avignon papacy and the Great

ogy (Chicago, 1986), pp. 31–36. The concept of "white ecstasy" seems to have been derived from the pure light that is not passed through a prism to produce the separate colors. For a recent meditation on its importance, see Michel de Certeau, "Extase blanche," *Traverse*, 29 (October, 1983).

61. For a discussion of Eckhardt's views, see Samuel Y. Edgerton, Jr., *The Renaissance Rediscovery of Linear Perspective* (New York, 1975), p. 60.

62. Claudio Guillén, *Literature as System: Essays Towards the Theory of Literary History* (Princeton, 1971), p. 286.

63. Friedrich Nietzsche, *Daybreak*, trans. R. J. Hollingdale (Cambridge, 1982), p. 68.

64. For an arresting examination of vision in Nicholas of Cusa, see Michel de Certeau, "Nicholas de Cues: Le secret d'un regard," *Traverses*, 30–31 (March, 1984), pp. 70–84.

65. Frances A. Yates, *The Art of Memory* (Chicago, 1966). Interestingly, after these devices were rendered otiose by the invention of printing, they lingered in occult circles, such as Rosicrucianism, where seeing with the "third eye" was popular.

66. Thomas Aquinas, *Summa Theologiae*, I, 84, 2c, cited in Ong, p. 140.

67. For a discussion of the implications of the distinction, see Phillips, *The Reformation of Images*, p. 15. See also Michael Camille, *The Gothic Idol: Ideology and Image-making in Medieval Art* (Cambridge, 1989).

68. Ong claims (p. 51) that medieval glass was really more decorative than information-bearing, but gives no conclusive proof that this was the intention of the cathedral builders.

69. For a discussion of the mystery plays, see Rosemary Woolf, *The English Mystery Plays* (Berkeley, 1972).

70. For treatments of the metaphysics of light behind the construction of the cathedrals, see Otto von Simson, *The Gothic Cathedral* (London, 1956); and Erwin Panofsky, *Gothic Architecture and Scholasticism* (New York, 1967).

Schism. Following Georges Duby, he claims that the contest for the allegiance of the illiterate masses meant the unfortunate decision to resort to sensual seduction:

During this period we see the profusion of images—of all images—and the cataclysmic appearance of visualization's effect on the people. Precisely when the Church is involved in its worst crisis, it falls back with all its weight on its institutionality, which it magnifies, and on the utterly idolatrous image utilized for every end.⁷¹

Whether or not Ellul's deeply antivisual account of the Church's fall into idolatry is accepted, it is clear that medieval Christendom was often intoxicated by what it saw. In fact, it is only the intensity of the ocular temptation that can explain the periodic rise of iconophobic movements in the Church: the Byzantine emperor Leo Isaurian's iconoclastic campaign in the eighth century, St. Bernard's Cistercian retreat from the abundance of images in the Clunian order in the thirteenth century, John Wyclif and the English Lollards' debunking of visual spectacle in the fourteenth century, and finally the Protestant Reformation itself.

Although Martin Luther's followers were not above using visual aids such as cartoons and caricatures in their propaganda campaigns against the Church,⁷² the Reformation tended to collapse the difference between iconolatry and idolatry, condemning them alike. As William Bouwsma has shown in the case of John Calvin, a virulent hostility to what was

71. Jacques Ellul, *The Humiliation of the Word*, trans. Joyce Main Hanks (Grand Rapids, Mich., 1985), p. 186. See also Georges Duby, *The Age of the Cathedrals: Art and Society, 980–1420*, trans. Eleanor Levieux and Barbara Thomson (Chicago, 1981). According to Margaret Miles, such attitudes betray an elitist hostility to the unlettered masses, and particularly women. See *Image as Insight*, p. 38. The cults of the Virgin and Mary Magdalene were often presented in visual form.

72. See R. W. Scribner, *For the Sake of Simple Folk: Popular Propaganda for the German Reformation* (Cambridge, 1981). In general, the German branch of the Reformation tended to be less programmatically iconophobic, which allowed artists like Dürer and Cranach to use the new print culture to good effect.

perceived as the hypertrophy of the visual was a key motivation in his return to the literal word of Scripture.⁷³ Physical blindness, Calvin contended, was spiritually valuable because it forced one to listen to the voice of God. A similar attitude permeated the English Reformation, whose desecration (or what its defenders would have called purification) of churches began with Henry VIII's dissolution of the monasteries and culminated in the Puritans' smashing of images of all kinds, which paralleled their hostility to the spectacle of the Mass and the illusions of the theatrical stage.⁷⁴

Ironically, if we concentrate our attention on the iconophobic impulse of the Reformation and note as well the renewed interest in the sophistic arts of rhetoric and the recovery of classical texts in the Renaissance, it may well seem, contra Febvre and Mandrou, that vision was on the wane with the eclipse of the medieval world.⁷⁵ This reversed generalization, however, would be no more satisfactory than the one it replaces, for the Reformation helped spawn the Counter-Reformation, which was closely tied to a deeply visual baroque culture. And the Renaissance, for all its distrust of the medieval fetish of images (Erasmus, for example, played a role in their debunking),⁷⁶ was by no means predominantly suspicious of the visual. Indeed, its naturalist aesthetics, as David Summers has recently shown, were strongly dependent on a faith in the value of optical experi-

73. William J. Bouwsma, "Calvin and the Renaissance Crisis of Knowing," *Calvin Theological Journal*, 17, 2 (November, 1982), pp. 190–211.

74. The best account of the English iconoclasts is Phillips, *The Reformation of Images*, which shows how the Puritans were prepared by a long-simmering tradition of hostility. Barish, however, makes the astute observation that "Puritan repugnance to the visible and the tangible matters of faith did not prevent their clinging fiercely to it in matters of dress" (p. 166), for they were staunch supporters of sumptuary laws. It also should be noted that Dutch Calvinists were never as virulently iconoclastic as their English and Swiss counterparts, which helps explain the vital tradition of painting in Holland during the years of Calvinist hegemony.

75. The Renaissance Humanists were, to be sure, not as hostile to the eye as the Protestant Reformers. See Charles Trinkaus, *Likeness and Image: Humanity and Divinity in Italian Humanist Thought* (Chicago, 1973).

76. Phillips, pp. 35f.

ence.⁷⁷ Not only did Renaissance literature abound in ocular references,⁷⁸ not only did its science produce the first silvered glass-mirror able to reproduce the world with far greater fidelity than before,⁷⁹ not only did some of its greatest figures like Leonardo da Vinci explicitly privilege the eye over the ear,⁸⁰ but also the Renaissance saw one of the most fateful innovations in Western culture: the theoretical and practical development of perspective in the visual arts, an epochal achievement whose importance we will examine shortly.

If one had to summarize the contribution of the medieval and early modern struggle over the proper role of the visual in the preparation of the modern ocularcentric culture that followed, three points should be stressed. First, the medieval metaphysics of light, in large measure a religious adaptation of Platonic residues, kept alive the assumption that vision was indeed the noblest of the senses, despite its potential for deception and the arousal of lascivious thoughts. Second, the lengthy dispute over the idolatrous implications of that metaphysics and the Church's visual practices led to a new awareness of the difference between representation and fetishism, the distinction Aquinas made between a venerating iconolatry and a worshiping idolatry. This in turn helped prepare the way for what might be called the secular autonomization of the visual as a realm unto itself. The early modern separation of the visual from the textual completed this differentiation, which was crucial in the preparation of the scientific worldview. It also made possible the liberation of art from

77. David Summers, *The Judgment of Sense: Renaissance Naturalism and the Rise of Aesthetics* (Cambridge, 1987).

78. Shakespeare, for example, revels in visual metaphors and references. For a recent account, see Joel Fineman, *Shakespeare's Perjured Eye: The Invention of Poetic Subjectivity in the Sonnets* (Berkeley, 1986). The great utopias of the Renaissance, Campanella's *City of the Sun*, and Andrea's *Christianopolis*, also abound in them, and could be used as well as occult memory systems based on sight. See Yates, *The Art of Memory*, pp. 377-378.

79. See Goldberg, chap. 8.

80. Leonardo da Vinci, *Treatise on Painting*, trans. A. Philip McMahon, 2 vols. (Princeton, 1956), vol. 1, p. 23.

the sacred tasks to which it had previously been bound. As John Phillips has noted, "the arts went their separate ways from religion because in great part Protestantism no longer really desired the assistance of visual aids in teaching the mysteries of faith."⁸¹

But, and this is the third general conclusion, if vision was relieved of its sacred function and allowed to pursue its own developmental path, the lessons that had been learned about its persuasive capabilities were never lost. In fact, they were immediately reapplied for political and social purposes. Whether or not these were enlightening or obscurantist is a question that is still heatedly debated. What can be said with some assurance, however, is that vision, aided by new technologies, became the dominant sense in the modern world, even as it came to serve new masters.

However, domination did not mean uniformity. Because of the multiple and often conflicting implications of these epochal transformations, the modern era emerged with a much more complicated attitude toward vision than is often assumed. As Jacqueline Rose has recently reminded us, "our previous history is not the petrified block of a singular visual space since, looked at obliquely, it can always be seen to contain its moment of unease."⁸² That moment was largely perpetuated by the subterranean presence of what can be called the baroque ocular regime as the uncanny double of what we might call the dominant scientific or "rationalized" visual order (itself, as we will see, not fully homogeneous). Because much more time will be needed to explicate the latter, let us detour chronology and begin with a brief account of the former.

Baroque culture emerged in ways too complicated to spell out now in connection with the Catholic church's response to the challenge of Protestantism, the scientific revolution, and the explorations of the seven-

81. Phillips, p. 209.

82. Jacqueline Rose, *Sexuality in the Field of Vision* (London, 1986), pp. 232-233. As Peter de Bolla has suggested, the repeated affirmation of perspectival theory in eighteenth-century England implies that it was being tacitly challenged in practice. See his discussion in *The Discourse of the Sublime: History, Aesthetics and the Subject* (Oxford, 1989), chap. 8.

teenth century.⁸³ It also accompanied and abetted the rise of the absolutist state. Rejecting the Reformation's suspicion of vision and its trust only in the unmediated word of God, the baroque Church, after a moment of hesitation,⁸⁴ self-consciously resorted to sensual seduction in order to win back the masses (having already been somewhat successful in this endeavor in the fourteenth century). The unabashed naturalism first evident in Michelangelo da Caravaggio's stunning rejection of jejune Mannerist decoration was harnessed for spiritual ends. Whether the secular was transcendentalized or vice versa remains a point of contention. Whatever the religious implications, the aggrandizement of the eye was clearly encouraged. As Roland Barthes remarked in his essay on Ignatius Loyola, "We know that to these mistrustings of the image Ignatius responded with a radical imperialism of the image."⁸⁵

This imperialism was not confined to religious propaganda, but appeared as well in the theatricalized splendor of the baroque court throughout Catholic Europe in the sixteenth and seventeenth centuries. The link between art and power, first systematically exploited in the Renaissance city-states and royal courts with their tournaments, fêtes, princely entries, firework displays, masques and water spectacles, reached new heights in the baroque.⁸⁶ According to the Spanish historian, José Antonio Maravall, its seductive use of spectacle was a deliberate ploy in a power struggle with disruptive social forces; in fact, he goes so far as to call it the first example of a cynical festering of mass culture by an authoritarian, centralizing state

83. For standard accounts, see John Rupert Martin, *Baroque* (New York, 1977); and Germain Bazin, *The Baroque: Principles, Styles, Modes, Themes* (London, 1968).

84. Martin notes that the Mannerism still in vogue immediately following the Council of Trent did not exploit heightened naturalist emotion for religious ends. Only in the late sixteenth century did the baroque come to dominate Catholic ecclesiastical and devotional art (p. 100).

85. Barthes, p. 66.

86. For accounts of their origins in the Renaissance, see Stephen Orgel, *The Illusion of Power: Political Theater in the English Renaissance* (Berkeley, 1975); Roy Strong, *Art and Power: Renaissance Festivals 1450-1650* (Woodbridge, Suffolk, England, 1984); and Christopher Pye, *The Regal Phantasm: Shakespeare and the Politics of Spectacle* (London, 1990).

for politically repressive purposes.⁸⁷ In the no less baroque Hapsburg Empire, it was not until the Reform Catholicism of Maria Theresa's reign (1740-1780) that critics of idolatrous popular devotion like Ludovico Antonio Muratori were able to turn the tide against visual seduction in favor of literate understanding.⁸⁸

A far more positive reading of baroque visual culture has appeared in the recent works of the French philosopher Christine Buci-Glucksmann, *La raison baroque*, *La folie du voir*, and *Tragique de l'ombre*, which celebrate the disorienting, ecstatic, dazzling implications of the age's visual practices.⁸⁹ For Buci-Glucksmann, herself espousing many of the anti-ocularcentric discourse's conclusions, it is precisely the baroque's subversion of the dominant visual order of scientific reason that makes it so attractive in our postmodern age.⁹⁰ Anti-Platonic in its disparagement of lucid clarity and essential form, baroque vision celebrated instead the confusing interplay of form and chaos, surface and depth, transparency and obscurity. Sensitive to the interpenetration of the discursive and the figural—for example, in richly decorated emblem books—it registered an awareness of the impurities of both that was greatly in advance of its time. Resistant to any totalizing vision from above, the baroque explored what Buci-Glucksmann calls "the madness of vision,"⁹¹ the overloading

87. José Antonio Maravall, *Culture of the Baroque: Analysis of a Historical Structure*, trans. Terry Cochran (Minneapolis, 1986). He also argues that it was essentially a bourgeois phenomenon, despite its ambivalence toward nationalization (p. 63).

88. See James Van Horn Melton, *Absolutism and the Eighteenth-Century Origins of Compulsory Schooling in Prussia and Austria* (Cambridge, 1988), chap. 3.

89. Christine Buci-Glucksmann, *La raison baroque: De Baudelaire à Benjamin* (Paris, 1984); *La folie du voir: De l'esthétique baroque* (Paris, 1986); and *Tragique de l'ombre: Shakespeare et le maniérisme* (Paris, 1990).

90. Here she differs radically from commentators like Martin, who connects the visually realistic dimension of the baroque with the scientific advances of the period (pp. 65f).

91. The term was first used by Maurice Merleau-Ponty in *The Visible and the Invisible*, ed. Claude Lefort, trans. Alphonse Lingis (Evanston, Ill., 1968), p. 75. It is also the subject of an essay by Michel de Certeau on Merleau-Ponty in *Esprit*, 66 (June, 1982), pp. 89-99, entitled "La folie de la vision."

of the visual apparatus with a surplus of images in a plurality of spatial planes. As a result, it dazzles and distorts rather than presents a clear and tranquil perspective on the truth of the external world. Seeking to represent the unrepresentable, and of necessity failing in this quest, baroque vision sublimely expresses the melancholy so characteristic of the period—that intertwining of death and desire trenchantly explored by Walter Benjamin.⁹²

Significantly, the typical mirror of the baroque was not the flat reflecting mirror, which is often seen as vital to the development of rationalized perspective,⁹³ but rather the anamorphic mirror, either concave or convex, that distorts the visual image.⁹⁴ Anamorphosis, from the Greek *ana* (again) and *morphe* (form), also allows the spectator to reform a distorted picture by use of a nonplanar mirror. First developed by Leonardo in 1485 and popularized by Père Nicéron's *La Perspective curieuse* in the early seventeenth century, such pictures were widely admired well into the eighteenth century. The most often remarked is Hans Holbein's *The Ambassadors* of 1533. A distorted skull lies at the feet of the sumptuously dressed figures staring out from the canvas, a reminder of an alternative visual order the solidity of their presence cannot efface, as well as the vanity of believing in the lasting reality of earthly perception. By combining two visual orders in one planar space, Holbein subverted and de-centered the unified subject of vision painstakingly constructed by the dominant scopic regime.

Anamorphic painting was virtually forgotten except as a curiosity after the eighteenth century, only to be recovered by several contributors to the antiocularcentric discourse that is the subject of this study. Both Jacques Lacan and Jean-François Lyotard pondered its importance and, in fact, each reproduced the Holbein skull on the covers of one of his books.⁹⁵

92. Walter Benjamin, *Origin of German Tragic Drama*, trans. John Osborne (London, 1977).

93. Edgerton, p. 134.

94. For a history of anamorphosis, see Fred Leeman, *Hidden Images: Games of Perception, Anamorphosistic Art and Illusions from the Renaissance to the Present*, trans. Ellyn Childs Allison and Margaret L. Kaplan (New York, 1976).

Here the pioneering efforts of Jurgis Baltrušaitis, a Latvian living in France, in rescuing the anamorphic tradition were crucial.⁹⁶ Thus, we might say that the discourse we will explore in this book is, at least on one level, a recovery of a subordinate, heterodox, and virtually obliterated visual practice—that of the baroque—from the initial moment of the modern era. Its later recovery may appear at times “antivisual” only because the dominant ocular regime of that era was so powerful and pervasive that it came to be identified with vision *per se*.

The arrival of that dominant regime was prepared by a constellation of social, political, aesthetic, and technical innovations in the early modern era, which combined to produce what has in retrospect been called “the rationalization of sight.”⁹⁷ One of its sources was apparently the increasingly formalized and distant social space of the courtly societies of the era. In his account of the “civilizing process,”⁹⁸ the sociologist Norbert Elias has argued that the elaborate courtly rituals of display devised to mark the articulations of social hierarchy led to a devaluation of the more intimate senses of smell and touch in favor of a more remote vision. The political function of courtly spectacle, already alluded to in the case of the Spanish baroque described by Maravall, reached its crescendo in the Versailles of the Sun King, Louis XIV. As Jean-Marie Apostolidès has argued, the Apollonian splendor of Louis's court was soon transformed into a more

95. Jacques Lacan, *Le séminaire XI: Les quatre concepts fondamentaux de la psychanalyse* (Paris, 1973), not on the cover of the English translation; and Jean-François Lyotard, *Discours, Figure* (Paris, 1971). Lacan's fascination with the baroque is also shown in his “Du baroque,” *Encore, le séminaire XX* (Paris, 1975), where he defines it as “the regulation of the soul by the corporeal gaze [*scopie corporelle*]” (p. 105).

96. Jurgis Baltrušaitis, *Anamorphoses: Ou Thaumaturgus Opticus* (Paris, 1984).

97. William W. Ivins, Jr., *On the Rationalization of Sight: With an Examination of Three Renaissance Texts on Perspective* (New York, 1973). For the rationalizers themselves, however, there was less an awareness of change than a belief in the discovery of an already inherent rational system. As Joel Snyder has noted, “For Alberti, there can be no issue that involves the ‘rationalization’ of vision, because what we see is established by rational processes.” See his “Picturing Vision,” *Critical Inquiry*, 6, 3 (Spring, 1980), p. 523.

98. Norbert Elias, *The Civilizing Process*, trans. E. Jephcott (New York, 1973), p. 203.

mechanical apparatus in which the power of the visual to control behavior was depersonalized:

The image of the king, the image of his double body, invented at the time of courtly festivals, will detach itself from the private person and will function in an autonomous way. The machinist king is then succeeded by a king-machine whose unique body is confused with the machine of the State. At the end of the reign, the king's place becomes an empty space, susceptible of being occupied by anyone possessing the effective reality of power.⁹⁹

It is, however, still a space assumed to be at the center of a vast network of visual channels through which the subjects are perpetually on view (a theme Foucault will elaborate in terms of a still later and more efficacious technology of surveillance).

The increased reliance on visually defined behavior in social and political terms reinforced that autonomization of the visual from the religious mentioned earlier. In the Middle Ages, as we have seen, there was a rough balance between textuality and figurality with occasional oscillations in one direction or another. As Norman Bryson has argued with reference to the great stained-glass windows of Canterbury Cathedral, their visual splendor was always in the service of the narratives they were meant to illustrate:

The window displays a marked intolerance of any claim on behalf of the image to independent life. Each of its details corresponds to a rigorous programme of religious instruction. . . . Images are permitted, but only on the condition that they fulfil the office of communicating the Word to the unlettered. Their role is that of an accessible and palatable substitute.¹⁰⁰

99. Jean-Marie Apostolides, *Le roi-machine: Spectacle et politique au temps de Louis XIV* (Paris, 1981), p. 131.

100. Norman Bryson, *Word and Image: French Painting of the Ancien Régime* (Cambridge, 1981), p. i.

The progressive, if by no means uniformly accepted, disentanglement of the figural from its textual task—the denarrativization of the ocular we might call it—was an important element in that larger shift from reading the world as an intelligible text (the “book of nature”) to looking at it as an observable but meaningless object, which Foucault and others have argued was the emblem of the modern epistemological order.¹⁰¹ Only with this epochal transformation could the “mechanization of the world picture”¹⁰² so essential to modern science take place.

Full denarrativization was a long way off, only to be achieved in painting with the emergence of abstract art in the twentieth century. One way in which it was abetted, as Albert Cook has suggested in his discussion of Sandro Botticelli, Giorgione, Vittore Carpaccio, and Hieronymus Bosch, was by overloading the signs in a painting, producing a bewildering excess of apparent referential or symbolic meaning.¹⁰³ Without any one-to-one relationship between visual signifier and textual signified, images were increasingly liberated from their storytelling function.

The process of denarrativization was helped on its way even more powerfully by the great technical innovation of the Renaissance art, which is variously called the invention, discovery, or rediscovery of perspective, the technique for rendering three-dimensional space onto the two dimensions of the flat canvas.¹⁰⁴ For now it was possible to be concerned more with the rules and procedures for achieving the illusion of perspective

101. Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (New York, 1973).

102. The classic study of this process is E. J. Diksterhuis, *The Mechanization of the World Picture*, trans. C. Dikshoorn (London, 1961).

103. Albert Cook, *Changing the Signs: The Fifteenth-Century Breakthrough* (Lincoln, Nebr., 1985). Cook notes, however, that the sixteenth-century successors to these painters, with the possible exception of Breughel, returned to a more controlled visual repertoire of readable images. He speculates that the post-Tridentine church may have been better at policing images than its immediate predecessor.

104. Bryson notes that “perspective strengthens realism by greatly expanding the area on the opposite side of the threshold to the side occupied by textual function, and we might even say by instituting into the image a permanent threshold of semantic neutrality” (*Word and Image*, p. 12). Whether or not its arrival was an invention or

than with the subject depicted. Space rather than the objects in it came to have increasing importance. Although Leon Battista Alberti—who first spelled out Filippo Brunelleschi's great breakthrough in his 1435 treatise *Della Pittura*,¹⁰⁵—himself emphasized the importance of the painting's *istoria*, or ennobling story, his successors were not always willing to follow his lead. The early use of a figure in the painting literally pointing to its action was soon discontinued. With the differentiation of the aesthetic from the religious, which we've noted before as an outgrowth of the Reformation, perspective was free to follow its own course and become the naturalized visual culture of the new artistic order.

What makes it especially important is that it functioned in a similar way for the new scientific order. In both cases space was robbed of its substantive meaningfulness to become an ordered, uniform system of abstract linear coordinates. As such, it was less the stage for a narrative to be

discovery was first broached by Erwin Panofsky in a famous essay on "Die Perspektive als 'symbolische Form'," *Vorträge der Bibliothek Warburg, 1924–1925* (Leipzig, 1927), pp. 258–331. He contended that it was not natural and there to be discovered, but rather a symbolic form in Ernst Cassirer's sense. As the title of Edgerton's book suggests, he is cautious about seeing it as a complete invention and is equally circumspect about saying it was first discovered by the Renaissance. Ivins, who had a strong stake in differentiating the allegedly tactile Greeks from the visual moderns, emphasized the radical newness of the Albertian innovation. "The knowledge of perspective attributed to Agatharcus, Anaxagoras, and Democritus," he contended, "is a modern myth based on the utterly unwarranted reading into a casual remark by Vitruvius, who lived at least four hundred years later, of ideas that neither Vitruvius nor any Greek of the fifth century B.C. could possibly have had" (*Art and Geometry*, p. 40). For a different account, see John White, *The Birth and Rebirth of Pictorial Space* (Cambridge, Mass., 1987), chap. 16.

105. The work was also published in a Latin edition, which often leads it to be called *De Pictura*. Wendy Steiner has argued that *istoria* for Alberti already meant more of a spatial theme than a temporal narrative. See her discussion in *Pictures of Romance: Form Against Context in Painting and Literature* (Chicago, 1988), p. 23. Her book as a whole is concerned with the denarrativization of painting during the Renaissance and the complicated return of narrative in post-abstract twentieth-century painting. For an interesting account of the resistance to full denarrativization in the painting of Duccio, see Geoffrey Hawthorn, *Plausible Worlds: Possibility and Understanding in History and the Social Sciences* (Cambridge, 1991), chap. 4.

developed over time than the eternal container of objective processes. It was not until the time of Darwin that narrative regained a significant place in the self-understanding of science. More recently still, philosophers and historians of science have urged us to reconsider its role in all scientific explanations.¹⁰⁶ However, in the immediate aftermath of the scientific revolution, with its debt to the perspectival notion of space, narrative was banished from the cognitive method that produced "the truth" about external reality.

There is an enormous literature on the sources, development, and implications of perspectival vision which defies easy summary.¹⁰⁷ Several salient points are, however, worth stressing. First, the rapid and positive reception of the new technique was abetted by the late medieval metaphysics of vision with its positive evaluation of divine radiation. The Latin word *perspectiva* (from *perspicere*, to see clearly, to examine, to ascertain, to see through) was a synonym for optics itself. Painters like Lorenzo Ghiberti and Leonardo were conversant with and deeply influenced by ancient and medieval theories of optics, which often were imbued with religious meaning.¹⁰⁸ As Samuel Edgerton has noted, "Linear perspective . . . with its dependence on optical principles, seemed to symbolize a harmonious relationship between mathematical tidiness and nothing less

106. Alasdair McIntyre, "The Relationship of Philosophy to Its Past," in *Philosophy in History*, Richard Rorty, J. B. Schneewind, and Quentin Skinner, eds. (Cambridge, 1984), pp. 31–98.

107. In addition to the works by Edgerton, Ivins, White, and Panofsky mentioned above, the most important accounts would include M. H. Pirenne, *Optics, Painting and Photography* (Cambridge, 1970); Lawrence Wright, *Perspective in Perspective* (London, 1983); Michael Kubovy, *The Psychology of Perspective and Renaissance Art* (Cambridge, 1986); Richard Krautheimer, in collaboration with Trude Krautheimer-Hess, *Lorenzo Ghiberti* (Princeton, 1982), chap. 16; Claudio Guillén, *Literature as System*, chap. 8, which analyzes its metaphoric uses in literature; Karsten Harries, "Descartes, Perspective and the Angelic Eye," *Yale French Studies*, 49 (1973), pp. 28–42; and Hubert Damisch, *L'Origine de la perspective* (Paris, 1988).

108. Lindberg, 1, 152. For more on the religious background of perspective, see Michael Baxendall, *Painting and Experience in 15th Century Italy: A Primer in the Social History of Pictorial Style* (Oxford, 1971).

than God's will."¹⁰⁹ The visual microcosm was assumed to duplicate the invisible macrocosm created by the heavenly mathematician. Even when neo-Platonic theories of divine radiation based on the *lux/lumen* distinction no longer persuaded an increasingly secular world, the positive associations of geometrical order lingered.

Second, with the humanist turn of the Renaissance, an important shift occurred in the assumed point from which the rays emanated—or rather, to which they were now assumed to converge. For perspective meant not only an imagined visual cone (Euclid's word) or pyramid (Alberti's) with its apex the receding, centric (or as it was later called, vanishing) point in the scene on the canvas. It was also the reverse pyramid or cone whose apex was the beholder's eye (or the infinitesimal point that came to replace it in theoretical terms). The plane between the two symmetrical pyramids or cones was what Alberti in his famous metaphor called a transparent window, but in another sense it resembled more a mirror intersecting one pyramid, which then reflected that pyramid's apex back in the other direction.¹¹⁰ The significance of this innovation was that the medieval assumption of multiple vantage points from which a scene could be painted, which at times meant no real vantage point at all, was replaced by one, sovereign eye. John Berger describes the implications of the change:

The convention of perspective, which is unique to European art and which was first established in the early Renaissance, centers everything on the eye of the beholder. It is like a beam from a lighthouse—only instead of light travelling outward, appearances travel in. The conventions called those appearances *reality*. Perspective makes the single eye the center of the visible world. Everything converges on to the eye as to the vanishing point of infinity. The visible world is arranged for the spectator as the universe was once thought to be arranged for God.¹¹¹

If the beholder was now the privileged center of perspectival vision, it is important to underline that his *viewpoint* was just that: a monocular, unblinking fixed eye (or more precisely, abstract point), rather than the

two active, stereoscopic eyes of embodied actual vision, which give us the experience of depth perception. This assumption led to a visual practice in which the living bodies of both the painter and the viewer were bracketed, at least tendentially, in favor of an eternalized eye above temporal duration.¹¹² Even when two-point perspective—*costruzione legittima*, as it was called—was introduced to portray objects at non-right angles to the window's plane, the assumption remained that each point was static and unchanging.

In Gibson's terms, the visual field now replaced the visual world. The ocular potential to privilege synchronic stasis, which we've seen Jonas claim was the key to Greek metaphysics, here achieved explicit visual expression. But now the participatory moment in *theoria*, the specular intertwining of likenesses in viewer and viewed, was lost as the spectator withdrew entirely from the seen (the scene), separated from it by Alberti's shatterproof window. No longer did the painter seem as emotionally in-

109. Edgerton, p. 24. The centric ray in particular was taken to be of great religious significance. It should be noted that we are talking only of linear perspective, not what is known as "atmospheric perspective." The latter recognized that distinct objects grew more indistinct the farther away they were. The latter was discovered at about the same time, but was not given any religious significance.

110. John White notes an alternative, if subordinate, perspectival tradition, which he calls "synthetic" and identifies with Paolo Uccello and Leonardo da Vinci. It relies on a concave rather than flat mirror, producing an effect of curved space closer to apprehensive visual experience. See White, chap. 12. The effect was not, however, as disorienting as the baroque anamorphism discussed by Buci-Glucksmann. For a recent consideration of the window metaphor, which challenges its centrality, see Joseph Masheck, "Alberti's 'Window': Art-historiographic Notes on an Antimodernist Misprision," *Art Journal*, 50, 1 (Spring, 1991).

111. John Berger, *Ways of Seeing* (London, 1972), p. 16.

112. For analyses, see Norman Bryson, *Vision and Painting: The Logic of the Gaze* (London, 1983); and Louis Marin, "Toward a Theory of Reading in the Visual Arts: Poussin's *The Arcadian Shepherds*," in *Calligram: Essays in New Art History from France*, ed. Norman Bryson (Cambridge, 1988). This bracketing of the body was not, however, confirmed in practical terms, as perspectival canvases could be viewed successfully from more than one point of observation by bodies in motion. See Kubovy, *The Psychology of Perspective and Renaissance Art*, on the "robustness" of perspectival beholding.

volved with the space he depicted; no longer was the beholder absorbed in the canvas.¹¹³ The reduction of vision to the Medusan gaze (or often the male gaze contemplating the female nude)¹¹⁴ and the loss of its potential for movement in the temporal glance was now ratified, at least according to the logic—if not always the actual practice¹¹⁵—of perspectival art.

The painter's own body, whose restoration we will see demanded by Merleau-Ponty and other twentieth-century critics of the dominant ocular regime, was effectively banished. Bryson summarizes the cost:

In the Founding Perception, the gaze of the painter arrests the flux of phenomena, contemplates the visual field from a vantage-point outside the mobility of duration, in an eternal moment of disclosed presence; while in the moment of viewing, the viewing subject unites his gaze with the Founding Perception, in a perfect recreation of that first epiphany. Elimination of the diachronic movement of deixis creates or at least seeks, a synchronic instant of viewing that will eclipse the body, and the glance, in an infinitely extended Gaze of the image as pure idea: the image of *eidolon*.¹¹⁶

113. For an account, drawing on psychological object-relations theory, that suggests that perspectival space was a loss of affective involvement, see Peter Fuller, *Art and Psychoanalysis* (London, 1980), p. 87. See also Pierre Francastel, *Peinture et société* (Lyon, 1951), p. 87. For a discussion of the dialectic of absorption and distantiation, influenced by Merleau-Ponty, see Michael Fried, *Absorption and Theatricality: Painting and Beholder in the Age of Diderot* (Berkeley, 1980).

114. See Svetlana Alpers, "Art History and Its Exclusions," in *Feminism and Art History*, ed. Norma Broude and Mary D. Garrard (New York, 1982), where she discusses the famous print of Dürer's draftsmen drawing a woman's body through the screen of perspectival projection (p. 187). For another account, which reads it as an ironic warning against pure geometricalization, see Steiner, *Pictures of Romance*, pp. 45f.

115. For an analysis of the ways in which the mobile glance could still be invoked by Renaissance artists in a complex visual environment, alongside of the more static gaze (which he calls the "measured view") and the totalizing scan, see Randolph Starn, "Seeing Culture in a Room of a Renaissance Prince," in *The New Cultural History*, ed. Lynn Hunt (Berkeley, 1989).

116. Bryson, *Vision and Painting*, p. 94. Deixis refers to linguistic utterances that contain information about their locus of expression. In visual terms, this means the

The differentiation of the visual from the textual was thus intensified by the differentiation of the idealized gaze from the corporeal glance and the monocular spectator from the scene he observed on the other side of the window.

No less significant was the perspectivalists' assumption of what was visible in the perceptual field: a homogeneous, regularly ordered space, there to be duplicated by the extension of a gridlike network of coordinates (Alberti's "velo" or veil of threads extended from the centric point to the base and perpendicular to them).¹¹⁷ The result was a theatricalized "scenographic" space, to use Pierre Francastel's widely adopted term.¹¹⁸ It was this uniform, infinite, isotropic space that differentiated the dominant modern world view from its various predecessors, a notion of space congenial not only to modern science, but also, it has been widely argued, to the emerging economic system we call capitalism.

Making a strong case for a causal relationship between the invention of perspective and the rise of capitalism may be problematic, so it would be

concrete body of the painter positioned in the world. Bryson also makes the important point that the mobile glance introduces desire into the visual act, whereas the frozen gaze represses it (p. 122). With this in mind, Augustine's hostility to ocular desire might be reformulated as a critique of the glance in favor of the eternal images produced by the fixating gaze, which the Platonic tradition in general favors. Thus perspective can be understood as continuing the hostility of that tradition to the deceptive and dangerous illusions of desiring vision in its mobile mode.

117. For a discussion of its importance as an anticipation of Cartesian space, see James Bunn, *The Dimensionality of Signs, Tools and Models: An Introduction* (Bloomington, Ind., 1981). For accounts of the relationship of this visual regime and the development of modern science, see Giorgio de Santillana, "The Role of Art in the Scientific Renaissance," in *Critical Problems in the History of Science*, ed. Marshall Clagett (Madison, Wis., 1959); and David C. Lindberg and Nicholas H. Stenck, "The Sense of Vision and the Origins of Modern Science," in *Science, Medicine and Society in the Renaissance: Essays in Honor of Walter Pape*, ed. Allen G. Debus (New York, 1972).

118. Pierre Francastel, "The Destruction of a Plastic Space," in *Art History: An Anthology of Modern Criticism*, ed. Wylie Sypher (New York, 1963), p. 382. Perspective was, in fact, actually used in the construction of the Renaissance illusionist stage, with the king's box occupying the honored point of perfect vision. See Strong, *Art and Power*, pp. 32f.

better to fall back on the term Max Weber introduced in his celebrated account of the Protestant ethic and speak instead of an "elective affinity" between the two. A number of observers have suggested its various dimensions. According to Edgerton, Florentine businessmen with their newly invented technique of double-entry bookkeeping may have been "more and more disposed to a visual order that would accord with the tidy principles of mathematical order that they applied to their bank ledgers."¹¹⁹ Brian Rotman has suggestively linked the invention of the vanishing point with the introduction of the Hindu number zero, vital for calculating mercantile trade, and the Renaissance invention of "imaginary money" without any anterior referent in valuable metals like gold.¹²⁰ Leonard Goldstein claims causal importance for the rational division of labor, to which he attributes similar changes in musical and poetic form.¹²¹

John Berger adds that more appropriate than the Albertian metaphor of the window on the world would be that of a "safe let into a wall, a safe in which the visible has been deposited."¹²² For it was at the same time as the invention (or rediscovery) of perspective that the oil painting as a commodity to be sold and possessed came into its own. Separate from the painter and the viewer, the visual field depicted in perspectival paintings could become such a detached commodity available for capitalist circula-

tion. Moreover, Raymond Williams contends, only the exaggerated capitalist separation of the spaces of production and consumption permitted a radical disjunction between working the land and merely viewing it from afar, as an aesthetically "pleasing prospect,"¹²³ which was the real estate version of perspectival art. Finally, to add a surmise of my own, the placement of objects in a relational visual field, objects with no intrinsic value of their own outside of those relations, may be said to have paralleled the fungibility of exchange value under capitalism.

However much weight one wants to give to arguments of this kind, there can be no doubt that the fortunes of both perspectivalism and the capitalist system prospered in the centuries that followed. Alberti's rules were refined and disseminated by later commentators like Jean Pelerin (known as Viator) and Albrecht Dürer to the point where they came to seem equivalent to natural vision.¹²⁴ Ivins points out the larger implications of this assumed unity between a technique of representation and vision itself:

Either the exterior relations of objects, such as their forms for visual awareness, change with their shifts in location, or else their interior relations do. If the latter were the case there could be neither homogeneity of space nor uniformity of nature, and science and technology as now conceived would necessarily cease to exist.

119. Edgerton, p. 39.

120. Brian Rotman, *Signifying Nothing: The Semiotics of Zero* (New York, 1987). He sees all three as signaling an abandonment of the belief in signs as natural referents in favor of an understanding of them as representational conventions produced by a fictional metasubject.

121. Leonard Goldstein, *The Social and Cultural Roots of Linear Perspective* (Minneapolis, 1988). The most orthodox Marxist of these commentators, Goldstein goes so far as to claim that although the changes in musical and poetic form antedate any evidence for the capitalist division of labor by several centuries, since the causal relationship works for painting, it may also explain these earlier phenomena!

122. Berger, p. 109. For metaphoric support for this argument, see George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago, 1980), p. 31, where they contend that "we conceptualize our visual field as a container and conceptualize what we see as being inside it."

123. Raymond Williams, *The Country and the City* (New York, 1973), p. 121. Williams is talking about the eighteenth-century division of a working field into a landscape to be appreciated for its picturesque beauty alone.

124. See Ivins, *On the Rationalization of Sight*, for discussions of their importance. Interestingly, he argues that Dürer was not fully in control of the technique he extolled. He describes the results in terms that unwittingly evoke Buci-Glucksmann's baroque "madness of vision": "The consistency with which he carried out these various distortions amounts almost to a methodological denial of the homogeneity of space. This fundamental contradiction of one of the great intuitive bases of experience produces a subtle psychological malaise in the beholder of his work. . . . It may also be that this basic contradiction is responsible for the fact that so many students of Dürer's work seem always to be working at some conundrum which, like squaring the circle, is incapable of solution" (pp. 42-43).

Thus perspective, because of its logical recognition of internal invariances through all the transformations produced by changes in spatial location, may be regarded as the application to pictorial purposes of the two basic assumptions underlying all the great scientific generalizations, or laws of nature.¹²⁵

Ivins, to be sure, was a champion of the rationalization of sight and the visual culture it promoted. He was prone to identify it with *all* art in the modern era.¹²⁶ However, it has recently been pointed out by Svetlana Alpers that at least the Dutch art of the seventeenth century followed a different course from its Italian counterpart.¹²⁷ Less insistent on a “monocular,” static point of beholding, not as taken with the reverse pyramid on the other side of the window, and more skeptical of the importance of geometric form, northern painting sought instead to describe the textures and colors of a world of opaque and flat surfaces. Following an impulse to map that world in two dimensions rather than represent it in an illusory three,¹²⁸ and tolerant of the intrusion of verbal inscriptions into seemingly realistic images, Dutch art accepted the materiality of the canvas and the paint on it far more readily than did Italian. Rather than positing a privi-

125. *Ibid.*, pp. 10–11.

126. In *Art and Geometry*, for example, he claims that “the history of art during the five hundred years that have elapsed since Alberti wrote has been little more than the story of the slow diffusion of his ideas through the artists and peoples of France” (p. 81).

127. Svetlana Alpers, *The Art of Describing: Dutch Art in the Seventeenth Century* (Chicago, 1983). By so sharply distinguishing between Dutch and Italian art, Alpers avoids the problem of trying to put painters as different as Vermeer and Cortona in the same category, which bedevils works like John Rupert Martin’s *Baroque*. Martin, to be sure, admits that “the sober realism of the Dutch school bears no resemblance to the high-flown imagery of the Roman baroque, and neither shows any affinity to the noble classicism of the age of Louis XIV” (p. 26). But as a result, baroque becomes purely a period designation without any stylistic unity at all.

128. In discussing the mapping impulse in Dutch art, Alpers disputes Edgerton’s claim that the recovery of Ptolemy’s *Geography* with its grid of geometrical projections was important for Italian perspectival art. “Although the grid that Ptolemy proposed,” she argues, “and those that Mercator later imposed, share this mathematical

leged beholder outside the painting gazing on a theatricalized scene from afar, it placed the viewer inside the scene as an ambulatory presence. It was thus far less hierarchical in its refusal to privilege deep focus over surface texture, far more “democratic” in its equal attention to the entire canvas.

The result, Alpers contends, was an even greater denarrativization and detextualization than took place, at least tendentially, in the south.¹²⁹ Rather than showing moments in mythical or religious stories, those *istoria* Alberti had called the necessary subject matter of perspectival art, it rested content with depicting a world of concretely rendered, precisely described objects. Although often imbued with allegorical meaning—still lifes could be *memento mori* comparable to the *Vanitas* pictures of Catholic Spain and landscapes might serve as moralizing reminders of the inevitable passing of the seasons—Dutch art reveled in the concrete embodiment rather than the abstract lesson. When it focused on the human subject, it did so normally in the mode of the individual or group portrait, which emphasized the particular identity of the sitter or sitters rather than the putative universality of the more exalted southern subject.

Alpers’s aim is to challenge the traditional supremacy of the southern tradition over the northern as the normative visual practice of Western art. “The Albertian picture,” she complains, “has been so dominant in the Western tradition ever since the Renaissance that exceptions to it are rarely granted and attempts to analyze these exceptions are even rarer.”¹³⁰ Although some of her particular claims have aroused controversy,¹³¹

uniformity of the Renaissance perspective grid, they do not share the positioned viewer, the frame, and the definition of the picture as a window through which an external viewer looks. . . . The projection is, one might say, viewed from nowhere. Nor is it looked through. It assumes a flat working surface” (p. 133).

129. Perhaps because of her desire to redress the balance and legitimate the value of descriptive over narrative art, Alpers tends to underplay the extent to which perspectival, southern art was also on the road to detextualizing the picture. And there were, of course, major figures in the north, such as Rembrandt, who, as she herself acknowledges, were certainly storytellers.

130. Alpers, p. 245.

131. See, for example, the review essay by Anthony Grafton and Thomas Da Costa Kaufmann, *Journal of Interdisciplinary History*, 16 (1985), pp. 255–266.

Alpers has successfully reopened the question of the multiplicity of visual cultures in modernity. Like the baroque "madness of vision," the Dutch "art of describing" remained available as a resource to be rediscovered by later critics of the dominant tradition. In fact, as we will see, photography has sometimes been construed in the same terms as the nonperspectival art Alpers finds in seventeenth-century Holland.

It is nonetheless clear that the rationalized art of the perspectivists was still the dominant visual practice, largely because of its close and symbiotic relationship to the new scientific world view of the day.¹³² Alpers, to be sure, forges suggestive links between the scientific enthusiasms of Constantin Huygens, the optical discoveries of Kepler, and the Dutch fascination with lenses on the one hand and the art of describing on the other. The case of Kepler's importance, hitherto unremarked by art historians, is especially interesting, because of his characterization of the mechanics of vision in purely passive terms. Alpers summarizes his strategy as the deanthropomorphization of vision:

He stands aside and speaks of the prior world picturing itself in light and color on the eye. It is a dead eye, and the model of vision, or of pointing if you will, is a passive one. The function of the mechanism of seeing is defined as making a representation: representation in the dual sense that it is an artifice—in the very making—and that it resolves the rays of light into a picture.¹³³

Kepler, she further points out, was the first to use the term *pictura* to describe images on the retina. Dutch art was thus in a certain sense "retinal" in its passive recording of what was actually seen, a characterization later applied to the Impressionists' very different paintings as well.

But this passive concept of optical experience was not really typical of the scientific revolution. Even in its understanding of visual experience, there was often a tendency to give some role to the activity of the mind in

132. See note 117.

133. Alpers, p. 36.

reading the images on the retina. Kepler prudently stopped when it came to explaining how those images, reversed and inverted, could be "seen" by the mind in their upright and correct order, but later thinkers like Descartes tried to make up the deficiency. In so doing, they were in accord with the visual tradition of Albertian painting, which went beyond merely recording what was projected on the retina. In both cases, the active potential in vision—its probing, penetrating, searching qualities—was given free rein.

One of the preconditions for the arrival of the scientific revolution, as Blumenberg has suggested,¹³⁴ was the long process of liberating human curiosity from its pejorative status as a frivolous distraction from man's meditation on the wisdom of the past, divinely or classically inspired. Augustine's hostility to ocular desire exemplified a general distrust of the temptations of "idle curiosity" and the appetite for dangerous new experiences it whetted. Once what Blumenberg calls the "trial of curiosity" was over and the defendant acquitted, the unleashing of the mastering, exploring, scrutinizing potential in sight meant that modern science could begin—for that science was a far more active and interventionist enterprise than the contemplation of the ancients. As such, it roughly paralleled those other great exploring ventures of the early modern era, the voyages to unknown lands, which were themselves fueled in large measure by visually charged curiosity.¹³⁵ The mapping impulse, which Alpers has linked to the Dutch art of describing because of its valorization of flatness, can also be seen as a more active search for controlling and dominating the earth, not very different from the imposition of the Albertian grid on visual space in paintings.¹³⁶

The nonpassive dynamic of modern science was also defended by such

134. Blumenberg, *The Legitimacy of the Modern Age*, part 2.

135. For a recent critique of the visually impelled domination of the exotic "other," both by colonialists and more recent anthropologists, see Johannes Fabian, *Time and the Other: How Anthropology Makes Its Object* (New York, 1983), chap. 4.

136. Edgerton suggests a link between Columbus, perspectival art and the mapping impulse (p. 120), which may be less straightforward than he claims, but is not without merit.

empiricist advocates of the scientific method as Francis Bacon, who defiantly claimed that "I admit nothing but on the faith of the eyes."¹³⁷ Intersubjective visual witnessing was a fundamental source of legitimation for scientists like Robert Boyle, who championed the value of replicable experimentation.¹³⁸ And if Walter Ong is right, the pedagogically powerful tool of deductive Ramist logic, developed in the sixteenth century, meant the end of the Socratic dialogue and disputation in favor of a more visually active mode of reasoning. "The Ramist arts of discourse," he claims, "are monologue arts. They develop the didactic, schoolroom outlook which descends from scholasticism even more than do non-Ramist versions of the same arts, and tend finally to lose the sense of monologue in pure diagrammatics. This orientation is very profound and of a piece with the orientation of Ramism toward an object world (associated with visual perception) rather than toward a person world (associated with voice and auditory perception)."¹³⁹

For Ong and other contemporary critics of the domination of this type of visual practice, modern science was thus tainted from its birth. More sympathetic observers like Blumenberg have replied that the new faith in the actively seeking eyes was a liberating event, allowing a proudly upright humanity to free itself from "blind obedience" to the voices of the past. No longer did humans have to bow their heads, bend their knees in supplication, and wait for instruction from the interpreters of sacred texts.¹⁴⁰

However one judges its implications, the significance of the transformation cannot be doubted. The activist reevaluation of curiosity and the

137. Francis Bacon, *The Great Instauration* in *The Works of Francis Bacon*, James Spedding et al., eds., 14 vols. (London, 1857-1864), vol. 4, p. 30.

138. For an account of its importance, see Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton, 1985). They show that although Hobbes's challenge to Boyle's experimentalist assumptions may have initially failed, in the long run his understanding of the discursive, institutional construction of evidence has prevailed. Interestingly, they note the similarity between Boyle's approach and the Dutch "art of describing" discussed by Alpers.

139. Walter J. Ong, *Ramus, Method, and the Decay of Dialogue* (Cambridge, 1958), p. 287.

legitimation of probing vision were especially evident in the new confidence in the technical enhancement of the eye. Broadly speaking, the innovations of the early modern era took two forms: the extension of the range and power of our ocular apparatus and the improvement of our ability to disseminate the results in visually accessible ways. The former meant, inter alia, the perfection of the flat, silver-backed looking glass, most notably in sixteenth-century Venice; the invention of the microscope by Hans and Zacharias Jansen in the late sixteenth century; and the creation of the refracting telescope by several hands shortly thereafter. It also meant an increased fascination with the implications of the camera obscura, that "dark room" with a pinhole on one side projecting an inverted image on its far wall, used as early as the time of Leonardo to help artistic as well as scientific experimentation.¹⁴¹ In all of these instances, technical advances were generally welcomed rather than shunned, as had so often been the case with the lenses and mirrors of an earlier era.¹⁴² Philosophers like Baruch Spinoza, who ground lenses, Gottfried Wilhelm von Leibniz, who was fascinated by optical instruments, and Huygens, who was concerned with building telescopes, were all positively impressed by these innovations. Disciplining and enhancing normal perception, they remedied what Robert Hooke called the "infirmities" of the senses and led to the "enlargement of the[ir] dominion."¹⁴³

Moreover, because the technical improvements in vision were far more

140. Blumenberg, "Licht als Metapher der Wahrheit," p. 443. From the religious point of view, this upright posture betokened hubris and arrogance. See the account in Bouwsma, "Calvin and the Renaissance Crisis of Knowing," p. 194.

141. The first published account appeared in 1521 in Cesariano's annotations to Vitruvius's *Treatise on Architecture*. See the discussion in Snyder, "Picturing Vision," p. 512.

142. The Pauline hostility to earthly mirrors has already been noted; perhaps the technical improvement in the mirror itself in the Renaissance helped change it. For an account of the reception of the microscope, see Catherine Wilson, "Visual Surface and Visual Symbol: The Microscope and Early Modern Science," *Journal of the History of Ideas*, 49, 1 (January-March, 1988), pp. 85-108. For its history, see Reginald S. Clay and Thomas M. Court, *The History of the Microscope* (London, 1932).

143. Robert Hooke, *Micrographia* (1665), as cited in Shapin and Schaffer, p. 36.

rapid than those of any other sense, they had the effect of intensifying its importance. Robert Innes has suggested two likely outcomes:

Specifically instrumental auxiliaries of perception, which are assimilated to the systems of senses themselves, can either magnify the unaided sense-organ or power or they can reduce—through a kind of negative abstraction—the complex polymorphy of sense perception, which is its “natural” as well as “culturally induced” state, to a single mode of perception.¹⁴⁴

In the case of the innovations of the early modern era, that single mode was visual.

The same effect was produced by the new technologies of dissemination, most famously the printing press and the invention of reproducible images through woodblocks and other more refined mechanical means. The impact of Gutenberg's revolutionary breakthrough, so sensationally trumpeted by Marshall McLuhan and Walter Ong, seems in fact to have been far greater than the mere dissemination of previous knowledge and practices. “The new intensity of visual stress and private point of view in the first century of printing,” McLuhan claims, “were united to the means of self-expression made possible by the typographic extension of man. Socially, the typographic extension of man brought in nationalism, industrialism, mass markets, and universal literacy and education. For print presented an image of repeatable precision that inspired totally new forms of extending social energies.”¹⁴⁵ As if these effects were not enough, he adds that “perhaps the most significant of the gifts of typography to man is that of detachment and noninvolvement. . . . It was precisely the power to separate thought and feeling, to be able to act without reacting, that split literate man out of the tribal world of close family bonds in private and social life.”¹⁴⁶ Although, as we have seen while considering

144. Robert E. Innes, “Technics and the Bias of Perception,” *Philosophy and Social Criticism*, 10, 1 (Summer, 1984), pp. 76–77.

145. Marshall McLuhan, *Understanding Media: The Extensions of Man* (London, 1964), p. 184.

Jonas's analysis of Hellenic metaphysics, this “gift” was perhaps already possessed by the Greeks, McLuhan is surely correct in stressing the impact of printing on multiplying the number of its beneficiaries.

Ong's claims are somewhat more circumspect, but far-reaching enough. “We are not suggesting that typographic man used his eyes more than earlier man had,” he concedes. “Even primitive man is highly visual in the sense that he is a keen observer, detecting all sorts of minute visual clues in his environment which civilized man misses. What happened with the emergence of alphabetic typography was not that man discovered the use of his eyes, but that he began to link visual perception to verbalization to a degree previously unknown.”¹⁴⁷ This in turn led, Ong contends, to modern individualism (the eye = I), the depersonalization of the external world, and the glorification of observation as the only valid way of knowing the world. “With the shift in the sensorium by print,” he concludes, “the large-scale campaign for the ‘clear and distinct’ soon began, led by Ramus and focused by Descartes—a campaign for visually conceived cognitive enterprise.”¹⁴⁸

Some of these claims may well be hyperbolic, as the implications of printing were more complicated than McLuhan and Ong contend. The printed word could, after all, be taken as the recording of an aural event, which helps explain its importance for the Reformation. As Elizabeth Eisenstein has noted, “Printed sermons and orations did not remove preachers from their pulpits or speakers from their podiums. To the contrary, priests and orators both benefited from the way their personal charisma could be augmented and amplified by the printed word.”¹⁴⁹ And the extension of print to other, more obvious aural phenomena like musi-

146. *Ibid.*, p. 185.

147. Ong, *The Presence of the Word*, p. 50.

148. *Ibid.*, p. 221.

149. Elizabeth L. Eisenstein, *The Printing Revolution in Early Modern Europe* (Cambridge, 1986), p. 92. In general, she is more circumspect in her claims than McLuhan or Ong, but she too emphasizes the importance of the new technology. For example, she argues that a unified historical perspective on the past needed more than Albertian notions of space: “How could the entire classical past be viewed ‘from a

cal scores meant that hearing was also abetted by its dissemination. Still, while it would be wrong to conceptualize its impact in terms of a zero-sum game with the rise of sight necessarily leading to the debasing of the other senses, it does seem fair to conclude that visual primacy was aided by the invention of printing.

This generalization is even more securely grounded if we consider the impact of the mechanical reproduction of actual images. These were more explicitly visual than the graphic symbols on the printed page (which could, after all, be translated into acoustic equivalents by being read aloud). They too were revolutionized by technical advances in the early modern era.¹⁵⁰ Appearing slightly before Gutenberg's printing press, the invention of replicable prints of pictures and diagrams, first from wood cuts and then from engraved metal plates, had an incalculable effect on the standardization and dissemination of scientific knowledge (as well, we might add, as on artistic techniques like perspective, which was first transmitted in a printed book by Pelerin in 1504). Although for a long time limited by a still syntactical method of crosshatching, which Ivins called a "tyranny"¹⁵¹ because of its failure to reproduce reality directly, the widespread appearance of the identical scientific plates and diagrams meant the unimpeded spread of knowledge across linguistic boundaries, knowledge whose reliability was far greater than the mere "heresy" of a pretypographic culture. Ivins thus concluded—showing that his capac-

fixed distance' until a permanent temporal location had been found for antique objects, place names, personages and events? The capacity to see the past in this way could not be obtained by new optical effects devised by Renaissance artists. It required a rearrangement of documents and artifacts rather than a rearrangement of pictorial space" (p. 117). Such an innovation could only be produced by the rationalization of records enabled by printing.

150. William M. Ivins, Jr., *Prints and Visual Communication* (Cambridge, Mass., 1953).

151. *Ibid.*, p. 70. The "tyranny" of syntactical crosshatching was ended, he suggests, with the triumph of the photograph, which provides truthful representations of "how it actually was" (p. 94). This naive notion of the perfect imitative ability of the camera has been questioned by many recent students of its implications. See, for example, Snyder, "Picturing Vision."

ity for hyperbole was no less than that of McLuhan or Ong—"It is hardly too much to say that since the invention of writing there has been no more important invention than that of the exactly repeatable pictorial statement."¹⁵²

Whether or not one gives greater weight to technical advances or social changes, it is thus evident that the dawn of the modern era was accompanied by the vigorous privileging of vision. From the curious, observant scientist to the exhibitionist, self-displaying courtier, from the private reader of printed books to the painter of perspectival landscapes, from the map-making colonizer of foreign lands to the quantifying businessman guided by instrumental rationality, modern men and women opened their eyes and beheld a world unveiled to their eager gaze.

⊙

The grip of modern ocularcentrism was perhaps nowhere as evident as in France, the culture whose recent reversal of attitudes is thus perhaps all the more worthy of study. No better evidence of its power can be offered than the stubborn hold Cartesian philosophy had on its major thinkers for so many years. As has often been remarked, Descartes was a quintessentially visual philosopher, who tacitly adopted the position of a perspectivalist painter using a camera obscura to reproduce the observed world.¹⁵³ "Cartesian perspectivalism," in fact, may nicely serve as a short-

152. Ivins, *Prints and Visual Communication*, p. 3. For an account of the later history of scientific atlases, which stresses the moral imperative behind the struggle for visual "truth," see Lorraine Daston and Peter Galison, "The Image of Objectivity," *Representations*, 40 (Fall, 1992), pp. 81-128.

153. See, for example, Jean-Joseph Goux, "Descartes et la perspective," *L'Esprit Créateur*, 25, 1 (Spring, 1985). Goux argues that the monocentric perspectivalism of Cartesian philosophy corresponded to the power of the absolute monarch, but it also opened the door for a democratic alternative by implying that anyone might occupy the perspectival point of view. For a discussion of the camera obscura as the emblematic visual apparatus of Cartesian perspectivalism, see Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge, Mass., 1990), chap. 2.

hand way to characterize the dominant scopic regime of the modern era. It will therefore be useful to lower our high-flying balloon somewhat and focus our attention more closely on the text in which Descartes, more extensively than anywhere else, examines vision: *La Dioptrique* of 1637, one of the three scientific treatises he appended to his celebrated *Discourse on Method*.

For many commentators, Descartes is considered the founding father of the modern visualist paradigm. Thus, for example, Rorty claims that "in the Cartesian model, the intellect *inspects* entities modeled on retinal images. . . . In Descartes's conception—the one which became the basis for 'modern' epistemology—it is *representations* which are in the 'mind.'"¹⁵⁴ Hacking concurs that "the Cartesian world was thoroughly visual"¹⁵⁵ and adds, "The doctrine that we study our ideas with steadfast mental gaze was bequeathed by Descartes to the Port Royal *Logic*, and swallowed almost whole by the British disciples."¹⁵⁶ Gasché further contends,

Although it is true that the Augustinian notion of *reditus in se ipsum*—a return upon and into oneself constituting the medium of philosophy—prefigures the modern concept of reflection, the philosophy of reflection is generally considered to have begun with Descartes's *prima philosophia*. . . . In Descartes the scholastic idea of the *reditus* undergoes an epochal transformation, whereby reflection, instead of being merely the medium of metaphysics, becomes its very foundation. With Cartesian thought, the self-certainty of the thinking subject—a certainty apodictically found in the *cogito me cogitare*—becomes the unshakable ground of philosophy itself.¹⁵⁷

Descartes may thus not only be responsible for providing a philosophical justification for the modern epistemological habit of "seeing" ideas in the mind, but may also have been the founder of the speculative tradition of identitarian reflexivity, in which the subject is certain only of its mirror image.¹⁵⁸ In addition, he is also often seen as legitimating a mode of scientific investigation through visual observation of evidence (from the Latin

videre), which could lead in a decidedly empirical direction. How these competing visual models could be derived from this thought will become apparent if we look closely at his treatise on optics.

La Dioptrique, or *Optics*, as it is usually translated, was only one of several meditations on vision written by Descartes, including a lengthy "treatise on light" as the first part of his *Treatise on the World*, left unpublished because of the Church's condemnation of Galileo in 1633, and *Meteorology*, another of the three studies appended to the *Discourse on Method*. The latter included discussions of lightning, the rainbow, and other visual phenomena. Descartes was very much an enthusiast of the new mechanical aids to vision; they had a particularly strong impact in Holland, where he spent a good part of his mature life. In fact, it was the invention of the telescope, which he attributed—we now know wrongly—to one Jacques Métius of the Dutch city of Alcmár, that sparked the writing of *La Dioptrique* itself. One of its major goals was the encouragement of the building of such devices, whose principles of construction he detailed with great precision.

The work begins with the famous encomium to vision and its technical enhancement we have used as one of the epigraphs of this chapter: "All the management of our lives depends on the senses, and since that of sight is the most comprehensive and the noblest of these, there is no doubt that the inventions which serve to augment its power are among the most useful that there can be."¹⁵⁹ Then Descartes adds the curious after-

154. Rorty, *Philosophy and the Mirror of Nature*, p. 45.

155. Hacking, *Why Does Language Matter to Philosophy?*, p. 31.

156. *Ibid.*, p. 45.

157. Gasché, *The Tain of the Mirror*, p. 17.

158. The visual constitution of subjectivity was, to be sure, anticipated by earlier exponents of introspection, such as Montaigne, who wrote, "I turn my gaze inward, I fix it there and keep it busy. . . . I look inside myself; I continually observe myself" (Michel de Montaigne, *Essays*, trans. and ed. Donald Frame [New York, 1973], p. 273). Here the model is closer to the observation of an object by a subject than a purely specular subject looking at itself.

159. Descartes, *Discourse on Method, Optics, Geometry and Meteorology*, p. 65.

thought, "But to the shame of our sciences, this invention [the telescope], so useful and so admirable, was found in the first place only through experiment and good fortune."¹⁶⁰

Descartes's "shame" expresses his chagrin that the purely inductivist tradition of experimentation and observation was lucky enough to discover what deduction should have ascertained without the need of experiential aids. His celebrated method was preeminently deductive, at least in intention.¹⁶¹ And *La Dioptrique* was aimed at demonstrating how vision can be understood following that method and it alone, which was based on the prior existence of ideas innate in the mind.

Why then, it might be asked, should it be useful to construct telescopes, which could only help the sight of the actual eyes? What, to put it in somewhat different terms, was the relationship between seeing with the inner eye of the mind, the "steadfast mental gaze" looking at clear and distinct ideas, and the two technologically improved eyes of the body? To answer these questions, we have to compare Descartes's account of vision with that of the figure Alpers has argued best embodies in scientific terms the Dutch "art of describing": Kepler.

In *La Dioptrique*, there is a celebrated picture of Kepler gazing at a geometrically arranged cross-section of the eye.¹⁶² Clearly, Descartes recognized his debt to his great predecessor. But there are a number of interesting and subtle differences between them. Kepler ended his analysis with the inverted and reversed image on the retina and refused to speculate on the difficult question of how the retinal "pictura" becomes our actual conscious experience of sight. It is for this reason that we have seen Alpers claiming that he deanthropomorphized vision, producing a dead and passive eye. In contrast, Descartes, like Plato before him, was never

content with the sufficiency of mere sense experience, visual or otherwise. In the *Discourse on Method*, for example, he explicitly rejected the contention that "nothing is in the intellect that was not first in the senses," for "without the intervention of our understanding, neither our imagination nor our senses could ever assure us of anything."¹⁶³ Such assurance could only come from the indubitability of deductive reasoning beginning with innate ideas.

But despite its alleged function as an illustration of the superiority of that procedure, *La Dioptrique* in fact does not faithfully follow the Cartesian method. Descartes begins by conceding that he will not undertake to explain the "true nature"¹⁶⁴ of light, which he hints he has already accomplished in the still unpublished "Treatise on Light" in the *Treatise on the World*. In a letter composed shortly after the publication of *La Dioptrique*, he wrote, "Light, that is, *lux*, is a movement or an action in the luminous body, and tends to cause some movement in transparent bodies, namely *lumen*. Thus *lux* is before *lumen*."¹⁶⁵ *La Dioptrique* was, however, concerned primarily with *lumen*, the transmission of light, rather than *lux*, although certainly Descartes hoped to explicate the link between them. But he was never fully successful. Indeed, as he admitted in a famous letter to Marin Mersenne of May 27, 1638, he had not really worked out the relationship between deduction and the experiments he described in *La Dioptrique*, nor apparently the relationship between *lux* and *lumen*.¹⁶⁶

Be that as it may, *La Dioptrique* asks its reader to consider light as "nothing else, in bodies that we call luminous, than a certain movement or action, very rapid and very lively, which passes toward our eyes through the medium of the air and other transparent bodies, in the same manner

160. Ibid. The metaphoric importance of the telescope for early modern theorists is discussed in Timothy J. Riess, *The Discourse of Modernism* (Ithaca, 1980), pp. 25ff.

161. The extent of Descartes's fidelity to the deductive method has often been a matter of dispute. Paul Olscamp, in the introduction to the English edition cited above, tries to establish the importance of induction in his work as well.

162. In the English edition of *Optics* cited above, the head of Kepler is missing, but the diagram remains (p. 92).

163. Descartes, *Discourse on Method*, p. 31. Descartes did not, however, fully realize that the inversion of the retinal image was really a pseudoproblem, which was a discovery left to Bishop Berkeley. See Michael J. Morgan, *Molyneux's Question: Vision, Touch and the Philosophy of Perception* (Cambridge, 1977), p. 61 for a discussion.

164. Descartes, *Optics*, p. 66.

165. Descartes's letter to Morin, July 13, 1638, *Oeuvres*, ed. Charles Adam and Paul Tannery (Paris, 1897-1913), vol. 2, p. 205.

166. Descartes, *Oeuvres*, vol. 2, pp. 135-153.

that the movement or resistance of the bodies that this blind man encounters is transmitted to his hand through the medium of his stick.¹⁶⁷ Here, as many commentators have remarked, Descartes's reasoning was neither deductive nor inductive, but rather analogical, based on a comparative thought experiment that involved another sense. The analogy between sight and the touch of a blind man's stick was an old one, used as early as Simplicius's commentary on Aristotle's *De Anima*.¹⁶⁸ The point of the comparison is that both reveal an instantaneous transmission of the stimulus through pressure, either seen or felt, to the sensory organ. Descartes's physics was, in fact, grounded in the assumption that light passes without any lapse of time through an extended medium that filled the space between object and eye, no vacuum existing in nature. Nothing material passes from one to the other—just the pressure conveyed through the medium. Thus the medieval idea of actual images passing through the air—those “intentional” or “visible species” already called into question by William of Ockham—was mistaken.¹⁶⁹ Rays of light, for Descartes, were not even movements per se, but what he calls, somewhat vaguely, “an action or inclination to move.”¹⁷⁰

Descartes's next analogy was even less precise. In the second discourse of *La Dioptrique*, he introduces the example of tennis balls being hit through bodies of different density, which he claims explains the changes in the angle of their movement (those angles of refraction which are the subject of the book).¹⁷¹ What makes this analogy problematic—as seven-

167. Descartes, *Optics*, p. 67.

168. Simplicius Cilicius, *Commentaria Semplicii in tres libros De Anima Aristotelis* (Venice, 1564).

169. For Descartes's general debt to Ockham, see Funkenstein, *Theology and the Scientific Imagination*, pp. 185f. It should be noted that he did hold on to the pre-Nominalist theory of extramission, but only for animals like the cat, which seemed to be able to see in the dark (*Optics*, p. 68).

170. Descartes, *Optics*, p. 70.

171. Descartes was far more interested in refracted than reflected light and apparently was soon aware of the tricks of anamorphic distortions from reading Jean-François Nicéron's *La perspective curieuse* of 1638, which appeared shortly after the *Optics*. See the discussion in Leeman, pp. 105–108.

teenth-century critics of Descartes like Fermat were quick to point out—is the parallel between the transmission of light, which is allegedly an *instantaneous* pressure or inclination to move, and the actual movement of tennis balls, which have to take time when they pass through different media. The entire problem of the supposedly timeless transmission of light was, in fact, never solved by Descartes, which is one reason that his physics was ultimately replaced by that of Newton, who recognized the temporality of light waves.¹⁷²

In the third discourse of *La Dioptrique*, Descartes turns from the refraction of light rays to the eye itself, which, like Kepler, he had personally examined by slicing through that of a cow. Unlike Kepler, however, he moved beyond the physical apparatus of the eye's lenses and vitreous humors to speculate about its link to human visual consciousness. In so doing, he made the celebrated claim that “it is the mind [*âme*] which senses, not the body.”¹⁷³ “It is necessary,” he continues, “to beware of assuming that in order to sense, the mind needs to perceive certain images transmitted by the objects to the brain, as our philosophers commonly suppose.”¹⁷⁴ Even Kepler, he implies, was wrong to remain with the “*pictura*” focused on the retinal screen. For in so doing, he failed to address the crucial question of how we see upright, when the camera obscura of the eye can only receive reversed and inverted images. For sight in the mind is not dependent on the passive contemplation of such images, which resemble the objects they mirror. “We should consider that there are many other things besides pictures which can stimulate our thought, such as, for example, signs and words, which do not in any way

172. A recent attempt has been made by Stephen M. Daniel in “The Nature of Light in Descartes' Physics,” *The Philosophical Forum*, 7 (1976), pp. 323–344, to defend him by claiming that the ambiguity of his theory meant it was more in line with twentieth-century physics than was Newton's. Light acts like an instantaneous wave when passing through the same medium, but like a moving particle when it passes through different media. Descartes, however, was not Heisenberg, so it is unlikely he would have himself felt happy with this equivocal solution.

173. Descartes, *Optics*, p. 87. *Âme* may be better translated as soul, but the standard version is mind.

174. *Ibid.*, p. 89.

resemble the things which they signify. . . . There are no images that must resemble in every respect the objects they represent—for otherwise there would be no distinction between the object and its image—but that it is sufficient for them to resemble the objects in but a few ways.¹⁷⁵

To clinch this point, Descartes invoked the evidence of perspectival art, which produces the experience of correct vision by devices that eschew perfect resemblance. Using the same example the twentieth-century psychologist James Gibson would adduce to distinguish between the “visual world” and the “visual field,” he noted that “following the rules of perspective, circles are often better represented by ovals rather than by other circles; and squares by diamonds rather than by other squares.”¹⁷⁶ The images formed in the brain, he contended, are the result of a similar process of reading signs that are not perfect reproductions of external reality. Thus, it is the mind, not the eye, that really “sees.”

But the question still not answered is what the relationship between the physical art of seeing (through what we might call Kepler’s cold eye) and our conscious vision might be. Is actual sight to be distrusted and mental representations considered the only true reality of which we have indubitable, because specular knowledge?¹⁷⁷ Is Descartes as hostile to the deceptions of actual sight as Plato? If so, why then the panegyric to the telescope, which aids only the latter?

That Descartes did, in fact, seek a positive link between what our physical organs sense and what the mind sees is demonstrated by his notorious reference to the pineal gland as the locus in the brain of that very interaction, a reference made yet more bizarre by his claim, “I could go even still further, to show you how sometimes the picture can pass from there through the arteries of a pregnant woman, right to some specific member

175. *Ibid.*, pp. 89–90.

176. *Ibid.*, p. 90.

177. For a strong argument to this effect, see Dalia Judovitz, “Vision, Representation and Technology in Descartes,” in *Modernity and the Hegemony of Vision*, ed. David Michael Levin (Berkeley, 1993). Judovitz, following Merleau-Ponty’s critique of Descartes, claims that he substitutes an entirely mathematical, disincarnated, logical simulacrum of sight for the real thing.

of the infant which she carries in her womb, and there forms these birthmarks which cause learned men to marvel so.”¹⁷⁸ Although modern science now acknowledges that the pineal gland does in fact function as “the non-visual photoreceptor of an independent sensory system not a part of the eyes or any other sense,”¹⁷⁹ it could not bear the burden placed on it by Descartes. As the bridge between the *res cogitans* and the *res extensa*, it was soon discarded in favor of such equally problematic solutions as the “occasionalism” of Nicolas de Malebranche, which introduced God’s intervention as the alleged link.

Another argument in *La Dioptrique* proved far more substantial. It was grounded in the distinction between two dimensions of vision: seeing location, distance, size, and shape on the one hand, and light and color on the other. In a more traditional philosophical vocabulary, this implied the difference between primary and secondary characteristics. In the modern terminology of scientific optics, it roughly approximated the difference between seeing with rods, which process contours and patterns, and seeing with cones, which give us sensitivity to color and brightness. Unlike Kepler, who claimed that all these characteristics resided in the object and then are transmitted to the waiting retina, Descartes claimed that color and light were merely a function of the physical apparatus of the eye, in particular the fibers of the optic nerve stimulated by the rotational velocities of light corpuscles.¹⁸⁰ No parallel could be assumed between what we experience in this way and a real world of extended matter confirmed by touch. Here deception and illusion are hard to avoid.

Distance, location, size, and shape are, however, *both* in the mind and

178. Descartes, *Optics*, p. 100.

179. Robert Rivlin and Karen Gravelle, *Deciphering the Senses: The Expanding World of Human Perception* (New York, 1984), p. 67. They further note that the pineal gland secretes a hormone called melatonin according to the level of light, a hormone that causes drowsiness and also sexual arousal (p. 207). For another, more popular account of the remarkable new research on the pineal gland, see “The Talk of the Town” column of *The New Yorker* of January 14, 1985. Still, no one holds that Descartes was correct about its role in vision.

180. Descartes, *Meteorology*, pp. 335f.

in the world. To make this case, Descartes once again resorted to an analogy from touch.

Just as our blind man, holding the two sticks *AE*, *CE*, of whose length I am assuming that he is ignorant, and knowing only the interval which is between his two hands *A* and *C*, and the size of the angles *ACE*, *CAE*, can from that, as if by a natural geometry, know the location of the point *E*; so also when our two eyes, *RST* and *rst*, are turned toward *X*, the length of the line *Ss* and the size of the two angles *XSs* and *XsS* enable us to know the location of the point *X*.¹⁸¹

The crucial phrase here is "as if by a natural geometry," for Descartes was assuming that the intellectual process of geometrical triangulation underlying the blind man's capacity to feel distance by using his two sticks was somehow duplicated in our rationally constructed vision. We are thus not prone to be deceived about distance, location, shape, and size, because of a correspondence between our unconscious and innate geometrical sense and the geometrical reality of the world of extended matter. That we are not always perfectly certain, Descartes concedes, is due to the intervention of the brain between the mind and the world, or to the imperfect functioning of the nerves. These account for hallucinations of the insane and the illusions of dreams. But these physical impediments can be mitigated by the inventions that extend the power of empirical vision. The last four discourses of *La Dioptrique* are thus dedicated to a painstaking lesson in the construction of the telescope.

As Fermat, Bishop Berkeley, and a host of other critics were quick to point out, there was a major problem in Descartes's argument. His assumption of a natural geometry in the mind, which he identified with

181. Descartes, *Optics*, p. 106. Descartes shared the belief in a natural geometry with Leibniz, but later thinkers like Molyneux and Locke argued against them. See the discussion in Colin Murray Turbayne, *The Myth of Metaphor* (Columbia, S.C., 1970), pp. 109f.

Euclid's,¹⁸² was not only problematic in itself, but was even more questionable when it was extended to the world without. Unable to anticipate the Copernican Revolution in philosophy later accomplished by Kant, Descartes posited a structure of the mind and then assumed it was congruent with the external world in a specular way.

Several recent commentators have suggested that Descartes's critique of a resemblance theory of knowledge in favor of one that introduced signs, which needed to be read by the mind, meant that he was at the forefront of that great epistemic shift Foucault has described in *The Order of Things* as the move from resemblances or similitudes to representations.¹⁸³ Images in the mind were thus perceptual *judgments*, not mere simulacra. They involved the intervention of language to read them correctly, an insight that was itself duplicated, doubtless unwittingly, in the rhetoric of *La Dioptrique* itself. For, as Michel de Certeau has remarked, Descartes oscillated between a self-referential "je dis" and a more objectivist "vous voyez."¹⁸⁴ In so doing, he reproduced the same tension that existed in *Discourse on Method*, where he employed the rhetoric of demonstration (I will "present my life here as in a painting") and the rhetoric of narration ("I am proposing only this work as, so to speak, a history—or if you prefer, a fable"), and often on the same page.¹⁸⁵ In other words, by moving

182. The analogy from touch suggests, if Ivins is right, that Descartes was still beholden to a Greek tactile tradition rather than a modern visual one. But Kepler, as Ivins himself notes in *Art and Geometry* (p. 101), argued that lines do ultimately meet at the point of infinity. Not only did Descartes follow Kepler in this respect, he was also a good friend of Gerard Desargues, who was the first to see that the conic section and perspective were alike.

183. John W. Yolton, *Perceptual Acquaintance: From Descartes to Reid* (Oxford, 1984); Joel Snyder, "Picturing Vision"; and Charles Lemoine, "Descartes' Empirical Epistemology," in *Descartes: Philosophy, Mathematics and Physics*, ed. Stephen Gaukroger (Brighton, 1980).

184. Conversation with Michel de Certeau, Paris, March, 1985. For another discussion of the rhetoric of Descartes, see Ralph Flores, "Cartesian Strip-tease," *Sub-stance*, 39 (1983), pp. 75–88.

185. Descartes, *Discourse on Method*, p. 5.

from resemblances to representations, it can be argued, Descartes was subtly opening the door to a nonvisual, linguistically oriented epistemology of judgments.

But whereas many later theorists of representation would come to think of sign systems as conventional and self-referential, Descartes was still enough of an ontological realist with a strong correspondence theory of truth to believe that the mind's natural geometry—its intellectual sign system, if you will—was congruent with that in the natural world. Like the Albertian perspectivalists he so resembled, he had no qualms about naturalizing a particular visual practice and lifting it outside of history.

From the "vantage point of hindsight," it is easy to discern contradictions, insufficiencies, and "blind spots" in Descartes's account of vision. Not only was it based more on undefended analogical reasoning than on the deduction it was supposed to illustrate, but it also erred about the lack of light's temporality, the function of the pineal gland, and other more minor details such as the ability of Archimedes' giant mirror to burn distant ships (Descartes thought it couldn't; we now know otherwise).¹⁸⁶ These were mistakes that allowed many later commentators to dismiss his account as of little worth.

And yet, the Cartesian contribution to the dominant ocularcentric bias of the modern era, especially in his native France, was assuredly profound. A major source of that influence, it seems probable to assume, was the very ambiguity of his argument. If, as is often claimed, Descartes could become the warrant for rationalist and sensationalist philosophies, claimed by idealists and materialists alike, he was no less able to give encouragement to both speculative and empirical concepts of vision. Despite his avowed dualism, the specular element in his philosophy could foster an ultimately identitarian monism. Even if later readings of Descartes discovered their linguistic mediation, the innate ideas he posited were still most widely interpreted as being seen "clearly and distinctly" by the mind's eye. Not surprisingly, his more religious followers

186. Descartes, *Optics*, p. 147. For a rebuttal of his belief, see Goldberg, *The Mirror and Man*, p. 181.

like Malebranche were able to resurrect the spiritual metaphysics of light characteristic of earlier theologians like Grosseteste, while others were able to take his encomium to the telescope as a boost to their empiricist inclinations.

Cartesian dualism was, moreover, particularly influential because of its valorization of the disembodied eye—the "angelic eye," as Karsten Harries has called it¹⁸⁷—shared by modern science and Albertian art. In either of its guises, speculative or observational, it justified a fully spectatorial rather than incarnate eye, the unblinking eye of the fixed gaze rather than the fleeting glance. Descartes himself anticipated this interpretation in *Discourse on Method*, with his celebrated thought experiment that he had no body, which allowed him to conclude that "this *me*—that is, the soul by which I am what I am—is completely distinct from the body: and is even easier to know than is the body."¹⁸⁸ The Descartes who had called his own philosophical quest a journey in which he tried "to be a spectator rather than an actor"¹⁸⁹ in the affairs of the world had reduced the visual world, in Gibson's sense, to a visual field and consigned the body to objecthood in it.

It was precisely over this issue that twentieth-century phenomenological critics of Cartesian perspectivalism like Heidegger and Merleau-Ponty would challenge his version of sight, and feminists like Irigaray would condemn the gender bias of his philosophy.¹⁹⁰ Building on Bergson's earlier critique of Descartes's bias for a spatial rather than temporal ontology, their polemics would inform the discourse that called many other dimen-

187. Harries, "Descartes, Perspective, and the Angelic Eye." Harries argues that such an eye, transcendental and beyond all perspectives, was not entirely without warrant for mere mortals, in that it expressed the very human ability to see something from the point of view of the other.

188. Descartes, *Discourse on Method*, p. 28.

189. *Ibid.*, p. 24.

190. Luce Irigaray, *Speculum of the Other Woman*, trans. Gillian G. Gill (Ithaca, N.Y., 1985), p. 180. For another feminist critique of Descartes, informed more by object relations theory than French psychoanalysis, see Susan R. Bordo, *The Flight to Objectivity: Essays on Cartesianism and Culture* (Albany, N.Y., 1987).

sions of modern ocularcentrism into question. Included among these was the typical Cartesian gesture of refusing to listen to the voices of the past and trusting instead only to what one could "see with one's eyes." Insofar as the Enlightenment was premised largely on that same attitude, the antiocularcentric discourse often took on a self-consciously Counter-Enlightenment tone. Here, however, I am getting ahead of myself, for it will be necessary before analyzing the twentieth-century turn against vision to see more clearly what its target actually was. To do so, the role of ocularcentrism in the France so long beholden to its Cartesian point of departure must first be exposed to view.

CHAPTER TWO

Dialectic of EnLIGHTenment

If I could alter the nature of my being and become a living eye, I would voluntarily make that exchange.

WOLMAR IN JEAN-JACQUES ROUSSEAU'S
*LA NOUVELLE HÉLOÏSE*¹

The general system of the sciences and arts is a sort of labyrinth The encyclopedic arrangement of our knowledge . . . consists of . . . placing the philosopher at a vantage point, so to speak, high above this vast labyrinth, whence he can perceive the principle sciences and arts simultaneously. From there he can see at a glance the objects of their speculations and the operations which can be made on these objects. . . . It is a kind of world map which is to show the principal countries, their position and their mutual dependence, the road that leads directly from one to another.

JEAN LE ROND D'ALEMBERT²

If photography is allowed to deputize art in some of art's activities, it will not be long before it has supplanted or corrupted art altogether, thanks to the stupidity of the masses, its natural ally. . . . If once it be allowed to impinge on the sphere of the intangible and the imaginary, on anything that has value solely because man adds something to it from his soul, then woe betide us!

CHARLES BAUDELAIRE³

"What is an idea?" Voltaire asked in his *Philosophical Dictionary*. "It is an image," he immediately replied, "that paints itself in my brain. . . . The most abstract ideas are the consequences of all the objects I've perceived. . . . I've ideas only because I've images in my head."⁴ In these simple propositions, delivered with Voltaire's characteristic self-assurance, both

1. Jean-Jacques Rousseau, *La nouvelle Héloïse*, part 4, letter 12, in *Oeuvres complètes* (Paris, 1959), vol. 2, p. 491.

2. Jean le Rond D'Alembert, *Preliminary Discourse to the Encyclopedia of Diderot*, trans. Richard N. Schwab and Walter E. Rex (New York, 1963), pp. 46–47.

3. Charles Baudelaire, "The Modern Public and Photography," in *Classic Essays in Photography*, ed. Alan Trachtenberg (New Haven, 1980), p. 88.

4. Voltaire, *Philosophical Dictionary*, ed. and trans. Theodore Besterman (New York, 1972), p. 236.