

Within this new field of serially produced objects, the most significant, in terms of their social and cultural impact, were photography and a host of related techniques for the industrialization of image making.<sup>14</sup> The photograph becomes a central element not only in a new commodity economy but in the reshaping of an entire territory on which signs and images, each effectively severed from a referent, circulate and proliferate. Photographs may have some apparent similarities with older types of images, such as perspectival painting or drawings made with the aid of a camera obscura; but the vast systemic rupture of which photography is a part renders such similarities insignificant. Photography is an element of a new and homogeneous terrain of consumption and circulation in which an observer becomes lodged. To understand the "photography effect" in the nineteenth century, one must see it as a crucial component of a new cultural economy of value and exchange, not as part of a continuous history of visual representation.

Photography and money become homologous forms of social power in the nineteenth century.<sup>15</sup> They are equally totalizing systems for binding and unifying all subjects within a single global network of valuation and desire. As Marx said of money, photography is also a great leveler, a democratizer, a "mere symbol," a fiction "sanctioned by the so-called universal consent of mankind."<sup>16</sup> Both are magical forms that establish a new set of abstract relations between individuals and things and impose those relations as the real. It is through the distinct but interpenetrating economies of money and photography that a whole social world is represented and constituted exclusively as signs.

Photography, however, is not the subject of this book. Crucial as photography may be to the fate of visibility in the nineteenth century and beyond,

14. The most important model for serial industrial production in the nineteenth century was ammunition and military spare parts. That the need for absolute similarity and exchangeability came out of the requirements of warfare, not out of developments in an economic sector, is argued in Manuel De Landa, *War in the Age of Intelligent Machines* (New York, 1990).

15. For related arguments, see John Tagg, "The Currency of the Photograph," in *Thinking Photography*, ed. Victor Burgin (London, 1982), pp. 110-141; and Alan Sekula, "The Traffic in Photographs," in *Photography Against the Grain: Essays and Photo Works 1973-1983* (Halifax, 1984), pp. 96-101.

16. Karl Marx, *Capital*, vol. 1, trans. Samuel Moore and Edward Aveling (New York, 1967), p. 91.

its invention is secondary to the events I intend to detail here. My contention is that a reorganization of the observer occurs in the nineteenth century before the appearance of photography. What takes place from around 1810 to 1840 is an uprooting of vision from the stable and fixed relations incarnated in the camera obscura. If the camera obscura, as a concept, subsisted as an objective ground of visual truth, a variety of discourses and practices—in philosophy, science, and in procedures of social normalization—tend to abolish the foundations of that ground in the early nineteenth century. In a sense, what occurs is a new valuation of visual experience: it is given an unprecedented mobility and exchangeability, abstracted from any founding site or referent.

In chapter 3, I describe certain aspects of this revaluation in the work of Goethe and Schopenhauer and in early nineteenth-century psychology and physiology, where the very nature of sensation and perception takes on many of the features of equivalence and indifference that will later characterize photography and other networks of commodities and signs. It is this visual "nihilism" that is in the forefront of empirical studies of subjective vision, a vision that encompasses an autonomous perception severed from any external referent. What must be emphasized, however, is that this new autonomy and abstraction of vision is not only a precondition for modernist painting in the later nineteenth century but also for forms of visual mass culture appearing much earlier. In chapter 4, I discuss how optical devices that became forms of mass entertainment, such as the stereoscope and the phenakistiscope, originally derived from new empirical knowledge of the physiological status of the observer and of vision. Thus certain forms of visual experience usually uncritically categorized as "realism" are in fact bound up in *non-veridical* theories of vision that effectively annihilate a real world. Visual experience in the nineteenth century, despite all the attempts to authenticate and naturalize it, no longer has anything like the apodictic claims of the camera obscura to establish its truth. On a superficial level the fictions of realism operate undisturbed, but the processes of modernization in the nineteenth century did not depend on such illusions. New modes of circulation, communication, production, consumption, and rationalization all demanded and shaped a new kind of observer-consumer.

What I call the observer is actually just one effect of the construction of a new kind of subject or individual in the nineteenth century. The work of

Michel Foucault has been crucial for its delineation of processes and institutions that rationalized and modernized the subject, in the context of social and economic transformations.<sup>17</sup> Without making causal connections, Foucault demonstrates that the industrial revolution coincided with the appearance of "new methods for administering" large populations of workers, city dwellers, students, prisoners, hospital patients, and other groups. As individuals became increasingly torn away from older regimes of power, from agrarian and artisanal production, and from large familial setups, new decentralized arrangements were devised to control and regulate masses of relatively free-floating subjects. For Foucault, nineteenth-century modernity is inseparable from the way in which dispersed mechanisms of power coincide with new modes of subjectivity, and he thus details a range of pervasive and local techniques for controlling, maintaining, and making useful new multiplicities of individuals. Modernization consists in this production of manageable subjects through what he calls "a certain policy of the body, a certain way of rendering a group of men docile and useful. This policy required the involvement of definite relations of power; it called for a technique of overlapping subjection and objectification; it brought with it new procedures of individualization."<sup>18</sup>

Although he ostensibly examines "disciplinary" institutions like prisons, schools, and the military, he also describes the role of the newly constituted human sciences in regulating and modifying the behavior of individuals. The management of subjects depended above all on the accumulation of knowledge about them, whether in medicine, education, psychology, physiology, the rationalization of labor, or child care. Out of this knowledge came what Foucault calls "a very real technology, the technology of individuals," which he insists is "inscribed in a broad historical process: the development at about the same time of many other technologies—agronomical, industrial, economical."<sup>19</sup>

Crucial to the development of these new disciplinary techniques of the subject was the fixing of quantitative and statistical *norms* of behavior.<sup>20</sup> The

17. Michel Foucault, *Discipline and Punish*, trans. Alan Sheridan (New York, 1977).

18. Foucault, *Discipline and Punish*, p. 305.

19. Foucault, *Discipline and Punish*, pp. 224–225.

20. For Georges Canguilhem, processes of normalization overlap with modernization

assessment of "normality" in medicine, psychology, and other fields became an essential part of the shaping of the individual to the requirements of institutional power in the nineteenth century, and it was through these disciplines that the subject in a sense became *visible*. My concern is how the individual as observer became an object of investigation and a locus of knowledge beginning in the first few decades of the 1800s, and how the status of the observing subject was transformed. As I have indicated, a key object of study in the empirical sciences then was subjective vision, a vision that had been taken out of the incorporeal relations of the camera obscura and relocated in the human body. It is a shift signaled by the passage from the geometrical optics of the seventeenth and eighteenth centuries to physiological optics, which dominated both scientific and philosophical discussion of vision in the nineteenth century. Thus knowledge was accumulated about the constitutive role of the body in the apprehension of a visible world, and it rapidly became obvious that efficiency and rationalization in many areas of human activity depended on information about the capacities of the human eye. One result of the new physiological optics was to expose the idiosyncrasies of the "normal" eye. Retinal afterimages, peripheral vision, binocular vision, and thresholds of attention all were studied in terms of determining quantifiable norms and parameters. The widespread preoccupation with the defects of human vision defined ever more precisely an outline of the normal, and generated new technologies for imposing a normative vision on the observer.

In the midst of such research, a number of optical devices were invented that later became elements in the mass visual culture of the nineteenth century. The phenakistiscope, one of many machines designed for the illusory simulation of movement, was produced in the midst of the empirical study of retinal afterimages; the stereoscope, a dominant form for the consumption of photographic imagery for over half a century, was first developed within the effort to quantify and formalize the physiological operation of binocular vision. What is important, then, is that these central components of nine-

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in the nineteenth century: "Like pedagogical reform, hospital reform expresses a demand for rationalization which also appears in politics, as it appears in the economy, under the effect of nascent industrial mechanization, and which finally ends up in what has since been called normalization." *The Normal and the Pathological*, trans. Carolyn Fawcett (New York, 1989), pp. 237-238. Canguilhem asserts that the verb "to normalize" is first used in 1834.

teenth-century "realism," of mass visual culture, *preceded* the invention of photography and *in no way required* photographic procedures or even the development of mass production techniques. Rather they are inextricably dependent on a new arrangement of knowledge about the body and the constitutive relation of that knowledge to social power. These apparatuses are the outcome of a complex remaking of the individual as observer into something calculable and regularizable and of human vision into something measurable and thus exchangeable.<sup>21</sup> The standardization of visual imagery in the nineteenth century must be seen then not simply as part of new forms of mechanized reproduction but in relation to a broader process of normalization and subjection of the observer. If there is a revolution in the nature and function of the sign in the nineteenth century, it does not happen independently of the remaking of the subject.<sup>22</sup>

Readers of *Discipline and Punish* have often noted Foucault's categorical declaration, "Our society is not one of spectacle but of surveillance. . . . We are neither in the amphitheatre nor on the stage but in the Panoptic machine."<sup>23</sup> Although this remark occurs in the midst of a comparison between arrangements of power in antiquity and modernity, Foucault's use of the term "spectacle" is clearly bound up in the polemics of post-1968 France.

21. Measurement takes on a primary role in a broad range of the physical sciences between 1800 and 1850, the key date being 1840 according to Thomas S. Kuhn, "The Function of Measurement in Modern Physical Science," in *The Essential Tension: Selected Studies in Scientific Tradition and Change* (Chicago, 1979), pp. 219–220. Kuhn is supported by Ian Hacking: "After 1800 or so there is an avalanche of numbers, most notably in the social sciences. . . . Perhaps a turning point was signaled in 1832, the year that Charles Babbage, inventor of the digital computer, published his brief pamphlet urging publication of tables of all the constant numbers known in the sciences and the arts." Hacking, *Representing and Intervening: Introductory Topics in the Philosophy of Natural Science* (Cambridge, 1983), pp. 234–235.

22. Baudrillard's notion of a shift from the fixed signs of feudal and aristocratic societies to the exchangeable symbolic regime of modernity finds a reciprocal transformation articulated by Foucault in terms of the individual: "The moment that saw the transition from historico-ritual mechanisms for the formation of individuality to the scientifico-disciplinary mechanisms, when the normal took over from the ancestral, and measurement from status, thus substituting for the individuality of the memorable man that of the calculable man, that moment when the sciences of man became possible is the moment when a new technology of power and a new political anatomy of the body were implemented." *Discipline and Punish*, p. 193.

23. Foucault, *Discipline and Punish*, p. 217.

When he wrote the book in the early 1970s, "spectacle" was an obvious allusion to analyses of contemporary capitalism by Guy Debord and others.<sup>24</sup> One can well imagine Foucault's disdain, as he wrote one of the greatest meditations on modernity and power, for any facile or superficial use of "spectacle" as an explanation of how the masses are "controlled" or "duped" by media images.<sup>25</sup>

But Foucault's opposition of surveillance and spectacle seems to overlook how the effects of these two regimes of power can coincide. Using Bentham's panopticon as a primary theoretical object, Foucault relentlessly emphasizes the ways in which human subjects became objects of observation in the form of institutional control or scientific and behavioral study; but he neglects the new forms by which vision itself became a kind of discipline or mode of work. The nineteenth-century optical devices I discuss, no less than the panopticon, involved arrangements of bodies in space, regulations of activity, and the deployment of individual bodies, which codified and normalized the observer within rigidly defined systems of visual consumption. They were techniques for the management of attention, for imposing homogeneity, anti-nomadic procedures that fixed and isolated the observer using "partitioning and cellularity . . . in which the individual is reduced as a political force." The organization of mass culture did not proceed on some other inessential or superstructural area of social practice; it was fully embedded within the same transformations Foucault outlines.

I am hardly suggesting, however, that the "society of the spectacle" suddenly appears alongside the developments I am detailing here. The "spectacle," as Debord uses the term, probably does not effectively take shape until several decades into the twentieth century.<sup>26</sup> In this book, I am offering some

24. Guy Debord, *The Society of the Spectacle*, trans. Donald Nicholson-Smith (New York, 1990). First published in France in 1967.

25. On the place of vision in Foucault's thought, see Gilles Deleuze, *Foucault*, pp. 46-69. See also John Rajchman, "Foucault's Art of Seeing," *October* 44 (Spring 1988), pp. 89-117.

26. Following up on a brief remark by Debord, I have discussed the case for placing the onset of the "society of the spectacle" in the late 1920s, concurrent with the technological and institutional origins of television, the beginning of synchronized sound in movies, the use of mass media techniques by the Nazi party in Germany, the rise of urbanism, and the political failure of surrealism in France, in my "Spectacle, Attention, Counter-Memory," *October* 50 (Fall 1989), pp. 97-107.

notes on its prehistory, on the early background of the spectacle. Debord, in a well-known passage, poses one of its main features:

Since the spectacle's job is to cause a world that is no longer directly perceptible to be *seen* via different specialized mediations, it is inevitable that it should elevate the human sense of sight to the special place once occupied by touch; the most abstract of the senses, and the most easily deceived, sight is naturally the most readily adaptable to present-day society's generalized abstraction.<sup>27</sup>

Thus, in my delineation of a modernization and reevaluation of vision, I indicate how the sense of touch had been an integral part of classical theories of vision in the seventeenth and eighteenth centuries. The subsequent dissociation of touch from sight occurs within a pervasive "separation of the senses" and industrial remapping of the body in the nineteenth century. The loss of touch as a conceptual component of vision meant the unloosening of the eye from the network of referentiality incarnated in tactility and its subjective relation to perceived space. This autonomization of sight, occurring in many different domains, was a historical condition for the rebuilding of an observer fitted for the tasks of "spectacular" consumption. Not only did the empirical isolation of vision allow its quantification and homogenization but it also enabled the new objects of vision (whether commodities, photographs, or the act of perception itself) to assume a mystified and abstract identity, sundered from any relation to the observer's position within a cognitively unified field. The stereoscope is one major cultural site on which this breach between tangibility and visuality is singularly evident.

If Foucault describes some of the epistemological and institutional conditions of the observer in the nineteenth century, others have detailed the actual shape and density of the field in which perception was transformed. Perhaps more than anyone else, Walter Benjamin has mapped out the heterogeneous texture of events and objects out of which the observer in that century was composed. In the diverse fragments of his writings, we encounter

27. Debord, *The Society of the Spectacle*, sec. 18.

an ambulatory observer shaped by a convergence of new urban spaces, technologies, and new economic and symbolic functions of images and products—forms of artificial lighting, new use of mirrors, glass and steel architecture, railroads, museums, gardens, photography, fashion, crowds. Perception for Benjamin was acutely temporal and kinetic; he makes clear how modernity subverts even the possibility of a contemplative beholder. There is never a pure access to a single object; vision is always multiple, adjacent and overlapping with other objects, desires, and vectors. Even the congealed space of the museum cannot transcend a world where everything is in circulation.

It should not go unremarked that one topic is generally unexamined by Benjamin: nineteenth-century painting. It simply is not a significant part of the field of which he provides a rich inventory. Of the many things this omission implies, it certainly indicates that for him painting was not a *primary* element in the reshaping of perception in the nineteenth century.<sup>28</sup> The observer of paintings in the nineteenth century was always also an observer who simultaneously consumed a proliferating range of optical and sensory experiences. In other words, paintings were produced and assumed meaning not in some impossible kind of aesthetic isolation, or in a continuous tradition of painterly codes, but as one of many consumable and fleeting elements within an expanding chaos of images, commodities, and stimulation.

One of the few visual artists that Benjamin discusses is Charles Meryon, mediated through the sensibility of Baudelaire.<sup>29</sup> Meryon is important not for the formal or iconographic content of this work, but as an index of a damaged sensorium responding to the early shocks of modernization. Meryon's disturbing images of the mineral inertness of a medieval Paris take on the value of "afterimages" of an annihilated set of spaces at the onset of Second Empire urban renewal. And the nervous crosshatched incisions of his etched plates bespeak the atrophy of artisanal handicraft in the face of serial industrial reproduction. The example of Meryon insists that vision in the nineteenth

28. See, for example, Benjamin, *Reflections*, trans. Edmund Jephcott (New York, 1978), p. 151: "With the increasing scope of communications systems, the significance of painting in imparting information is reduced."

29. Walter Benjamin, *Charles Baudelaire: A Lyric Poet in the Era of High Capitalism*, trans. Harry Zohn (London, 1973), pp. 86–89.

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century was inseparable from transience—that is, from new temporalities, speeds, experiences of flux and obsolescence, a new density and sedimentation of the structure of visual memory. Perception within the context of modernity, for Benjamin, never disclosed the world as presence. One mode was the observer as *flâneur*, a mobile consumer of a ceaseless succession of illusory commodity-like images.<sup>30</sup> But the "destructive dynamism" of modernization was also a condition for a vision that would resist its effects, a revivifying perception of the present caught up in its own historical afterimages. Ironically, "the standardized and denatured" perception of the masses, to which Benjamin sought radical alternatives, owed much of its power in the nineteenth century to the empirical study and quantification of the retinal afterimage and its particular temporality, as I indicate in chapters 3 and 4.

Nineteenth-century painting was also slighted, for very different reasons, by the founders of modern art history, a generation or two before Benjamin. It is easy to forget that art history as an academic discipline has its origins within this same nineteenth-century milieu. Three nineteenth-century developments inseparable from the institutionalization of art historical practice are: (1) historicist and evolutionary modes of thought allowing forms to be arrayed and classified as an unfolding over time; (2) sociopolitical transformations involving the creation of leisure time and the cultural enfranchisement of more sectors of urban populations, one result of which was the public art museum; and (3) new serial modes of image reproduction, which permitted both the global circulation and juxtaposition of highly credible copies of disparate artworks. Yet if nineteenth-century modernity was in part the matrix of art history, the artworks of that modernity were excluded from art history's dominant explanatory and classifying schemes, even into the early twentieth century.

For example, two crucial traditions, one stemming from Morelli and another from the Warburg School, were fundamentally unable or unwilling to include nineteenth-century art within the scope of their investigations. This in spite of the dialectical relation of these practices to the historical moment of their own emergence: the concern of Morellian connoisseurship with

30. See Susan Buck-Morss, "The Flâneur, the Sandwichman, and the Whore: The Politics of Loitering," *New German Critique* 39 (Fall, 1986), pp. 99–140.

authorship and originality occurs when new technologies and forms of exchange put in question notions of the "hand," authorship, and originality and the quest by Warburg School scholars for symbolic forms expressive of the spiritual foundations of a unified culture coincides with a collective cultural despair at the absence or impossibility of such forms in the present. Thus these overlapping modes of art history took as their privileged objects the figurative art of antiquity and the Renaissance.

What is of interest here is the penetrating recognition, subliminal or otherwise, by the founding art historians that nineteenth-century art was fundamentally discontinuous with the art of preceding centuries. Clearly, the discontinuity they sensed is not the familiar break signified by Manet and impressionism; rather it is a question of why painters as diverse as Ingres, Overbeck, Courbet, Delaroche, Meissonier, von Köbell, Millais, Gleyre, Friedrich, Cabanel, Gerôme, and Delacroix (to name only a few) together incarnated a surface of mimetic and figural representation apparently similar to but disquietingly unlike what had preceded it. The art historian's silence, indifference, or even disdain for eclecticism and "degraded" forms implied that this period constituted a radically different visual language that could not be submitted to the same methods of analysis, that could not be made to speak in the same ways, that even could not be read.<sup>31</sup>

The work of subsequent generations of art historians, however, soon obscured that inaugural intuition of rupture, of difference. The nineteenth century gradually became assimilated into the mainstream of the discipline through apparently dispassionate and objective examination, similar to what had happened earlier with the art of late antiquity. But in order to domesticate that strangeness from which earlier scholars had recoiled, historians explained nineteenth-century art according to models taken from the study of older art.<sup>32</sup> Initially, mainly formal categories from Renaissance painting

31. The hostility to most contemporary art in Burckhardt, Hildebrand, Wölfflin, Riegl, and Fiedler is recounted in Michael Podro, *The Critical Historians of Art* (New Haven, 1982), pp. 66–70.

32. One of the first influential attempts to impose the methodology and vocabulary of earlier art history onto nineteenth-century material was Walter Friedlaender, *David to Delacroix*, trans. Robert Goldwater (Cambridge, Mass., 1952); original German edition, 1930. Friedlaender describes French painting in terms of alternating classical and baroque phases.

were transferred to nineteenth-century artists, but beginning in the 1940s notions like class content and popular imagery became surrogates for traditional iconography. By inserting nineteenth-century painting into a continuous history of art and a unified discursive apparatus of explanation, however, something of its essential difference was lost. To recover that difference one must recognize how the making, the consumption, and the effectiveness of that art is dependent on an observer—and on an organization of the visible that vastly exceeds the domain conventionally examined by art history. The isolation of painting after 1830 as a viable and self-sufficient category for study becomes highly problematic, to say the least. The circulation and reception of *all* visual imagery is so closely interrelated by the middle of the century that any single medium or form of visual representation no longer has a significant autonomous identity. The meanings and effects of any single image are always adjacent to this overloaded and plural sensory environment and to the observer who inhabited it. Benjamin, for example, saw the art museum in the mid-nineteenth century as simply one of many dream spaces, experienced and traversed by an observer no differently from arcades, botanical gardens, wax museums, casinos, railway stations, and department stores.<sup>33</sup>

Nietzsche describes the position of the individual within this milieu in terms of a crisis of assimilation:

Sensibility immensely more irritable; . . . the abundance of disparate impressions greater than ever: cosmopolitanism in foods, literatures, newspapers, forms, tastes, even landscapes. The tempo of this influx *prestissimo*; the impressions erase each other; one instinctively resists taking in anything, taking anything deeply, to “digest” anything; a weakening of the power to digest results from this. A kind of adaptation to the flood of impressions takes place: men unlearn spontaneous action, they merely react to stimuli from the outside.<sup>34</sup>

Like Benjamin, Nietzsche here undermines any possibility of a contemplative beholder and poses an anti-aesthetic distraction as a central feature of mod-

33. See Walter Benjamin, *Das Passagen-Werk*, vol. 1 (Frankfurt, 1982), pp. 510–523.

34. Friedrich Nietzsche, *The Will to Power*, trans. Walter Kaufmann and R. J. Hollingdale (New York, 1967), p. 47.

ernity, one that Georg Simmel and others were to examine in detail. With Nietzsche uses quasi-scientific words like "influx," "adaptation," "react," "irritability," it is about a world that has already been reconfigured into perceptual components. Modernity, in this case, coincides with the collapse of classical models of vision and their stable space of representations. Instead of observation is increasingly a question of equivalent sensations and stimuli that have no reference to a spatial location. What begins in the 1820s and 1830s is a repositioning of the observer, outside of the fixed relations of interior/exterior presupposed by the camera obscura and into an undemarcated terrain in which the distinction between internal sensation and external signs is irrevocably blurred. If there is ever a "liberation" of vision in the nineteenth century, this is when it first happens. In the absence of the juridical model of the camera obscura, there is a freeing up of vision, a falling away of the rigid structures that had shaped it and constituted its objects.

But almost simultaneous with this final dissolution of a transcendental foundation for vision emerges a plurality of means to recode the activity of the eye, to regiment it, to heighten its productivity and to prevent its distraction. Thus the imperatives of capitalist modernization, while demolishing the field of classical vision, generated techniques for imposing visual attentiveness, rationalizing sensation, and managing perception. They were disciplinary techniques that required a notion of visual experience as instrumental, measurable, and essentially abstract, and that never allowed a real world to acquire solidity or permanence. Once vision became located in the empirical immediacy of the observer's body, it belonged to time, to flux, to death. The guarantees of authority, identity, and universality supplied by the camera obscura are of another epoch.