The value of this book's title is as much in evocation as description: important for me are several resonances of the word suspension. First, I want to suggest the state of being suspended, a looking or listening so rapt that it is an exception from ordinary conditions, that it becomes a suspended temporality, a hovering out of time. The roots of the word attention in fact resonate with a sense of "tension," of being "stretched," and also of "waiting." It implies the possibility of a fixation, of holding something in wonder or contemplation, in which the attentive subject's both immobile and ungrounded. But at the same time a suspension is also a cancellation or an interruption, and I wanted here to indicate a disturbance, even a negation of perception itself. For throughout the book I am concerned with the idea of a perception that can be both an absorption and an absence or deferral. It is this contradictory composition of perception that I will examine here, not by romanticly identifying it as part of the eternal ruses of vision, but by exploring the conditions of possibility for its historical emergence. Perhaps it is unnecessary for me to propose that the archaeology of these conditions is synonymous with the prehistory of our own present and its techno-institutional worlds.

The constant continuity of the process, the unobstructed and fluid transition of value from one form into the other, or from one phase of the process into the next, appears as a fundamental condition for production based on capital.

—Karl Marx, Grundrisse

Almost all the problems of philosophy once again pose the same form of question as they did two thousand years ago: how can something originate in its opposite, for example rationality in irrationality, the sentient in the dead, logic in unlogic, disinterested contemplation in covetous desire, living for others in egoism, truth in error?

—Friedrich Nietzsche, Human, All Too Human

One of the most important nineteenth-century developments in the history of perception was the relatively sudden emergence of models of subjective vision in a wide range of disciplines during the period 1810–1840. Dominant discourses and practices of vision, within the space of a few decades, effectively broke with a classical regime of visuality and grounded the truth of vision in the density and
maternality of the body. One of the consequences of this shift was that the functioning of vision became dependent on the complex and contingent physiological makeup of the observer, rendering vision faulty, unreliable, and, it was sometimes argued, arbitrary. Even before the middle of the century, an extensive amount of work in science, philosophy, psychology, and art involved a coming to terms in various ways with the understanding that vision, or any of the senses, could no longer claim an essential objectivity or certainty. By the 1860s, the scientific work of Hermann von Helmholtz, Gustav Fechner, and many others had defined the contours of a general epistemological uncertainty in which perceptual experience had lost the primal guarantees that once upheld its privileged relation to the foundation of knowledge. This book examines some of the components of a cultural environment in which these new truths and new uncertainties about perception were being contested and reconstructed, within both visual modernism and a modernizing mass visual culture, beginning in the late 1870s.

The idea of subjective vision—the notion that our perceptual and sensory experience depends less on the nature of an external stimulus than on the composition and functioning of our sensory apparatus—was one of the conditions for the historical emergence of notions of autonomous vision, that is, for a severing (or elevation) of perceptual experience from a necessary relation to an exterior world. Equally important, the rapid accumulation of knowledge about the workings of a fully embodied observer disclosed possible ways that vision was open to procedures of normalization, of quantification, of discipline. Once the empirical truth of vision was determined to lie in the body, vision (and similarly the other senses) could be annexed and controlled by external techniques of manipulation and simulation. This was the decisive achievement of the science of psychophysics in the mid-nineteenth century, which, by apparently rendering sensation measurable, embedded human perception in the domain of the quantifiable and the abstract. Vision, conceived in this way, became compatible with many other processes of modernization, even as it also opened up the possibility of visual experience that was intrinsically nonrationalizable, that exceeded any procedures of normalization. These developments are part of a critical historical turning point in the second half of the nineteenth century at which any significant qualitative difference between life and technics begins to evaporate. The disintegration of an indis-putable distinction between interior and exterior becomes a condition for the emergence of spectacular modernizing culture and for a dramatic expansion of the possibilities of aesthetic experience. The relocation of perception (as well as processes and functions previously assumed to be "mental") in the thickness of the body was a precondition for the instrumentalizing of human vision as a component of machinic arrangements; but it also stands behind the astonishing burst of visual invention and experimentation in European art in the second half of the nineteenth century.

More specifically since the late nineteenth century, and increasingly during the last two decades, capitalist modernity has generated a constant re-creation of the conditions of sensory experience, in what could be called a revolutionizing of the means of perception. For the last 100 years perceptual modalities have been and continue to be in a state of perpetual transformation, or, some might claim, a state of crisis. If vision can be said to have any enduring characteristic within the twentieth century, it is that it has no enduring features. Rather it is embedded in a pattern of adaptability to new technological relations, social configurations, and economic imperatives. What we familiarly refer to, for example, as film, photography, and television are transient elements within an accelerating sequence of displacements and obsolescences, part of the delirious operations of modernization.

At the moment when the dynamic logic of capital began to dramatically undermine any stable or enduring structure of perception, this logic simultaneously attempted to impose a disciplinary regime of attentiveness. For it is in the late nineteenth century, within the human sciences and particularly the nascent field of scientific psychology, that the problem of attention becomes a fundamental issue. It was a problem whose centrality was directly related to the emergence of a social, urban, psychic, and industrial field increasingly saturated with sensory input. Inattention, especially within the context of new forms of large-scale industrialized production, began to be treated as a danger and a serious problem, even though it was often the very modernized arrangements of labor that produced inattention. It is possible to see one crucial aspect of modernity as an ongoing

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2. As my friends and close colleagues well know, I've been engaged with the historical and cultural problem of attention since the late 1980s, initially setting up some of the terms of my interest in "Attention, Spectacle, Counter-Memory," October 50 (Fall 1989), pp. 97–107. Early sections of the present chapter and parts of chapter two appeared as "Unbinding Vision," October 68 (Spring 1994), pp. 21–44; and my "Attention and Modernity in the Nineteenth Century" was included in Caroline Jones and Peter Galison, eds., Picturing Science, Producing Art (New York: Routledge, 1998), pp. 475–499.

3. Marx discusses how, even by the 1840s, factory management understood that "the extent of vigilance and attention on the part of the workmen was hardly capable of being increased" and that...
crisis of attentiveness, in which the changing configurations of capitalism continually push attention and distraction to new limits and thresholds, with an endless sequence of new products, sources of stimulation, and streams of information, and then respond with new methods of managing and regulating perception. Gianni Vattimo has noted that “the intensification of communicative phenomena and the increasingly prominent circulation of information . . . are not merely aspects of modernization amongst others, but in some way the center and very sense of this process.” But at the same time, attention, as a historical problem, is not reducible to the strategies of social discipline. As I shall argue, the articulation of a subject in terms of attentive capacities simultaneously disclosed a subject incapable of conforming to such disciplinary imperatives.

Since Kant, part of the epistemological dilemma of modernity has been defining a human capacity for synthesis within the fragmentation and atomization of a cognitive field. That dilemma becomes especially acute in the second half of the nineteenth century alongside the development of various techniques for imposing specific kinds of perceptual synthesis, from the mass diffusion of the stereoscope in the 1850s to early forms of cinema in the 1890s. The nineteenth century saw the steady demolition of Kant’s transcendental standpoint and its synthetic a priori categories, detailed in his first critique. Kant argued that all possible perception could occur only in terms of an original synthetic unification principle, a self-cause, that stood over and above any empirical sense experiences such as vision. “Unity of synthesis according to empirical concepts would be altogether accidental, if these latter were not based on a transcendental ground of unity. Otherwise it would be possible for appearances to crowd in upon the soul . . . . Since connection in accordance with universal and necessary laws would be lacking, all relation of knowledge to objects would fall away.” Once the philosophical guarantees of any a priori cognitive unity collapsed (or once the possibility of the self-imposing its unity onto the world, in post-Kantian idealism, became untenable), the problem of “reality maintenance” gradually became a function of a contingent and merely psychological capacity for synthesis or association.” Schopenhauer’s substitution of the will for Kant’s transcendental unity of apperception is an event with many aftershocks, for it implied that the perceived wholeness of the world was no longer the apodictic product of Law but depended on a potentially variable relation of forces, including external forces outside the subject’s control. It became imperative for thinkers of all kinds to discover what faculties, operations, or organs produced or allowed the complex coherence of conscious thought. The failure or malfunction of a capacity for synthesis, often described as dissociation, became linked in the late nineteenth century with psychoses and other mental pathologies. But what was often labeled as a regressive or pathological disintegration of perception was in fact evidence of a fundamental shift in the relation of the subject to a visual field. In Bergson’s work, for example, new models of synthesis involved the binding of immediate sensory perceptions with the creative forces of memory. Wilhelm Dilthey discussed at length the creative forms of synthesis and fusion that are specific to the activity of the human imagination. For Nietzsche synthesis was no longer the constitution of truth but rather a shifting alignment of forces that was endlessly creative and metamorphic.

The American psychologist G. Stanley Hall, writing in 1888, pessimistically reflected on the repercussions of accepting this contingency as a condition of knowledge: “Does life cultivate the mind only in spots or nodes, and are these so imperfectly bound together by associative and apperceptive processes that special stress upon one of them causes it to isolate itself still more till the power of self-direction is lost, and devolution and disintegration slowly supervene?” For institutional psychology in the 1880s and 1890s, part of psychic normality was the ability

6. Victor Cousin exemplifies a wider sense of despair at the rise of “psychological” explanation within epistemology: “Now as soon as the laws of reason are degraded to being nothing but laws relative to the human condition, their whole character is circumscribed by the sphere of our personal nature, and their widest consequences, always marked with an indelible character of subjectivity, engender only irresistible assumptions, if you please, but no independent truths.” Cousin, Elements of Psychology, trans. Caleb Henry (New York: Putnam & Philips, 1856), pp. 170–172.


to synthetically bind perceptions into a functional whole, thereby warding off the threat of dissociation, or of what Kant saw as perceptions "crowding in upon the soul," The German psychologist Oswald Külpe insisted that without a capacity for attention, "consciousness would be at the mercy of external impressions...thinking would be made impossible by the noisiness of our surroundings." The operation of vision itself, with all its physiological idiosyncrasies and inconsistencies, was not sufficiently lawful to function reliably without the "juridical" intervention of attention to hold together sensory data.

The anti-modernist Max Nordau was one of the most widely read writers to link a failure of attentiveness with sociopathic behavior, but his diatribes were not far from the social determinations underpinning the work of more sober, scientific authorities like Ribot:

"Unattended and unrestrained by attention, the brain activity of the degenerate and hysterical is capricious and without aim or purpose. Through the unrestricted play of association representations are called into consciousness and are free to run riot there. They are aroused and extinguished automatically; and the will does not interfere to strengthen or to suppress them...Weakness or want of attention, produces, then, in the first place false judgements respecting the objective universe, respecting the qualities of things and their relations to each other. Consciousness acquires a distorted and blurred view of the external world...Culture and command over the powers of nature are solely the result of attention; all errors, all superstition, the consequence of defective attention." 12

Attention for Nordau, and in a less extreme way for many others, was a repressive and disciplinary defense against all potentially disruptive forms of free association. The words of British psychologist James Cappie in the 1880s are perhaps more typical: "It is unnecessary to enlarge on the psychological importance of this function. It may be said to underlie every other mental faculty. It is the bringing of the consciousness to a focus in some special direction...without it meaningless reverie will take the place of coherent thought." 13 Attention thus became an imprecise way of designating the relative capacity of a subject to selectively isolate certain contents of a sensory field at the expense of others in the interests of maintaining an orderly and productive world.

Obvious notions of attention and attentiveness exist in many different places long before the nineteenth century, going back to St. Augustine and earlier, and even a summary outline of their history would be enormous. 14 My aim here is simply to indicate how, in the second half of the nineteenth century, attention becomes a fundamentally new object within the modernization of subjectivity. In most cases before the nineteenth century, it had a local importance in matters of education, self-fashioning, etiquette, pedagogical and mnemonic practices, or scientific inquiry. 15 Even when attention was an object of philosophical reflection,

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11. In the 1880s, Yale psychology professor George Trumbull Ladd suggested the cognitive inadequacy of the "retinal." "Many retinal images admit of two or more interpretations—which interpretation will be chosen depends upon a variety of circumstances that perhaps cannot be accurately defined...Anyone accustomed to studying the effect of colored points and outlines which appear in the image seen with closed eyes by the retina's own light, knows how apparently lawless is the interpretation given to this image. This is especially true when attention is somewhat relaxed—as, for example, on sitting into reverie or sleep. Much of the stuff out of which the phenomena of dreams are made, may be suggested and controlled by the condition of the retinal field." In all these cases, only a sharper attention and more objective view of things is needed to dispel the illusion and make us aware how 'scary' is the schema, as a rule, out of which, by association and reproduction, we have constructed our presentations of sense." Ladd, Elements of Physiological Psychology (New York: Scribner's, 1887), pp. 146-147. (emphasis added)

12. Max Nordau, Degeneration (1892; New York: Appleton, 1895), p. 56. Nordau's work had been preceded by numerous more "scientific" studies of his subject. Mental degeneration, including defective attentiveness, is discussed in the context of larger cosmic and revolutionary processes of decline.


14. Augustine characterizes human attention in terms of its essential temporality, unlike divine knowledge: "Nor does God's attention pass from one thought to another, all things which he knows are present at the same time to his incorporeal vision. He knows events in time without any temporal acts of knowledge." City of God, trans. Henry Bettenson (London: Penguin, 1972), p. 452. Some Augustinian elements reappear much later in Malebranche's discussion of attention, a discussion that is otherwise a product of the Cartesian intellectual milieu of late seventeenth-century France. In one of the great European attempts at an ontology of perception, Malebranche outlines a fundamental ambivalence about attention because it is too bound up in the passions and the senses, which can divert the mind from contemplation of purely intelligible truths. "Nonetheless, as the soul cannot be without passions, sensations, or some other particular modification, we must make a virtue of necessity and draw even from these modifications assistance in making ourselves more attentive." Nicolás Malebranche, The Search after Truth (1675), trans. Thomas M. Lennon and Paul J. Olscamp (Cambridge: Cambridge University Press, 1997), pp. 413-148. In his essay "Time and Creation," Cornelius Castoriadis discusses the importance of attention to the conception of subjective time in Augustine and Husserl, in Castoriadis, World in Fragments, trans. David Ames Curtis (Stanford: Stanford University Press, 1997), pp. 374-401.

15. Descartes's discussion of admiration or wonderment in The Passions of the Soul defines some of the terms of a fundamentally different historical regime of attention. See The Philosophical Writings of Descartes, vol. 1, trans. John Cottingham et al. (Cambridge: Cambridge University Press, 1985), pp. 354-356. "Of wonder, in particular, we may say that it is useful in that it makes us learn and retain
it was a marginal, at best secondary problem within explanations of mind and consciousness that either did not constitutively depend on it or in which it was one of a constellation of equally significant and mutually dependent faculties. Attention figures in Condillac's epistemology, for example, but he situates it as simply one element of many contributing to the necessarily unified operation of mental life, whereas in the period I am examining attention was an essential but fragile imposition of coherence and clarity onto the dispersed contents of consciousness. At the same time, for Condillac, attention was a matter of the force of a sensation, an effect of an event external to the subject. In this sense he is not altogether distinct from eighteenth-century British philosophy with its models of a mind as passive receiver of sensation, models that had no need of an idea of attention (the word is of marginal significance in the work of Locke, Hume, and Berkeley if present at all). Attention, as it was conceived in the later nineteenth century, is radically alien to an eighteenth-century notion of mental activity as a stamp or a mold that will somehow fix or preserve the constancy of objects. In historical discussions of the problem of attention, one often encounters the claim that the modern psychological category of attention is continuous with notions of apperception that were important in different ways for Leibniz and Kant. But in fact what is crucial is the unmistakable historical discontinuity between the problem of attention in the second half of the nineteenth century and its place in European thought in previous centuries.

As I suggested earlier, there were two important conditions for the emergence of attention as a major problem in accounts of subjectivity. The first was
the collapse of classical models of vision and of the stable, punctual subject those models presupposed. The second was the untenability of a priori solutions to epistemological problems. This entailed the loss of any permanent or unconditional guarantees of mental unity and synthesis. There are many places in the first decades of the nineteenth century where responses to these problems were attempted. The work of philosopher Pierre Maine de Biran, in the early nineteenth century, is particularly important for demonstrating how questions of subjectivity are inseparable from the instability and uncertainty of physiological realities. His attempts to derive some factum primum of selfhood, of individual freedom, and finally of the possibility of soul from the enduring experience of active, willed effort in relation to the body established the terms for subsequent epistemological and even ethical debates. Jan Goldstein has detailed the importance of the problem of the unity of the self for Victor Cousin and others in the 1820s, who held to the general principle “Character is unity.” Cousin’s eclecticism “combined a limited reliance on sensationalism with a priori belief in the self, or moi, a repository of self-initiated mental activity and free will known through introspection.” Especially during the period from 1840 to the mid-1860s, there were a variety of systemic and often convoluted attempts to propose new principles from which to deduce an effective unity of mind or thought. Usually grouped under the category of “associationism,” such work—that of J. S. Mill, Herbert Spencer, Hermann Lotze, and the early Alexander Bain, for example—simply does not give attention a significant role. According to George Herbert Mead, “associational psychology never explained why

20. Maine de Biran is also significant here for the way his work anticipates some later nineteenth-century notions about attention. In one sense, his notion of attention is clearly part of an earlier body of knowledge in which attention is merely one of a number of equally important and interrelated faculties, such as judgment, memory, perception, and ideation. Maine de Biran’s rethinking of the category of apperception opens up a new understanding of the very nature of intuition and leads him to a mobile and dynamic conception of the will, especially its embeddedness in motor activity, that has crucial affinities with some late-nineteenth-century equations of attention and will. See, for example, Pierre-Maine de Biran, De l’apperception immediate (1807; Paris: J. Vrin, 1963). See also my discussion of Maine de Biran and the problematization of interiority in the early nineteenth century, in Techniques of the Observer, pp. 72–73.


22. The irrelevancy of Bain, Mill, and associationism in general by the 1880s is signaled conclusively by James Ward’s article on “Psychology” in the ninth edition of the Encyclopaedia Britannica, in which attention and volition figure as central categories. The place of attention in the thought of Thomas Reid, Dugald Stewart, and James Mill is differentiated from modern speculation and research in Charlton Bastian, “Les processus nerveux dans l’attention et la volition,” Revue philosophique 22 (April 1892), pp. 353–364.

23. Mead describes how “the psychology of attention ousted the psychology of association” in his Mind, Self, and Society (Chicago: University of Chicago Press, 1934), pp. 95–96.


By the last quarter of the nineteenth century, the specifically modern problem of attention is identifiable in many places. In a wide range of institutional discourses and practices within the arts and human sciences, attention became part of a dense network of texts and techniques around which the truth of perception was organized and structured. It was through the nev impatives of attention that the perception body was deployed and made productive and orderly, whether as student, worker, or consumer. Beginning in the 1870s, there was an explosion of research and debate on this topic. It was a major issue in the influential work of Gustav Fechner, Wilhelm Wundt, Titchener, Theodor Lipps, Carl Stumpf, Oswald Külpe, Ernst Mach, William James, and many others who interrogated the empirical and epistemological status of attention. Also, the pathology of a supposedly normative attentiveness was an important part of the inaugural work in France of researchers like J.-M. Charcot, Alfred Binet, and Théodule Ribot. In the 1890s attention became a major issue for Freud, and was one of the problems at the heart of his abandonment of the "Project for a Scientific Psychology" and his move to new psychical models. This book is not concerned with whether or not there is some empirically identifiable mental or neurological capacity for attention. It is an object for me only in terms of this massive accumulation of statements and concrete social practices during a specific historical period that presumed the existence and importance of such a capacity. I use the term attention not to hypostatize it as a substantive object, but to refer to the field of those statements and practices and to a network of effects which they produced. On one hand, then, I am asserting the centrality of attentiveness as a scientific object and social problem, but on the other I am emphasizing that the 1880s and 1890s generated a sprawling diversity of often contradictory attempts to explain it. Over the next part of this chapter I will indicate some of the important elements and

consequences of these finally unsuccessful attempts. However, I am not suggesting that there was any single or dominant model of an attentive observer. Attention was not part of a particular regime of power but rather part of a space in which new conditions of subjectivity were articulated, and thus a space in which effects of power operated and circulated. That is to say, new constructions of attentiveness occurred amid larger refigurations of subjectivity in the nineteenth century, and, as we have learned from studies of madness and sexuality in the same period, it was always a question of shifting relations between discursive/institutional power on one hand and a composite of forces that inherently resisted stabilization and control on the other.

Since the study of attention in this period attempted, as I will show, to rationalize what it ultimately revealed to be unrationlizable, the questions it asked are finally more important than its empirical conclusions. Some of the most pervasive of these questions were the following: How did attention screen out some sensations and not others? What determined how attention operated as a narrowing and focusing of conscious access? What forces or conditions caused an individual to attend to some limited aspects of an external world and not others? How many events or objects could one attend to simultaneously and for how long (i.e., what were its quantitative and physiological limits)? To what extent was attention an automatic or voluntary act, to what extent did it involve motor effort or psychic energy? For most authors, attention implied some process of perceptual or mental organization in which a limited number of objects or stimuli are isolated from a larger background of possible attractions. John Dewey provides an exemplary account, using optical figures, in his 1886 textbook: "In attention we focus the mind, as the lens takes all the light coming to it, and instead of allowing it to distribute itself evenly concentrates it in a point of great light and heat. So the mind, instead of diffusing consciousness over all the elements presented to it, brings it all to bear upon some one selected point, which stands out with unusual brilliancy and distinctness." But however it was described—organization, selection, attention—attention implied an inevitable fragmentation of a visual field in which the unified and homogeneous coherence of classical models of vision was impossible. The camera obscura model of vision in the eighteenth century described an ideal relation of self-presence between observer and world. Attention as a process of selection necessarily meant that perception was an activity of exclusion, of rendering parts of a perceptual field unperceived. The cultural and philosophical implications of this reconceptualization in turn raised a larger set of problems and produced a range of positions, which I will group into three loose categories. There were those who posed attention as an expression of the conscious will of an autonomous subject for whom the very activity of attention, as choice, was part of that subject's self-constituting freedom. There were those who believed that attention was primarily a function of biologically determined instincts, unconscious drives, a remnant, as Freud and others believed, of our archaic evolutionary heritage, which inexorably shaped our lived relation to an environment. And there were those who believed that an attentive subject could be produced and managed through the knowledge and control of external procedures of stimulation as well as a wide-ranging technology of "attraction."

For attention is not just one of the many topics examined experimentally by late nineteenth-century psychology but is the fundamental condition of its knowledge. Most areas of research—reaction times, sensory and perceptual sensitivity, mental chronometry, reflex action, conditioned responses—all presupposed a

32. Hegel's understanding of attention as "the beginning of education," as one of the means by which we obtain "knowledge of subject matter," is clearly part of an older set of models. However, his intuition of the division and loss of subjectivity in attention sets up the terms of a distinctly modern conceptualization, which turns on the problem of selectivity and exclusion. "But it does not follow that attention is an easy matter. On the contrary, it demands an effort since a man, if he wants to apprehend one particular object, must make abstraction from everything else, from all the thousand and one things going round in his head, from his other interests, from his own person, he must suppress his own concept which would rashly judge the subject-matter before it has a chance to speak for itself, must stubbornly absorb himself in the subject-matter, must fix his attention on it and let it have its way without obtruding his own reflections. Attention contains, therefore, the negation of one's self-assertion and also the surrender of oneself to the matter in hand." Hegel's Philosophy of Mind, trans. William Wallace and A. V. Miller (Oxford: Oxford University Press, 1971), pp. 195-196.
34. The work of Tom Gunning has been important for demonstrating that one of the formative components of a modernized mass visual culture in the West, as it took shape in the late 1880s and 1890s, was a technology of "attraction." Discussing early cinema, Gunning demonstrates that what was at stake was not primarily representation, imitation, narration, or the updating of theatrical forms. Rather it was a strategy of engaging an attentive spectator. "From comedians sitting at the camera, to the constant bowing and gesturing of conjurers in magic films, this is a cinema that displays its visibility, willing to capture a self-enclosed fictional world for a chance to solicit the attention of the spectator." Gunning, "The Cinema of Attractions: Early Film, Its Spectator, and the Avant-Garde," in Thomas Elsaesser, ed., Early Cinema: Space, Frame, Narratives. London, BFI, 1990), p. 37.
were technologically produced and were used to describe a subject who was compatible with those technical conditions. That is, its significance as an "interior" facility disappeared and it became a quantity or set of effects that could be measured or observed externally. In particular, attention was studied in terms of response to machine-produced stimuli, often electrical in nature and abstract in content, that allowed a quantitative determination of the sensory capacities of a perceiving subject. Within this vast project, an older model of sensation as something belonging to a subject became irrelevant. Sensation now had empirical significance only in terms of magnitudes that corresponded to specific quantities of energy (e.g., light) on one hand and to measurable reaction times and other forms of performative behavior on the other. It cannot be emphasized too strongly how, by the 1880s, the classical idea of sensation ceases to be a significant component in the cognitive picture of nature.64

But just as the rise of psychometry (i.e., any attempt at quantification or measurement of mental processes) in the human sciences either diminished or altered the importance of subjective sensation, another challenge to the classical notion of sensation can be seen in the work of a wide range of thinkers, in James, Nietzsche, Bergson, and Charles S. Peirce but also, as I will argue, in the work of Seurat and Cézanne. James and Bergson, in particular, explicitly challenged the notion of a pure or simple sensation, on which associationism depended. Both contended that any sensation, no matter how seemingly elemental, is always a compounding of memory, desire, will, anticipation, and immediate experience. But at the same time their work offered little support for the idea of a "pure" or autonomous aesthetic perception. Peirce, too, argued against the idea of "immediate" sensations, asserting that they are irreducible complexes of association and interpretation.65


65. See the important historical problemization of "mechanical objectivity" in the nineteenth century and the related orientation of the observer "beyond the limits of the human senses" in Lorraine Daston and Peter Galison, "The Image of Objectivity," Representations 40 (Fall 1992), pp. 81–128.

66. James was, however, convinced that "pure sensations" could be realized in the first days of life by an infant. Principles of Psychology, vol. 2, p. 7. He coined one of his most memorable phrases when he described how the "one great blooming, buzzing confusion" of the newborn baby quickly "coalesces" into a unified and homogeneous intuition of space. Principles of Psychology, vol. 1, p. 488.

Ernst Mach continued to employ the word "sensations" but refashioned it to indicate psychic "elements" that could not provide knowledge of a "true" external world. Important within this reorganization of perceptual experience, the contours of which I have only hinted at, was a struggle over how sensation and stimuli were interpreted, attended to, and made useful.

The problem of attention, then, was not a question of a neutral timeless activity like breathing or sleeping but of the emergence of a specific model of behavior with a historical structure—behavior that was articulated in terms of socially determined norms and was part of the formation of a modern technological milieu. Anyone familiar with the history of modern psychology knows the symbolic importance of the date 1879, the year when Wilhelm Wundt established the world's first psychology laboratory at the University of Leipzig. Irrespective of the specific nature of Wundt's intellectual project, this laboratory space, with its newly codified research procedures and finely calibrated apparatuses, became the model for the whole modern social organization of psychological experimentation around the study of an observer attentive to a wide range of artificially produced stimuli. To paraphrase Foucault, this has been one of the practical and discursive spaces within modernity in which human beings "problematize what they are."

This problem was elaborated within an emergent economic system that demanded attentiveness of a subject in a wide range of new productive and spectacular tasks, but whose internal movement was continually eroding the basis of any disciplinary attentiveness. Part of the cultural logic of capitalism demands that we

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45. On Wundt and the beginnings of the psychology laboratory see Kurt Danziger, *Constructing the Subject: Historical Origins of Psychological Research* (Cambridge: Cambridge University Press, 1990), pp. 17-33. See also Didier Deleuze, "The Living Machine: Psychology as Organology," in Jonathan Crary and Sanford Kwinter, eds., *Inscriptions* (New York: Zone Books, 1992), pp. 203-244. Occasionally, the priority of Wundt's laboratory is challenged in favor of the "laboratory" assembled by William James in Laconia Hall at Harvard in 1875, where he performed demonstrations for his students but did not then conduct or initiate any sustained experimental research program.
46. Studies on attention, like almost all important work within experimental psychology in the late nineteenth century, obviously involved human test subjects with specific demographic and sociological features such as age, gender, social class. It is well known, for example, that in the first ten years of the operation of Wundt's Leipzig laboratory his subjects were almost exclusively his own male students. Much the same was true of James McKeen Cattell's work at Columbia University in the 1880s. See the valuable discussion in Kurt Danziger, "A Question of Identity: Who Participated in Psychological Experiments?" in Jill G. Moravski, ed., *The Rise of Experimentation in American Psychology* (New Haven: Yale University Press, 1988), pp. 35-52.
accept as 'natural' switching our attention rapidly from one thing to another. Capital, as accelerated exchange and circulation, necessarily produced this kind of human perceptual adaptability and became a regime of reciprocal attentiveness and distraction. Helmholtz's account of subjective vision in his *Physiological Optics* established the truth of an observer in terms of an innate compatibility with this organization of experience: "It is natural for the attention to be distracted from one thing to another. As soon as the interest in one object has been exhausted, and there is no longer anything new in it to be perceived, it is transferred to something else, even against our will. When we wish to rivet it on an object, we must constantly seek to find something novel about it, and this is especially true when other powerful impressions of the senses are tugging at it and trying to distract it."\textsuperscript{45} Unlike in any previous order of visuality, mobility, novelty, and distraction became identified as constituent elements of perceptual experience.\textsuperscript{46} Even some of the most avid defenders of technological progress acknowledged that subjective adaptation to new perceptual speeds and sensory overload would not be without difficulties. Nordau predicted that "the end of the twentieth century, therefore, will probably see a generation to whom it will not be injurious to read a dozen square yards of newspapers daily, to be constantly called to the telephone, to be thinking simultaneously of the five continents of the world, to live half their time in a railway carriage or in a flying machine and . . . know how to find its ease in the midst of a city inhabited by millions."\textsuperscript{50} What he and others failed to grasp then was that modernization was not a one-time set of changes but an ongoing and perpetually modulating process that would never pause for individual subjectivity to accommodate and "catch up" with it.

Obviously, as I've suggested, in the late nineteenth century attention became a problem alongside the specific systemic organization of labor and production by industrial capitalism. But even as the global functioning of capitalism has mutated


\textsuperscript{50} Photography, whose development coincides historically with the acceleration of nineteenth-century capitalism, was intertwined with the emergence of new rhythms of attentional receptiveness. For example, in 1852, Victor Hugo, in his *Looking at Photographs*, in *Thinking Photography* (London: Macmillan, 1982), pp. 142-155.

\textsuperscript{51} Nordau, *Degeneration*, p. 311.

in the course of the twentieth century into postindustrial and information/communication-based phases, attention as a subjective and social problem retains some enduring features. To make this more concrete, consider one of the places where an influential model of an attentive subject was constructed, and where some elements of a modern system of perceptual transformation and adaptability were formulated: the work of Thomas Edison. Edison is a prominent sign of the transition to centralized corporate capitalism in the late nineteenth century (even though some aspects of his enterprise retained preindustrial practices and others pointed toward features of an information/communications-based economy). It is within this shift that we can locate his move away from earlier nineteenth-century techniques of display, exhibition, and consumption to paradigms that would become dominant in the twentieth century. Edison's importance lies not with any particular device or invention but rather in his role in the emergence, beginning in the 1870s, of a new system of quantification and distribution.\textsuperscript{52} Raymond Williams locates the origins of this system later, in radio and television, but his analysis is applicable to much of Edison's production: a system "primarily designed for transmission and reception as abstract processes, with little or no definition of preceding content."\textsuperscript{53} For Edison, cinema, for example, had no significance in itself—it was simply one of a potentially endless streams of symbols by which a space of consumption and circulation could be dynamized, activated.\textsuperscript{54} Edison saw the marketplace in terms of how images, sounds, energy, or information could be reshaped into measurable and distributable commodities and how a social field of individual subjects could be arranged into increasingly separate and specialized units of consumption.\textsuperscript{55} The logic that supported the Kinetoscope and the
Modernity and the Problem of Attention

...distinction between information and visual images, and the making of quantifiable and abstract flow into the object of attentive consumption. Edison's grasp of some of the systemic features of capitalism as it evolved in the 1880s and 1890s underscores the abstract nature of the products he "invented"; his work was inseparable from the continual manufacture of new needs and the consequent restructuring of the network of relations in which such products would be consumed. Recent corporate innovators Stephen Jobs, Bill Gates, and Andrew Grove are later participants in this same historical project of perpetual rationalization and modernization. In the late twentieth century as in the late nineteenth, the management of attention depends on the capacity of an observer to adjust to continual repatternings of the ways in which a sensory world can be consumed. Throughout changing modes of production, attention has continued to be a disciplinary immobilization as well as an accommodation of the subject to change and novelty—as long as the consumption of novelty is subsumed within repetitive forms.

Since the late 1800s, the problem of attention has remained more or less within the center of institutional empirical research and at the heart of the functioning of a capitalist consumer economy. It could be argued rather strictly that during the hegemony of behaviorism, beginning in the early twentieth century and

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57. Neil Postman singles out the earlier invention of the telegraph in the 1840s as a precedent for these developments in its creation of "a world of anonymous, decontextualized information. The telegraph also moved history into the background and amplified the instant and simultaneous present." That the emergence of the perpetual "present" entailed a reorganization of the perceiving subject along the lines of my argument is symbolically signaled by what contemporary authorities insist was Samuel F. B. Morse's actual first transmission: "Attention Universe." See Neil Postman, The Disappearance of Childhood (New York: Delacorte Press, 1982), pp. 68–72.


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Edison's stock ticker apparatus, 1869.

Edison's Kinetoscope, 1893.

Cutaway view showing 15-foot loop of film and display mechanism.

phonograph—that is, the structuring of perceptual experience in terms of a solitary rather than a collective subject—is replayed today in the increasing centrality of the computer screen as the primary vehicle for the distribution and consumption of electronic entertainment commodities.

At the same time, Edison's early understanding of the economic relation between hardware and software (the machines to make movies, the machines with which to view movies, and the movies themselves) coincided with emerging (and enduring) patterns of vertical integration of these spheres of production within a single corporation. Edison's first technological product, a hybrid telegraph-stock ticker in the early 1870s, is paradigmatic for what it foreshadows in subsequent technological arrangements, including those of the late twentieth century: the

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especially in the 1920s and 1930s, attention, along with the idea of a "mental process," was proscribed or marginalized as an explicit object of research. But in fact, regardless of terminological polemics, the entire regime of stimulus-response research was founded on the attentive capacities of a human (or even animal) subject. It has been argued that problems related to the efficient human use of new technology during World War II were in part responsible for a new wave of research into attention: there were issues of "vigilance" in, for example, the continuous scanning of radar screens by human operators. During the last few decades, within the context of a dramatically transformed space of knowledge and neurological research, it is not uncommon to encounter claims, such as those of Popper and Eccles, that the unitary character of the self-conscious mind is inseparable from attention. More recently, neurologist Antonio Damasio has maintained that "without basic attention and working memory there is no prospect of coherent mental activity." Much contemporary study is founded on the assumption that attention is not simply a psychological issue but that its operation can be demonstrated on the neuronal level, while others believe it will always be a more elusive phenomenon. Whatever the relative merits of various theories, attention has proven to be a remarkably persistent problem within the generalized disciplinary context of the social and behavioral sciences.

Over the last few years we have been reminded of the durability of attention as a normative category of institutional power, in the form of the dubious classification of an "attention deficit disorder" (or ADD) as a label for unmanageable schoolchildren and others. Without entering into the larger issue of the social construction of illness, what stands out is how attention continues to be posed as a normative and implicitly natural function whose impairment produces a range of symptoms and behaviors that variously disrupt social cohesion. One recent study on ADD declares, "What is deficient is the control exerted over behavior by rules," making explicit that the real concern is with rule-governed conduct. As one reads the literature on ADD, one regularly reencounters some of the exact language and evaluations of Ribot and Nordau in the 1890s, especially in the enumeration of symptoms. Thus, children with ADD are ones who "will not concentrate, won't listen, refuse to pay attention, and won't follow rules... They can't sit still, talk excessively and out of turn, fidget and throw non-sequiturs into conversation." Of course, one distinction that separates contemporary discussions from those of

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64. A different approach to the problem of attention, remote from the historical concerns of this book, can be found in some areas of nineteenth-century analytic philosophy, where distinctions are made between various concepts such as "noticing," "intention," "awareness," and "mindfulness." See, for example, the discussion of "tried concepts" in Gilbert Ryle, The Concept of Mind (London: Hutchinson, 1949), pp. 135-144. For Ryle, "heed" refers to "the concepts of noticing, taking care, attending, applying one's mind, concentrating, putting one's heart into something, thinking what one is doing, aliveness, interest, intention, studying, and trying." See also the general overview in A. R. White, Attention (Oxford: Blackwell, 1964).

65. By the late 1870s inattentiveness had been widely associated with a range of sociopathic forms of behavior, for example in Cesare Lombroso, L'homme criminolo (Italian, trans. G. Regnier and A. Bournet (Paris: F. Alcan, 1887), pp. 424-425. One of the first comprehensive sociological accounts of attention is Theodule Ribot's Psychologie de l'attention (1899) in which attention is divided into race, gender, nationalities, and class were central to his evaluations. For Ribot, the concept of attention included "children, prostitutes, savages, vagabonds and South Americans." This book was one of the sources for Max Nordau's reflections on attention in Degeneration (1892). However, there were influential claims that attentive capacities were unattainable to gender, for example the widely cited work by the Viennese clinician Heinrich Obersteiner, "Experimental Researches on Attention," Brain 1 (January 1879), pp. 339-415. As regards sex, it may be stated that there does not appear to be any direct relation, in and by itself, between this and the degree of power of attention.


67. See, for example Carpenter's case study of Coleridge's "congenital weakness of the voluntary attention" in Principles of Mental Physiology, pp. 266-269.

a century ago is the insistence that ADD is not linked to any weakness of the will, that there is no personal responsibility involved. Even after admitting that there is absolutely no experimental or empirical confirmation of an ADD diagnosis, the authors of a best-selling book on the subject make the claim: “Remember what you have is a neurological condition. It is genetically transmitted. It is caused by biology, by how your brain is wired. It is not a disease of the will, nor a moral failing, nor some kind of neurosis. It is not caused by a weakness in character, or by a failing to mature. Its cure is not to be found in the power of the will, nor in punishment, nor in sacrifice, nor in pain. Always remember this. Try as they might, many people with ADD have great trouble accepting the syndrome as being rooted in biology rather than in weakness of character.” Other more prudent researchers admit the difficulty of establishing any consistent screening criteria for the condition, referring to it as a “rather elusive childhood disorder.”

We learn from “experts” of our own time that this condition is characterized by “impulsiveness, short attention span, low frustration tolerance, distractibility, aggressiveness and in varying degrees, hyperactivity.” The diagnosis of ADD in adults is increasingly linked to feelings of underachievement, in such a way that any sort of economic shortcoming or social insecurity is now understandable in terms of a failure to apply oneself attentively to the ideologically determined standards of performance and “achievement.” In a culture that is so relentlessly founded on a short attention span, on the logic of the nonsequitur, on perceptual overload, on the generalized ethic of “getting ahead,” and on the celebration of aggressiveness, it is nonsensical to pathologize these forms of behavior or look for the causes of this imaginary disorder in neurochemistry, brain anatomy, and genetic predisposition. Of course there are some ADD researchers who understand how the individual is caught between the subjective dislocations of modernization and imperatives for institutional discipline and productivity. That is, the behavior categorized as ADD is merely one of many manifestations resulting from this cul-


74. The cultural and social disruptions inherent in schizophrenia have been outlined thus: “By the process of attention we thus break down and effectively categorize both the information reaching us from the environment, and that which is internally available in the form of stored past experience. By such processes we reduce, organize and interpret the otherwise chaotic flow of information reaching consciousness to a limited number of differentiated, stable and meaningful perceptions from which reality is constructed . . . . Now let us suppose there is a breakdown in this selective-inhibitory function of attention. Consciousness would be flooded with an undifferentiated mass of incoming sensory data, transmitted from the environment via the sense organs. To this involuntary tide of impressions there would be added the diverse internal images, and their associations, which would no longer be coordinated with incoming information. Perception would revert to the passive and involuntary assimilative process of early childhood and if the incoming flood were to carry on unchecked, it would gradually sweep away the stable constructs of a former reality.” Andrew McAllister and James Chapman, “Disorders of Attention and Perception in Early Schizophrenia,” British Journal of Medical Psychology 51 (1980), pp. 110–111. Recent studies, though, have questioned the usefulness of the concept of a monolithic attentional impairment in schizophrenia and asserted that unitary models of attention have limited explanatory value. See, for example, J. T. Conley and H. Metzner, “Attention and Higher Control Functions in Schizophrenia,” Journal of Neurophysiological and Clinical Neuroscience 5 (1991), pp. 269–275.

93. See, for example, Kevin R. Murphy and Suzanne Levitt, Out of the Fog: Treatment Options and Coping for Adult Attention Deficit Disorder (New York: Hyperion, 1995), in which symptoms of ADD include poor management, communication, and organizational skills in the workplace. See the excellent cultural overview of ADD in Lawrence H. Diller, “Running on Ritalin,” Double Take 14 (Fall 1998), pp. 40–55.
the modern paradigm of sensory overload. The Swiss psychiatrist Eugen Bleuler, credited with introducing the term schizophrenia, observed a profound disturbance of the inhibiting properties of attention: "The selectivity which normal attention ordinarily exercises among the sensory impressions can be reduced to zero so that almost everything is recorded that reaches the senses." 77

The thematic of inhibition has been an integral part of many influential theories of attention, for example in the work of Wundt, which exemplifies the replacement of Kant's transcendental unity of apperception with merely psychological processes of synthesis and integration. Selective attention, for Wundt, was the single most important psychic category because of its essential (but not a priori) role in producing an effective unity of consciousness and perception. His postulation of an attention center located in the frontal cerebral lobes was particularly influential. 76 Sustained with many of the social assumptions of evolutionary thought in the 1870s and 1880s, his account defined attention as one of the highest integrating functions (distinct from the automatic functions of the lower brain and spinal column) within an organism whose makeup was emphatically hierarchical. 77 More significantly, Wundt's model of attention, which he effectively equated with will, was founded on the idea that various sensory, motor, and mental processes were necessarily inhibited in order to achieve the restricted clarity and focus that characterized attention. 78 It was a powerful formulation to be found in many variations throughout the 1880s and 1890s.

The idea of inhibition and anesthesia as constitutive parts of perception is an indication of a dramatic reordering of visuality, implying the new importance of

77 The groundbreaking neurological work of John Hughlings Jackson was a parallel articulation of this hierarchical model, in which different functions were associated with specific areas of the nervous system. Jackson distinguished so-called "higher" functions like voluntary attentiveness from more automatic and "lower" forms of motor behavior.
78 For a detailed overview of this problem in the nineteenth century, see Roger Smith, Inhibition: History and Meaning in the Sciences of Mind and Brain (Berkeley: University of California Press, 1992). But the relation between attention and inhibition is also articulated in many places fully independently of neurological or physiological ideas. See, for example, P. H. Brücke, "On Active Attention," Mind, n.s. 11 (1902), p. 6: "Attention will thus consist in the suppression of any psychical fact which would interfere with the object, and its essence therefore is not positive at all, but merely negative.

models based on an economy of forces rather than an optics of representation. Freud's formulations on the relation between perception and repression (from the "Project" in 1895 to the essay on psychogenic visual disturbances in 1910) are only the more widely known products to come out of speculation and research by others in the 1870s and 1880s. 79 Charles Féré and Alfred Binet described "the simple fact of attention" as "a concentration of the whole mind on a single point, resulting in the intensification of the perception of this point and producing all around it a zone of anesthesia; attention increases the force of certain sensations while it weakens others." 80 They specified "the negative effects of attention." Janet described how attention "suppressed" the contents of consciousness and produced a shrinkage of the visual field. 81 These are indications of the irrelevance of the camera obscura model of vision, in which an ideal observer had the capacity to

apprehend instantaneously the unedited contents of a visual field. Thus, a normative observer in the late nineteenth century began to be conceptualized not only in terms of the isolated objects of attention, but equally in terms of what is not perceived, or only dimly perceived, of the distractions, the fringes and peripheries that are excluded or shut out of a perceptual field. As I will detail in chapter four, part of this new disjunct model of vision was linked to the physiological discovery of the nonhomogeneous nature of the eye itself, with its small area of foveal clarity within a much larger field of peripheral indistinctness. However, it was the metaphorical and not the empirical impact of this model that became important for modern reconfigurations of the observer.

It should be emphasized that the themes of inhibition, exclusion, and periphery did not necessarily support a Freudian model of an unconscious actively denying certain contents to attentive awareness. Jonathan Miller has argued recently that an alternative European tradition in the nineteenth century posed the unconscious as part of a system in which automatic behavior was reciprocally intertwined with the changing needs of conscious activity, including attention. In contrast to the "custodial" Freudian interpretation, many nineteenth-century psychologists saw the unconscious as "actively generating the processes which are integral to memory, perception, and behavior. Its contents are inaccessible not, as in psychoanalytic theory, because they are held in strenuously preventive detention but, more interestingly, because the effective implementation of cognition and conduct does not actually require comprehensive awareness. On the contrary, if consciousness is to implement the psychological tasks for which it is best fitted, it is expedient to assign a large portion of psychic activity to automatic control; if the situation calls for a high level management decision, the unconscious will freely deliver the necessary information to awareness.82" Helmholtz, for example, proposed a quasi-utilitarian functioning of the mind in which sensory information that is unlikely to be useful or necessary is involuntarily unattended to. To become aware of such information (like the blind spot in our visual field) requires a special effort at reorienting one's attention.

Darwin established a pervasive belief in the importance of attention in human evolution, identifying it as a survival mechanism: "Hardly any faculty is more important for the intellectual progress of man than the power of attention. Animals clearly manifest this power, as when a cat watches a hole and prepares to spring on its prey. Wild animals sometimes become so absorbed when thus engaged, that they may be easily approached.83" A certain kind of reactive attention was believed to be an essential part of human biology. This was what triggered a systemic response to novel stimuli, whether visual, olfactory, or auditory, in which the organism was instantly able to shut down (or inhibit) ongoing motor activity while focusing mental effort exclusively on the relevant stimuli, usually those related to potential predators or prey. Parallel to Wundt's work in the 1870s were the neurological researches of the Scottish physician Sir David Ferrier, who championed the idea of localization of brain function. Ferrier developed the hypothesis of inhibitory centers in specific parts of the brain, which were effectively the physiological basis of will and attention. He demonstrated how attention and volition depend on the physiological suppression of movement, that is, paradoxically, how certain forms of sensorimotor activity inhibited other motor activity.84 Thus an attentive observer might appear motionless, in a state of frozen immobility, but was in fact the site of a ferment of physiological (and motor) occurrences, upon which that relative "stasis" depended.85 This state of heightened alertness and intense focus on a restricted area of a sensory field could be understood in many ways. For example, it could be transposed from the animal realm of sheer survival into a biological adaptation of the organism to disciplined and productive labor within a social realm. But attention, as a shutting out, a powerful filter, could also be seen as a model of a Nietzschean forgetting, an essential precondition not merely for subsistence but for affirmation of the self through action.86 Attention here has less

84. See David Ferrier, The Functions of the Brain (1876; New York: G. P. Putnam, 1885), pp. 463-466. See also the valuable discussion of Ferrier in Smith, Inhibition, pp. 116-121.
85. See, for example, Muaddibi, The Physiology of Mind, pp. 313-315: "But it may be asked, how can motor innervation be a factor in the operation of will in a mental act when, so far as appears, no muscular act is concerned? The reply which there seems to be a good warrant to make is that motor innervation invariably accompanies the simplest effort of what seems to be pure will."
86. This sense of attention, as a forgetting that is a condition for the affirmation and self-actualization of the organism, persisted well into the twentieth century in Bergson (whose work I discuss in chapter four) and many others. See, for example, the assertion that "it is creative apprehension more than anything else that makes the individual feel that life is worth living," in Donald Winnicott, Collected Papers (New York: Basic Books, 1951), p. 65; or, more significantly, Abraham H. Maslow's notion of the "peak-experience" which was widely popularized in the 1960s. Maslow describes a mode of "total
to do with a model of consciousness than with an idea-motor network of forces. It is paradoxically that which immobilizes yet, if seen as a part of a biological heritage, is inseparable from mobility. As part of the larger physiological reconfiguration of subjectivity that occurred during the nineteenth century, attention, in almost all of the varied ways it was theorized, was inseparable from physical effort, movement, or action. During the period I am examining, attentiveness was generally synonymous with an observer who was fully embodied and for whom perception coincided with physiological and/or motor activity. To specify further, there were three particularly important models through which attention as movement was understood. Occasionally elements of these models overlapped, but for the most part they stood for relatively incompatible positions. (1) Attention as a reflex process, part of a mechanical adaptation of an organism to stimuli in an environment. Important here is the evolutionary legacy of attention, and its origins in involuntary and instinctive perceptual responses. (2) Attention as determined by the operations of various automatic or unconscious processes or forces, a position articulated in many ways,beginning with Schopenhauer, Janet, Freud, and numerous others. (3) Finally, attention as a decisive, voluntary activity of the subject, an expression of its autonomous power to actively organize and impose itself on a perceived world. But even those who defended the latter position, like James or Bergson, readily acknowledged the proximity of and blurred limits between voluntary attentiveness and automatic or involuntary states.

During the 1880s the similarity between will and attention became a central issue in work of many kinds, highlighting how far removed psychological thought was now from Mill's associationism and his "psychic chemistry" of laws regarding regularities of sensations, or from Spencer's work in the 1850s that had defined experience as the passive response to external order. William James opened his pivotal discussion of attention with an attack on Spencer and the Mills for their repression or avoidance of the problem: "Their motive of this ignoring of the phenomenon of attention is obvious enough. These writers are bent on showing how the higher faculties of the mind are pure products of 'experience,' and experience is supposed to be something simply given. Attention, implying a degree of reactive spontaneity, would seem to break through the circle of pure receptivity . . . the creature as absolutely passive clay, upon which experience rains down." In a general way the shift that takes place in the 1870s is from the structural psychology of associationism to various kinds of functional psychological accounts. The change is, in part, the product of the increasing importance and richness of a physiological understanding of the human subject. The poverty and inadequacy of associationist theories of knowledge became evident in the face of a widespread coming to terms with the subject as an active center of striving behavior and as a composite of processes unfolding in time.

Thus attention flourished and persisted as a problem, even as various systems of thought in which it was positioned became obsolete. For example, in the 1870s and 1880s, many social thinkers and psychologists either closely associated or identified attention with will. But as historian Lorraine Daston has convincingly shown, the movement toward a more rigorously "scientific psychology," which gathered momentum and institutional significance in the 1890s, was a joining of forces "in the campaign against consciousness, volition, introspection and other distinctive aspects of mind." By the turn of the century, "the theory of the will became the common target of an attack launched by several different schools of American and British psychology." But if the will, the mind, and introspection were superfluous elements, attention remained as an inescapable component of an institutional construction of subjectivity. Hugo Münsterberg and James McKeen Cattell (whose work I discuss in chapter four) can stand as examples of this jettisoning of any notion of an active will, while still retaining attention as an important problem in various attempts to align psychology with strategies of social control. In a related way today, attention remains an indispensable category for institutional discourses and techniques of the subject, not only in its obvious social manifestations like the debate around ADD but also within the sprawling precincts of the cognitive sciences, even as the relevance or existence of "mind and attention" in which it is "as if the world were forgotten, as if the percept had for the moment become the whole of Being," in Nietzsche's Psychology of Being (New York: Van Nostrand Reinhold, 1981), p. 74. The enduring (or recyclable) nature of such formulas is evident in the 1990s in such best-selling self-improvement handbooks as Mihaly Csikszentmihalyi's Flow: The Psychology of Optimal Experience (New York: Harper, 1990), p. 53: "Attention is our most important tool in the task of improving the quality of our experiences."


88. See George Herbert Mead, Movements of Thought in the Nineteenth Century, vol. 2 (Chicago: University of Chicago Press, 1930), pp. 597-597. Mead writes: "The structure of the act is the important character of conduct. This psychology is also called motor psychology, as over against the older psychology of sensation, voluntary psychology, as over against the mere association of ideas with each other."

"consciousness" is contested in those same domains. Both "attention" and "consciousness" are historically constructed notions, and over the last century they have had a variable and independent relation to each other: attention as part of an account of subjectivity is not inherently synonymous with consciousness.90

This noncoincidence of attention and consciousness is crucial here. From a certain vantage point, the use of the problem of attention as the basis for an investigation of modernity in the late nineteenth century may seem out of step with a whole legacy of recent critical practice. That is, attention might seem superficially to be a return to traditional problems of an epistemological nature, problems that were radically transformed or made irrelevant by the modern shift to semantic and semiotic frameworks of analysis, which Richard Rorty has described as a move "from epistemology to hermeneutics."91 That shift is demonstrated most vividly in the parallel work of, for example, Mallarmé, Nietzsche, and Peirce (and later of Wittgenstein and Heidegger): thinkers operating in circumstances where it is no longer a question of how an already constituted subject knows or perceives the objectivity of an external world but how a subject is provisionally constructed through language and other systems of social meaning and value. Within this syntactic-semantic remaking of epistemology, the study of the function of various psychic faculties became increasingly irrelevant. I am suggesting, however, that the emergence of attention as a way of describing or explaining a perceiving subject is in fact an indication of the same general epistemological crisis, the termination of various analyses of consciousness, and the increasing insignificance of the dualistic models within which classical epistemology had operated. Once an observer was understood in terms of the essential subjectivity of vision, attention became a constitutive (and destabilizing) component of perception. The very uncertainty and vagueness about the nature of attention was an indication of the obsolescence of older theories of perception. Attention implied that cognition could no longer be conceived around the unmediated givenness of sense data. To use Peircean terms, it made a previously dyadic system of subject-object into a triadic one, with the third element constituted by a "community of interpretation": a shifting and intervening space of socially articulated physiological functions, institutional imperatives, and a wide range of techniques, practices, and discourses relating to the perceptual experience of a subject in time. Attention here is not reducible to attention to something. Thus attention within modernity is constituted by these forms of extortivity, not the intentionality of an autonomous subject. Rather than a faculty of some already formed subject, it is a sign, not so much of the subject's disappearance as of its precariousness, contingency, and instableness.

While it is easy and appropriate to situate the wide-ranging research on attention within the requirements of larger disciplinary and administrative apparatuses for the management and control of human subjects, it is also important to emphasize another related dimension of the knowledge accumulated within the newly configured human sciences in the nineteenth century. Foucault has taken us through what he calls the great eschatological dream of the nineteenth century, which was "to make this knowledge of man exist so that man could be liberated by it from his alienations, liberated from all the determinations of which he was not the master, so that he could, thanks to this knowledge of himself, become again or for the first time master of himself, self-possessed. In other words, one made of man an object of knowledge so that man could become subject of his own liberty and of his own existence."92 Thus the attempt to determine empirically the specific physiological and practical conditions under which a perceiving subject could be most acutely attentive to the world, or could stabilize and objectify the contents and relations within that world through an exercise of a sovereign and attentive will, would also be a claiming of that subject's self-possesed as potential master and conscious organizer of that perceptible world.93 But scientific psychology never was to assemble knowledge that would compel the efficient functioning of an attentive subject, or that would guarantee a full co-presence of the world and an attentive observer.94 Instead, the more one investigated, the more attention was shown to contain within itself the conditions for its own

90. Ludwig Wittgenstein, as an anti-Cartesian, was acutely aware of this noncoincidence of perception, consciousness, and attention. "But don't the words 'I perceive' here show that I am attending to my consciousness"—which is ordinarily not the case.—If so, then the sentence 'I perceive I am conscious does not say that I am conscious, but that my attention is disposed in such and such a way." *Philosophical Investigations,* trans. G. E. M. Acombus (New York: Macmillan, 1953), p. 125.


93. Nietzsche made this link between attention and the will to mastery: "That which is termed 'freedom of the will' is essentially the affect of superiority in relation to him who must obey. I am free, 'he must obey'—this consciousness is inherent in every will, and equally so the straining of the attention, the straight look that frees itself exclusively on one aim, the unconditional evaluation that this and nothing else is necessary now; the inward certainty that obedience will be rendered—and whatever else belongs to the position of the commander." *Beyond Good and Evil,* trans. Walter Kaufmann (New York: Random House, 1966), pp. 25–26 (sec. 19).

94. A sense of this failure is implicit in Hermann Ebbinghaus's blunt conclusion in 1905: "Der Aufmerksamkeit ist ein rechte Verleugnung der Psychologie [Attention is a real embarrassment to psychology]." *Grundzüge der Psychologie,* vol. 1, p. 611.
model of a sustained aesthetic gaze. Attention always contained within itself the conditions for its own disintegration, it was haunted by the possibility of its own excess—which we all know so well whenever we try to look at or listen to any one thing for too long. In any number of ways, attention inevitably reaches a threshold at which it breaks down. Usually it is the point at which the perceptual identity of its object begins to deteriorate and in some cases (as with certain sounds) disappear altogether. Or it can be a limit at which attention imperceptibly mutates into a state of trance or even autohypnosis. In one sense, attentiveness was a critical feature of a productive and socially adaptive subject, but the border that separated a socially useful attentiveness and a dangerously absorbed or diverted attention was profoundly nebulous and could be described only in terms of performative norms. Attention and distraction were not two essentially different states but existed on a single continuum, and thus attention was, as most increasingly agreed, a dynamic process, intensifying and diminishing, rising and falling, ebbing and flowing according to an indeterminate set of variables. 

Philosopher Alfred Fouillée succinctly expressed the problem: "Concentration of the will and of attention on anything will lead to exhaustion of attention and to a paralysis of the will." In this sense attention had certain thermodynamic qualities by which a given force could assume more than one form. Emile Durkheim, in his epistemological writings of the 1890s, made explicit the inseparability of attention and distraction within a larger discussion of the blindness inherent in perception: "We

98. See Théodule Ribot, The Psychology of Attention (1899, Chicago: Open Court, 1899), p. 3: “Attention is a state that is fixed. If it is prolonged beyond a reasonable time... everybody knows from individual experience, that there results a constantly increasing cloudiness of the mind, finally a kind of intellectual vacuity, frequently accompanied by veris-.” See also Ribot’s account of pathological failures of attention in his The Diseases of the Will, trans. Merwin-Marie Snell (Chicago: Open Court, 1894), pp. 72-76.

100. Gustav Fechner was one of the first to articulate this continuum with some specificity. He outlines a reciprocal relation between attention and "partial sleep" in his Elements of Psychophysics, vol. 2 (Leipzig: Breitkopf und Härtel, 1860), pp. 452-457. Kurt Goldstein wrote that unless attention has a "differential emphasis" it will shift into a "pathological boundness to stimuli," and he insists that "dissociation and abnormal fixation are expressions of the same functional change under different conditions." Goldstein, "The Significance of Psychological Research in Schizophrenia," Journal of Nervous and Mental Disease 97, no. 3 (March 1942), p. 272.


102. Ernst Mach was one of many who, in the 1880s, grasped its apparently paradoxical nature: "Where the development of intelligence has reached a high point, such as is presented now in the complex conditions of human life, representations may frequently absorb the whole of attention, so that events in the neighborhood of the reflecting person are not noticed, and questions addressed to him are not heard—a state which persons unused to it are wont to call absent-mindedness, although it might with more appropriateness be called present-mindedness." Mach, Contributions to the Analysis of the Sensations (1885), trans. C. M. Williams (La Salle, Ill.: Open Court, 1890), p. 85.
are always to a certain extent in a state of distraction, since the attention, in concentrating the mind on a small number of objects, blinks it to a greater number of others; all distraction has the effect of withdrawing certain psychic states from consciousness which do not cease to be real for all that, since they continue to function.\(^{100}\)

In this sense my work qualifies some assumptions that have been part of a long-established critical characterization of modernity in terms of experiences of distraction. In particular, the work of Georg Simmel, Walter Benjamin, Siegfried Kracauer, Theodor Adorno, and others presumed that a distracted perception was central to any account of subjectivity within modernity.\(^ {101}\) The German word Zerstreunung figured in numerous critical analyses that were indebted to a Kantian theory of knowledge. Here Zerstreunung referred to a dispersion or scattering of perceptions outside of any necessary synthesis, perceptions as merely a blind play of representations, less even than a dream.\(^ {102}\) One of the enduring legacies of this work has been accounts of modernity as a process of fragmentation and destruction in which premodern forms of wholeness and integrity were irretrievably broken up or degraded through technological, urban, and economic reorganizations. One of the premises of Fiedler's *On Judging Visual Works of Art* (1876) was the diagnosis of a “decay” in the capacity for perception, and this text stands as an important early instance of generalized historical assumptions in which premodern modalities of looking and listening are either implicitly or explicitly predicated as richer, deeper, or more valuable.\(^ {103}\) This evaluation certainly was behind Fiedler's attempt to establish an “objectivist” aesthetics in which the “presence” of pure visible form is accessible only to an attentive “seeing” cut off from any of the subjective psychological conditions of vision.\(^ {104}\) By the turn of the century Simmel

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104. See the penetrating discussion of Fiedler in Ernst Cassirer, *The Philosophy of Symbolic Forms*, vol. IV *The Metaphysics of Symbolic Forms*, trans. John Michael Krois (New Haven: Yale University Press, 1990), pp. 81–85. “The psychological context may not be confused with the constitutive; the feelings that are elicited while taking in a work of art may not be regarded as belonging to its essential aspects... Fiedler in the end regards everything that belongs to the ‘subjective’ side to the ‘emotional’ world instead of the world of the visible, as merely ‘obscuring’ pure visibility.”


108. John Dewey is one of many who, by the 1880s, had established the inseparability of a narrative model of attention from experiences of shock, dissociation, and novelty. “A shock of surprise is one of the most effective methods of arousing attention. The unexpected in the midst of the routine is the accentuated. The very contrast between the two rivers attention, and more effectively dissociates each from the other. Thus variety and mobility of psychic life are secured.” Dewey, *Psychology*, p. 127.
the disruption inherent in shock and distraction held forth the possibility of new modes of perception, he does so in terms of a fundamental duality in which an absorbed contemplation, purified of the excess stimuli of modernity, was the other term. Distraction and concentration form polar opposites, declares Benjamin in his well-known discussion of architecture and film as two paradigms of modern

112. Of course in German there is no cognate of contemplation. Nonetheless it is worth remembering the theological resonances of this Latinic word. Not only does it mean "viewing or considering with continued attention," but as Adorno's early Frankfurt Institute colleague, Paul Tillich, later wrote: "Contemplation means going into the temple, into the sphere of the holy, into the deep root of things, into their creative ground." Tillich, The New Being (New York: Scribner's, 1955), p. 131. For Benjamin, even Franz Kafka, one of his exemplary modernists, is characterized by a problematic relation to secularized modalities of perception: "Even if Kafka did not pray—and this we do not know—he still possessed in the highest degree what Malebranche called the 'natural prayer of the soul': attentiveness. And in this attentiveness he included all living creatures, as saints include them in their prayers." Benjamin, Illuminations, p. 134.


"reception in a state of distraction." I argue, instead, that attention and distraction cannot be thought outside of a continuum in which the two ceaselessly flow into one another, as part of a social field in which the same imperatives and forces incite one and the other.

Among the many elements that shaped Benjamin's historicization of perception was the work of the Viennese art historian Alois Riegl. In his 1902 book The Dutch Group Portrait, Riegl outlined a countermodel of attention with which he opposed not so much contemporary forms of distraction but rather modernized forms of subjectivity, characterized by absorption in a physiologically grounded perception. If Riegl's work was informed by his familiarity with the research of Wundt and others, his specific account of attentiveness sought to resolidify the unitary self that scientific psychology was in the process of dismantling. The transitory and provisional nature of mental states and perceptual experiences which Wundt and others detailed were quite incompatible with Riegl's postulation of a subject whose integrity depended on a reciprocal relation between an unwavering subjective attentiveness and a coherent objective world. For Riegl, the individual defined itself through the exercise of a directed concentration that exceeded the domain of mere psychophysiology. And in The Dutch Group Portrait he made clear that his privileged model of the individual observer presupposed an ideal of attentive intersubjectivity, as opposed to modern forms of interiority, absorption, and psychic isolation, or to the dissolution of this communal world which he saw figured within the general cultural phenomenon of "Impressionism." Thus the group portraits of seventeenth-century Holland provided, at the beginning of the twentieth, a utopian figuration of a world of mutual communication (a secular equivalent of religious experience) and a world in which art would be inseparable from an imaginary democratic harmony of individual and community. For Riegl the goal of these paintings was the representation of a selfless psychological element (attention), by means of which the individual psyches were forged together as a whole in the consciousness of the beholding subject. Modern distraction could only erode such a possibility. But for Riegl, the dream of community, of a hushed moment of psychic communion, as figured, say, in Rembrandt's Syndics, existed as an aesthetic construction to be apprehended by the individual as a solitary observer. Without question, the new forms of collective reception, such as
between human and machine is based on internal, mutual communication, and no longer on usage or action. Deleuze (by himself) has proposed that during the last two decades there has been a modification of Foucault's disciplinary societies into "societies of control," in which the combination of a global market, information technology, and the irresistible imperative of "communication" produces continuous and unbounded effects of control. I would stress that, however we label and characterize such historical shifts or social transformations within the last century, attention has continued to be integral to the subjects produced for a wide range of socio-technical machines, even as it simultaneously continues to be a potential site of breakdown or crisis in terms of the efficient operation of these machines. It is becoming clearer that a concurrence of panoptic techniques and attentive imperatives now functions reciprocally in many social locations. The video display terminal, in particular, can stand for the effective fusion of surveillance and spectacle, as the screen is both the object of attention and yet capable of monitoring, recording, and cross-referencing the behavior of purposes for productivity or even, through the tracking of eye movement, for the accumulation of data on the specific paths, durations, and fixations of visual interest in relation to a flow of images and information. Attentive behavior in front of all kinds of screens is increasingly part of a continuous process of feedback and adjustment within what Foucault calls a "network of permanent observation." 180


182. See the discussion of attention in Manon Wain, The Plug-In Drug: Television, Childre and the Family, rev. ed. (New York: Penguin, 1985), p. 54: "Of course there are variations in the attention-getting and attention-sustaining powers of television images, many of which depend on such factors as the amount of movement present on the screen, at any given moment, and the way that movement changes from image to image. It is a bit misleading to consider that the producers of the most influential program for pre-school children, Sesame Street, employed modern technology in the form of a 'synchronizer' machine to test each segment of their program to ensure that it would hold and capture the child's attention to the highest degree possible."


At the same time, for every mutation in the construction of attentiveness there are parallel shifts in the shape of intention, distraction, and states of "absent-mindedness." New thresholds continually emerge at which an institutionally competent attentiveness veers into something vagrant, unfocused, something folded back against itself. Because so many forms of a disciplinary attentiveness, especially since the early twentieth century, have entailed cognitively "processing" a stream of heterogeneous stimuli (whether film, radio, television, or cyberspace), the kind of swerves into inattentiveness increasingly have produced alternate experiences of dissociation, of temporarities that are not only dissimilar to but also fundamentally incompatible with capitalist patterns of flow and obsolescence. The daydream, which is an integral part of a continuum of attention, has always been a crucial but indeterminate part of the politics of everyday life. However, as Christian Metz and others have argued, in the twentieth century both film and television have entered into a "functional competition" with daydreams. Though its history will never be formally written, the daydream is nonetheless a domain of resistance internal to any system of routinization or coercion. Similarly, institutional models of attention based on imperatives of recognition, identity, and stabilization are not fully separate from nomadic models of attention that generate novelty, difference, and instability.

However, one feature of many contemporary technological arrangements is the imposition of a permanent low-level attentiveness that is maintained to varying degrees throughout large expanses of waking life. The later nineteenth century saw the onset of a relentless colonization of "free" or leisure time. Initially this was relatively scattered and partial in its effects, allowing oscillations between spectacular attentiveness and the free play of subjective absorptions. But at the end of the twentieth century, the loosely connected machinic network for electronic work,
communication, and consumption has not only demolished what little had remained of the distinction between leisure and labor but has come, in large arenas of Western social life, to determine how temporality is inhabited. Information and telematic systems simulate the possibility of meanderings and drift, but in fact they constitute modes of sedentization, of separation in which the reception of stimuli and the standardization of response produce an unprecedented mixture of diffuse attentiveness and quasi-automatic, which can be maintained for remarkably long periods of time. In these technological environments, it's questionable whether it is even meaningful to distinguish between conscious attention to one's actions and mechanical autoregulated patterns. Writing in the 1960s, Arthur Koestler described the "dimming of awareness" produced by repetitive experiences within homogeneous sensory milieus: "Automatised routines are self-regulating in the sense that their strategy is automatically guided by feedbacks from their environments, without the necessity of referring decisions to higher levels. They operate by closed feedback loops." But what once might have been called reverie now most often takes place aligned with preset rhythms, images, speeds, and circuits that reinforce the irrelevance and dereliction of whatever is not compatible with their formats. Beyond the limits of the present study is the question of how and whether creative modes of trance, inattention, daydream, and fixation can flourish within the interstices of these circuits. It is particularly important now to determine what creative possibilities can be generated amid new technological forms of boredom.

