Rhetorical Bodies

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8 *Lester Faigley*

Material Literacy and Visual Design

Phaedrus Media is a typical web site these days, especially in a university town like Austin, Texas. It advertises a new, technology-related small business, probably run out of someone's home. It offers examples of work in a portfolio; if you click on "portfolio," you jump to another index page that offers a choice among "graphics," "bleed" (for bleeding edge technology), and "Java" prototypes and demos. If you then click on "graphics," you get a catalog of thumbnail graphics, which can be enlarged. After you enlarge a few of the abstract graphics, some of which are animated, you might wonder what the point *is*, so you click back to the previous screen and look at the words beside the thumbnails:

genesis jellyfish

Created in: Painter 4

Notes: genesis jellyfish. I don't know what it means but the image is kind of cool. That's why I animated it. It was animated in Painter, too. (Painter has very nice animation and rotoscoping tools)

Soon you begin to suspect that the web site is the creation of an adolescent, and you're right. Phaedrus Media is the web site of Ben Syverson, who was fifteen when he built it.

Among his peers Ben Syverson is exceptional, but he is hardly unique. Thousands of teen-agers now have personal web pages, many of which display the multimedia capabilities of the World Wide Web. The web sites of two young women from Community High in Ann Arbor, Michigan, are more typical teen-

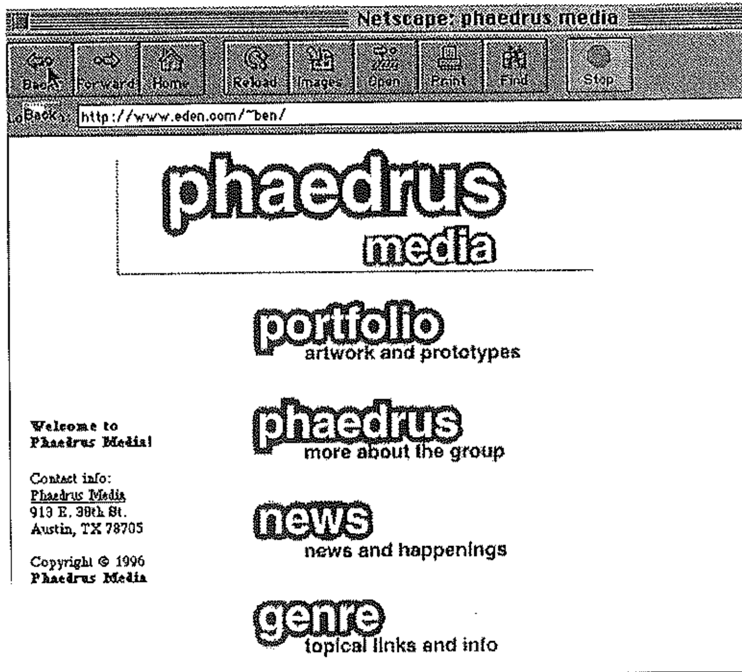

Figure 8.1. Phaedrus Media. Web site no longer available.

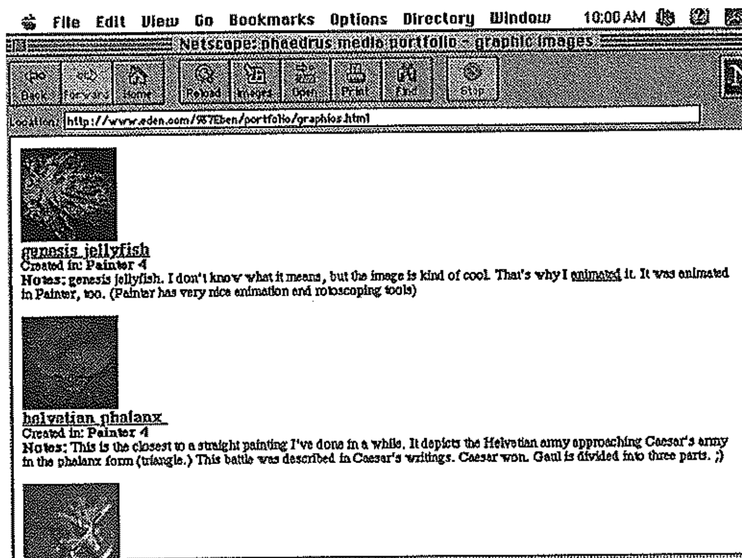

Figure 8.2. Phaedrus Media Portfolio. Web site no longer available.

Figure 8.3. Jessica Draper's "Llanarth's Lair." Web site no longer available.

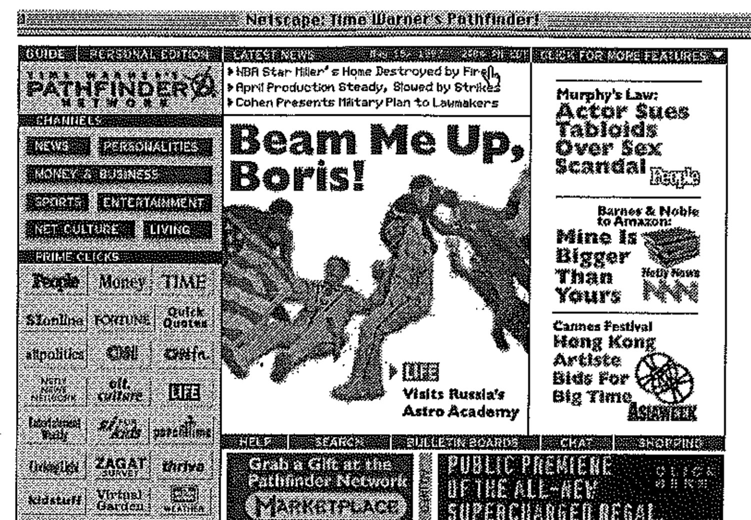

Figure 8.4. Time Warner's Pathfinder. Web site: http://pathfinder.com.

ager's personal pages. Seventeen-year-old Jessica Draper has a web site called "llanarth's lair," with the title illuminated by flashing multicolors, making the letters appear to move across the page. If you scroll down her page, you find text which announces that her dog "rules," as well as a long clickable list of what she finds cool, including e-mail. Another student, Kate Levy, has a home page that announces, "This is Kate Levy's site. I am Kate. My homepage uses frames. If you can't handle this, I'm sorry." At the bottom is a blinking message that requires concentration and several seconds to read. It says: "Blink tags are annoying. interesting, huh? I think so. But not really . . . oh well . . . maybe someday I'll understand you. O if things never change, I won't. Of course things do . . . change is good . . . someday everything will change. INCLUDING YOU!!!"

I find these sites remarkable for a number of reasons, not the least of which is the considerable design talent of these teen-agers; compare, for example, Time Warner's Pathfinder site, which is the work of professionals and cost many thousands of dollars to produce. But far more interesting is the way these sites intersect with three long historical trajectories: the development of writing systems, going back at least fifty-five hundred years; the development of images, going back at least to cave paintings thirty thousand years ago; and the development of capitalism, variously dated but at least a few centuries old. Other chapters in this volume discuss how the body emerged as the central problematic for material rhetoric in the 1990s, following from the obsession with the body evident in much postmodern theory. My chapter concerns another aspect of material rhetoric—the materiality of literacy. Later in the chapter I turn to the relationship of material literacy with the problematic of the body, but I first investigate the concept of material literacy. Why I should even want to discuss the materiality of literacy is not obvious, because, as Carol Blair points out in her chapter, a literate act assumes an object, a text that can be read. Yet it was precisely that object that one of the ideals of Enlightenment rationality—the ideal of the transparent text—sought to erase. It took decades of critical and empirical studies to convince scholars that texts are not transparent and that reading and writing are situated acts, but the ideal of the transparent text still persists in perceptions of literacy held by much of the public.

The ideal of the transparent text entails several other presuppositions. Foremost is that "true" literacy is limited to the abstract representation of sounds—a presupposition that subordinates syllabic and logographic writing systems and banishes pictograms and images to the status of illiteracy. Scholars of the history of literacy have shown us how much cultural baggage the conceptions of literacy have carried (see especially Peter Mortensen's chapter in this volume). A loathing for mass-produced images is part of that cultural baggage. Barbara Maria Stafford has examined how current attitudes toward images were formed in eighteenth-century England when educated people began associating images with ignorance, illiteracy, and deceit (110). These attitudes followed from the Protestant mission of defeating the "mindless" auditory, visual,

and olfactory credulity of Catholicism with the power of reason expressed in print. In the nineteenth century, these prejudices began running squarely against an increasingly shared world culture of images made possible by new technologies. The crisis these new technologies caused for the prevailing concept of literacy is expressed in a poem by William Wordsworth, signed in 1846, commenting on the mass publication of illustrated books and newspapers following the appearance of the *Illustrated London News* in 1842:

> DISCOURSE was deemed Man's noblest attribute,
> And written words the glory of his hand;
> Then followed Printing with enlarged command
> For thought—dominion vast and absolute
> For spreading truth, and making love expand.
> Now prose and verse sunk into disrepute
> Must lacquey a dumb Art that best can suit
> The taste of this once-intellectual Land.
> A backward movement surely have we here,
> From manhood—back to childhood; for the age—
> Back towards caverned life's first rude career.
> Avaunt this vile abuse of pictured page!
> Must eyes be all in all, the tongue and ear
> Nothing? Heaven keep us from a lower stage!

Wordsworth's lament has been uttered again and again in the century and a half since his poem "Illustrated Books and Newspapers" was written. Each new popular image technology has brought accompanying cries that "dumb Art" has captured the reading public of "this once-intellectual Land" and caused "a backward movement surely."

Lately the World Wide Web, the most powerful publishing technology ever created to distribute both words and images, has provoked an eruption of jeremiads about how the Web is destroying literacy as we conceive of it in the academy. We hear that critical thinking and reflection, a sense of order, dialectical interaction, logical relations in texts, depth of analysis, trails of sources, and the reform mission of public discourse are all going to be lost. Even those who take a more balanced view fear that the multimedia capability of the Web will undermine or overwhelm the power of prose. Jay David Bolter writes, "The new media . . . threaten to drain contemporary prose of its rhetorical possibilities. Popular prose responds with a desire to emulate computer graphics. Academic and other specialized forms respond by a retreat into jargon or willful anachronism" (270). The coming of the Web, however, does not have to be viewed as a loss to literacy. Images and words have long coexisted on the printed page and in manuscripts, but relatively few people possessed the resources to exploit the rhetorical potential of images combined with words. My argument in this chapter is that literacy has *always* been a material, multimedia construct, even though we only now are becoming aware of this multidimensionality and ma-

teriality because computer technologies have made it possible for many people to produce and publish multimedia presentations.

The Paradox of the Alphabetic Literacy Narrative

The reasons that we have not acknowledged this multidimensionality and materiality have much to do with the influence of the grand narrative of alphabetic literacy. Based on a dichotomy between the oral and the visual, the grand narrative is often identified with the work of Harold Innis, Jack Goody, Walter Ong, and Eric Havelock.[1] This reduction of their wide-ranging scholarship, however, is misleading. The grand narrative of alphabetic literacy is actually an accumulation of ideas about language and culture that began to take shape in the eighteenth century. In recent years it has been popularized in books such as Robert Logan's *The Alphabet Effect*, complete with explanations of why the invention of the alphabet led to the superiority of northern Europe. Logan writes:

> Many of the seminal ideas in Western science, mathematics, jurisprudence, politics, economics, social organization, and religion are intrinsically linked with the phonetic alphabet. . . . Of all mankind's inventions, with the possible exception of language itself, nothing has proved more useful or led to more innovations than the alphabet. (17–18)

According to the grand narrative, not only the rise of science but also the development of democracy, the celebration of the individual, the establishment of Protestantism, the codification of law, and the spread of capitalism resulted from a shift from an oral bias to a written bias for conveying information and ideas. This shift is claimed to have facilitated abstract thinking and deductive logic.

The narrative of alphabetic literacy assumes the existence of an evolution from pictographs to modern writing systems. This theory was first advanced by William Warburton, the future bishop of Gloucester, in his 1738 book *Divine Legation of Moses*. From his study of Egyptian, Chinese, and Aztec manuscripts, Warburton hypothesized that all scripts evolved from narrative drawings. His theory was widely diffused by Diderot and d'Alembert's *Encyclopédie* and remained definitive for over two centuries (Schmandt-Besserat 4). Even though twentieth-century archeologists have amassed a great deal of evidence to the contrary, the pictograph theory is still repeated in popular accounts of the origins of writing (e.g., Claiborne; Gelb). Logan follows the underlying assumption of the pictographic theory in arguing that "the absence of Western-style abstractions and classification schemes in Chinese culture is related to the differences in writing systems" (47). In a chart of cultural patterns (49), he makes the following comparisons:

EAST	WEST
Ideograms	Alphabet
Right-brain oriented	Left-brain oriented
Nonlinear	Linear
Acoustical	Visual
Analogical	Logical
Inductive	Deductive
Concrete	Abstract
Mystical	Causal
Intuitive	Rational

Logan concludes, "The lack of abstraction in the writing system reflects itself throughout Chinese thought and discourages the development of abstract notions of codified law, monotheism, abstract science, and deductive logic" (58). For those who endorse the narrative of alphabetic literacy, China provides the example of what happens to a culture whose writing system fails to evolve—to "progress."

The two crux points in the narrative of alphabetic literacy occur with the inventions of the modern alphabet in classical Greece and of Gutenberg's printing press in the mid-fifteenth century. Singling out the contribution of the Greeks to the alphabet at first seems a curious move because systems of writing as abstract signs existed long before Greek civilization. Greeks living in Phoenicia simply adapted the twenty-two Phoenician consonant characters to represent the Greek language; they converted a few of the consonants to vowels and added a few signs—phi, chi, psi, ksi, and omega—which were either borrowed, modified, or independently created. The earliest known alphabetic Greek inscription dates from about 730 B.C.E., and the earliest surviving commercial documents in Greek come two hundred years later. The Greek alphabet was subsequently transmitted to Latin via the Etruscans, who lived in central Italy from about the seventh through the first centuries B.C.E. Until nearly the end of the fifth century, the Euboean alphabet was used in Greece; hence it was the script the Etruscans imported, and the one that later became the basis for the Roman alphabet. Had the Etruscans borrowed the later Ionian alphabet instead, modern European and Greek scripts would now have a much closer resemblance.

The mutation known as the Greek alphabet, then, came relatively late in the history of writing. The earliest written texts appeared many centuries earlier in Mesopotamia with the development of the first urban centers around 3500 to 3100 B.C.E. We base our knowledge of the earliest writing on a collection of about fifteen hundred texts preserved on clay tablets, produced by the Sumerians, who in the middle of the fourth millennium became dominant in southern Mesopotamia. Although the content of many of these texts remains enigmatic, most apparently are administrative records of economic transactions, bearing official seals. Writing was one of the inventions that made civilization possible. It allowed kings to send instructions to far-off administrators and to collect taxes. It allowed merchants to order goods and bill customers. It allowed farmers to buy, sell, and lease land. But even though we know a great deal about

the functions of writing in early civilization, the precise origins of writing have remained mysterious. The repertory of signs on the earliest tablets is surprisingly large—more than two thousand words at minimum. Furthermore, the great majority of these signs are abstract. My colleague at the University of Texas, Denise Schmandt-Besserat, believes that the small clay tokens commonly found at archeological sites in the Middle East are an important clue to the origins of writing. These tokens, which come in several shapes and extend over a long time span from the ninth to the second millennia B.C.E., were hand-modeled out of clay; they are widely distributed over a region extending from Khartoum in the Sudan, to mainland Greece, to sites east of the Caspian Sea. Until a decade ago, however, archeologists had few guesses about what the tokens were used for.

Schmandt-Besserat thinks that the tokens were an early recording system. Many of the tokens are contained inside bullae, which have to be broken open to discover their contents. One bulla, found at Nuzi in the 1920s and dating from about the sixteenth century B.C.E., throws light on what the tokens might have been used for. It contained forty-nine small tokens, but more important, it also bore a lengthy cuneiform inscription on the outside. The translation is

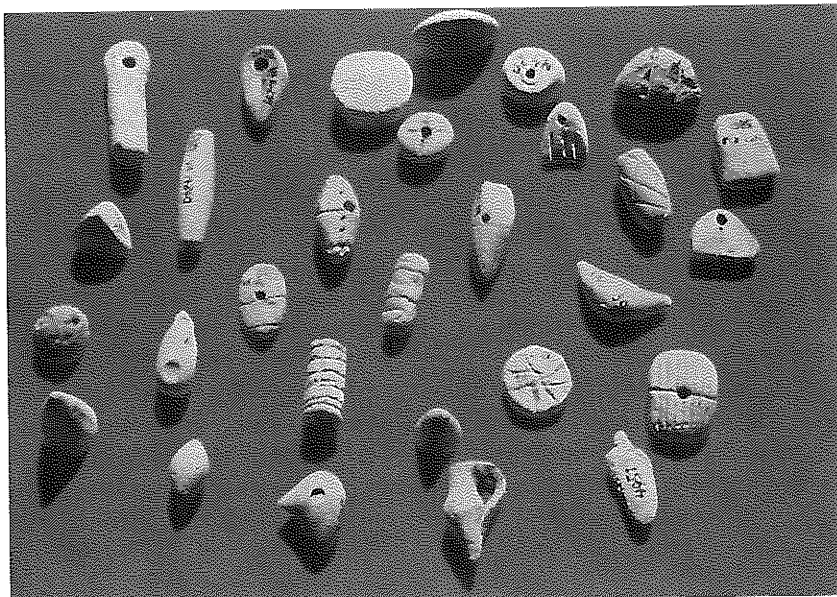

Figure 8.5. Tokens with various geometric shapes have been recurrently found in great numbers throughout the Middle East at archaeological sites dating from 8500–1500 B.C.E. (Photograph by Denise Schmandt-Besserat, Pergamon Museum, Berlin, Germany)

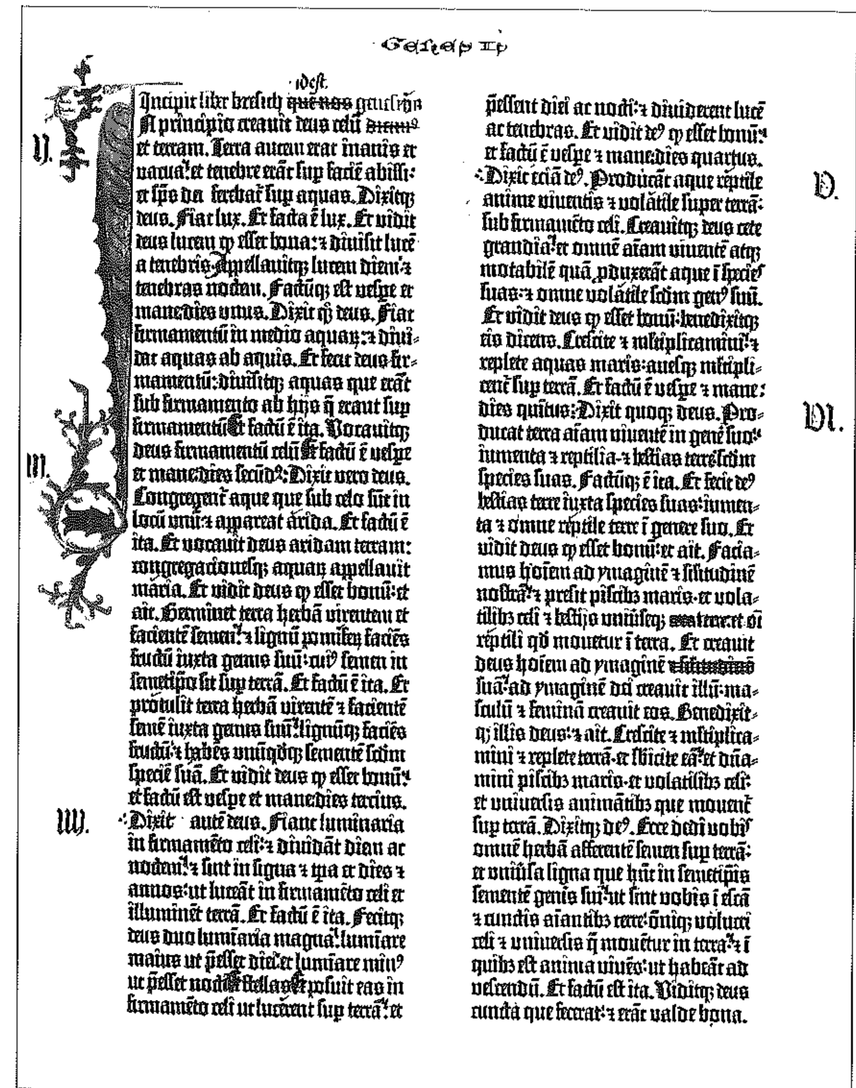

Figure 8.6. Page from the forty-two-line Gutenberg Bible, ca. 1455 (Photograph provided by the Harry Ransom Humanities Research Center, the University of Texas at Austin)

'twenty-one ewes, six female lambs, eight adult rams, four male lambs, six female goats, one male goat, three female kids,' and the seal of the shepherd. These numbers add up to forty-nine, leaving little doubt that the tokens were counters representing the herd. Tokens, then, were very likely invented in response to another technology—agriculture—and advances in agriculture that

created surpluses. Suppose one farmer had a bumper crop of grain, and his neighbor had a herd of pregnant but hungry sheep. The second farmer might have used tokens to promise the first farmer a certain number of lambs the next spring in return for a load of grain. To ensure that the number delivered was the one they agreed on, the tokens were sealed in a bulla. In this way tokens functioned like a modern bill of lading.

The crux of Schmandt-Besserat's theory, however, is the way that three-dimensional material tokens led to two-dimensional symbols. Again, consider the example of the farmer with a grain surplus, eager to make futures trades for livestock and other goods. As this proto-agribusinessman wheeled and dealed his way up and down the Tigris and Euphrates, the bullae on his shelves piled up. After a while he couldn't recall exactly how many sheep and goats he was going to acquire in the spring, because the tokens were sealed in the bullae. Schmandt-Besserat thinks that some clever trader began impressing symbols of the tokens on the outside of the bullae to indicate what they contained. Eventually the convenience of noting the number of tokens on the surface of the bullae supplanted the system of tokens altogether. Schmandt-Besserat also hypothesizes that many of the tokens represent numerical signs rather than individual objects. Consequently, it appears, two-dimensional writing began not by representing reality through pictographs but by representing in two dimensions the previous recording system. If Schmandt-Besserat is correct, her theory helps to explain why the first tablets contain a surprisingly large percentage of symbols, why these symbols are abstract, and why they apparently were standardized at a very early date. Even if she is not correct, the unearthing of large numbers of archaic texts dating from the fourth millennium B.C.E., and their subsequent deciphering, dispute the assumption that writing evolved from pictures. True pictograms are actually relatively rare in the earliest Sumerian texts, representing "plow," "chariot," and "sledge." By 3000 B.C.E. the Sumerians had considerably reduced the number of signs and had developed the cuneiform script, which mixes phonetic signs and ideograms. Throughout the history of writing in the West, we find such mixed systems; indeed, we have only to look at the top row of a keyboard to find words represented by single symbols: @, #, $, %, &.

The paradox of the narrative of alphabetic literacy lies in its claim of a cognitive divide between oral and visual cultures. In order to make this claim, one has to ignore a great deal about how information and ideas are stored and transmitted. The essential shortcoming in the narrative lies in its desire to provide a simple explanation of cultural differences by theorizing that writing systems shape cultures. The history of writing suggests just the opposite: cultures freely borrow and adapt systems for information storage when the need arises. Thus, in its claim for the primacy of the visual, the narrative of alphabetic literacy effaces not only the material tools used in writing (as Christina Haas has noted), but also the element of visual cognition.

The second great moment in the grand narrative of alphabetic literacy is the invention of the printing press. Robert Logan writes:

> With the printing press we finally encounter a technology whose impact on the use of the alphabet is so great that it must be ranked in importance with the alphabet itself. For not only did the printing press greatly multiply access to alphabetic texts, it also, through the regularity it introduced, transformed the way in which the alphabetic text was placed on the page and was perceived by its readers. (177)

The issue of perception is essential to the narrative of alphabetic literacy. Logan and others claim that print magnified the changes brought about by the introduction of the alphabet. Because scribes often used variant spellings and irregular punctuation, readers of hand-copied texts often had to speak the texts in order to interpret them. Print brought regularity to spelling and the conventions of punctuation, enabling rapid, silent reading. Logan quotes Harold Innis, who maintains that "the discovery of printing in the middle of the fifteenth century implied the beginning of a return to a type of civilization dominated by the eye rather than the ear" (186). But like the argument on the effects of alphabetic literacy on Greek culture, the concept of the visual in print literacy is severely truncated. With the regularity of uniform type, Logan argues, the "printed medium became transparent and hence its effects more abstract" (193). The ideal of print literacy is the conduit metaphor, by which ideas flow directly from the mind of the author to the mind of the reader. Thus, again the argument for the turn to the visual paradoxically means the effacement of the visual.

The development of the Phoenician alphabet and its subsequent adaptation by the Greeks are largely a subject of speculation, but we know a great deal about the development and distribution of the printing press. The central figure is Johannes Gensfleich, known as Gutenberg from the name of the family estate—*Zu Guten Bergen*, "the good mountain." For many years scholars have debated Gutenberg's role in the invention of printing. Much of what we know about him comes from the legal records of Strasbourg and Mainz, where lawsuits in 1439 and 1455 make claims for loans and partnerships related to Gutenberg's invention. Gutenberg was a goldsmith by trade, and his innovations came in the replica casting of movable metal type, uniform in size, and in the mixing of an oil-based ink that would adhere to type. The result was a book with very high technical and aesthetic quality—with regular lines, justified margins, and beautiful type design.

There is little doubt that Gutenberg made major technical achievements in printing, but many questions remain. To what extent was he a synthesizer of traditions of printing that had preceded him by centuries, rather than an originator of printing? And how influential was the printing press in the major cultural and economic changes that were taking place during the Renaissance? Major scholarly controversies have centered on these questions, which are too complex to rehearse fully here. In brief, Gutenberg inherited two technologies

that originated in China: paper and block printing. The process of making paper was invented in China by 200 C.E., following an even older technology of producing a paperlike material from the bark of mulberry trees. A battle in Central Asia, fought in 751 C.E. between Arab-led armies and Chinese armies, eventually led to the transmission of paper technology to Europe. Captured Chinese paperworkers established paper workshops in Samarkand and later in Baghdad (al-Hassan and Hill 191). A paper and book industry then flourished in Baghdad and spread to other parts of the Islamic world, including Morocco and Spain. When Toledo was captured by Christian forces in 1085, Europe gained both access to the knowledge in paper books and the technology to make them. The papermakers of Baghdad also learned how to harness water power for the labor-intensive process of pounding fibers into pulp. In the thirteenth century, a paper industry grew up in Italy using water power; it spread to France in the fourteenth century and throughout western Europe in the fifteenth. The book historian Henri-Jean Martin observes, "The importance of this movement can hardly be exaggerated. Before paper became available, the hides of a veritable herd of young animals were required to make a single *in-folio* volume" (210).

Along with paper, the Chinese developed several technologies for reproduction of images. A history of the Sui dynasty (581–617), written in the seventh century, describes Taoist priests who printed charms as cures for illnesses. During the eighth century the Chinese had mastered block printing, which allowed images to be combined with text. During the eleventh century, they used movable type made of baked clay, and both Chinese and Koreans may have been printing with movable metal type as early as the twelfth century. The extent to which these technologies were known in Europe is still debated, but various kinds of wood-block printing were already practiced in Europe by the time Gutenberg began experimenting with his press. Engraved wood blocks were employed primarily to print religious images, but blocks were also used to print textiles, playing cards, pamphlets, tabletops, and secular images (Martin 212). Gutenberg also benefited from new technologies of metalworking, an industry that was flourishing in Europe, with metals being extracted in large quantities to meet a strong demand. Metallurgists learned new techniques of making alloys and casting metal copies; Gutenberg himself had a background in minting coins and manufacturing mirrors. From a larger perspective, therefore, Gutenberg's achievements represent a stage in the evolution of a series of linked technologies rather than a distinct breakthrough.[2]

The second and much more extensive controversy has been the debate over the historical impacts of printing. The expansion of the printing industry in the fifteenth century was phenomenal. By 1501, at least ten million copies (possibly double that number) of an estimated twenty-seven to thirty-five thousand publications had been printed. Like answering machines, VCRs, and e-mail in the late twentieth century, printed books spread quickly through the emergent middle class. Logan claims that the printing press "unleash[ed] a powerful new force that completely transformed Western civilization, leaving in its wake the Renaissance, the rise of science, the Reformation, individualism, democracy, nationalism, the systematic exploitation of technology, and the Industrial Revolution—in short, the modern world" (183). The extravagance of Logan's claim is underscored by the facts that the Renaissance had been in progress in Italy for over a century, while the Industrial Revolution lay two or three centuries ahead.

Nevertheless, there were notable short-term impacts of printing, and one of the most important was the use of print by religious reformers to disseminate the translated Bible and their religious views. Martin Luther believed that all Christians should read from the Gospels daily in their own languages, and he advocated schooling so that children could read the scriptures before age ten. But even with the success of the Reformation, the great majority of books published during this first century of print were in Latin. Latin remained the language of international scholarship, and its decline was slow. During the Counter-Reformation, the Jesuits established schools that rivaled the Protestant ones, and they actively published Latin titles. Even after the energy of the Counter-Reformation was spent, the dominance of Latin lingered. Some of the best records of early books come from the catalogues of the Frankfurt Fair, where new books were announced to Europe. Not until the 1680s did more German than Latin books appear (Febvre and Martin 232).

Furthermore, there is little evidence that the practices of literacy changed radically with the appearance of printed books. Roger Chartier notes, "In the sixteenth and seventeenth centuries the reading style implicit in a text, literary or not, was still often an oralization of the text, and the 'reader' was an implicit auditor of a read discourse" (9). Thus the great cognitive achievement alleged for print literacy—silent reading—occurred long after printed books became dominant. Similar claims have been made for the impact of print on science but are not borne out by the historical record. Logan writes that "the rapid dissemination of information and knowledge to a mass audience was one of the essential elements in the use of modern science" (194), but what was in fact disseminated in the early decades of printing was hardly scientific by modern standards. (The most popular "scientific" subject was astrology.) Febvre and Martin observe that early books did not contribute much to scientific theory, though they did draw attention to new technical advances in architecture, agriculture, and machinery. Febvre and Martin conclude that printing brought about no sudden or radical cultural transformation; this is hardly surprising, since booksellers were interested in making a profit and thus looked for books that would sell in the largest numbers (260).

Those who argue for a strong impact of print on science, such as Elizabeth

Eisenstein, point out that the visually dependent sciences of botany, zoology, and anatomy flourished after accurate print images replaced scribal images that became intolerably degraded in copying. Copperplate engravings, which later became important in printing, in the middle of the fifteenth century, about the same time as Gutenberg's press. For the sciences, engraving was as important a technology as movable type.

Logan credits alphabetic literacy with creating an environment where images and diagrams thrive. At no point is his version of the rise of alphabetic literacy more confused. Illustrations had a long tradition in manuscripts, and they came to early books as woodcuts. Printers quickly learned to place wood blocks beside type and to print such a sheet with one pull of the press bar. Just two decades after Gutenberg's forty-two-line Bible, printers of the 1470s produced a library of illustrated books, including *The Golden Legend*, *The History of the Destruction of Troy*, Aesop's fables, and works by Boccaccio and Petrarch (Martin 229). Great artists worked as illustrators; the wood engravings of Albrecht Dürer, including his *Apocalypse* (1498), *Great Passion* (1498–1501), and *Life of the Virgin* (1502–1510), were issued first as prints and later in bound volumes. In the early 1500s emblem books came into vogue; the *Iconologie* of Caesare Ripa, published in 1539, is a dictionary of visual signs, describing the symbols for the virtues, vices, wisdom, justice, and other qualities. Both Protestants and Catholics used printed images for propaganda.

The forces allied with print during the fifteenth, sixteenth, and seventeenth centuries are ambiguous, and distinctions between cause and effect are problematic. Much of what is claimed for print by the proponents of alphabetic literacy is in fact the heritage of Enlightenment rationality. If the cognitive effects of literacy are as profound as some proponents have claimed (for example, Jack Goody and Ian Watt maintain that Aristotle's syllogistic reasoning was made possible by writing), then these effects should be manifest in the nineteenth and twentieth centuries, by which time the spread of mass literacy and the proliferation of cheap printed texts should have extended the benefits of print literacy.

The assumption of a cognitive gulf created by alphabetic literacy was effectively challenged by Sylvia Scribner and Michael Cole, who studied the Vai of Liberia, a people who had developed literacy apart from schooling. Scribner and Cole found that while literacy produces differences in certain contexts, in the important dimension of logical thinking, literates and illiterates do not differ in performance; many of the abilities claimed especially for literates could be attributed to schooling. Scribner and Cole pointed the way for new concepts of literacy as pluralistic and socially situated. That the narrow view of literacy as alphabetic literacy has dominated so long into the twentieth century stems directly from the limited tools most people had for producing texts. Beginning in the nineteenth century, people were exposed to many mass-produced images, and in the twentieth century to broadcast audio and video, but until very

recently most people had little opportunity to produce and distribute images, audio, or video themselves. With the advent of the World Wide Web in the mid-1990s, technologies of the visual can no longer be denied.

Technologies of the Visual

In an often-quoted passage in *Ways of Seeing*, John Berger observes:

> The visual arts have always existed within a certain preserve; originally this preserve was magical or sacred. But it was also physical: it was the place, the cave, the building, in which, or for which, the work was made. The experience of art, which at first was the experience of ritual, was set apart from the rest of life—precisely in order to be able to exercise power over it. Later the preserve of art became a social one. It entered the culture of the ruling class, whilst physically it was set apart and isolated in their palaces and houses. During all this history the authority of art was inseparable from the particular authority of the preserve.
>
> What the modern means of reproduction have done is to destroy the authority of art and to remove it—or, rather, to remove its images which they reproduce—from any preserve. For the first time ever, images of art have become ephemeral, ubiquitous, insubstantial, available, valueless, free. They surround us in the same way as a language surrounds us. They have entered the mainstream of life over which they no longer, in themselves, have power. (89)

Although Berger is discussing great art, his distrust of mass-produced images—both explicit and implicit in this passage—is widely held. Berger is indebted to Walter Benjamin here, but the overall argument has been embraced by both conservative and radical social critics. The assumption is that outside cloistered art, images lack the capacity to encourage deep reflection, serious thought, or even the creation of identity. Instead, they play on the emotions, encourage stereotypes, and at best merely record reality—even though the recording of reality is hardly a simple process.

The recording of reality was a focal problem in Gutenberg's productive years in the mid-fifteenth century. Some of the great masterpieces of the Italian Renaissance, including Botticelli's *Primavera*, were painted on commission from the Medici and other patrons within twenty years of the printing of the forty-two-line Bible. We know from theoretical treatises by painters such as Cennino and Alberti at the beginning of the fifteenth century that they took as their goals the imitation of natural objects, and above all the illusion of three-dimensional space. The masters of the Italian Renaissance succeeded in establishing a dominant though often challenged ideal of literal naturalism that would not be completely overturned until the advent of photography brought painting into crisis.

Berger decries the way great art loses authority when it is mass-reproduced, but we often hear this thesis extended to a claim that we now live in a culture

based on images that is somehow different from our past. This claim is one of the great misperceptions of the alphabetic literacy narrative. Preliterate peoples fashioned many everyday images. We know best only the pieces with most skilled craftsmanship, because they are the ones represented in museums. Less frequently exhibited are thousands of everyday objects from prehistoric and historic cultures. Every known culture, past and present, has a language of images. The primary difference, as Berger points out, is the means of reproduction. The rapid expansion of technologies of reproduction in the nineteenth century brought the modern era of the image. Most accounts of the book discuss the development of the steam press around 1814 and of the rotary press in 1847—both of which increased production from about three hundred hand-pressed sheets a day to more than twelve thousand sections—and that of linotype in 1885, a process that automated composition and replaced the handwork of routine typesetting. Along with woodpulp paper, which came about 1875, these technologies made mass media possible. Less noted in histories of printing is the rapid improvement in engraving that occurred during the nineteenth century. Wood engravings, which had been replaced by copper, were brought back to illustrate newspapers. In 1804 the *Times* of London began to feature illustrations. Unlike earlier wood engravings, which were carved with knives, the new generation of wood engravers used the more precise burin. Steel engravings were also introduced by the 1830s, and the overall quality of all engravings increased dramatically by the 1850s. In the United States, *Frank Leslie's Illustrated Newspaper* began in 1855, and the more famous *Harper's Weekly* in 1857. Both covered the Civil War extensively and featured the work of outstanding artists, including Alfred Waud and Winslow Homer.

More accurate engravings brought the desire for even more true-to-life images. As early as the Renaissance, artists aspired to reproduce exactly what they saw. In 1519 Leonardo da Vinci described the camera obscura, and many other artists experimented with it to explore problems of perspective, but it was not until the nineteenth century that a technology developed to fix images. The daguerreotype, presented to the Académie des Sciences in Paris in 1839, quickly became a medium of popular portraiture. By 1851 the wet-plate process made photography widely available. With their heavy, clumsy equipment, photographers began to document the world around them. Within a few years the uses of photography proliferated, extending from art and ethnographic recording to postcards and pornography. In 1889 the first inexpensive Kodak cameras were marketed, made possible by George Eastman's invention of flexible roll film, and by the turn of the century many Americans were pasting photographs into family albums. Photographs also became widely distributed consumer objects through the popularity of stereo viewers, introduced at the 1851 Great Exhibition in London's Crystal Palace, to the delight of Queen Victoria. In 1856 twin-lens cameras made stereo viewers a long-running consumer fad. From 1860 to 1920, millions of stereo viewers were manufactured and sold; they gave the illusion of three-dimensional solidity, an effect that neither engraving nor painting could achieve.[3] For the first time a visual medium produced the illusion of actually seeing the object itself, conflating the image with reality. The new visual technologies of the photograph and stereoscope were deeply implicated in the expansion of industrial capitalism and colonialism: once the world was made visible, it became appropriable and transformable.

The spread of photographs, postcards, and comics in the last decades of the nineteenth century, along with the continuing proliferation of posters, illustrated books, and illustrated newspapers, brought predictable conservative responses (see Harris). Pictures were accused of offering an overly simplified view of the world, a view that lacked interpretation. Furthermore, photographs could be staged and retouched to give misleading views of reality. Stronger accusations were leveled against the new genre of the comic strip, which began in 1895 when a staff illustrator, Richard Felton Outcault, working for Joseph Pulitzer's *World*, published a one-panel cartoon called "Down Hogan's Alley," featuring a gap-toothed, bald little boy in a long frock. Shortly after, the *World's* printers were experimenting with colored ink and ran a test yellow on the boy's frock. Thus was born "The Yellow Kid," credited as the first comic strip; many others shortly followed. Comics were alleged to corrupt the morals and manners of youth.

Despite these warnings, the invasion of images accelerated. In the twentieth century, image technologies have diversified to an extent that makes even a quick sketch impossible. The trajectory of bringing more and better images into printed texts led to the publication in 1936 of *Life*, the first mass-market picture magazine.[4] Even more transformative image technologies had been launched by the time *Life* appeared. Beginning with Eadweard Muybridge's 1877 photographic experiment to prove that galloping horses lift all four hooves off the ground at once, innovations in the photography of movement made motion pictures possible, and the commercial potential was quickly recognized. In the first decade of the twentieth century in Europe and the United States, film companies were created, special theaters were built, and very profitable distribution networks were established. By 1910, twenty-six million Americans were going to the movies at nickelodeon theaters every week (Merritt 86). Television became technically feasible in 1931, and the BBC began broadcasting televised programs in 1936. In the United States following World War II, television grew in a way that predicted the speed of the Internet: the number of sets in use passed one million in 1949 and ten million just two years later; by 1959, fifty million television sets were being watched in the United States. With the development of telecommunications and computer technologies, the potential of television was convincingly demonstrated in 1969 in live broadcasts from the surface of the moon. Less spectacular but no less influential has been the expansion of video and audio recording and production technologies to reach mass markets. The majority of American households now have answering ma-

chines and VCRs, and many have computers, video cameras, fax machines, synthesizers, and sophisticated audio equipment. The most powerful combination of these technologies is the World Wide Web, which possesses a massive capacity for distributing images and is already a means for distributing audio and video.

The progression of computer-generated images in motion pictures gives us a sense of where we are headed. The first major studio film to use computer graphics was *Futureworld*, a 1976 science fiction thriller that computer-mapped the head of Peter Fonda on a monitor. Many people think that the battle scenes in *Star Wars* were created with computer graphics, but actually they were made with small scale models. The first film to use computer graphics to advance a plot line was *Tron* (1982), with about twenty minutes of the movie produced by computers. *Tron*, however, was a box office flop, and it was not until the 1990s, with films like *Terminator 2*, that the commercial potential of computer graphics in films was realized. In 1995 Disney's *Toy Story* became the first film with every frame generated by computers. Digital humans are now used in dangerous movie stunts formerly performed by people. The era of the virtual actor—the "vactor" or "synthespian"—cannot be far in the future. Craig Barrett, the chief operating officer at Intel, predicts that very soon the technology of the $75,000 workstation that produced *Jurassic Park* will cost about $2,000 ("Intel View"). He foresees that personal computers in the year 2011 will use a chip that has as many as a billion transistors, compared with about eight million in today's most advanced chip. The web sites of Ben Syverson, Jessica Draper, and Kate Levy only hint at what might be just around the corner.

Literacy as Design

Even after a century and a half of saturation with mass-market image technologies, the heritage of alphabetic literacy from the Enlightenment still dominates within the academy and in literacy instruction. The totemization of alphabetic literacy and the denial of the materiality of literacy have had the attendant effect of treating images as trivial, transitory, and manipulative. Visual thinking remains excluded from the mainstream literacy curriculum in the schools, and it is taught only in specialized courses in college, in disciplines such as architecture and art history. When, in the early 1960s, one of the first designers of three-dimensional computer graphics, Lawrence G. Roberts, looked for scholarship on perspectival imaging, he found a dearth of work in the twentieth century; instead, he had to refer to German geometry textbooks from the early nineteenth century to find a mathematics of perspective.

Perhaps because images are ubiquitous, we in the academy have paid little attention to how they work. But an even stronger reason may be that images have been so thoroughly appropriated by advertising. No aspect of our culture

is more despised from the viewpoint of the academic humanities than advertising, the discursive Anti-Christ that does everything the tradition of academic literacy detests: it persuades with images; it acts on the emotions; it bends and stretches language; it employs humor and parody; it cannot always be explained; and it is anonymous. To parade the usual statistics, we see more than three thousand ads a day, and today's teenagers will probably spend a decade of their lives watching ads; but this is only stating the obvious (Twitchell 2). It is now difficult to find any public space free of advertising or to listen to or watch any public medium, including the public channels, without encountering ads. The state of Iowa sells advertising in its income tax booklet. Universities have cashed in by selling sponsorship of sports teams to shoe manufacturers, signing exclusive deals with soft-drink companies, and selling rights to their own images. Penn State football jerseys, which used to be distinctive for their lack of adornment, now display the Nike logo.

Advertising is a 158 billion-dollar business in the United States and has grown to around 200 billion dollars in the rest of the world, with Western-style advertising quickly expanding into emerging markets like China and Vietnam. Nonetheless, the academic response to advertising continues to be to ignore it, to accuse it of deception, and to dismiss it as trash. The basic criticisms of advertising remain the same: either by outright deception or, more insidiously, by creating wants and desires that otherwise would not exist, advertising causes people to purchase goods they have no wish to purchase. Herbert Marcuse is representative in arguing that advertising creates false needs that perpetuate misery and injustice: "Most of the prevailing needs to relax, to have fun, to behave and consume to accordance with the advertisements, to love and hate what others love and hate, belong to this category of false needs" (5). Certainly there is a long list of products consumed today for which markets barely existed before advertising—cosmetics, deodorants, soft drinks, credit cards, household cleaning products, cigarettes, bottled water, insurance, state lotteries, mouthwash, and most over-the-counter medicines. The usual account of advertising is that it depends on an irrational connection between the product and an object of desire. Throughout most of this century, print ads and later broadcast ads depended on a narrative of the object of desire being attained through purchase of the product. Most often the promise was one of sexual success, either in attracting a partner or in keeping one. The right choice of chewing gum or mouthwash got the partner; the right choice of coffee kept him interested.

Mass media ads of today, however, depend far less on narrative coherence for their appeal. By the late 1980s, advertisers realized that the old tactics would not work for an audience oversaturated with advertising and overly cynical. Thus the emphasis in advertising for a number of products shifted from story to style as advertisers became increasingly self-referential, recirculating images drawn from the cultural landscape, most often from media representations. This mode of advertising—lifting images and meanings from one

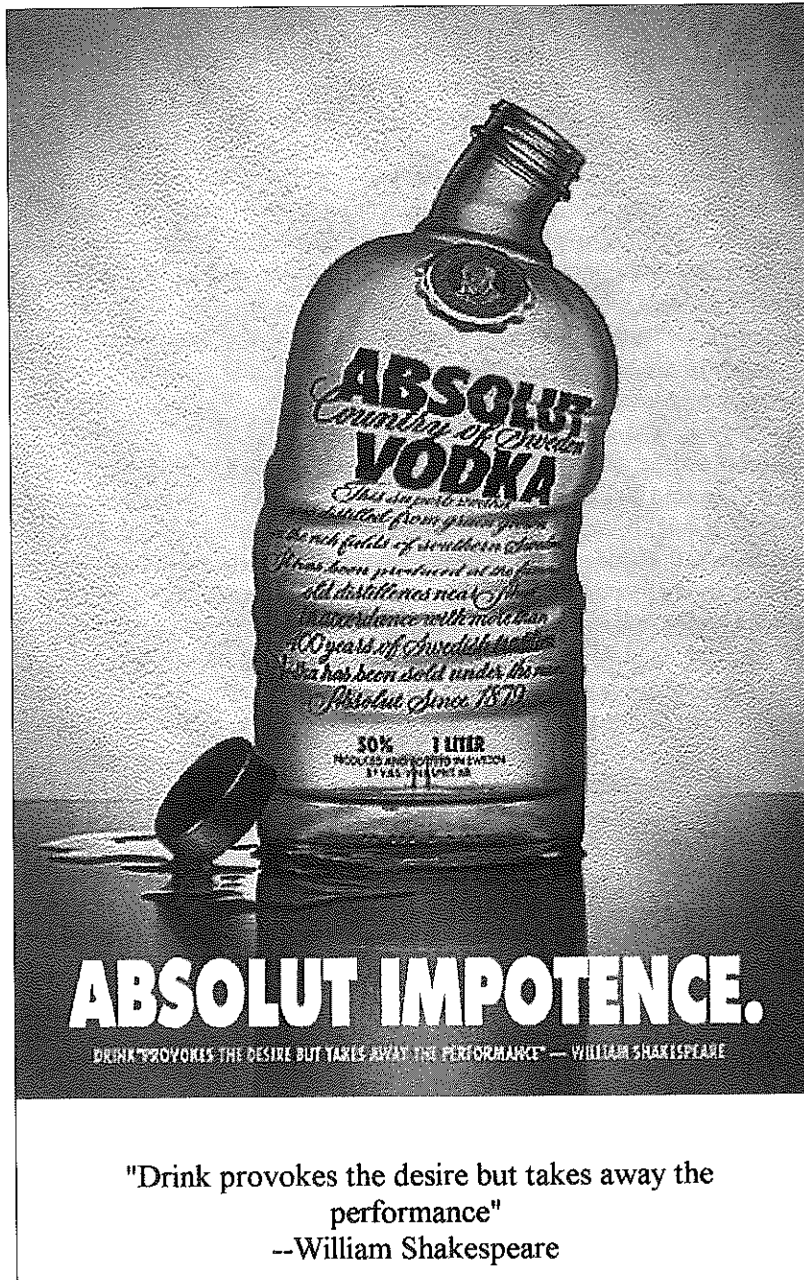

Figure 8.7. Absolute Impotence. Web site: http://www.adbusters.org.

context and placing them in another—resists the simple analysis of attaching a product to an object of desire. Instead, advertisers enact a conversation of images with their audiences. Advertisers are both manipulators and manipulated, because they must interject their product into an ongoing system of signs. Their effect depends on extending a set of cultural associations.

Since many of those associations are charted on bodies, it is no accident that cultural critics have had to explore the consequences of advertising on bodies in terms other than the creation of false needs (one such exploration is J. Blake Scott's chapter in this book). At no time before in advanced nations have so many people of different genders, ethnicities, age groups, and social classes participated in the altering of their bodies through transplants, implants, augmentations, lifts, and tucks, along with intense regimens of exercise and dieting. Clearly advertising is participating in a much larger cultural discourse in which fat is viewed as ugly and aging as repulsive, but more important, in which personal empowerment is expressed in terms of controlling one's body image. Thus human agency can be summed up in Nike's slogan, "Just Do It!" The problem for scholars criticizing the effects of consumerism and advocating change is how to get their students to interrogate the chains of assumptions in the rhetoric of personal empowerment.

An alternative approach to responding to ads comes from a Canadian media activist group, the Media Foundation, which challenges the advertising it considers harmful by subverting it. The Media Foundation publishes an ad-free magazine, *Adbusters*, and it supports the Adbusters web site, both of which take on specific advertising campaigns with clever spoofs. The group's president, former advertising man Kalle Lasn, explains Adbusters' mission: "I don't have any problem with advertising. I love advertising. We are into selling ideas, not products. We're social marketers, not product marketers. To me, that is a whole different kettle of fish" (Lewis). At the top of the Adbusters' sabotage list have been alcohol and cigarette ads. Because ads are in the public domain, their copyright status is questionable, and Adbusters has pushed that question. One target has been Absolut vodka. "Absolut Impotence," shows an empty, shriveling bottle with a caption quoting Shakespeare: "Drink provokes the desire but takes away the performance." In February 1992, Absolut threatened to sue Adbusters, but Absolut quickly backed it down when it recognized that the suit would lead to a public debate about protecting advertisers who sell dangerous products.

A more difficult challenge for Adbusters is posed by ads that fetishize glamor. Adbusters has launched a spoof campaign against one of the most exploitive marketers, Calvin Klein, using the gray-scale tones its ads are famous for. Adbusters produced a thirty-second spot that points to the connection between eating disorders and the worship of the adolescent body in fashion images. The commercial begins with a soft-focus image of a thin, naked woman,

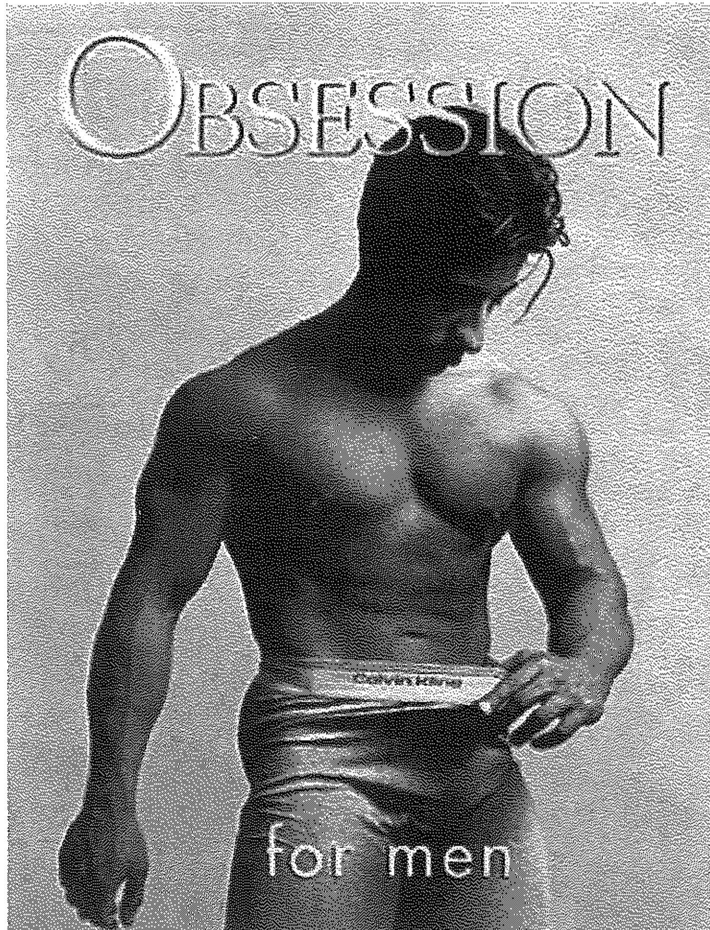

Figure 8.8. Obsession for men. Web site: http://www.adbusters.org.

accompanied by a voice-over saying, "Obsession, fascination, fetish." The writhing woman appears to be in slow-motion ecstasy until we realize that she is vomiting into a toilet bowl. The voice says, "Why do nine out of ten women feel dissatisfied with some aspect of their bodies? The beauty industry is the beast." Several women's groups joined Adbusters in purchasing four spots for the CBC show *Fashion File*, and they attempted to buy airspace on CNN's *Style with Elsa Klensch*. Both networks refused to run Adbusters' uncommercial.[5]

Even though Adbusters' uncommercial was censored by the networks, it and other uncommercials have been viewed by many people via the World Wide Web. The Adbusters' URL is frequently mentioned in lists of favorite web sites

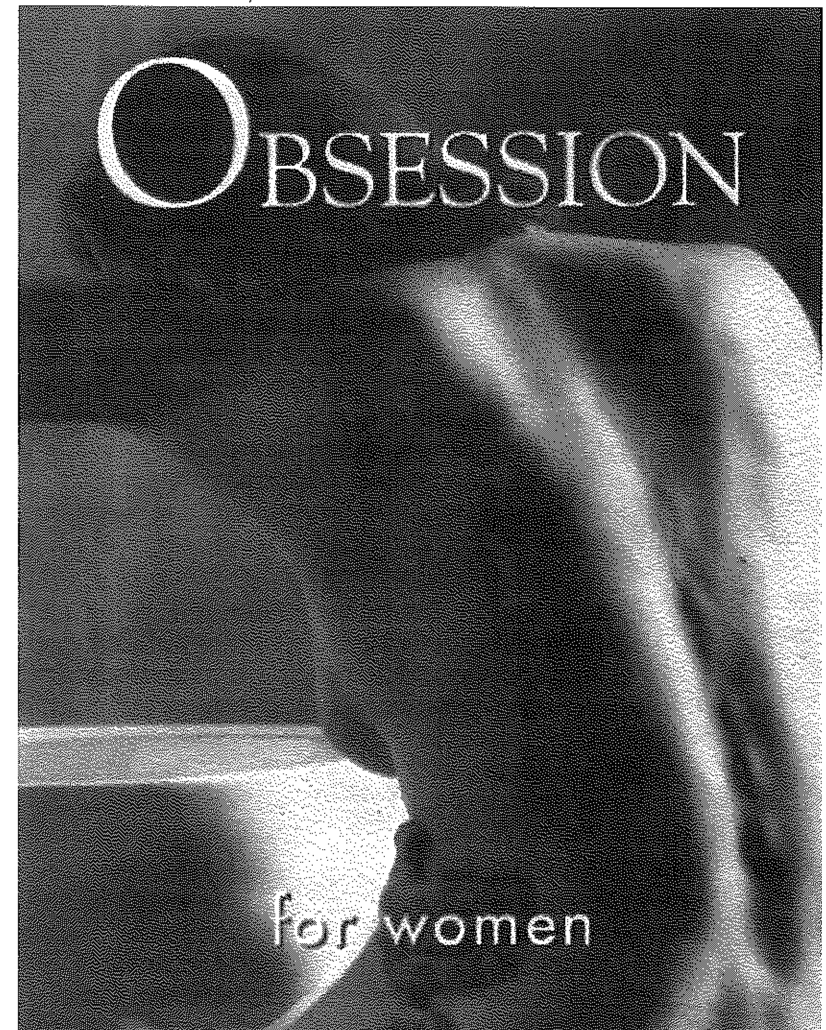

Figure 8.9. Obsession for women. Web site: http://www.adbusters.org.

in newspapers and on individuals' home pages. It offers a critique of the visual iconography of the perfect body and the "Just Do It" rhetoric of personal empowerment embedded that iconography. Adbusters seeks to redefine agency by "trickle-up" activism. The "Culture Jammers Toolbox" section of the site gives production advice on how to introduce noise into focus groups, compose alternative print ads, make television spots, buy television time, and subvert billboards with spray-painted modifications.

The "Culture Jammers Toolbox" says nothing about making web sites, but the Web has become the primary medium for grass-roots media activism. Among the tens of thousands of web sites of individuals are many pages devoted to media criticism and parodies of advertising. This activism has come at a time when the Internet has become the battleground for the deregulated corporate giants, where control of the coaxial cable and fiber-optic conduits represents only a small part of the potential fortunes to be made from an array of services carried through the pipe: advertising, credit cards, banking, entertainment, news, and sales of other products. Given the corporate vision of the Internet as the ultimate Home Shopping Network, is there reason to expect anything other than a more accelerated, more international, and much more profitable global consumer culture?

The Web and Material Matters

In spite of all the talk about the Internet as cyberspace and a virtual world, the materiality of the Internet as a medium is unavoidable. You sit in front of a machine that has to be turned on and connected to the net. And if you want to access the resources of the World Wide Web, you need at least a 28.8 kilobytes-per-second modem and a computer with enough memory to support the current versions of Netscape Navigator or Internet Explorer. Kate Levy puts it bluntly: "My homepage uses frames. If you can't handle this, I'm sorry." In the United States, not every neighborhood has access to a local server, and in the rest of the world, almost the entire continent of Africa outside South Africa is not on line. At present the Internet continues the one-way flow of information from the First to the Third World. Can the Internet become a factor in promoting a two-way flow between the margins and the center?

One of the groups least likely to become a significant presence on the World Wide Web is the Ejército Zapatista de Liberación Nacional, whose members rose in rebellion in Mexico on New Year's Day, 1994, the day the North American Free Trade Agreement went into effect. The Zapatistas are primarily indigenous people from the Lacandón mountain jungles of Chiapas, Mexico's southernmost state, bordering on Guatemala. They take their name from Emiliano Zapata, hero of the Mexican Revolution, who was the champion of land reform and indigenous peoples in the south of Mexico. Estimates of the Zapatista forces vary, but the high-end guess of the number of well-armed troops is only three thousand.

The Zapatista uprising took the Mexican government by surprise. When Luis Donaldo Colosio was unveiled on 28 November 1993 as the presidential candidate of Mexico's governing Institutional Revolutionary Party (PRI), the policies of President Carlos Salinas, in his last year of a six-year term, appeared to be firmly in place. The signing of the North American Free Trade Agreement (NAFTA) cemented Salinas's free-market economic policy, and opposition on the right and left was not attracting wide popularity. Colosio seemed to be the ideal candidate to continue Salinas's modernization policy. But on 1 January, the day NAFTA went into effect, the smooth road of Colosio's ascendancy suddenly developed a deep rut. The Zapatistas, unsuccessful in their previous efforts to address the misery of the people in Chiapas, called on Article 39 of the Mexican Constitution, which states that "the people have, at all times, the inalienable right to alter or modify the form of their government." They seized four towns in Chiapas, including San Cristóbal de las Casas.

In other years, the news of the uprising would have been suppressed in Mexico and little noticed abroad. Most people in the United States have never heard of Chiapas and probably would have overlooked a brief report in the back pages of a newspaper, just as they paid little attention to the concurrent massacres of people in East Timor. But the Zapatistas had two great allies: their timing, and their innovative use of communications technologies. The Zapatistas faxed their Declaration of War to newspapers, to radio and television stations, and to the international press. They represented themselves as the heirs to the long struggle for social justice in Mexico—the legacy of Emiliano Zapata and the Mexican Revolution of 1810. On the second day of the uprising, they held theatrical press conferences at which men, women, and children wore black ski masks. They invited reporters from the major international papers, including *Der Spiegel*, *Le Figaro* and the *New York Times*, the independent Mexican dailies *La Journada* and *El Financiero*, and European television crews, but they refused access for the pro-government Mexican media (Gómez-Peña 91). The primary spokesperson for the Zapatistas, Subcomandante Marcos, was photographed with a pipe sticking out of his mask and a Zapata-style bandolero with shotgun shells that didn't match the rifle slung over his shoulder. The Zapatista media campaign within Mexico was enormously successful, forcing the government to declare a cease-fire on 9 February. On the day of the cease-fire, more than one hundred thousand people in Mexico City marched in support of the Zapatistas. A month later, the hand-picked PRI candidate, Colosio, was assassinated after expressing sympathy for the Zapatistas. By the end of the year, the Mexican economy had crashed with a huge flight of capital out of the country, and former president Salinas had fled into exile.

The Zapatistas effectively used the Internet for an ongoing alternative commentary on politics in Mexico. They critiqued NAFTA and the Mexican government's treatment of indigenous peoples, and they disputed the modernist view of peasant communities as isolated, backward, societies that should be relegated to the past as quickly as possible. They have explained why it is important to have a viable and sustainable peasant agriculture if the rain forests of Chiapas and the cultures of its Mayan peoples are to be preserved. The Zapatistas have been greatly assisted by academics in Mexico and the United States,

who have created distribution sites and translated communiqués. On-line discussion lists concerning Chiapas were formed in Mexico and in the United States, and a web site, "¡Ya Basta!," was begun in spring 1994 by Justin Paulson, then an undergraduate student at Swarthmore. The web site has become much publicized through articles in magazines and newspapers, including the *Guardian* (U.K.) and *Reforma* (Mexico). In April 1995, the Mexican foreign minister, José Angel Gurría, declared that the uprising in Chiapas is a "guerra de tinta y de Internet" ("a war of ink and of the Internet").

The cleverness of the Zapatistas in distributing images has been one of the keys to their success. Subcomandante Marcos even created a cartoon

Figure 8.10. Subcomandante Marcos, spokesperson for the Zapatistas. Web site no longer available.

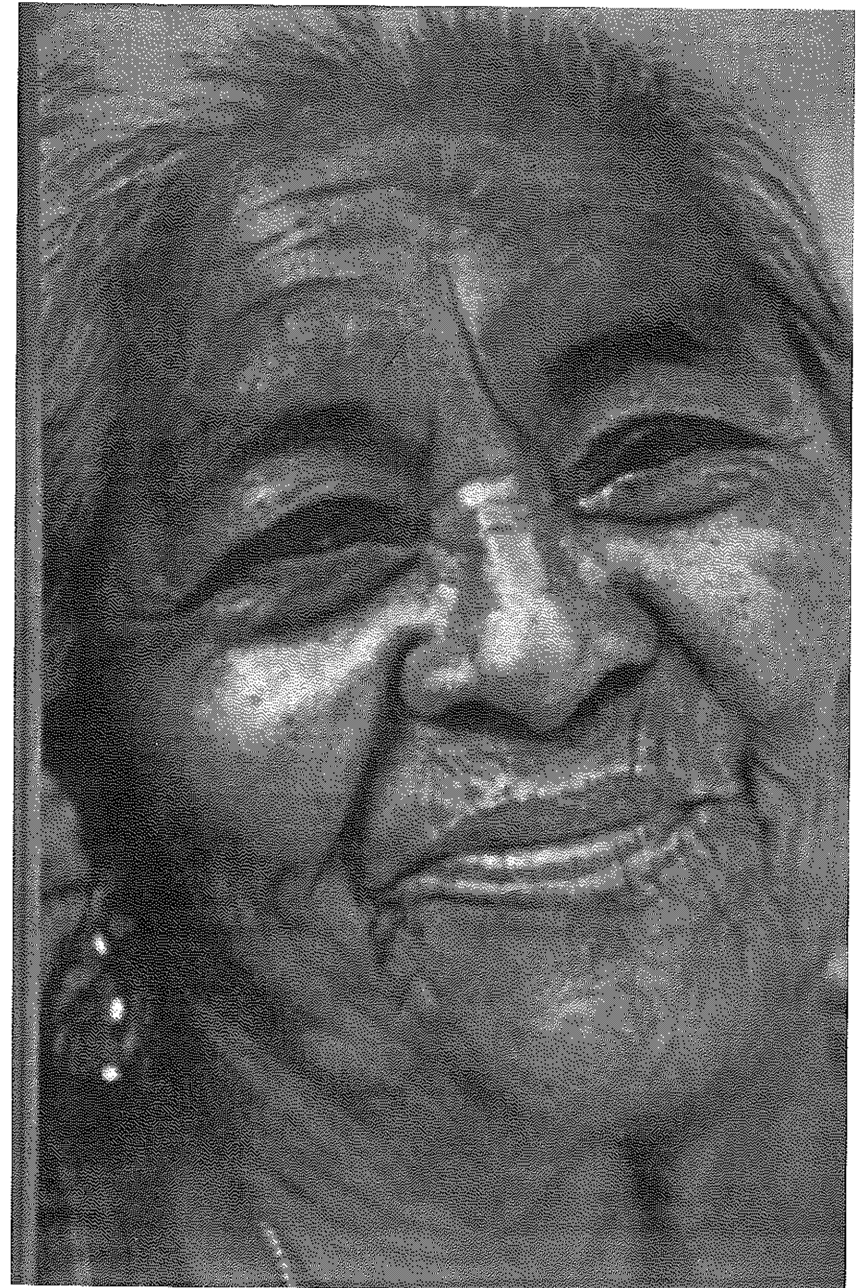

Figure 8.11. Venustiano Carranza, Casa del Popolo, July 1996 (Photograph by Massimo Boldrini). Web site no longer available.

character, a loquacious beetle named Don Durito, who skillfully avoids being stepped on. To reach sympathetic people in advanced nations, the Zapatistas have taken advantage of the graphic power of the Web to issue many images of themselves, which portray both their revolutionary struggle and the daily lives of indigenous people. Without those images, I doubt that the numerous web sites around the world that support the Zapatistas would be quite so prominent. The Zapatistas, with a little help from their friends, have shown how the disempowered can also engage in cross-marketing if they understand the material effects of visual literacy. After nearly five years of intermittent peace talks, the Mexican government still has not granted the people of Chiapas the right of self-government. But if the Zapatistas have failed thus far to win a just settlement, the government likewise has failed to restore credibility in its ability to lead the people of Mexico, and violent uprisings of other groups have occurred in Guerrero and other states. The Zapatista rebellion exposed quickly the sense that the only people in Mexico who would benefit from NAFTA would be the urban elites in the North and in Mexico City, while the indigenous peoples and the poor would suffer even greater marginalization.

The Zapatistas also offer an important lesson in material literacy. In the face of claims that computer-mediated language and images have broken with the past and have lost reference to the perceived world, the Zapatistas have shown that although language and images are increasingly self-referential, they still have material consequences. The example of Chiapas demonstrates that people are still adapting new technologies of literacy for their own purposes, that literacy can still be used to promote social justice, and that history, including the history of literacy, indeed still continues.

Notes

1. For critiques of the oral-literate dichotomy, see Brandt; Daniell; and Street.

2. In this respect, the achievement of Gutenberg compares with that of James Watt, who is often credited with inventing the steam engine. In 1765 Watt repaired an existing steam engine designed by Thomas Newcome and made a minor modification that allowed the engine to pump water more efficiently out of coal mines. Watt thereby became wealthy as a manufacturer of steam-driven mine pumps. The gearing system that allowed the steam engine to be used to power factories, making possible the Industrial Revolution, was invented sixteen years later by one of Watt's employees, William Murdock.

3. The research on vision that led to the development of the stereoscope was done in the 1820s and 1830s, thus preceding the development of photography. See Crary 116–36.

4. The first issue of *Life* sold out all 250,000 copies on its first day of release, and soon a million and a half copies a week went into American homes. *Life* was preceded by European periodicals that used glossy paper, making possible a photographic realism unavailable in newspapers. *Life*, however, was unique in allowing photographs to tell its stories, relying on the visual literacy of its readers. It was also the first magazine to generate the majority of its revenue from advertising, which also depended on photographs. Its success relied on the ambiguity of the title—that the images in the magazine are not about life, they *are* life (Berger, *About Looking* 50).

5. Adbusters also attempted to buy time on CNN, ABC, NBC, and CBS for a spot declaring the day after Thanksgiving "Buy Nothing Day." The spot opens with an image of a bloated pink plastic pig, wiggling and grinning. The voice-over says, "The average North American consumes five times more than a Mexican, ten times more than a Chinese person, and thirty times more than a person from India." Then the spot cuts to a bulldozer piling up a mountain of trash in a landfill. The voice continues, "We are the most voracious consumers in the world. . . . Give it a rest. November 29 is Buy Nothing Day." CNN ran the ad once, but the other major networks refused it. Richard Gitter, NBC's vice president of advertising standards and program compliance, says that NBC does not air controversial ads. Gitter continued with more candor, "This action was taken in self-interest. It was a spot telling people, in effect, to ignore our advertisers" (Oldenburg).

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