

Graph

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preface

The graphic arts industry is moving through a period of transition. Everywhere, digital electronics are revolutionizing the industry, fostering dramatic changes at all levels of visual image making and, in some instances, totally eliminating modes of production. Yet, the graphic arts industry still needs and uses traditional methods of art preparation and printing processes to reproduce many, if not most, graphic images.

Graphic design education must adapt to this period of transition, too. Students today need the professional skills necessary to create and produce graphic images with both desktop publishing and traditional methods.

More important, visual communication is emerging to take its place with verbal communication as an equal partner in the presentation of ideas. But, this ascension poses new challenges for you, the graphic communication student. Now, you need to understand something about theories of visual communication as well as simply knowing how to lay ink on paper. Students must focus more on principles and not tie themselves to technology because technology metamorphoses even as these words are written and reproduced.

Graphics for Visual Communication is designed to lead you through this period of transition. It discusses the traditional methods of creation and production of graphic images while incorporating chapters and sections on desktop publishing and other digital means of reproduction.

Graphics for Visual Communication introduces expanded concepts of visual literacy. It offers many critical analyses of effective graphic design, so you can learn to “see,” to tap into your own creative wellsprings, or to act as a better image translator for your clients.

Graphics also devotes increased space to discussions of photography and editing illustrations to broaden the skills of the graphic communicator.

This textbook is divided into four parts—Contexts, Principles, Applications, and Production—which are described, chapter by chapter, below. Ideally, you will start reading sequentially with part one—Contexts. Designers first need to know the historical, environmental, and psychological boundaries of the playing field before they can begin to devise strategies. Otherwise, they run the risk of running out of bounds.

In Chapter 1, The History of Graphics, we look at our visual heritage as a special kind of contextual resource. Students must know something about visual communication history because it is a vast, rich cultural reservoir. Designers who have historical knowledge can draw out previously tested images and adapt them to modern contexts.

In Chapter 2, The Graphic Design Environment, we place visual communication within the larger context of all communication and look at the interaction between communication and environment.

In Chapter 3, Visual Perception, we place visual communication within the context of Gestalt psychology. The more that designers know about the context of perception, the more likely it is that they will practice communication by design.

Part Two—Principles—shows how an understanding of basic principles can help you choreograph words and illustrations so that they follow the same rhythm.

In Chapter 4, Design Principles, we discuss contrast, harmony, balance, proportion, movement, perspective, and unity in broad terms, noting how they grow out of the human experience. We see them at work in examples from our current visual culture.

In Chapter 5, Type, we use design principles to describe “type,” the raw material of printed words. We specifically look at the elements of type and how to measure and classify typefaces.

In Chapter 6, Typography, we use the same design principles, this time to explore the art and science of arranging type.

In Chapter 7, Color, we see how artists and graphic designers have used the same words to describe methods of combining colors. Color can be used either to intuitively please viewers or to create tension that forces reaction.

In Chapter 8, The Photograph, we look at perhaps the most powerful communication tool available to the graphic designer. We note how design principles work with photographs in slightly different ways than with other tools.

Part Three—Applications—looks at how those principles are applied in the worlds of advertising and publication design. In many instances I used recent design annuals from which to cull the very best examples of print design. This assured that I drew from the broadest field of artifacts possible, that the samples had been preselected, and that other experts in the field agreed that the selections were well considered. Because of the production time necessary in putting together design annuals, a few of the artifacts are several years old. Rest assured, however, that the examples still are instructive of effective, modern design.

In Chapter 9, Advertising Design: Display Ads, Stationery, and Logotypes, we approach design from the point of view of the primary client, the person paying you to help sell goods or services. While the product may have a story to tell, the story must be visually crafted to induce a sale.

In Chapter 10, Editorial Design: Editing Photographs, we look at how to find and select photos and how to crop them intelligently. We also analyze both the content and structure of photo stories and photo essays, showing how they reflect editorial decisions.

In Chapter 11, Editorial Design: Magazines and Newsletters, we see how design has become the primary way magazines differentiate themselves and their audiences. Then, we look at the growing area of newsletters. We consider various specific concerns, including space allocation, the two-page spread, and typography.

In Chapter 12, Editorial Design: Newspapers and Information Graphics, we look at the demands facing newspapers today and how designers can provide some new responses. After covering page elements, layouts, and formats, we turn to the increasingly important area of information graphics.

Ideally, Part Four—Production—should be read last, because logically you should observe and analyze before you should leap confidently. Yet, this may be a luxury that isn't feasible for many, and *Graphics for Visual Communication* is designed for different points of entry. Depending upon how your teacher approaches the very large topic of communication graphics, and depending upon the number of weeks allowed for your course, it may make more sense to begin with part four. Those of you anxious to begin creating artifacts will find that production know-how there.

In Chapter 13, Planning Production, we introduce the essential first step of production: the plan. After identifying in sequence all the necessary production tasks, we examine desktop publishing systems, page description languages, and dummyming.

In Chapter 14, Prepress Operations: Preparing Text, we cover the mechanics of specifying type and the methods of typesetting and copyfitting.

In Chapter 15, Prepress Operations: Preparing Illustrations, traditional and desktop routes are mapped out. We introduce the steps of preparation then look at types of originals, screens, and halftone finishes. Color illustrations and electronic manipulation are also considered.

In Chapter 16, Prepress Operations: Preparing Camera-Ready Art, we look at traditional and electronic methods of preparation. It's important to know both methods, because the middle 1990s is a period of transition from pasteup to desktop procedures.

In Chapter 17, Prepress Operations: Selecting Paper, we discuss the aesthetic and practical importance of paper in design. After covering trends in paper use and how paper is made, we look at qualities, grades and weight, recycled paper, and ink.

In Chapter 18, Press Operations: Choosing a Printing Method, we finally arrive at the last stage of the production process. We follow the steps of reproduction, from choosing a printing method to delivery of the finished product. In the conclusion of this chapter, and thus of the book, we look to the future of design.

Many of you will be approaching graphic design and visual expression for the first time. Delight in the fact that you have no history, only a blank sheet upon which to inscribe your beginnings. Strip yourself of labels and fears of inadequacy, and plunge into these readings, no matter where you start. Take risks, challenge assumptions, and savor the texture of the goods along the way—as you cast off on your journey toward understanding graphics.

acknowledgments

Listing sources, credits, and acknowledgments is a humbling experience for any textbook writer, because the author usually is not the original source of the information. Nor is he or she often the person who first made the discovery through research. To a large extent, I have been a packager. I've tried to supply an overall vision, adding personal insights and experience, forming linkages where appropriate.

A lot of the work in this book has been done by others: those who performed heroic duty by first digging through the primary sources or by risking the unknown with their original research. They really should get the credit. Only space precludes me from mentioning those forerunners. But, any graphic design student willing to explore beyond the surface level will discover them. Possibly, your instructor is one of them. If so, give him or her a tip of your hat. This author does.

A selected bibliography following Part Four lists sources I found helpful. I can't pass up this opportunity, however, to acknowledge a few people who stepped in with counsel and intercession when blank walls blocked the path. During a time when he was feverishly trying to complete the second edition of his *A History of Graphic Design*, Philip B. Meggs of Virginia Commonwealth University graciously interrupted his schedule to provide research assistance and procured reproducible originals of artifacts. Bruce Jensen, president of Fotheringham & Associates, helped me gain access to critical advertising design materials found in Chapter 2. Ravell Call at the *Deseret News* offered invaluable insight and research assistance for Chapter 10. Steve Wilson spent a good deal of time shooting and printing the photographs for Part Four, providing excellent suggestions at important junctures. Ken Hulme at the University of Utah Computer Center always has been cheerfully ready to answer my questions regarding desktop publishing. Borge Andersen and Associates and staffers at University of Utah Printing Services provided essentially gratis service in order to bring the production process illustrations to fruition. And, to all you kind souls who helped me through the labyrinth of gaining permissions to reproduce illustrations, my deepest thanks.

Finally, I would like to thank the following reviewers for their insights and suggestions at each stage of the writing process: Robert L. Baker, Pennsylvania State University; Kevin G. Barnhurst, University of Illinois at Champaign-Urbana; Douglas C. Covert, University of Evansville; Robert Heller, University of Tennessee, Knoxville; William Korbus, University of Texas at Austin; Sandra E. Moriarty, University of Colorado at Boulder; David W. Richter, Ohio State University; Linda Schamber, Syracuse University; C. Zoe Smith, Marquette University; Sandra H. Utt, Memphis State University; Elaine Wagner, University of Florida; and Marilyn Weaver, Ball State University.

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contexts: part one

historical, environmental, and psychological

As you pick up this book, consider the moment.

Perhaps there is a poster nearby waiting to carry your drifting eyes to some escapist place where there are no textbooks. Perhaps someone is yelling in the next room or rustling papers on the library table, making it difficult to concentrate. Perhaps there is a television on in the background providing mixed messages. Perhaps you are tired or preoccupied.

Because communication does not operate in a vacuum, it is often a wonder that we can communicate at all. For as I seek to write to many, I am really trying to communicate to you. Correspondingly, I must try to anticipate the contexts or environments that surround you, or the mental set that may shape your perceptions. Part one of this book explores some of those contexts in which visual communication occurs.

In Chapter 1, The History of Graphics, we look at our visual heritage as a special kind of contextual resource. A visual communicator must know something about visual communication history because it is a vast, rich cultural reservoir. Designers can dip into that well and draw out previously tested images that, with proper adaptation to modern contexts, can add a feeling of tradition or perhaps a lively new twist to a message. Also, designers can study other practitioners and learn how they solved similar communication problems, within the limitations of their times.

In Chapter 2, The Graphic Design Environment, we look at visual communication from a macroscopic point of view and place visual communication within the larger context of all communication. We survey the ways that industries, computers, and information processing shape our communication. We suggest that communication is like an organism within a biological system that moves and exists only because of its interaction with its changing environments.

In Chapter 3, Visual Perception, we place visual communication within the context of Gestalt psychology. We look microscopically at how individuals perceive, process, and store visual information. Because individuals tend to order visual information the same way, the more we know about that context of perception, the more likely it is that we can practice communication by design.

The history of graphics is unique. It is a history that you can touch. Besides recording history, books, magazines, newspapers, and posters *are* the history. You can trace the texture of another time with the tips of your fingers when they glide over a yellowed parchment.

It is a history that is visual, one where concepts actually display themselves. “Reading” visual communication history means learning how “to see.” Communication graphics also is a history of words, to be sure, but the words are designed to be seen as well as read. Words have form and structure as well as symbolic content.

Inevitably, each slice of time has its own look. As you read through three historical periods in graphic design below, take note of how a particular look reflects a people and their culture, for it was people, graphic designers, who designed that communication to speak to and reveal their times. To remember history, try remembering the look of that history.

During this generative period the fundamental forms of communication systems began to evolve. In the beginning humans initially saw the pictorial as the basis for lasting messages. Written language materialized from the first pictures.

The Classical Period:
Developing the Basic
Forms (15,000 B.C.
to A.D. 1400)

For Cro-Magnons verbal communication was useful for immediate interaction, but it had a short life. Visual communication, on the other hand, could preserve the person beyond space and time. Apparently, Paleolithic humans understood that difference and felt that need, because they told us their stories on the walls of caves in Spain and France around 15,000–10,000 B.C.

The First Visual Images

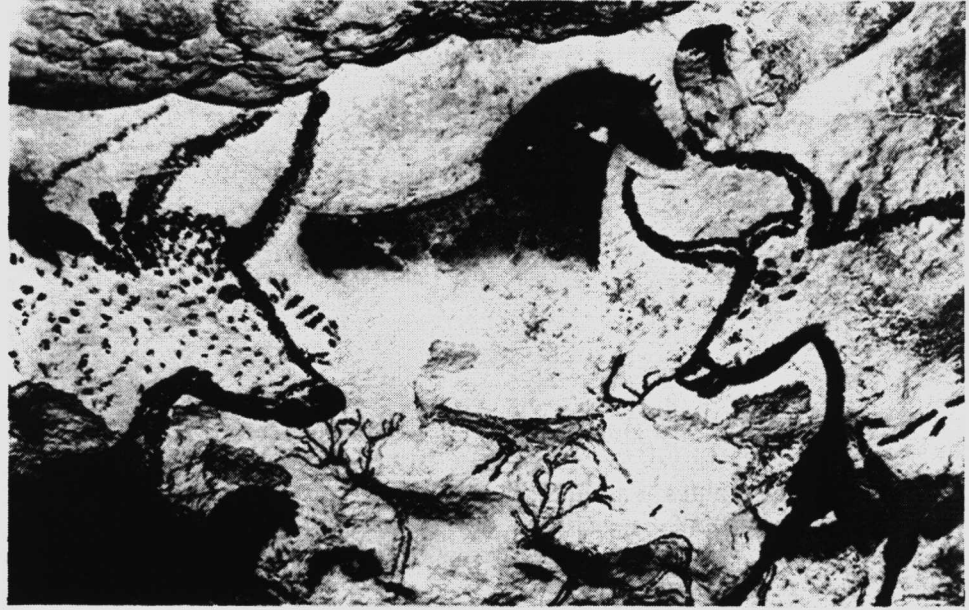
While the Paleolithic designers perhaps wanted to create **representative** images, their skills, experiences, and materials left the images looking **abstract**. Still, we can marvel at the exact sense of **proportion** and the careful differentiation of **forms** that allow us to identify the various species of animals. In turn, **pictorial styles** give each figure a life of its own.

Paleolithic visual communicators used **pictographs** to communicate, pictures that conjure up the images of things. But, while we can “read” the pictographs on the walls of Lascaux caves as identifiable mammals, the organization of those pictographs might form a **syntax** that could provide an expanded meaning, if we only knew the designers’ visual rules of grammar.

Anthropologists help a bit. They suggest that early human cave communication was utilitarian, perhaps identifying the regional animals that clansmen could successfully hunt. Possibly, the images were ritualistic, giving the illustrators

Figure 1.1

A Paleolithic cave painting from Lascaux, France.
French Government Tourist Office.



power over the animals they “captured.” Perhaps the cave drawings were narrative, simply recording a successful hunt. We also can guess that creating things of beauty that communicated ideas to others was for them something inexplicably breathtaking, something necessarily human (Figure 1.1).

Egyptian Hieroglyphics and Illustrative Art

During the period 3000 B.C.–A.D. 300, Egyptians developed **hieroglyphics** into a graphic language system where pictographs came to represent ideas and words rather than simply things. Also, Egyptians incorporated the Assyrian notion that pictures could represent syllabic sounds.

Egyptians invented a new substrate called **papyrus**. Made from the interwoven fibers of a Nile River reed, papyrus was easier to use than clay or wax tablets, wood, or stone. Also, the rolls of papyrus could be sold.

Pharaohs, priests, and lay people alike revered Egyptian scribes for the knowledge that came from their ability to read and write the over 700 hieroglyphs. Scribes were graphic designers as well. Clients chose scribes for the aesthetics of their individual writing styles. Such was their eminence that scribes were excused from paying taxes.

Egyptians were the first culture to combine words and pictures into one communication. Preoccupied with their deaths and the possible loss of their earthly perquisites, pharaohs commissioned scribes and artists to prepare **funerary scripts** that would describe the idyllic lives and great fortunes that awaited them. When papyrus became affordable for common citizens, they too commissioned scribes to write their first person narratives that came to be called *The Book of the Dead*. If you were not particular, you could purchase a **stock** funerary papyrus with a blank for your name and choose your future afterlife from a menu.

Eventually, scribes and artists devised a consistent design **format** for these funerary papyri. First, narrative space was framed by two strong borders at top and bottom. Then, designers divided the internal space into rectangles and columns that would hold either copy or illustrations.

In *The Final Judgement* from the Papyrus of Ani (Figure 1.2), the scribe Ani and his wife Thuthu approach their moment of decision, when the jackal-headed god Anubis weighs the sins of Ani against the feather of truth. Thoth, the beaked scribe of the gods, awaits to record the verdict on his wooden palette, while Ammit, the devourer of the dead, crouches at the far right ready to spring upon the damned.

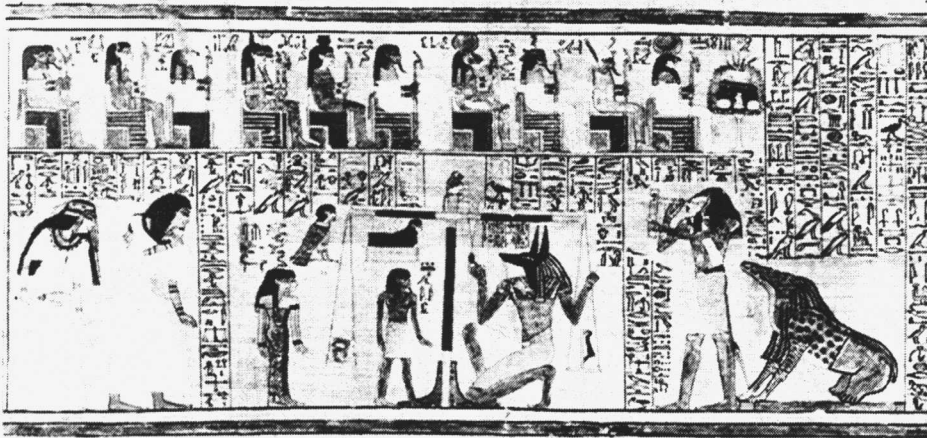


Figure 1.2
Egyptian hieroglyphics and
illustrative art from *The Book of*
the Dead.

Courtesy of the Trustees of the
British Museum.

The Phoenicians, a Mediterranean seafaring people, traded with Mesopotamia and Egypt. Their desire to streamline communication with their markets led the Phoenicians to develop the first alphabet.

The Phoenicians borrowed **cuneiform** writing from the Assyrians. Cuneiform was based on hundreds of pictures that represented syllables. They also incorporated the Egyptian notion that pictures could represent sounds, as well as ideas. Then, the Phoenicians took those concepts one step further.

The Phoenicians recognized that their Semitic language really only consisted of twenty-two individual sounds. They gave each of these consonant sounds an individual picture that already existed either in the Assyrian or Egyptian graphic language systems.

As shown in Figure 1.3, the first letter in the Phoenician alphabet was *aleph*. Because that letter had the same sound as the Phoenician word for “ox,” they gave that letter the pictograph that was currently being used to denote an ox.

Later, the Greeks would take the Phoenician alphabet and add five vowels. But, consider the ramifications of a written alphabet of only twenty-two letters. Now, anyone could learn to read and write. Immediately, the power of the priests and scribes began to ebb. New leaders from the masses would begin to exercise power in the Mediterranean Basin.

Greeks during the Fifth Century B.C. were preoccupied with finding and displaying graceful forms. They admired the order found in **symmetry**, where each side is a mirror image of the other. They felt that regular geometric forms could be the basis for perfect systems of writing, inscriptions, and architecture.

Greek writing was based on geometric units. In the votive stela in Figure 1.4A, notice how the letters *E* and *M* are based on a perfect square. The letter *A* has grace and stability because it is formed from an equilateral triangle. The letter *O* is almost a perfect circle.

This preoccupation with geometry and forms in space led the Greeks to institute linearity in their writing; each line is firmly grounded. There also is an even distribution of space between succeeding letters so that a graceful rhythm moves the reader. Because Greek writers often used a stylus or reed pen that came to a point, their letters have a uniformity of weight between vertical, horizontal, and diagonal strokes.

The Phoenician Alphabet

Greek and Roman Contributions

Figure 1.3
Phoenician alphabet.
From James Craig & Bruce Barton,
Thirty Centuries of Graphic Design,
1987.

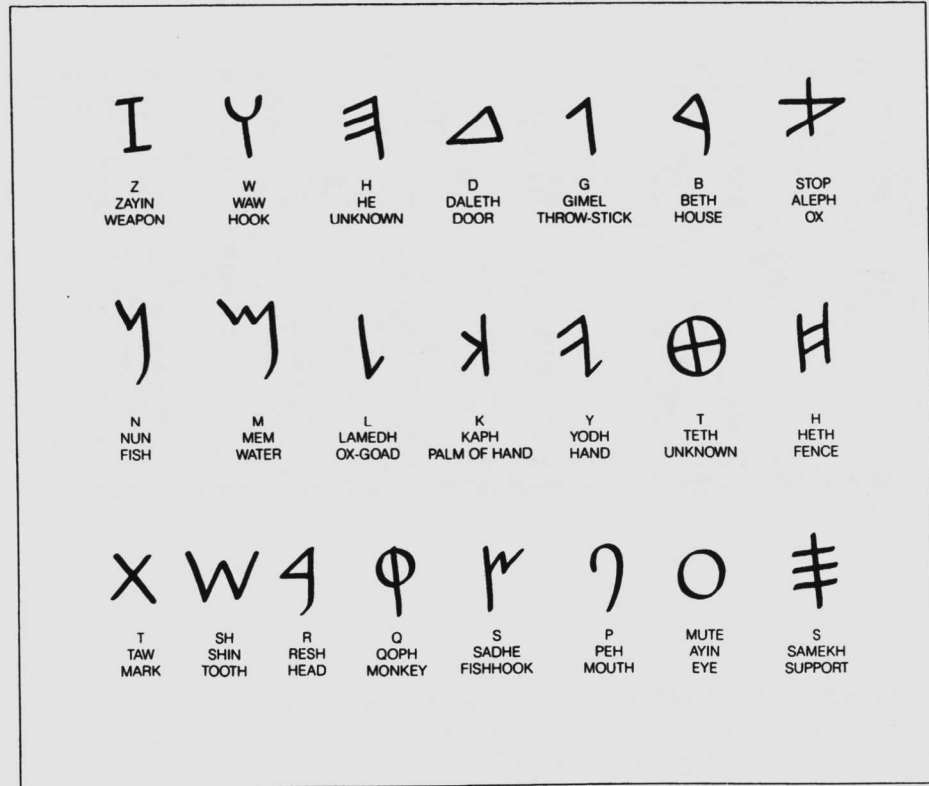


Figure 1.4
(A) Greek votive stela.
(B) Detail of a carved
inscription from a Roman tomb.
(A) Gift of Mrs. Charles Amos
Cummings. Courtesy, Museum of
Fine Arts, Boston.
(B) Photographer: James Mosley.



A



B

When Rome conquered Greece, it absorbed much of Greek culture, graphics included. After Roman legions established control over an area, they marked that new extension of the *Pax Romana* by erecting columns or arches. At the bases of these monuments, they would inscribe the stories of those battles to remind the indigenous peoples that they were under the imperial control of Rome.

These elegant, massive capitals were based on regular geometric units like Greek letters. But, Roman stonecutters added something new (Figure 1.4B). After first writing the inscriptions on the monuments with flat tipped brushes held at a slant, which gave their letters thick and thin strokes, they carved the letters. The angle of the sun would accentuate the stroke differences. Then, they chipped horizontal strokes at the bases and ends of letters so that their work would have a finished look. These finishing strokes are called **serifs**.

After the fall of the Roman Empire, Western civilization was torn by disease, dissension, and brigandage. Learning almost ceased, retreating into the monasteries, where clerics, aiming to please God and hoping to be saved from damnation, began copying sacred Christian texts.

Their illuminated manuscripts show that the term “Dark Ages” was a misnomer. A **scrittore** was a well-educated scholar who served as editor and art director and led a **copisti** (copyist) and **illuminator** (illustrator) in the creation of glorious books in rich color.

Frowning on the papyrus scroll, which was linked to paganism, they used the Roman invention of the **codex**, a book format that was assembled by writing on both sides of the skins of calves and sewing the skins together in the middle. This format made for easier reference and comparative study of texts.

In the *Ormesby Psalter* from the early fourteenth century, the copisti used a handwriting style called **textur**, whose width was condensed so as to conserve precious parchment. A page was anchored with a large, gloriously illustrated **initial letter**. Ornaments in gold leafing radiated when light struck the polished letters.

The monastic dictum was, *Pictura est laicorum literatura*, or, “The picture is the layman’s literature.” But, word and illustration did not always reinforce each other. The illustrations did not always refer to allegories spun by the text on the same page, and there were occasional visual allusions to old mythological beasts, sometimes suggesting the Devil, other times reflecting an earthy, mystical Christianity still in the making. Nevertheless, illustrations were considered as important as words. In his monumental *A History of Graphic Design*, Philip B. Meggs suggests that illustrators provided tableaux of everyday living in the margins in order to humanize their texts and to provide parables of common life that the priests could use as they preached to the illiterate lay audiences. The copy and illustrations on the page from the *Ormesby Psalter* in Figure 1.5 were inspired by the opening words of the psalm, ‘The fool hath said in his heart, There is no God.’

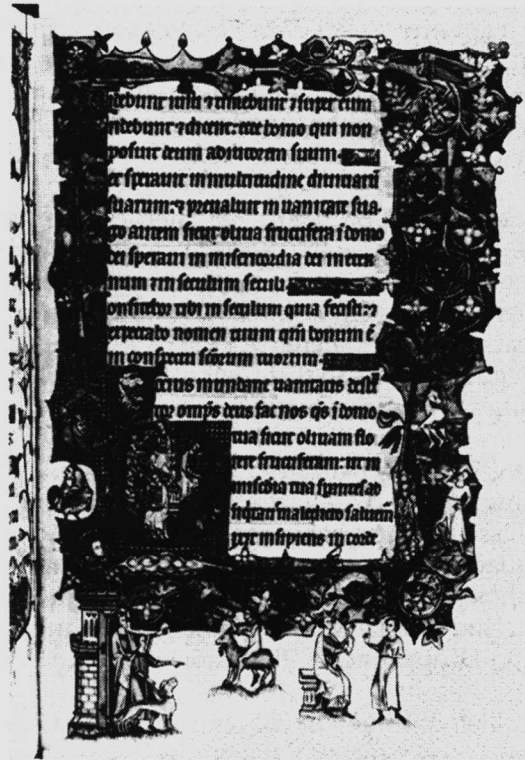
Medieval Illuminated Manuscripts

Printed mass communication became possible because of the dynamic interplay of entrepreneurship and growing public literacy. Spurred by the capitalist system, publishers and inventors created new machines to serve new markets. In so doing, they accelerated the growth and penetration of communication as culture.

The Age of Literacy, Masses, and Machines: The Birth of Mass Communication (1400–1890)

Figure 1.5
Page from the *Ormesby Psalter*,
a medieval illuminated
manuscript.

The Bodleian Library, Oxford, Ms.
Douce 366, fol. 72.



Johann Gutenberg and Printing from Movable Type

The Chinese had invented printing from a raised surface by 1000 A.D. They laboriously cut each page of art and letters from wooden blocks. But, they had no need for independent, reusable, movable letters because with over 5,000 characters in their language, it would be too burdensome to restack the used type characters.

But, Johann Gutenberg saw the advantages of reusable type for a smaller, Western alphabet. He devised a system whereby a liquid metal alloy could be poured into carved brass molds and, after hardening, become a raised letter on a rectangular block of metal. These individual letters could be arranged in any fashion and reused. He invented a new ink that would not run and adapted a wine press that could accommodate whole pages of type.

When he set out to print his forty-two-line Bible, Gutenberg had no buyers lined up. But, he had an inkling of what mass communication meant. He knew that the growth of universities and their new interest in classical texts from Greece and Rome made a market larger than the copyists could handle.

To design his type styles, he too dipped into the cultural well and used *textur* as his model. He devised a two-column format with wide **column breaks**. The initial letters were later drawn in by hand. The result, in 1455, was a page with elegant symmetry where the dense texture of letters contrasted pleasantly with the generous **negative space**, or margins, framing the copy (Figure 1.6).

The effects of this relatively inexpensive means of reproducing communication were culturally cataclysmic. Literacy and universal education became affordable. Secularism grew and challenged established religion; the newly threatened powers, in turn, claimed the right of censorship. Commerce and cities blossomed with the ability to relay commercial information. Cynicism and iconoclasm erupted as people began to see the fraud and propaganda that are the dark side of mass communication. And, writers became immortal.

Renaissance Printing

When Germanic printers fled to Italy to avoid political unrest, they could not please the Italian market. Italians did not like the type style, *textur*, or **black-letter**, that Northern European printers used. Rather, Italians admired a writing