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Models are mental or physical structures that represent our experience of and knowledge about the world. They shape and organize our perceptions of new experiences and help to make sense of our thought processes. Physical models give our ideas material form, allowing us to visualize, modify, elaborate, and share our thoughts, and to explore complex concepts and relationships that would be impossible to process in our minds alone.

Whether consciously or unconsciously, models influence the way we think and act. They also embody theoretical assumptions about things in the world and how they work. For example, the modern concept of the universe includes the idea of the Earth as a sphere that spins on an imaginary axis and revolves around the Sun. Our expectations of periods of dark and light, the shortest routes to certain destinations, and typical climates in different regions of the world arise as much from our mental representations of these spatial relationships as from any knowledge of relevant data. With this in mind, it is easier to understand how people in earlier historical periods created mental models of the universe that helped them to shape their own particular beliefs and customs.

Language gives expression to the mental and physical models upon which we base our perceptions. Inhabitants of the United States and Europe, for example, often refer to Australia as being “down” and the Arctic as being “up”; they describe Israel as the “Middle East” and China as the “Far East.” Such constructions, however, have no basis in concrete reality. They arise from political points of view and socially driven visual conventions related to how we represent the world in maps. The “up/down” references that are used in descriptions of location are a consequence of north-oriented cartography. But this particular orientation of the globe does not reflect a law of nature (we are all clinging to the planet through gravity, regardless of where we live)—it is simply the conventional model through which we learn about and refer to geography. The terms “Far East” and “Middle East” are derived from the perspective of the cartographers who created the maps: not only is it unlikely that the Chinese considered themselves to be “far,” but the nautical route from Los Angeles to Beijing is also not east. In these examples, language provides an insight into how our subjective mental models of physical reality shape interpretations and actions.

Physical models allow us to refine and communicate abstract concepts. Architects use models to explore the relationships between built spaces and how people live, work, and move around in them; they also examine the aesthetics of proportion and the technical demands of structural designs on construction. Architectural sketches and scaled-down versions of buildings give physical form to such ideas. In this case, the model physically expresses some optimal arrangement of form that is consistent with the architect’s theoretical model of how people use space. A model of a house allows the architect to see whether,
for example, the kitchen is too far from the laundry or a room is too vertically proportioned to be cozy. But, crucially, it also ensures that the client and the architect are able to reach a consensus about the final design of the house: the model confirms that both parties hold a similar vision of how to express certain needs, values, and meanings in built form.

Similarly, graphic design objects are models that express mental constructs of how language and communication work. Just as the architect's model of a house is a reflection of his or her ideas about the relationships among form, space, and how people live, the physical objects made by graphic designers are guided by mental models of how communication works. Over and above the subject matter of the communication, our analysis of such objects must therefore address what their physical qualities tell us about the designer's view of audience, representation, and the communication process.

Models can act as powerful tools in shaping or representing perception, behavior, and attitude. The models that are used by graphic designers to understand the communication process and the role of graphic design are highly significant: they define the scope of our work, the types of knowledge and collaborators we think are important to our task, and our understanding of the consequences of our actions. At this fascinating time in the evolution of graphic design, rapid changes in technology and shifting theories challenge us constantly to re-evaluate the models upon which our professional activity is based.

This chapter highlights a few models of communication from recent history. Fairly or unfairly, it critiques what they do and do not include, as well as the attitudes and actions they enable. The aim of the chapter is not to arrive at a definitive conclusion about how communication works, or to prove that one author has more validity than another, but to identify what kinds of theory and knowledge are important to design as a practice and a discipline.

THE SHANNON/WEAVER MODEL OF COMMUNICATION

In 1948 Claude Shannon, a research scientist for the Bell Telephone Company, tried to optimize the process for transmitting an electrical signal with minimum distortion. His “Mathematical Theory of Communication” described message transmission in terms of a signal source, or SENDER, which transmitted information along a CHANNEL to a RECEIVER (see Figure 1.1). The signal passed through various types of interference (NOISE), resulting in some degree of information loss. Shannon’s aim was to reduce noise and thereby improve the telephone’s ability to deliver messages with fidelity to the original.

Soon after Shannon published his work, the scientist Warren Weaver recognized that Shannon’s model (devised for message transmission between machines) could be used equally effectively in describing interpersonal communication. Warren’s interest was in applying models from physical science to the understanding of human behavior. Shannon’s original document was republished in 1949, with a preface and additional text by Weaver. The result is what is known today as the Shannon/Weaver model of communication.
It would be easy to dismiss this model as simply the beginning of a more sophisticated lineage of communication models, if it were not so persistent in shaping contemporary ideas of communication. Many people still refer to the Shannon/Weaver model as an accurate depiction of human communication, despite the fact that Shannon's original intention was to describe the work of machines. Although Weaver deemed Shannon's work a good match for explaining the exchange of information between two people, the model does little to address the interpretive consequences of CONTEXT (see chapter 3), the particularly human nature of communicators, and various kinds of communication channels.

If we accept this model as the basis for visual communication, the Shannon/Weaver sender must represent both the originator of the message (the client) and the designer of its form. The model does not provide a way to account for what the designer brings to the communication process that is more than the literal subject matter of the message, as defined by the client. A description of the channel would have to account for both the physical properties of the designed object (e.g., the poster, the screen-based display, and so on) and its means of distribution across time and space (e.g., online, by mail, on television, and so on). For the purposes of analysis, the material qualities of the designed object could not be separated from the means by which it reaches audiences. Finally, the Shannon/Weaver receiver would have to stand for all the diverse audiences who encounter the message CONTENT, now and in the future. Unlike a single telephone transmission that ends when it reaches the intended receiver, visual messages often circulate to many people over time and in many different contexts.

Needless to say, these additional criteria define a difficult representational task for such a simple model, and it is a little unfair to judge Shannon against the characteristics of a system that is far more complex than the one he originally addressed. But when Weaver adapted Shannon's mathematical model to a description of human communication, he opened it up to such criticism. Despite these shortfalls, some graphic design practices reinforce the beliefs that the designer can be a neutral, technical hand of the client; that meaning resides solely in the artifact itself (that is, in its subject matter and form but not influenced by its context or means of distribution); and that reaching a mass audience, in which all participants are seen as roughly equivalent in their behavior and attitudes, is the goal of most communication design. Later models and sections of this book challenge these beliefs.
THE EMMERT/DONAGHY MODEL OF COMMUNICATION

A deeper understanding of human communication was offered in 1981 by the communication professors Philip Emmert and William Donaghy in their elaboration of the Shannon/Weaver model. They include important additional factors in their model that describe human communication more appropriately—namely, context, feedback, and the makeup and behavior of communicators.

context

The Emmert/Donaghy model acknowledges that communication always takes place in a context. This context includes the communicators themselves, as well as the physical, socio-cultural, and technological environment through which messages pass. This recognition of context (as present in all communication exchange and as primary in the construction of particular meanings) is especially important for the graphic designer. As designers we seek "goodness of fit" between the formal aspects of designed objects (the choice of visual elements, their organization in particular artifacts and formats, and their stylistic treatment) and the contexts in which they are to be interpreted. Designed objects and their audiences do not live in an interpretive vacuum—they are situated in all the messiness and complexity of real life, and design must account for these conditions whenever possible.

A designer often has to decide how many variables within a given context the design will address, and which aspects of the overall context should be assigned the highest priority when they are in competition. The quality of a design is therefore often judged as much in terms of the designer's contextual definition of the problem as by the formal attributes of the designed object.
itself. If the designer chooses to ignore critical aspects of the communication context, the design may fail, even though its form may be responsive to other, less important demands of the problem. Imagine, for example, a fundraising pledge card that does not meet mailing regulations; an event poster that can be read only from a short distance away; and a television promotion for a male political candidate in which his wife always walks behind him, never at his side. These examples undervalue the technological, physical, and cultural factors in their respective communication contexts. Regardless of how beautiful or compelling the final form may be, we can judge them as falling short of the obvious communication task.

feedback
Emmett and Donaghy also introduce the concept of feedback and designate two communicators, as opposed to the sender and receiver in the Shannon/Weaver model. These concepts acknowledge the two-way nature of most human communication, even in circumstances under which feedback is delayed or communicators are not in the same physical space.

It may appear that print media and television involve one-way communication and lack formal opportunities for feedback. The designer of a poster rarely hears about success or failure from those who have attended an advertised event. And unless we take part in market research or are zealous bloggers, broadcasters have very little information about our responses to particular programming. If people do not show up, watch, or buy, it is not clear how their lack of engagement results from the failure of any specific design attribute or aspect of strategy. Focus-group testing provides some insight into these issues, but it rarely replicates the complexity of the actual context in which the communication takes place. Immediate feedback loops are more integral to the Web and interactive media. In these situations we can observe or record the physical interaction that is required to alter the state of information or review the submission of a formal response.

But if we expand the time frame for considering how an audience responds to visual communication and think of communicators in more subtle ways, we find that the information in designed messages, and evidence of its reception by audiences, often circulate through culture over time. The communication interaction can be viewed not just in terms of its immediate success or failure in achieving a short-term goal, but also as a trajectory of understanding and acceptance for ideas that result from encounters with visual messages. Much of what we define as “cultural literacy” (ideas that are held in common by people who live in the same culture)
can now be attributed to ideas circulated primarily through the media. Such messages constitute a kind of feedback for their originators. Ideas and practices that resonate with audiences enter the zeitgeist or spirit of the times. Those that do not, disappear quickly. (See box: "Consent and Affirmation").

In terms of the larger cultural response to design, the Emmert/Donaghly description of feedback is not particularly satisfying. It presumes that an understanding of message success or failure is informed only by first-hand responses from the recipient, or exists as some free-floating component of the larger context in which communication takes place. Individual designers, however, are obliged not only to inform their professional activity through observation, research, and various types of discourse that address a wider cultural context (beyond the domain of the individual project), but also to make sense of their work within systems of social and cultural production.

two communicators

As previously discussed, the aim of the Shannon/Weaver model was to describe the exchange of information between machines, and its main features included a sender and a receiver. But Emmert and Donaghly's introduction of the idea of two communicators offers a more accurate description of human communication. Their model not only acknowledges that individuals both transmit and receive messages, it also takes into account all the written, visual, auditory, and kinesthetic information present in human encounters and represented in the communication artifacts produced by people. Emmert and Donaghly describe communicators as being comprised of all the communication inputs, outputs, and mental processes of their lifetimes. In other words, our interpretation of a single message is influenced by all our previous experiences.

The authors also describe processing as involving perception, motivation, and reasoning. It is important to note that, as designers, we may view the world and messages from perspectives that are different from those of our audiences. Graphic designers cannot assume that their own perceptions and motivations are a good match with those of the people for whom they design, or that they are even typical of the general population. At the same time, the role of the designer is often as an advocate for the audience in the design process. An increasing number of design firms therefore rely on audience- or user-centered research that identifies significant patterns in people's wants and needs, as well as the behavior, values, and attitudes that shape them.

The design researchers Gerhard Fischer and Elizabeth Sanders suggest going a step further and using the intended audience for design as co-creators to...
ensure a “good fit” between the characteristics and features of a designed object and the people who make use of it in specific contexts. Rejecting the term consumer as contributing to “the degeneration of humans into ‘couch potatoes,’ for whom a remote control is the most important instrument of their cognitive activities,” Fischer suggests that the role of design lies in creating opportunities for informed participation. He laments situations in which “1) someone wants to be a designer in personally meaningful activities but is forced to be a consumer; and 2) someone wants to be a consumer in personally irrelevant activities and is forced to be a designer.” The goal of well-designed communication objects is therefore to engage audiences or users in reasoning and actions that are appropriate to their motivations and perceptions of relevance.

As the complexity of communication problems increases, so do the demands on reasoning. The designer is often a mediator between a system (physical, technological, cultural, social, or economic) and the audience’s or user’s idea of that system, how it works, and its role in supporting the activities people really care about. The goal of design is to represent the system appropriately in ways that aid reasoning. Whether this involves intuiting the use of a software operation, reflecting on a work of literature, accepting a political position, or making an informed purchase, designed objects stand between the audience and an external system or framework. The physical or virtual object may therefore enhance or diminish the audience’s understanding by the degree to which it effectively represents that system. Further, the system’s meaning and usefulness are often understood in terms of people wanting to accomplish something, so the configuration of the system must appear to be consistent with that intended goal.

For example, as a long-time user of Microsoft Word, I understand it to be word-processing software. I expect it to provide features and functions that allow me to check grammar and spelling, add emphasis to certain words through type weight and italics, and format a document using margins, line spacing, and tabs. This is my idea of a word-processing or authoring system. Microsoft, however, has decided to take some formatting control out of my hands. When I type a number at the beginning of a sentence, the program automatically assumes I am making a list and places numbers at the start of each subsequent line. To turn off this function, I must go back and enter commands that counter the programmed system. When I bullet a list of items, the program assumes I also want to indent that list. These are design, not authoring issues, even though my idea of Microsoft Word is not that of a design program. In other words, there is a mismatch between my understanding of the system and motivation for using it and those of Microsoft. This mismatch engages me in more reasoning than may be necessary for the task.

The Emmert/Donaghy view of communicators acknowledges that meaning is constructed in the mind of the interpreter and is not controlled solely by the originator of the message (as implied by the designation of sender and receiver in the Shannon/Weaver model). The best we can hope for, as designers, is to put in place the appropriate elements and conditions that help an audience arrive at a similar interpretation to the one we intend. Later chapters of this book discuss constructionist or writerly theories of design, which suggest...
that the reader actually creates or writes the meaning of the work through his or her own interpretive experiences (see pp. 36–37).

According to Emmert and Donaghy, noise is not only a by-product of the context but is also internal to the communicators themselves: perception, motivation, and reasoning (i.e. aspects of an individual’s mental processing of stimuli) can result in interpretations of meaning that differ between the originator of the message and the recipients. This principle argues for a deeper understanding of cognitive processes as fundamental to design practice. It indicates that the audiences for design are more complex and diverse than implied by the demographic definitions favored by most marketing studies, and that patterns in how we think influence both what and how things mean.

This expanded definition of the communication process tells us that the work of the designer involves more than simply subjective decisions about what looks good or is novel; confirms that design arises from and influences general values and attitudes in the culture; involves the detection of pattern in determining which characteristics of designed objects compete successfully for people’s attention in an environment of information overload; and suggests that decisions about form must be linked to how people process information as well as to the nature of the subject matter.

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<td>Smelling</td>
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<tr>
<td>Attitudes</td>
<td>Treatment</td>
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Berlo’s model of communication identifies the components of messages. While some of these components are physical, others are cultural conventions that account for what things mean beyond the literal inventory of subject matter.

BERLO’S MESSAGE COMPONENTS

The communication theorist David Berlo provided another useful model for designers in his identification in 1960 of message components (See Figure 1.3). Admitting that these components are often difficult to separate, he describes the role each one plays in the construction of meaning.

content, elements, and structure

Berlo explains that the message has CONTENT—subject matter that is the topic of communication. The message takes physical form through ELEMENTS: text, headlines, illustrations, photographs, graphic marks, and symbols. These are the tangible forms from which the message is composed and about which the designer makes choices.

berlo’s message components
**STRUCTURE**

The arrangement of elements and relationships among the parts of something complex. In visual terms, structure is composition and involves not only the organization of elements but also their relationship to the field of vision (i.e., on a page, on a screen, or in the environment).

**NARRATIVE**

Storytelling. An unfolding of connected events or actions.

**CODE**

A set of conventions or principles governing how the audience interacts with the elements of a message in various media or formats. The left-to-right, top-to-bottom pattern of reading English, for example, demands a certain pattern of engagement with printed text that is different from the ways in which a photograph is read or a film is watched.

**READING STRUCTURE IN DESIGN**

The history of graphic design reveals that the manipulation of visual structure has always been fundamental to our thinking about how communication works. In the early twentieth century, for example, writers, poets, and designers worked closely together, using typographic structure to awaken audiences to ideas of political and social change (see chapter 5). It is fair to say that they succeeded less by their words than by their arrangement of words.

Structures with less political motive are found in the grids and typographic systems of contemporary magazines. These underlying divisions of space and palettes of typographic variables organize reading behavior and our understanding of what kind of content appears on the page. Column width and style, typeface, and point size define the functional differences among information components. We know a sidebar from a feature article and a headline from a quote because the choices about form are applied systematically. The author's designated hierarchy among information elements is represented visually and through the recurring placement of different kinds of content in particular areas of the layout. If the structure of these layouts is not clear, we are unable to make quick decisions about which of the many articles to read or where one article begins and another ends.

**code**

In Berlo's model, **code** refers to the rules governing the reading of elements. In the strictest sense, code is grammar. “The dog bites the man” means something very different from “the man bites the dog,” even though the same words appear in both sentences. Speakers of English understand the difference in meaning because a particular linguistic code establishes the relationship between subject and object in English.

Similar codes operate in visual communication. Our interpretation is influenced by where different elements are positioned in relation to one another and to the perimeter of the page. For example, a financial bar chart that shows the declining revenues of a company over a five-year period is interpreted less easily...
Deliberate attempts to subvert this structural distinction can be found in the \textit{advertisorial}, a hybrid in which advertisements assume the structural identity of editorial content, presumably to gain credibility with the reader. These structures also define the \textit{identities} of magazines. Without seeing a masthead or reading text, we can easily differentiate the somewhat cluttered \textit{Family Circle} magazine from the more ordered \textit{Martha Stewart Living}. The wide columns of text, limited palette of typefaces, and liberal use of white space in \textit{Martha Stewart Living} contribute to a clear editorial hierarchy and separate it from other publications in the supermarket checkout line. By contrast, the four-column grid, random use of multiple typefaces, and frequent boxing of text by colored shapes and lines create a frantic structure for \textit{Family Circle} that is virtually interchangeable with competing women's periodicals. Although the two magazines address similar content, their structures communicate very different messages that extend their attitudes toward home interiors and fashion. They also provide not-so-subtle clues about social class, taste, and whom they see as their intended audience.

Structure, in this sense, is integral to the meaning of the message. It is not simply an arbitrary or neutral ordering of more content-infused elements, but rather an extension of particular ideologies about how form contributes to meaning.

when the bars are oriented horizontally than when they are oriented vertically (see Figure 1.4). Our interpretive code typically associates “gain” and “loss” with top and bottom rather than left and right. The health of the company will therefore be clearer if the designer orients the chart in a manner consistent with this code.

A grammar of visual form that describes the physical world has evolved gradually. For example, the code of linear perspective, evident in the work of sixteenth-century Renaissance artists, dates back to the mathematical experiments of the architect Filippo Brunelleschi (1377–1446) (see Figures 1.5–1.6). The depiction of three-dimensional space in work executed prior to Brunelleschi’s system of horizon lines and vanishing points is not “convincing” to modern eyes (see Figure 1.7). As a result of these efforts, we now take for granted such cues as the relative size of objects, their relationship to the horizon, the convergence of parallel lines in the distance, foreshortening, and shadows and shading as the grammar of spatial representations.

The French semiotician Jean Baudrillard (1929–2007) discusses code from a cultural perspective. In his analysis of interior design in \textit{The System of Objects} (1968), he suggests that, historically, the interiors of our homes were constructed from objects that were handed down through families. They consisted of a diverse assemblage of furniture and bric-a-brac amassed across generations. These objects were rich narratives of family history. They held meaning through their associations with people, places, and experiences, often expressed through their idiosyncratic appearance. Twentieth-century modernism
(see chapter 5) reduced the form and meaning of furniture and housewares solely to that of function. Stripped of all historical detail by industrial manufacturing processes and the new materials of the twentieth century, the design of such objects expressed a unity of purpose. Like the industrial machines that served as the metaphor of the modern world, these objects were void of any details that did not contribute to their primary function. Their value was as components within a larger system for living.

Today's interiors strive for the same sense of unity among components. We are told by advertising images what does and does not fit the code, and which parts are necessary in order to achieve the desired look and feel (see figure 1.8). It is not enough simply to purchase the sofa—we must also purchase the right pillows and the appropriate armchair if we want to complete the ensemble. The behavior encouraged by such advertising is to consume, always to want the next object that is necessary to the completion of a system that is slightly out of our economic reach. For example, a television commercial for the popular furniture store Rooms to Go presents a testimonial from a single man who purchased an entire, pre-coordinated living-room. He brags that he does not know “what these little round things are” (referring to decorative balls in a bowl on the coffee table), but he is glad the Rooms to Go designer had the savvy to know they “belonged.” In this sense, code is a visual template for “good taste,” a system that guides the selection and organization of parts.
The antique, according to Baudrillard, is now "exotic," someone else's story acquired on weekend jaunts through cluttered shops, flea markets, and backroad estates. Its meaning to the antique hunter resides not in the character of its life with the original owner but in its role as a member of a larger collection, as part of a more general set of grammatical rules about how things go together in eclectic interiors. In this way, interior design and advertising write the code according to guiding principles that are present in the culture.

**treatment (style, aesthetics)**

Berlo defines **treatment** as the subjective contribution of the creator/author to the meaning of the message. In design, this is often referred to as style, or, incorrectly, as **aesthetics**. Style defines a particular kind of relationship between the function of something and how it looks. The material, sensory qualities of the artifact produce emotional responses and meanings that might not otherwise be evoked by the literal subject matter itself. Style is often an expression of **ideology**, form that arises from beliefs and theories, as much as from the subject matter of the work.

Thomas Starr, a design professor at Northeastern University, illustrates the role of treatment or style in his account of events surrounding the publishing of the American Declaration of Independence in 1776. (The text that follows is a summary of an interview with Starr.)
Following the final editing of the Declaration of Independence on July 4, 1776, the authors turned over the manuscript to the typographer and official congressional printer John Dunlop. Dunlop set the text in metal type and, on July 5, delivered printed copies to Congress, which distributed them to the colonies. They were eventually reprinted in twenty-four colonial newspapers to inform the colonists. On July 19, however, Congress also ordered calligraphic versions of the document, one of which is now in the National Archives in Washington, D.C., and represents what most of us mistakenly consider to be the original form of the Declaration of Independence. Calligraphy was the style of the most important documents of the time and a remnant of the monarchy. The colonists could not leave behind, even after winning their independence, this stylistic convention.

Starr makes the point that typesetting is the style of democracy and mass communication; it was the typeset version that actually did the “declaring” to citizens. On the other hand, the handwritten calligraphy is elitist and implies a single author and a single reader.11

Style, more than any other aspect of a visual message, is subject to shifting cultural attitudes. The history of design is replete with examples in which ideological differences of opinion gain expression through breaks with styles of the past. For this reason, stylistic references in design are charged with meaning and serve as primary vehicles for communication.

THE MESSAGE CYCLE

The previous models discussed in this chapter illustrate an increasing awareness of context and of the specific attributes of the communicators themselves as fundamental to the construction of meaning. Such models have been used to describe written, spoken, and visual communication, yet there is little elaboration of how the message influences its surrounding context or how the media culture is responsible for shared interpretations of its meanings. And there is no description of the afterlife of messages beyond the initial encounters of audiences. These previous models are therefore more effective in describing individual interactions between two people than communication on the scale of mass audiences.

Even in Berlo’s description of message components, little is said about the particular contribution of certain kinds of elements, structures, and treatments to the interpretation of meaning. While Berlo acknowledges different channels of communication, he provides little discussion about how the meaning of various elements is linked to technologies for their creation or how messages gain or lose meaning through processes of distribution.

If we shift our focus to the visual message and its interpretive life cycle in society at large, we can describe communication as consisting of message creation, reproduction, distribution, reception by individuals, and consumption by culture [see Figure 1.9]. In this cycle, the message is first made concrete through a creative process of representation, an encoding of the message in material form that has the intention of bringing to mind the appropriate concepts. This encoding process is the traditional domain of the graphic designer, who draws upon the language and understanding of the culture to craft visual, spatial, and temporal messages that stand for something to the intended audience. If the
message is to be interpreted by a mass audience, it must be reproduced in a way that enables its circulation through the culture, frequently across time and physical space. The form of the message must be compatible with its means of distribution, placing technological as well as creative demands on the maker. The scale of reproduction influences the choice of medium.

**distribution**

More importantly, the message alters the interpretation of meaning through its means of distribution, and as a result it may or may not be read exactly as intended. For example, messages that are circulated through an interactive environment, such as the Web, are assembled in sequences that are often determined by the user: the choice to explore a link, to rollover, or to change the ordering of content affects the user's overall interpretation of meaning. In this way, the author of the message is not entirely in control of its meaning because the sequencing of message components will vary with each user and may even include content created by another author. In some cases, the user may actually leave the site through a link to read material by a completely different author. To the user, this hypermedia assemblage is one communication experience, the nature of which is defined, in part, by the very means of its distribution.

Similarly, messages that circulate across significant intervals of time are understood within the context of other intervening or subsequent messages, all of which influence the interpretation of the first message. We all experience those moments when primetime television programming and advertisements feel as though they are part of the same discourse: the pharmaceutical ad following a drama about addiction; the vacuously flirtatious girl in the shampoo advertisement adjacent to a documentary on the success of women in the workplace; the promotion for the supermarket tabloid, *National Enquirer*, on CBS Morning News. These compound messages result entirely from the programming structures and economics of broadcast television. It is almost impossible for the originators of feature programs and the sponsors of advertising to anticipate this collision of specific content, although there are attempts to increase product credibility or reach certain audiences by advertising during particular shows. Through the choice of the medium for distribution, therefore, the designer determines the extent to which he or she can control how messages acquire new significance.

The means of distribution also carry meaning of another sort. The media theorist Marshall McLuhan (1911–1980) wrote that the introduction of a technology changes the world around it forever (see pp. 87–88, 209–12). The experience of reading and owning a book is very different today than it would have been before Johannes Gutenberg's invention of printing with movable
type in the fifteenth century. The time and expense of producing hand-lettered
texts determined who could and could not read, reinforcing class distinctions
that were already established by wealth and privilege. The role of pictorial
representations in communicating to a largely illiterate population, and the
type of content deemed worthy of the tedious labor dedicated to bookmaking
were other consequences of the limited technology for the distribution of ideas.
As books became easier and cheaper to produce, these meanings changed.

Similarly, the introduction of the computer changed forever what it means
to “author,” now that anyone can copy or change original text. It also redefined
what it means to “publish,” when the endorsement and financial backing of a
company or organization are no longer required for the mass dissemination
of ideas. And it changed our perception of the value of documents, now that
“saving” something is no longer a matter of physical space and materials. In
other words, the values and meanings we attach to certain means of message
distribution are interpreted as part of our response to the message itself, and
these meanings change over time.

**reception by individuals**

The models discussed so far describe the mechanics of message reception by
individuals; later chapters address how we perceive and process information
cognitively. But in considering reception with respect to the message cycle
we must acknowledge the true nature of the contemporary communication
environment. We live in a time of unprecedented information access, of mes-
 sage overload and increasingly temporary relationships among people, places,
and things. It is impossible to process on a conscious level all the information
to which we are exposed in a single day. The information designer Richard Saul
Wurman describes this as the “ever-widening gap between information and
understanding,” as too many messages reach us in incomprehensible form.¹³

If visual messages are to compete in this environment of information
overload, they must first communicate their relevance through content and
forms that are well matched to the audience, and then deliver meaning that is
appropriate to the context of use. In recent years, the means for accomplishing
this match has been to tailor messages for highly specific target audiences (see
pp. 61–77). Design strategist Larry Keeley describes such **TAILORING** as the
current trajectory of communication strategy.

Keeley suggests that in the 1930s, the approach to strategy was selling. Like
the snake-oil salesman, communication touted the attributes of the product
or service, delivering the same message to anyone who would listen. By the
1950s, advertisers had discovered marketing—selling products differently to
broadly defined segments of the population. For example, because women made
most choices about home appliances, the communication appeal in refrigerator
advertising was to women. The “homemaker” was shown in high heels and a
party dress standing next to her new Amana freezer, which identified her as
an efficient woman who had time for parties because her life was made easier
by modern kitchen conveniences. In the 1970s the dominant communication
strategy was positioning—instead of buying the product, people bought the
lifestyle afforded by the product. Notions of value were wrapped up in the
intangible aura of a company and the social status that buying its products or services signified, not in the tangible attributes or performance of the product or service itself. Nike's athletic spokespeople told us to "Just Do It," without even showing shoes in their television and magazine advertising. The popular Niketown showrooms, which immersed customers in wall-sized media displays of active lifestyles, were experiences in their own right and bore little resemblance to buying shoes at other stores. According to Keeley, the 1990s heralded the age of tailoring. Smart companies promoted adaptable products that acknowledged the diverse and evolving needs of consumers.  

Newsstands today carry a staggering array of special-interest magazines that enable advertisers to reach their exact target readership. The circulation figures for magazines in 1992 (see Figure 1.10), around the time tailoring emerged, showed declining numbers of readers for general-interest magazines but a skyrocketing readership of special-interest publications.

The design of these publications reflected their specifically defined audience groups (see Figure 1.11). For example, recognizing that the readership of most teen magazines was ten- to thirteen-year-old girls, the visually edgier Sassy entered the market for the attention of older teens. The publishers followed this magazine with Dirt, a publication tailored for boys in the same age group. Lear's focused on the forty-something working woman, consistent with the publisher's status as a sophisticated but worldly-wise divorcée with expendable income. Town & Country magazine still addresses the interests of conservative middle-aged women who stay at home and have money to spend on the advertisers' luxury products. Many such publications had short but highly visible lifespans, fading away as their demographically defined readership advanced in age or changed its socio-economic status.

This continuing demassification of audiences raises questions about the viability of conventional design strategies. If success depends on communicating to highly targeted groups of people, what are the characteristics that
define meaningful differences among audience groups? Are the socio-economic definitions of audiences, as addressed by marketing studies, the only significant ways in which we are different or alike? And can we so fragment the population through tailored products, services, and communication that we lose all sense of a common cultural experience? These are questions that face the next generation of graphic designers.

**consumption by culture**

The message originator's aim is usually to influence individual understanding, opinion, or action. But the concepts embedded in a message also affect the culture at large by their individual presence or in combination with other messages that accumulate over time. The culture assimilates or consumes ideas from such communication as an ongoing process.

For example, a television advertisement for the tax preparer H&R Block, launched during the Super Bowl broadcast in 2003, was set to the Beatles' song *Taxman*. Three men, dressed identically in conservative, blue business suits, were shown walking in unison through an anonymous, Federal-style building. The song lyrics proclaimed, "one for you, nineteen for me," followed by a pitch from H&R Block to assist citizens in navigating the complexities of Federal tax preparation. The company's message depended entirely on the widely held American belief that the Internal Revenue Service (IRS) is a big, unfriendly government agency, out to make as much money as possible from the average citizen. The three men appeared in almost military formation, confirming the impression that the average taxpayer does not stand a chance against an army of bureaucrats without the aid of a professional tax preparer. The ad then cut to a warm and fuzzy conversation between a client and an H&R Block employee.

The designers of this ad did not have to build the impression of a greedy, adversarial government agency from scratch. The television images functioned as shorthand reminders of long-held ideas in our culture. This shorthand allowed H&R Block to devote the majority of its minute-long broadcast to explaining how the company protects citizens from the villain. If the public challenged this perception of government or required greater detail in the explanation of IRS behavior, the ad would not have worked. The offering up of a prevailing assumption about reality is so fundamental to how advertising works that we rarely see it as being a cultural response to the accumulated cultural messages that precede the ad itself. The ideas have been assimilated or consumed so effectively by the culture that we no longer identify them as message content delivered or perpetuated by the sponsor. Designers study such phenomena for clues about commonly held perceptions and values that may be reinforced or subverted in future communications—and so the message cycle begins again. Later chapters of this book will address the cultural context for design and how it shaped twentieth-century design history.

The message-cycle model illustrates that our concept of what constitutes the message is both relational and dynamic: that messages have multiple meanings within various contexts; and that our perception of their meanings changes over time. Some relationships and changes are predictable and are the domain of the graphic designer; others are not, but define the future context in which the designer must work.
This model represents an argument for educating graphic designers in more than the formal and technical aspects of design and communication. By expanding the domain of graphic design to include the distribution, reception, and consumption of messages, we see the value of studying the social sciences and the need for design research.

SUMMARY
In the middle of the twentieth century, the scientist Claude Shannon and the researcher Warren Weaver attempted to describe human communication as the transmission of a message from a sender to a receiver. Despite the popularity of their model, it did not meet the challenge of capturing those aspects of the communication process that are truly human. Professors Philip Emmert and William Donaghy expanded this model to include the important addition of context, feedback, and the makeup of two communicators. Their suggestion that interpretation results from the communicators’ lifetime experiences and their mental processing behaviors is well matched to constructionist theories of meaning-making that underpin post-modern design.

David Berlo focused attention on the message itself by identifying as its fundamental components content, elements, structure, code, and treatment (style). In doing so, he supported the concept that messages have organizational and material differences that are culturally determined. The message-cycle model extends this understanding in graphic design terms by identifying reproduction and distribution as discrete processes through which the intended meaning of a message may be enhanced, diminished, or altered. It further identifies differences in the reception of messages by individuals and assimilation of message ideas by culture, which forms the context in which the meanings of subsequent messages are interpreted.

What is apparent in these models is that, for better or worse, they arise from theories about the relationships between messages, audiences, and contexts. They are speculative, not grounded in empirical data, and are expressions of belief (hypotheses in the scientific sense, intuition in the design sense) about the basis on which design action should proceed. In this way, how we believe meaning is made and exchanged tells us how to define design problems, what we need to inform our task, and how form must perform in response to communication needs. Whether mental or expressed through physical form, complete or incomplete, conscious or unconscious, these models drive design.