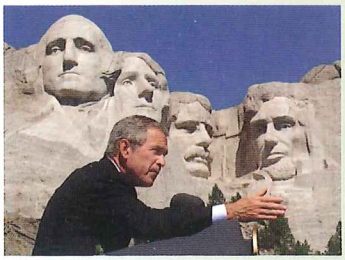
an accessory rationalizing the image, a "secondary vibration, almost without consequence."[27] "Formerly there was a reduction from text to image; today, there is amplification from one to another."[28] The image introduces the cultural connotations previously reserved for the text. By this Barthes means that in the past the image served as an objective, denotative version of the text, as apparent in textbook illustrations or in journalistic photography (SEE FIGURE 2.12). Today's images, through their deployment of culturally charged signs and compositions designed to foreground certain aspects of the representation, introduce connotations that were previously the responsibility of the text. Barthes is not saying that the design of typography is irrelevant, only that text is no longer the only information that functions connotatively and culturally.

Death and the Afterlife

2.12 PAGES FROM *GATEWAYS TO ART*
Designed by Geoff Penna
First published 2012 by Thames & Hudson Inc.

In an art history textbook, we expect images to serve as more detailed visual examples of the theme or movement discussed in the adjacent text. These images rarely introduce new content that undermines the narrative.

Consider, for example, the photograph of President George W. Bush in FIGURE 2.13. Staged for a press release by the White House staff, the image cleverly places the President's head in line with those of former presidents George Washington, Thomas Jefferson, Theodore Roosevelt, and Abraham Lincoln in the monument at Mount Rushmore. The speech delivered that day, to be covered by newspaper reporters, had no particular content relationship to the monument—it could have been delivered anywhere. The connotation of the representation (that President George W. Bush has something in common with the country's most revered leaders and will be remembered as one of the great presidents) overshadows the accompanying text. In this way, the image is culturally charged in a manner that the text of the speech or news report of the event was not.



2.13 PRESIDENT BUSH DELIVERING A SPEECH AT MT. RUSHMORE, August 15, 2005
Photograph by an employee of the Executive Office of the President of the United States

This image, cleverly staged by the White House staff and made available to newspaper journalists, places the President's head among the grouping of former presidents on Mt. Rushmore. The implied meaning is that Bush's leadership ranks in significance with that of Washington, Jefferson, Roosevelt, and Lincoln, something not discussed in the article. What upset many readers was the subjectivity of the myth-building introduced solely by the image in a medium that professes to uphold standards of objectivity (i.e. journalism).

MATCHING THE REPRESENTATION TO ITS CONTEXT OF USE

More than two thousand years ago, the Roman architect Marcus Vitruvius Pollio (fl. 1st century BCE) described the essences of design as firmness, commodity, and delight.[29] Today's designers translate these qualities of design as usability, usefulness, and desirability. While the goal is to achieve all three, the contexts that define design problems frequently place a greater burden on representations for achieving one outcome more than the others.

In some cases, the primary goal of the representation is efficient use. The audiences for income-tax forms and signage in airports, for example, do not expect to contemplate the patriotism of paying taxes, or how the signage system complements the architecture of the terminal. This is not to say that form is irrelevant, aesthetics do not matter, or that there are not emotional consequences in making one visual choice over another. Usability is *not* the opposite of appealing form; it is *not* a rationale for a detached, default solution that ignores the full spectrum of audience needs and wants. The priorities in such contexts as taxpaying and airport navigation, however, are clarity, accuracy, completeness, efficiency, and objectivity; such representations must be usable over and above all other possible considerations.

Donald Norman discusses the appropriate use of representational form in his book *Things That Make Us Smart* (1993). In one example, he shows the typical inconsistency in the representation of dosage instructions for prescription medicines (SEE FIGURE 2.14).[30] The patient who takes multiple medications each day often confronts conflicting narrative descriptions that must be reconciled to ensure he or she receives the correct dosage. The form of the information requires more reflection than patients want to expend in reading such instructions. In a reconfigured representation, Norman shows that ordering medications in a matrix by the time of day places all instructions in a consistent format and allows the patient to ignore medications that are not required at the current time; the visual pattern is more usable in this task than is the narrative form.

ZANTAC	Take twice a day at meals
LISINOPRIL	One tablet daily
SINGULAIR	Once a day in the morning
LIPITOR	One at bedtime
AMOXICILLIN	Twice a day with meals

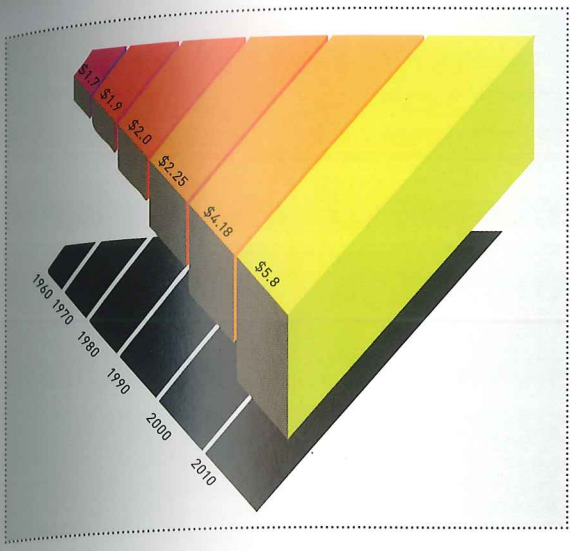
	BREAKFAST	LUNCH	DINNER	BEDTIME
ZANTAC	X		X	
LISINOPRIL	X			
SINGULAIR	X			
LIPITOR				X
AMOXICILLIN	X		X	

2.14 TRANSLATION OF MEDICAL INSTRUCTIONS
Based on a chart by Donald Norman, published in *Things that Make us Smart* (Cambridge, MA, 1993)

Norman makes the point that prescription information arranged by time, rather than in the narratives that appear on the labels of medicine bottles, is less confusing to patients about what medications to take at any particular time.

In other contexts, the goal of the representation is to engage the audience more deeply in reflection about concepts and to inform judgments about significance and possible courses of action. Under these circumstances, we value attributes of representations that invite the analysis of importance or consequence, provide insight through enlightening stories, and connect meaning to future action. The priorities in such projects are about managing complexity, revealing patterns and relationships, and establishing hierarchies. Good solutions are not merely efficient, they are also effective. They extend our ability to think about things, demonstrating that they are useful and worthy of time spent in contemplation.

The chart in FIGURE 2.15, comparing company revenue across several years, is similar to one that appeared in an annual report for consumers who make stock purchases and was recognized in a prestigious design publication. The colored bars (which create the illusion of a receding plane) carry no meaning other than to hold the typeset numbers represented by the sizes of the vertical gray bars. Attention is drawn to this feature by the most vibrant colors in the chart, yet the reader must debate whether the diminishing sizes of the colored bars represent varying amounts of something or are simply the illusion of perspective among elements of the same size. In actuality, the sizes of the colored bars are meaningless and have nothing to

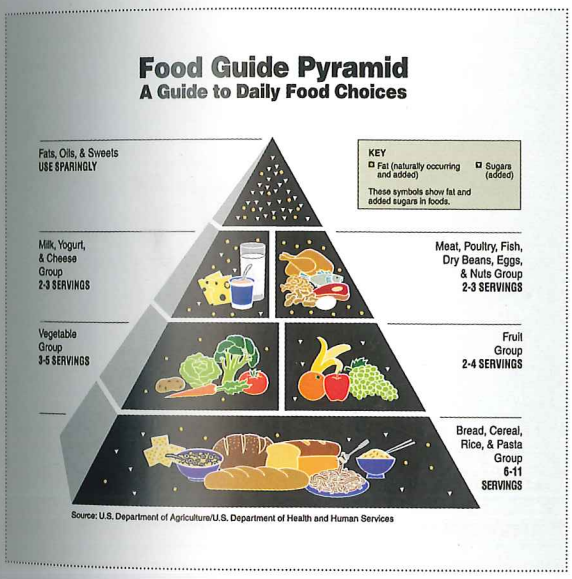


2.15 FINANCIAL CHART
Based on an award-winning diagram

This chart shows successive years of revenue for a company. The relevant financial comparison resides in the vertical gray bars. The colorful bars confuse the viewer by an ambiguous spatial representation and the changing sizes of black bars represent no statistical information.

do with the data. The black drop-shadows—which merely contain the typeset years for which financial data is provided—reinforce the perspective illusion and distract readers from the more important data comparisons among the vertical gray bars. Because the comparative data is at an angle, it is difficult to determine how much actual difference there is between any two gray bars. So if consumers depend on this chart to make crucial judgments about the health of the company and stock purchases, they might reasonably question why the form of the chart confuses the very information necessary for reaching such conclusions and why there is no payoff for the additional time spent in reflection. The chart is ultimately usable (with work, we can identify what the form represents), but many of its elements are not very useful.

Many people are familiar with the original Food Guide Pyramid designed by the United States Department of Agriculture (USDA) to explain what constitutes a healthy diet. The USDA represented various food groups as pictorial illustrations located within wedges of a five-sided pyramid (SEE FIGURE 2.16). The number of objects illustrated in each wedge of this diagram (fruits, vegetables, dairy products, and so on) has nothing to do with the recommended consumption of any food group. Instead, readers are asked to equate food intake with differently proportioned sections of a polyhedron representing the various food groups, a difficult perceptual comparison. While the more obvious differences in the sizes among the polyhedron sections and their vertical locations in the pyramid are moderately useful in determining that we should eat less meat than fruits and vegetables, people rarely plan meals or make food choices on the basis of surface area or volume. The truly useful information appears in the text in the margins of the diagram, indicating the number of recommended daily servings from each food group (although there are still questions about what constitutes a "serving"). In this case, numbers are better matched to the way in which we plan meals than are spatial representations. The usefulness of the chart is compromised by a perceptual mismatch between the form of the information and the means through which people are to adopt the recommended behavior.



2.16 USDA FOOD PYRAMID, 1992
United States Department of Agriculture

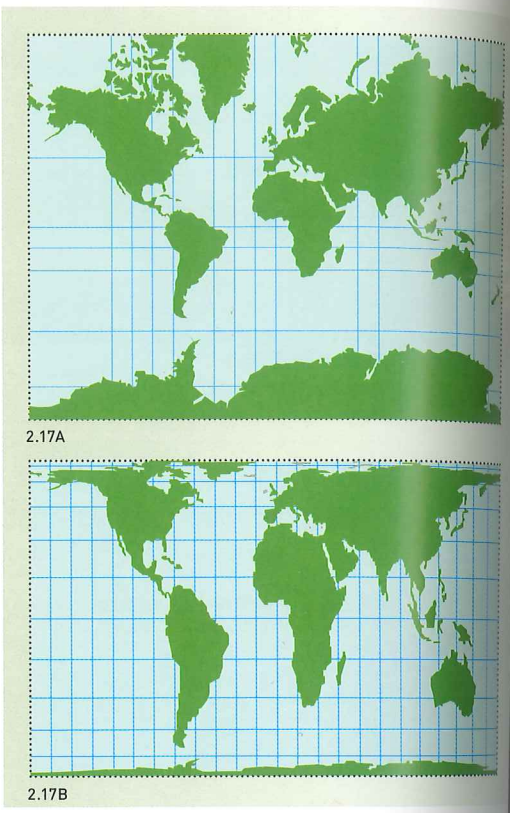
This version of the food pyramid encouraged consumers to make nutritional choices based on comparisons among differently sized wedges of a polyhedron, a tough perceptual task that is unrelated to how we plan meals (by servings). The most useful information appears in the text surrounding the image.

In some cases, the purpose of the representation is to aid us in forming a perspective about something. In this type of communication, representations may be evaluated as insightful, revealing, credible, compelling, or convincing. They are valuable to us in making judgments and in forming or confirming opinions. Other representations appeal to our emotions in an attempt to persuade us to some opinion or action, frequently addressing a want rather than a need. In these types of representation we usually expect subjectivity, a point of view, and consider the motivation of the message source in our interpretation of meaning.

The photograph of President Bush at Mount Rushmore, discussed earlier (see p. 49), demonstrates a point of view, both literally and figuratively. The camera angle from which Bush was photographed inserts the President physically into the sequence of other presidential heads in the monument. This placement is intentional. The position of the photographer is not a natural one were Mount Rushmore simply a backdrop for the President as an important speaker, but it is necessary to reinforce the political point of view that Bush's record is consistent with those of his great predecessors. For readers who agree, the photograph is confirmation of that belief. But for those who take a different political stance, the photograph represents media manipulation.

What is disturbing for the latter group is the relationship between the loaded connotations of the photograph and the objectivity we expect from journalistic photography. Our interpretation of meaning depends not only on the attributes of the representation itself, but also on the extended meanings of the category of imagery to which the representation belongs. We trust newspaper reporting—as opposed to editorial commentary—to be accurate and free from bias. For those who consider the Bush photograph biased, outrage results both from its content and from what is perceived as a violation of journalistic integrity, maneuvered by White House media moguls.

We generally consider maps and diagrams as "objective" representations, yet many are used to promote particular points of view, values, or social outcomes. The view of the world that many of us hold in our minds, for example, is represented in the Mercator projection, a sixteenth-century attempt to depict landmasses on the surface of a sphere in flat form. The result is an east–west distortion of geographical shapes that diminishes the relative sizes of South America and Africa and enlarges Europe and North America (SEE FIGURE 2.17A). The Peters projection from 1973, on the other hand, represents land of equal area equally, but distorts the shape of the Earth (SEE FIGURE 2.17B). The publication of the Peters projection spawned controversy over whether one map was more "fair" than another, especially in policy decisions that affect developing nations. While the Mercator projection is still the dominant representation, the debate makes apparent that the choice to use one representational form over another, however mathematical its origin, can be seen as a value-driven decision.[31]



2.17A

2.17B

2.17 (A–B)

The Mercator Projection (top) distorts the sizes of landmasses in order to depict them on a flat plane, while the Peters Projection (bottom) shows landmasses of equal dimensions equally. Both are accurate representations when considered under the limitations of their mathematical models, but they create very different perceptions of geography. Such perceptions guide policy making, as well as assumptions about distance and time.

PROPAGANDA

A form of communication aimed at influencing opinion or inciting action, based on a particular, usually political or cause-related, point of view.

In contrast, we fully expect some representations to be subjective. **PROPAGANDA**, an attempt to sway opinion, is understood to have a point of view and has employed a variety of techniques across history. *Testimonials* by people we respect lead many of us to adopt political positions without independent judgment: "If my hero believes this, it must be right for me because I aspire to be like this person." Given today's equivalency between "hero" and "celebrity," this technique need not employ testimony from anyone knowledgeable on the issue or of exceptional character. *Bandwagoning* encourages acceptance because "everyone believes or does" something, playing on our desire to be

2.18 *THE ETERNAL JEW*, 1937
Hans Stalüter

The propaganda technique of scapegoating, blaming a common enemy for negative circumstances, often depicts the "villain" in the most unflattering light. Physical and behavioral characteristics are exaggerated to distance audiences from feelings of empathy.

part of a dominant social group. To disagree with the commonly held opinion is to declare our own inability or unwillingness to see what is obvious to everyone else. *Scapegoating* blames a detractor, uniting those with otherwise dissimilar beliefs in their opposition to a common enemy and relieving them from responsibility for the negative consequences of making a decision on the issue alone. The scapegoat is usually depicted in an unflattering or exaggerated way (SEE FIGURE 2.18). Other approaches use *reward or punishment*, warning of the negative consequences of holding a particular opinion or associating the "rightness" of a position with some personal benefit. In all cases, these appeals are visceral or emotional and do not depend on deep reflection or judgment about the subject matter. Their power lies outside the content of the issue itself and resides, instead, in the relationship between the context of use and the psychology of the viewer.

SUMMARY

While graphic designers are professionals whose job it is to build meaningful representations, all people use signs and symbols to exchange meaning with others in their culture. The construction of meaning involves a complex interplay of factors relating to the creator of the representation, who encodes the message in some culturally negotiated form, and the interpreter, who brings past experiences and context to a determination of its significance.

We sort stimuli into categories in our minds in ways that allow us to recall them when confronted with new stimuli. These categories include members that share something in common, with some being more central or prototypical to the category than others and with fuzzy boundaries between the categories.

The style of the representation and its composition carry meaning over and above the literal content. Today, cultural meanings reside in images that were once thought simply to illustrate more culturally charged text. We read significance in the choice of style and means of production, attributing subject-matter-independent meaning to both. We also view the arrangement of signs within the representation as meaningful, with the visual relationships among elements serving a narrative function. The relationship between text and image has shifted over time.

We expect communication artifacts to be usable, useful, and desirable, but recognize that different contexts often demand more of one quality than another. Representations succeed in achieving these outcomes when there is a good fit among the choice of signs, the ordering among signs in the same physical space, and the context of use.