

Bauer Bodoni Regular Helvetica Bold

This text is set in 10/12 point and the headline is set in 24 point Bauer Bodoni Regular. Because the typeface has a small x-height (the height of lowercase letters in relation to capital letters) and because of the thick and thins in the strokes of letters, its visual impression is one of delicate text surrounded by generous white space. Therefore, it requires less additional space between lines of type for comfortable reading than the Helvetica Bold setting in the paragraph to the right.

This text is set in 10/12 point and the headline is set in 24 point Helvetica Bold. Because the typeface has a large x-height and because of its bold strokes in relation to the enclosed white space, its visual impression is one of sturdy text surrounded by little white space. Helvetica, therefore, requires more additional space between lines of type for comfortable reading than the Bauer Bodoni Regular setting in the paragraph to the left.

When the linespacing is increased and point size is reduced, as in this 9/13 point paragraph, the legibility of the typeface for reading large amounts of text improves. And because Helvetica has a large x-height, it can be set at sizes smaller than Bodoni and be equally readable. For these reasons, it is difficult to use a single set of rules for the legibility of type.

contrasting shapes of the two objects are so incongruous that it is hard to believe that they represent any likely comparative task in real life. These types of study therefore have little transferability to real design situations unless they are tested in the actual circumstances of use.

On the other hand, the emerging design research culture in universities shows promise for building more relevant theories of the perceptual implications of design form in various physical settings and for confirming or denying designers' intuition about what does and does not "work." For example, research by the design professor Dennis Puhalla addresses how people assign hierarchical significance to text on the basis of projected color in such software programs as PowerPoint. Puhalla's work stops short of recommending particular color combinations in favor of the more useful discovery that contrast in intensity (brightness or dullness) and value (lightness or darkness) is significant and that hue (the particular color, such as blue or green) is not.⁵⁶ This finding is of far more use in that it identifies a general principle for making decisions in individual situations and addresses a specific, recurring context (digitally projected text). There is a difference, therefore, between studying a phenomenon (such as color) and studying its application in a context.

In general, communication that succeeds in gaining audience attention exhibits some visual, auditory, kinesthetic, or temporal contrast with its physical setting. A well-known design educator used to preach, facetiously, to students, "If you can't make it good, make it big . . . if you can't make it big, make it red." Yet there are clearly times when visual restraint creates the most contrast. The storefront signage in a commercial strip and the supermarket ads in the newspaper provide ample evidence that when all messages "scream,"

3.16 TYPE SAMPLES

Both headlines are set at 24 point and body copy at 12 point. Because the serif Bodoni has a much smaller x-height (the height of lowercase letters) in comparison to the generous proportions of the sans-serif Helvetica, it requires less additional vertical space between lines of text to make it legible.

no one will be heard, and that too much contrast creates a pattern of visual clutter in which the boundaries and meaning of a single message are lost in the chaos. These relationships must therefore be crafted individually and take into consideration an environment that competes for people's attention.

physical embodiment

Design also addresses the physical context in the sense that it deals with meanings that arise from our own physical place in a setting. Many of our metaphors for talking about the virtual space of the Internet, for example, involve references to our spatial locations in a physical context: the "information highway"; "site"; "address"; and the concept of "going to" somewhere (when changing content or source) are not literal but figurative references to bodily movement through a physical world.

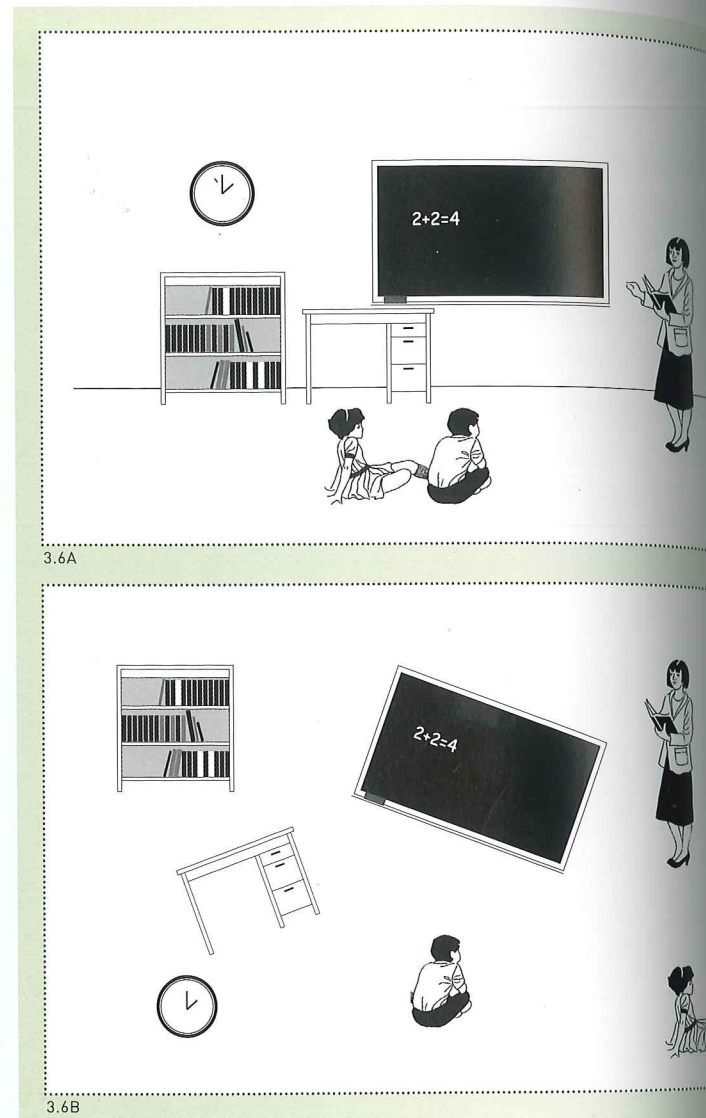
Some technologists have compared our perception and navigation of cyberspace to the way in which we interpret and move spatially through the built environment. The work of the urban planner Kevin Lynch in his book *The Image of the City* (1960) is often cited in this context. Lynch studied people's conceptions of the urban environment and found recurring similarities, regardless of the city in which they lived. Urban dwellers organized their conceptual map of a city into districts, nodes, edges, paths, and landmarks.⁵⁷ *Districts* are areas that have some identifiable character and that we may enter. Some cities, for example, have a warehouse district or an arts district. This is not a political designation as much as a perception that a particular area of the city has distinctive functional or visual features that define it in contrast to other areas. *Nodes* are destination points, places to and from which we travel. We can also enter a node (for example, when we go to a city park or visit a collection of shops on a city block). Lynch describes an *edge* as a boundary between two areas of the city. It may be well defined by a wall, railroad tracks, or a major highway, or it may be fuzzy as we move from one district to another. We may or may not be able to enter an edge. *Paths* are the channels along which we move and they connect nodes. *Landmarks* are visible reference points but we do not enter them. They may be viewed from a variety of angles and are used in orienting our movement.

If we were to draw a diagram of an information search on the Internet, we could think about the collection of sites defined through a keyword by a search engine or a content area within a site as a district. A node would be a specific site or a particular document within a site. Edges would be the embedded links that take us to related content without engaging in another keyword search—in some ways, edges define conceptually "adjacent territory." Landmarks would be the keywords through which we search. Their repetition in each entry provided by the search engine simulates different points of view around which our search can be oriented. What is not visible in cyberspace, however, is the path that connects two nodes. With a click we instantly arrive at the second site, having no sense of how we "got there." Several software programs attempt to reveal the path (Acrobat, PowerPoint, and InDesign, for example, display linear sequences of pages on the screen when the user is working) and the log or history of movement over time is recorded as URLs in Internet use.

concept) was about three seconds. This typical viewing pattern was almost identical to that of window shopping in a mall.¹⁵ In addition, many museum-goers report entertainment, not learning, as their primary reason for visiting museums.¹⁶ Such short exposure to content, not motivated by an explicit intention to learn, raises questions about many curatorial and exhibition-design strategies. Long textual discussions on labels and sequential presentations of content that require a specific viewing order may be at odds with the visual processing behavior and somewhat random movement of viewers through exhibition spaces. Just as in window-shopping, something visually compelling must interrupt the general scanning behavior for the viewer to invest time in processing content.

Another study concludes that there are at least three types of picture memory: one in which we retain an inventory of the objects in the picture; another in which we remember the appearance of those items; and a third that captures the location of the items within the picture frame and with respect to each other.¹⁷ Two images, similar to those in FIGURE 3.6, were shown separately to viewers for very short periods of time. The viewers' memories of the size and the orientation of the items in the two compositions were roughly the same. What differed was their retention of spatial information. They were more likely to remember items and where they were located in response to the ordered composition, and they read the image vertically; if they were unable to remember something, it was usually an item at the bottom of the page. In response to the tumbled composition, viewers were less likely to remember the object placement and read the images horizontally, defaulting to the left-to-right reading pattern for text in the absence of a recognizable schema (i.e. a classroom) that explains the presence of these items in the same composition.¹⁸

This research demonstrates that there are no hard-and-fast rules about how viewers process images that designers can apply in every design setting. Viewers deploy the cognitive behavior that is appropriate to a particular interpretive task or context. Such research also emphasizes the importance of defining a communication task not only by the inventory of subject matter, but also by the perspective for viewing it.



3.6
PICTURE PROCESSING
Based on studies by Potter and Levy (1969) and Potter (1976) described in Kathryn T. Spoehr and Stephen T. Lehmkuhle, *Visual Information Processing* (San Francisco, 1982)

Two similar configurations of images, when shown to viewers for short periods of time, produced very different results in viewers' speed of recognition and memory of elements.

sensing and feeling: the affective response to design

If design decisions were only about initiating physical responses to stimuli, there would be less debate about how things should look. Yet design also seeks to bring about some kind of **AFFECT**, **EMOTION**, behavior, or reflection. In his book *Emotional Design* (2004) the cognitive psychologist Donald Norman (see pp. 36, 50) defines these terms:

*The affective system makes judgments and quickly helps you to determine which things in the environment are dangerous or safe, good or bad.... The cognitive system interprets and makes sense of the world.... Emotion is the conscious experience of affect, complete with attribution of cause and identification of its object.*¹⁹

Norman describes three levels of emotion that can be represented through the physical characteristics of products, and by extension, in communication artifacts.

The **VISCERAL** level of emotion relies on appearance. Norman suggests that this type of emotion is "pre-wired" in our brains and is not the result of reasoning—exposure to the object or image actually changes the chemistry of the brain and our processing mechanisms.²⁰ Through pattern matching we respond to some things positively (smiling faces, sensuous shapes, rhythmic beats) and other things negatively (crowds of people, looming objects, discordant sounds).²¹ The claustrophobic, jostled view photographed from within a crowd is visceral; we usually react to the visual and kinesthetic experience of crowding with anxiety. This is not the case with a diagram of population density or an attendance number for an event, which require far more reflection about abstractions.

The material qualities of design objects often elicit visceral responses: the woody texture of paper; the hefty weight of a book; the mesmerizing fluidity with which one shape morphs into another on a computer screen. Apart from the content they represent, these appealing physical qualities of things frequently account for our attraction to one object over another. Our interest in such qualities has little to do with culture—we all respond to touch, sound, and sight as physical beings. In this way, then, aesthetics really matter. Norman reminds us that we actually believe that attractive things work better.²²

Television advertising makes frequent use of the visceral response: the frosty glass of beer with foam spilling over its rim in slow motion; the extreme close-up of pouty, hot-pink lips glistening with a new coat of lipstick; the tires of a shiny SUV leaving the ground, then landing with a dramatic splash in a mountain stream. So basic is our response to these types of representation that advertisers need not worry that they are too complicated for a thirty-second experience or are likely to become dated. Because we do not reflect on them, we can watch them repeatedly during prime time, without diminished reaction—that beer looks just as frosty and enticing the third and fourth time around. The goal is to make us want something; it is about an immediate emotional response, not about the rationality of that desire.

The **BEHAVIORAL** level of emotion arises from the effectiveness and pleasure derived from use; it is not conscious and, when successful, is the facility of experts.²³ Norman gives the example of being able to drive while thinking about something other than the car and the road. The psychologist Mihaly Csikszentmihalyi goes a

AFFECT

Donald Norman used this term to refer to the experience of feeling or emotion, as distinct from other kinds of thought.

EMOTION

Donald Norman used this term to refer to the conscious experience of affect, in which it is possible to identify the cause or object of the emotion.

VISCERAL EMOTION

Donald Norman used this term to refer to an instinctive or unreasoned emotional response to something.

BEHAVIORAL EMOTION

Donald Norman's term for the satisfaction or pleasure that comes from the use of something or from doing something well.