

Getting attention

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Attention is the process of selectively focusing on one aspect of the sensory environment while ignoring other things that seem less important or less worthy of consideration. It is a means for concentrating the mind on a single object, element, or thought with the goal of narrowing the number of stimuli in a complex perceptual field.

Attention is important to our species' survival—we pay the most attention to things that are biologically significant or driven by our emotions, such as predators and babies for example. It is human nature to focus on things that could threaten our lives or well-being and to be drawn to things that are unusual or distinct from other things in our field of vision.

Contemporary times, however, bombard us with too many demands on our limited capacity to focus. We simply cannot give equal attention to everything. Writer Alvin Toffler in his 1970 book, *Future Shock*, coined the term "information overload" to describe the glut of information reaching the senses in modern society. Toffler wrote, "When the individual is plunged into fast and irregularly changing situations, or a novelty-loaded context...his predictive accuracy plummets. He can no longer make the reasonably correct assessments on which rational behavior is dependent" (Toffler, 1971, p. 35). It is impossible to think critically about every message we encounter, so we either ignore those that seem unimportant or skim information for first impressions that are rarely accurate or complete. As a result, our relationship with much of the content we encounter is superficial and temporary.

Electronic media now circulate messages at lightning speed in a race for our attention. The Union of Concerned Scientists estimates that the average American is exposed to as many as 3,000 advertising messages a day and spends roughly 4.5 hours watching television and even more time on computers and smartphones. Clearly, there is no shortfall of digital information and it is impossible to reflect rationally on this much content. Rhetoric professor Richard Lanham says that if we define an economy by things that are scarce (typically, money or goods), then we currently live in an "attention economy," rather than an "information economy" (Lanham, 2006). There is no deficit of content in today's technological world but we lack the human capacity to allocate attention to all of it (Lanham, 2006).

Under this attention shortfall, what we choose to process has as much to do with its form as its substance. For many centuries, the aim of printed typography was to disappear so readers could get to the content of the text without

thinking about its physical form. The "best" design was one in which readers didn't think about how things looked and became completely absorbed in the story or message (Lanham, 2006). Think about reading a good novel; we notice typography only if it gets in our way of reading. But today, says Lanham, there is significance in the surface qualities of the message, in style (Lanham, 2006). Typefaces and motion in screen-based communication are carriers of content that may not be present in the literal meaning of words. In some cases, this visual content corresponds with the subject matter; in other cases it does not and causes us to question the meaning of the text.

Designer Richard Saul Wurman warned us in his 1989 book, *Information Anxiety*, that our current condition is characterized by an "ever-widening gap between what we understand and what we think we should understand. It is the black hole between data and knowledge, and what happens when information doesn't tell us what we want or need to know" (Wurman, 1989, p. 34). In other words, we have a lot more information than in earlier times, but not necessarily more understanding. In campaigns, for example, politicians utilize complex statistics in support of ideological positions. For the most part, however, such statistics do little to explain complicated issues. In social networking sites there is no shortfall of opinion, but few ways to judge the credibility of contributors. Grabbing attention, therefore, is not the only thing communication design aims to do. Attention is only the first step toward informing, explaining, orienting, persuading, or supporting people in taking action. Design has to follow through on the promise of attention, to deliver on first impressions.

So how things look matters. If form fails to attract our attention or to make us feel that our attention is well deserved, there are plenty of other important stimuli fighting for our consideration. The first task for the communication designer, therefore, is to configure how things look, sound, or move in ways that compete effectively for human attention in an environment of information overload and that are consistent with the essential nature or goal of the communication. Unless designers are successful in this task, the content and value of the message will be lost.

But what kinds of form are likely to be effective in gaining attention and on what basis can designers make decisions among the many options for how things might look? What are the origins of assumptions about the attention-getting aspects of form and are they rooted solely in biology or also the product of culture and context?

Perceptual and cultural experience

The concepts discussed in this chapter straddle perceptual and cultural experience; that is, some are phenomena that are thought to be universally human regardless of people's experience of living in a specific place and time. Others are learned through living in a particular social world. For instance, we can argue that human response to figure-ground relationships (for example, recognizing a bear as separate from the field in which he stands) will be similar from person to person. Our brains are wired to distinguish objects from their backgrounds, especially when the object moves or exhibits extreme visual contrast with its surroundings. Does this mean, therefore, that the ability to determine any figure-ground relationship is a trait shared by all of humankind? Here, things become trickier.

If we take objects out of their normal context and consider them under various representational strategies, such as drawn or graphic form, is the interpretation so clear? In the case of the famous Rubin vase, our ability to identify the object depends on having seen Grecian vases and having been trained visually to read their abstracted form—that is, as a rendering of a three-dimensional object as a flat silhouette (Figure 3.1). Some people have little or no cultural experience with such objects or are limited in their exposure to Western visual frameworks. They are, therefore, unable to switch between seeing a vase and seeing two facing human profiles.

Science has attempted to describe the nature of attention and interpretation throughout modern history. At the beginning of the twentieth century, a branch of experimental science called *Gestalt psychology* tried to sort out what and how we perceive. Working in Germany in the years around the First World War, practitioners of

the Gestalt movement proposed a set of principles through which we mentally construct wholes from parts. Proximity, constancy, similarity, and figure-ground, for example, describe general concepts that apply to our perceptions of visual elements, as well as motion and sound.

Max Wertheimer, a leading figure in the Gestalt movement, posed the question in relation to music: "Is it really true that when I hear a melody I have a sum of individual tones [parts] which constitute the primary foundation of my experience? Is not perhaps the reverse of this true... Instead, what takes place in each single part already depends upon what the whole is" (Wertheimer, 1924, p. 5). Wertheimer referred to our ability to interpret music as a cohesive melody rather than a series of distinct notes in a row. Similarly we experience a group of abstract marks—a circle, two dots, and a curved line—as a smiling face. We build complete and often more memorable wholes from isolated parts through the process of the perceptual association of elements.

But while the Gestalt psychologists were helpful in describing distinct perceptual phenomena, they were not as clear in explaining how such phenomena help us make sense of the world and construct meaning. In particular, they did not tell us much about how these principles interact or how context intervenes in our interpretations. For example, the Gestalt principle of similarity states that things that are similar are more likely to be perceived as related than things that are dissimilar. The principle of proximity suggests that objects close to one another tend to form groups. But which of these principles dominates when in combination, or when the structure of language and histories of meaning intervene?

Figure 3.1
Rubin vase
Edgar Rubin
(1886–1951)

This drawing is based on a set prepared in 1915 by Rubin, a Danish psychologist, to illustrate the ambiguity of figure-ground relationships. The drawing presents two possible interpretations (a vase or two faces in profile) but the viewer can only maintain one reading at any given time because the black and white shapes share a bounding contour.



For example, the Gestalt principle of proximity allows us to perceive a square within a square at the top of Figure 3.2. The closeness of the grouped elements in the inner square tells us they have a relationship that is different from their relationship with the elements in the outer square, even though all elements are equal in size. Further, we do not perceive the circle elements as a separate whole from the square elements; obvious groupings are established by distance alone, not by similarity. In the square on the bottom, however, rectangular and circular typographic elements (now the letters H and O) are spaced in the same way as elements in the original composition at the top. The red type and our cultural knowledge of Santa's "Ho, Ho, Ho!" override the effects of proximity with regard to our attention. Color choices further reinforce the Christmas association. Our attention, therefore, is drawn to a message defined by similarity (in color), the structure of language, and our past cultural experience, despite the proximity characteristics of the composition. We move through the composition on the bottom differently from our path through the composition at the top and we assign meaning to that path.

The concepts described in Chapter 3, therefore, connect abstract perceptual phenomena and principles to the attention-getting task of communication design and distinguish how their effects relate to the surrounding context. The discussions are organized around several issues, although they clearly overlap in application. The first group of phenomena describes the role contrast plays in the attention-getting properties of design. The second group addresses how we make judgments about size and the differences between actual measurements and our perceptions of size. The third group focuses on the role space plays in assigning importance to elements in the visual field. And the last group concerns movement and holding attention across space and time. All contribute to form that attracts attention in an environment of information overload, but they do it in different ways.

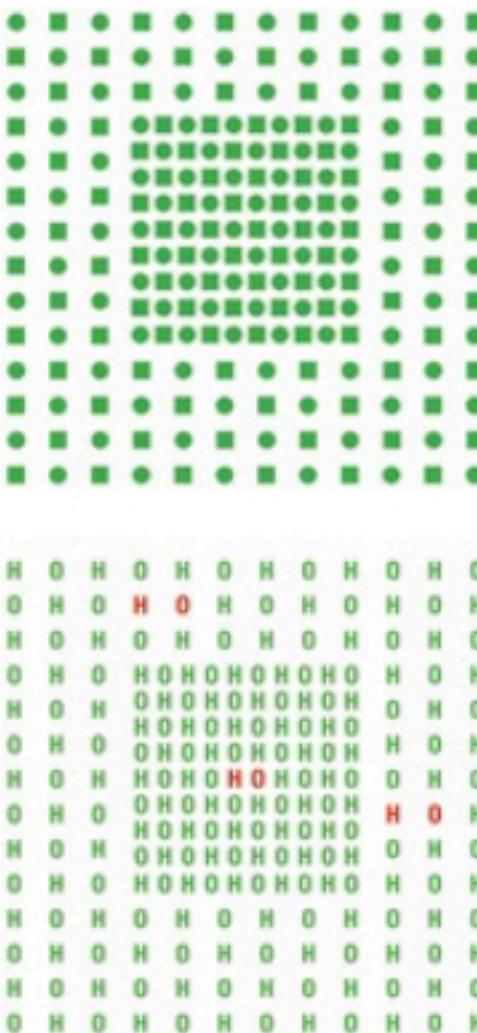


Figure 3.2
Interaction among Gestalt principles
The Gestalt principle of proximity creates the perception of two squares in each composition, solely on the basis of the distances among elements. In the image on the bottom, the principle of similarity dominates proximity relationships in getting viewers' attention. The red letters are read as a "whole," despite groupings based on distance. The cultural associations of color and phrase with the holidays reinforce the dominance of HO!HO!HO!

CONTRAST

Contrast is established by difference; there is no contrast unless there are at least two things to compare, even if one of those things is simply the background on which the other sits. Contrast intensifies the individual properties of the things being compared: black versus white, big versus small, rough versus smooth, moving versus stationary. It influences the order in which we see things and the importance we assign to them.

Through contrast, we allocate attention to some things over others; the degree of visual difference heightens or lessens our ability to distinguish between a message and its environment and between message elements and other objects in the visual field. What grabs our attention depends on how much difference there is between something and its surrounding context, not just whether something is big or small. When everyone screams, it is the quiet person who is noticed.

We are naturally wired to detect contrast. Our survival depends on recognizing those things that are unexpected in an otherwise undifferentiated environment. Something that moves in the forest is to be feared or seen as prey. We hide by "blending into the background," by not distinguishing ourselves by visual features or behaviors that contrast with our surroundings.

Our attention is also drawn to things that do not seem to fit conceptually with other elements in the scene. Studies of eye movement, for example, show that the greatest number of fixations (places where our eyes stop moving around a picture and rest on something in particular) occur in the areas of the picture that are least predictable (Spoehr & Lehmkuhle, 1982). A tiger in a barnyard of farm animals,

for example, draws more attention than other animals, not just because it is fierce but because it contrasts with the animals we expect to see on a farm (Davis, 2012). We view such conceptually different elements as informative because we seek a reason for them being present with more predictable elements of the message. We perceive the contrast as meaningful.

In gaining audience attention, designers must first separate messages from an environment of information overload. With too many things competing for our attention, important messages must be distinct from the visual or sound qualities of the surrounding conditions. Do you have trouble locating your favorite breakfast cereal on the supermarket shelves? Think about the visual qualities necessary for packaging to stand out in this visually cluttered aisle. Bright colors, big type, and a frantic layout certainly won't be enough (Figure 3.3). On the other hand, a bright and dynamic arrangement of big type can draw our attention to an otherwise unexceptional building in an industrial section of town (Figure 3.4). Getting attention does not depend on the visual properties of the message alone, but instead, on the contrast between the properties of the message and its perceptual context.

**Figure 3.3, below
Contrast**

Standing out has less to do with the visual properties of the element or object than with its relation to everything around it. Getting attention depends on contrast with the surrounding visual field. Contrast among too many elements and nothing stands out.

**Figure 3.4, right
MoMA QNS, 2002
Michael Maltzan
Architecture
Photography:
Christian Richters**
The oversized signage identifies the Museum of Modern Art in industrial Queens, New York.



face-width extended	roman	oblique	condensed	oblique condensed	ultra condensed	
light	Univers 45	<i>Univers 46</i>	Univers 47	<i>Univers 48</i>	Univers 49	
regular	Univers 53	Univers 55	Univers 56	Univers 57	Univers 58	Univers 59
bold	Univers 63	Univers 65	Univers 66	Univers 67	Univers 68	
weight black	Univers 73	Univers 75	Univers 76			

Designers also use contrast to direct audience attention to certain elements *within* messages to emphasize specific content or to signal where in the composition to begin the interpretive task. Used sparingly, contrast establishes hierarchy. It tells us where to look first, second, and third. In a word-processing application, for instance, we are able to use simple but effective differences in type weight (bold or light), posture (italic or Roman), or even underlining to draw the reader's attention or emphasize particular words.

Variations within type families (in weight, proportion, or posture) and changes in type size allow designers to differentiate groupings of content. The goal of late modernist typography, for example, was to communicate with maximum clarity the author's hierarchy among units of information. A quote was to look different from a headline. Annotations in the margin were to be different from and less important than the primary text. Modernist type families designed in the middle of the twentieth century assisted designers in this task through carefully articulated levels of contrast among the typeface variations in the family. Bold type attracted the eyes to keywords in an otherwise light block of text. Italics identified captions or subheads by distinguishing them from other kinds of text by contrasting posture.

Adrian Frutiger's 1957 systematic design of the Univers type family, for example, ensured that contrast within typeset text could be achieved through an array of variations without sacrificing overall unity among typographic elements. Unlike many other type families, the height of lowercase letters (called x-height) set in Univers is the same across all typeface variations in the family. This standardization achieves harmony when members of the family are used together and emphasizes contrasting changes in weight or proportion by keeping height constant. And by designing many Univers typeface variations, Frutiger gave designers

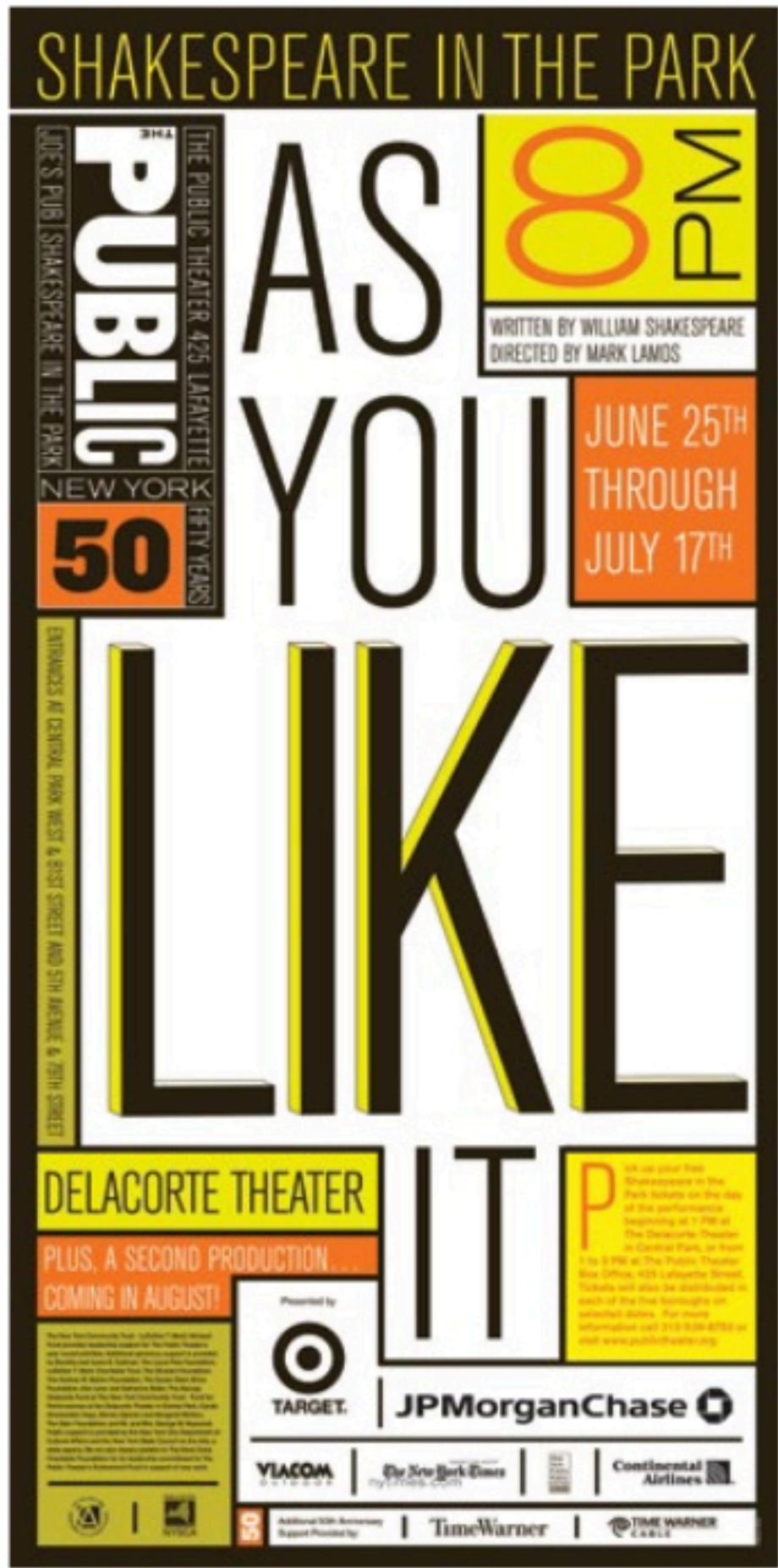
maximum flexibility in ways to create emphasis. While we might not detect the subtle difference between bold and regular in the same body of text, we will see contrast between bold and light (Figure 3.5).

Contrast is also important in establishing the visual characteristics of a single typeface across twenty-six letters. Typefaces are composed of very particular relationships between strokes and open spaces, thicks and thins, straight lines and curves. The degree of contrast among these parts of letterforms determines the texture of typeset text. Some typefaces maximize contrast (they sparkle), while others even out the distribution of black strokes and white spaces across the alphabet. Bodoni, for example, uses extreme contrast between thick and thin strokes to establish its visual character, while Futura has more uniform stroke widths and a consistent distribution of white space. Jonathan Barnbrook's *Exocet*, on the other hand, draws attention to very specific characters of the alphabet, using extreme contrast among individual letterforms to create random patterns within typeset text. The degree of contrast within typeset paragraphs influences how much of our attention those letters or paragraphs command in a composition (Figure 3.6).

Figure 3.5
Univers type family,
1957 release
Adrian Frutiger
(1928–2015)
 Frutiger's systematic design of the Univers type family includes forty-four different variations that allow designers to achieve both subtle and dramatic contrasts among information units. The first digit in the typeface number indicates weight and the second digit refers to face-width. The completeness of the system makes it possible to establish a clear hierarchy among elements without sacrificing the harmony gained by using a single type family.

Figure 3.6
Exocet typeface, 1991
Jonathan Barnbrook
For Emigre Foundry
 Unlike other typefaces that create harmony through similarity among the twenty-six characters of the alphabet, Barnbrook's design maximizes the contrast in certain letterforms. When set in paragraphs, the typeface creates random patterns of emphasis.

**EXOCET IS DESIGNED
 BY BRITISH DESIGNER,
 JONATHAN BARNBROOK**



Under different philosophies, some designers use contrast to feature certain compositional elements over others in a clear hierarchy of importance, while other designers challenge whether design should suggest a single interpretation of the text. Paula Scher's poster for the Shakespeare in the Park Festival blows up type to cartoonish size to draw the viewer's attention to the simplicity of the phrase, "As you like it" and its importance as the title of a play [Figure 3.7]. Katherine McCoy's poster advertising a college design program, on the other hand, treats all typography equally, reinforcing the contradictory nature of words in the text. The lack of contrast in McCoy's work produces no obvious visual hierarchy among elements, consistent with a theory of design that no single interpretation is possible [Figure 3.8].

Figure 3.7
Public Theater /
Shakespeare in the Park
/ As You Like It, 2012
Paula Scher

Contrasting size, color, and orientation in the typography control what readers see first and interpret as most important.

Figure 3.8, opposite
Cranbrook Academy
of Art Design poster,
1989

Katherine McCoy
Postmodern work of the 1980s and 1990s rejected the notion of a clear visual hierarchy that leads to a single interpretation. Typography and images struggled for dominance, consistent with the theory that there are many possible meanings and that the reader "writes" the text.

cranbrook

(the) criticallyrical

graduate

The Graduate Program in Design

A multidisciplinary design philosophy explores, probes theory and history between the
exploring practice, theory, and history.

materialism material

Caroline and Michael McCay

Designers in Residence, Design Department

Ray Stata

President, Cranbrook Academy of Art

program

mathematic poetic

desire necessity

design

in
form content

see

authentic simulated

read

mythology technology
cultural natural
vernacular classical
geometric biomorphic

personal universal

global local

F N P Drist pluralist

everything

discourse dialog

verbal visual

language thought

conceptual aesthetic

symbolic diagrammatic

analyze synthesize

image

text

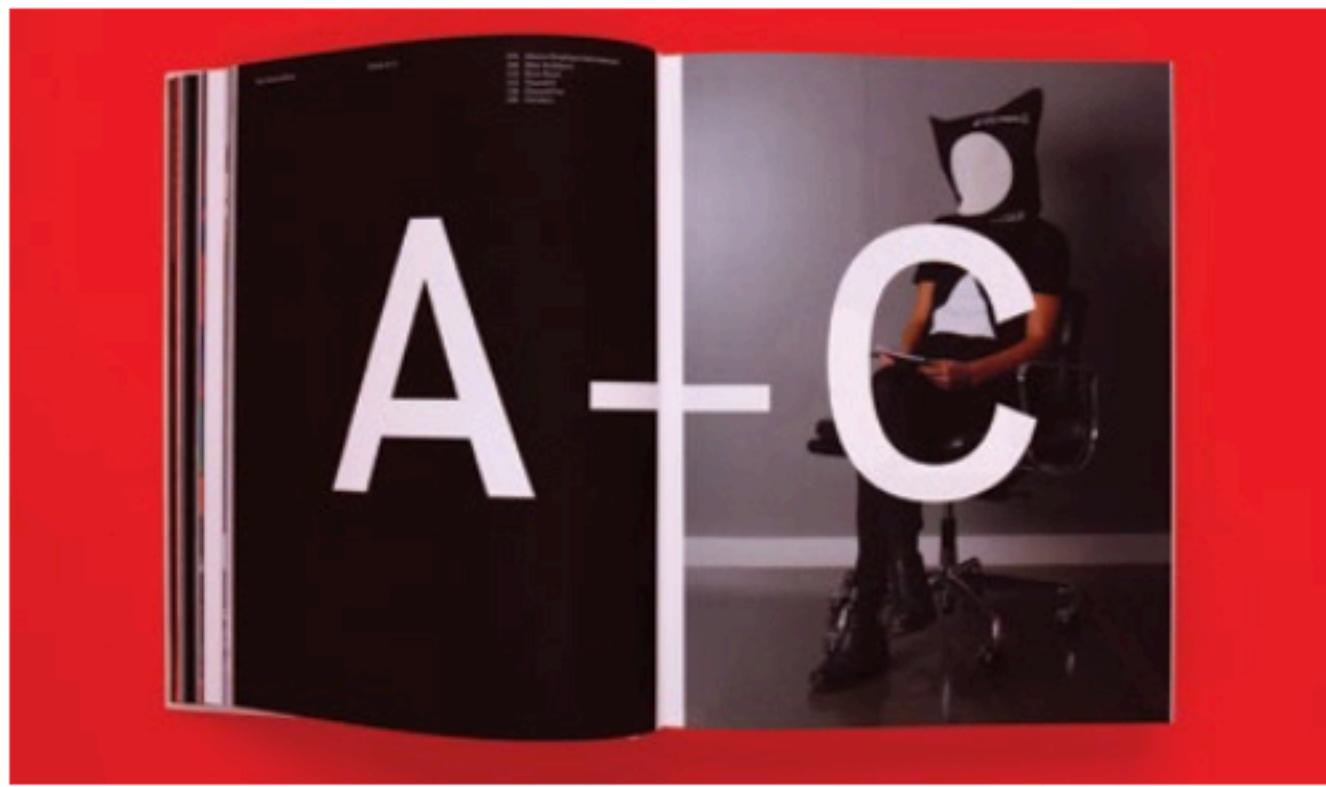
artscience

Image courtesy of Cranbrook Academy of Art

Figure 3.9
SPIN: 360°, 2015

© Spin

The book on the work of London studio SPIN juxtaposes strongly contrasting images throughout the publication: sketches with highly refined typeset text, full-bleed photographs with open pages, large typographic elements with clusters of small images, black and white with color. A recurring visual reference to a horizontal centerline provides continuity among contrasting layouts.



Contrast is important in determining emphasis among and within images as well as text. In a mostly black-and-white composition, color draws our attention. We notice organic forms when surrounded by geometry, typographic forms when surrounded by photography (Figure 3.9). In a line drawing of an object, contrast in line weight tells us what features are most important or serve a similar function (Figure 3.10).

Contrast, therefore, is an important attribute in gaining attention. It is a means through which designers emphasize what is important in a composition and how the meanings among various elements differ.

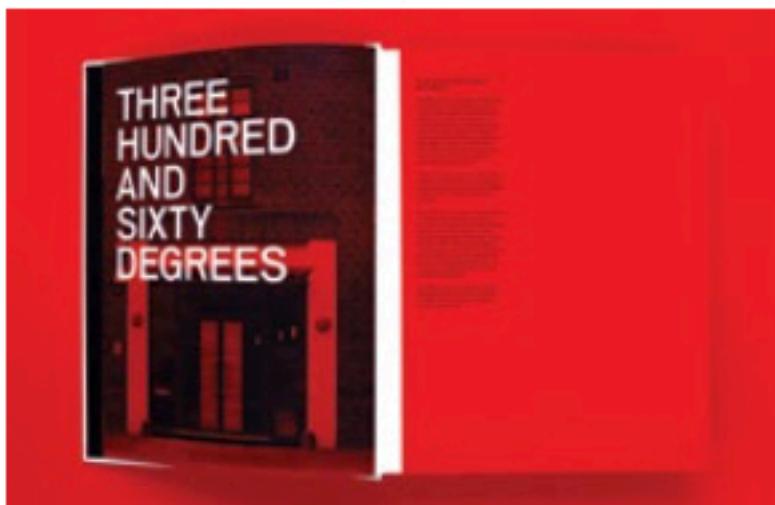


Figure 3.10
Line weight variations
Contrasting line weights in a drawing assign emphasis to particular features of the drawing. It is important to be consistent in the use of lines so that random changes in weight don't appear meaningless.

FIGURE-GROUND

Figure-ground refers to our ability to separate elements, based on contrast, into an object and a background. A figure can be any object, person, shape, or sound. Ground is the limitless background or field on which figures sit. Our visual system interprets objects primarily in terms of their contours. Figure-ground reversal occurs when two shapes share the same edge and we switch our attention from one shape to the other, trying to separate the figure from the ground.

When we look at a painting on the white wall of a museum gallery, we have no difficulty focusing our attention on the painting. The artwork is the *figure* and the wall is the *ground*. This ability to separate the object of our attention from its surrounding environment develops very early in life—separating our mother's face from other stimuli, for example—and may have its origins in survival strategies, in our desire to be a hunter rather than prey. Whether distinguishing a lurking tiger from its lair in savannah grasses or identifying a mother's voice in the babble of a crowded subway, our perceptual system is built on a foundation of figure-ground distinctions.

In the photograph in Figure 3.11, the ground appears to extend beyond the edge of our vision—that is, beyond the frame of the image. There is content in the ground but we have little difficulty assigning it a role secondary to the figure (the ladybug) in the image. So although the photograph frames a discrete section of a much larger visual field, it is still possible to separate the figure from the ground. This perception is supported by studies showing that figures have more definite shapes and grounds are

usually shapeless (Koffka, 1935). Figures are also perceived as being smaller and closer to the viewer in space than grounds (Koffka, 1935). And recent studies indicate that areas or shapes appearing in the lower portions of a composition are more likely to be perceived as figures than those appearing in other areas of the composition (Vecera, Vogel & Woodman, 2002) (Figure 3.12).

Motion also determines figure-ground relationships. Consider camouflage in the animal kingdom. As long as the animal remains stationary, its protective patterning and color allow it to merge with its environment; it is part of the ground. As soon as the animal moves and we detect its motion, it becomes a figure. This concept is useful in motion graphics and interaction design. Designers can direct users' attention through motion to particular locations in otherwise complex compositions, indicating the order in which to read information. It is also typical for interaction designers to use motion—for example, a flashing button—to tell users when the computer is waiting for an action.

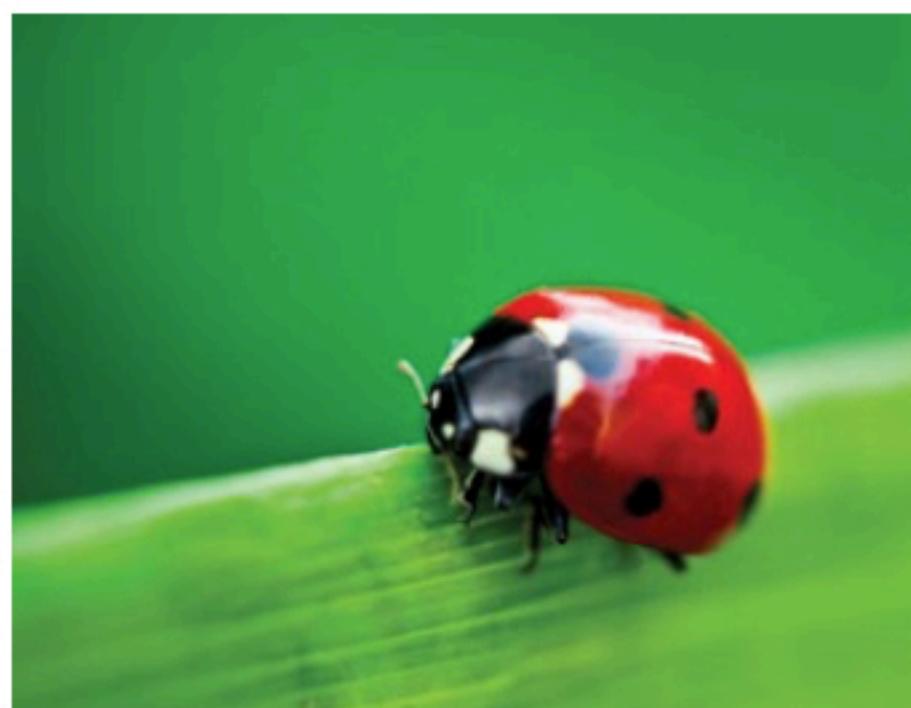


Figure 3.11, below

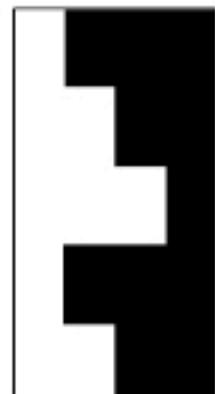
Figure-ground

Humans are perceptually wired to detect the difference between an object and its background.

Figure 3.12, below right

Figure-ground orientation

When shapes share a horizontal contour boundary, there is less trouble in distinguishing figure from ground than in compositions where the shared contour boundary is vertical.



Visual compositions, therefore, often contain an object that appears to be complete—or nearly complete—and a background that is perceived to be around and behind the figure. When the object sits on an empty visual field, we often refer to the figure as *positive* and the ground as *negative space*. Communication designers sometimes refer to the ground in typography as white space, no doubt a reference to the white printing paper that sits beneath printed shapes (Figure 3.13).

Figure-ground relationships are fundamental to the design of logos, which must appear on a variety of complex surfaces in the application of corporate identity systems (Figure 3.14). Because it is easier to apply contained shapes than soft-edged or textured forms in many different formats at many different sizes, designers often reverse simple elements out of solid geometric or typographic shapes. The surface on which the logo sits frequently shows through as the negative space, unifying the form with its background. This strategy also economizes on the number of colors required to reproduce the identity and allows logos to be interpreted quickly.



Figure 3.13, above
Driekoningenavond,
De Theatercompagnie
poster, 2006
Experimental Jetset
Photography: Johannes
Schwartz
Figure-ground
relationships create
ambiguity about what
is object and what is
"white space."

Figure 3.14, right
National Aquarium in
Baltimore logo, 1980
Tom Geismar,
Chermayeff & Geismar
& Haviv
Logos make frequent
use of figure-ground
relationships to integrate
these simple shapes
with their backgrounds
and other elements.
Geismar's logo for the
aquarium refers to
water and sea creatures
through shapes that shift
from figure to ground.

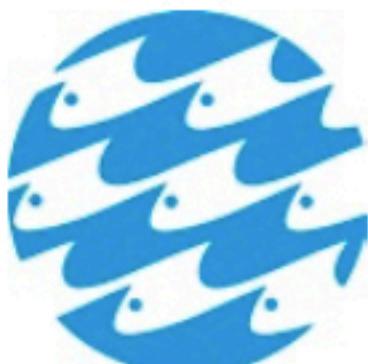




Figure 3.15
Kama Sutra book cover,
sketch
Malika Favre
Seeing the figures in
this image for a book
cover on the *Kama
Sutra* depends entirely
on shared contours and
figure-ground reversals.

Under certain circumstances the relationship of figure to ground can be unstable. This phenomenon occurs when the amount of space occupied by each is roughly the same and cropping makes the outer contour of the figure incomplete or shared equally with the ground. As a result, the viewer's attention shifts back and forth from one to the other. This unstable figure-ground relationship is called *aspect shifting*. Malika Favre's sketch for the cover of a book on the *Kama Sutra* depends on aspect shifting. Pairs of black and white figures emerge in the illustration through shared edges. Reading them as embracing couples requires shifting back and forth between the male and female figures (Figure 3.15).

A B C D E F G H I J K L M N O
P Q R S T U V W X Y Z
1 2 3 4 5 6 7 8 9 0

H H H H H

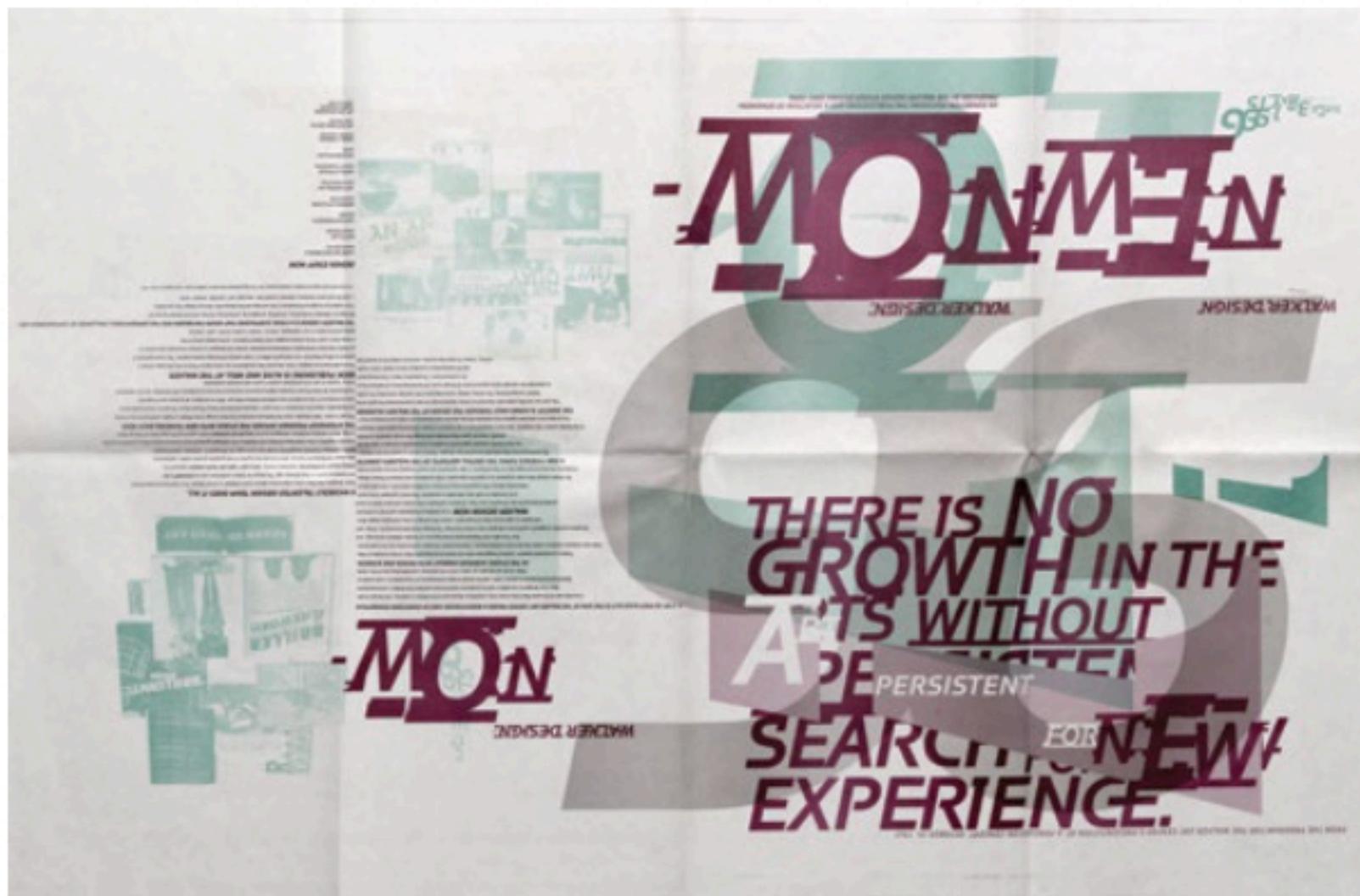
E E EH EH EH

WALKER
WALKER-ITALIC

WALKER-UNDER
WALKER-BOTH
WALKER-OVER

Figure-ground relationships can be crucial to the readability and visual character of type design. Type designer Matthew Carter designs the whole space, the negative territory that surrounds the letterform as well as its positive strokes (Blauvelt, 2005). Carter's typeface for the Walker Art Center has been described as strokes interrupting the ground, an approach that is repeated in how the institution uses abstract pattern in combination with the typeface (Figure 3.16). Serifs, in Carter's type design, are often used to shape and expand the space between letterforms.

Therefore, an understanding of figure-ground is essential in directing audience attention. The relationship either draws our attention to appropriate content for audience consideration or creates a dynamic interplay between objects and their surroundings, which compels us to resolve conflicting visual interpretations.



WALKER

ABCDEFGHIJKLMNOP
QRSTUVWXYZ

H H H

1 2 3 4 5

ROMAN
REGULAR
OVER
UNDER
BOTH

ITALIC
REGULAR
OVER
UNDER
BOTH

HE MB ME NE &
G K L Q R S W 27

1234567890\$%
.,!?"---0000\|x---#^~*@↔

H H

OPTION
OPTION

E E EH EH EH

"I THINK OF THEM RATHER LIKE STORE WINDOW MANNEQUINS WITH GOOD BONE STRUCTURE ON WHICH TO HANG MANY DIFFERENT KINDS OF CLOTHING."

Figure 3.16
Walker typeface, 1994
Matthew Carter
Carter's typeface for the Walker Art Center offers a number of variations. It uses "snap-on" serifs that attach to the bold sans serif at the designer's discretion, creating new shapes in the negative spaces. In a 1995 article in Eye Magazine titled, "The Space between Letters," Walker design director Andrew Blauvelt described the font as "a revision of modernist typography insofar as it focuses attention on the space between letters, words, and lines of text."

SIZE CONSTANCY

Size constancy is our mental ability to make sense of the approximate size and scale of objects, even when visual evidence suggests alternate interpretations. Constancy requires that a number of visual cues be present in order to accurately interpret what we see. In the case of a human figure walking toward us in the distance, the consistency between the figure and the diminished size of other objects surrounding the figure allow us to calibrate our perceptual assumptions against that body of evidence; we do not perceive the figure to be a tiny human.

A small visual trick: look at your face in a mirror within arm's reach (Figure 3.27). Without moving your position, reach out and trace with a marker on the mirror's surface the outline of your face. Then measure and compare the dimensions of the outline you traced to those of your face. Despite the fact that you have lived your entire life assuming that the mirror image is identical in size to your own face, it is in fact, substantially smaller. The Gestalt principle of size constancy allows you to adjust your perceptual estimation of size in the mirror to conform to your understanding of real dimensions.

In the fifteenth century, Renaissance artists and engineers devised a revolutionary system of geometrical relationships and vanishing points, called *linear perspective*, for rendering objects and landscapes with optical consistency. This logical but artificial system is in contrast to other

ways of communicating depth—for example, by simply overlapping objects or assigning vertical locations to objects within the picture plane, strategies we find in many traditional art forms. Because the system is consistent with both our perceptual and cultural experience—that things diminish proportionally in size as they approach the horizon line—we accept such representations of diminishing size in pictorial form as natural.

Without the intermediary evidence of surrounding objects or distorted scale relationships, however, the scene is potentially more confusing and the relationships among the elements in the picture plane are more dramatic (Figure 3.28). In other words, inconsistency with the typical perceptual experience attracts more attention. In his poster for the Swiss Automobile Club, designer Josef Müller-Brockmann heightened the viewer's sense of

Figure 3.27
Image in the mirror
The Gestalt principle of size constancy allows viewers to perceive an image in the mirror as actual size rather than smaller than reality.

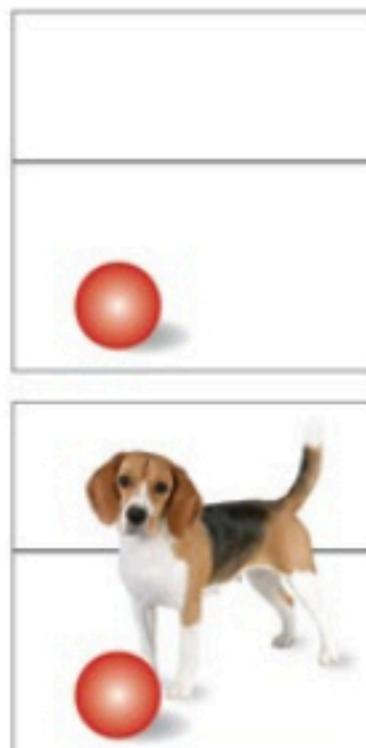


Figure 3.28
Size constancy
The ability to maintain an understanding of the size of an object across distances depends on making comparisons to known objects. There is no reference in the image on the top against which to estimate the size of a rolling red ball. In the image on the bottom, general knowledge of the dog makes possible judgment about the size of the ball, even when moving and changing its size within the picture frame.

protégez l'enfant !



disorientation through an interruption of size constancy (Figure 3.29). Is this a giant motorcycle or a really tiny child? Is there enough space between the two for the motorcycle to stop? Without other objects or additional information regarding the content of the background (does it represent the road or the horizon line of the landscape?) we lack the spatial context necessary to make judgments about distance. The designer, therefore, gives us the momentary perspective of the bystander, who worries whether the cyclist can adjust his speed before closing the gap between the bike and the child.

Communication designers, therefore, use size constancy to reinforce seemingly natural juxtapositions among elements of a composition or to eliminate contextual cues, thus gaining attention by destabilizing normal judgments about scale.

Figure 3.29
"Protect the Child"
Swiss Automobile Club
poster, 1953
Josef Müller-
Brockmann (1914–1996)
© DACS 2016

In this poster, the absence of information in the landscape creates anxiety regarding the distance between the motorcycle and the child. The bystander [the viewer] cannot judge at first whether there is sufficient distance to reduce speed and avoid an accident.

SCALE

Scale is a proportional relationship between the size of something and the sizes of other things. We often make sense of the world around us, both consciously and unconsciously, by testing how things size up to human form.

While size constancy involves an adjustment we make in our perception of things—a mental judgment of the size of something despite conflicting visual evidence—scale is a means for comparing measurements. We determine that the size of a model is one quarter the size of the actual object it represents or that the vertical proportions of a building can be expressed in increments that correspond to the height of the average man.

Figure 3.30
Nineteenth amendment,
Grand Central Station,
New York, 1994
© Doyle Partners

In commemorating the seventy-fifth anniversary of the nineteenth amendment to the United States Constitution, which gave American women the right to vote, Doyle Partners applied the text of the amendment in 9,276 point type to the floor of Grand Central Station. The terminal has forty-four train platforms, more than any other station in the world.

Unexpected scale relationships are effective in gaining attention for environmental applications. In 1996, Doyle Partners commemorated the seventy-fifth anniversary of the passing of the nineteenth amendment by applying the text of the law in eight-foot letters (9,276 point type) on the marble floor of the waiting room in Grand Central Station in New York City (Figure 3.30). Passersby read the one-sentence amendment, granting women the right to vote, as they walked to and from the station on their way to work each day.

Similarly, Bruce Mau's 2006 exhibition at the Museum of Contemporary Art in Chicago, titled *Massive Change*, challenged audiences to think about sustainable design through typography and image collections that exceeded the usual discrete labeling and display techniques of



art museums (Figure 3.31). Audiences confronted the excess of modern living through the sheer number of images and entered and left the galleries through a big, overarching question (literally) about the future. Rather than a few enlarged photographs that occupied the space, audiences saw a plethora of photo-album sized images that dominated by their sheer number; the scale of the images was small but together they made a big impression.

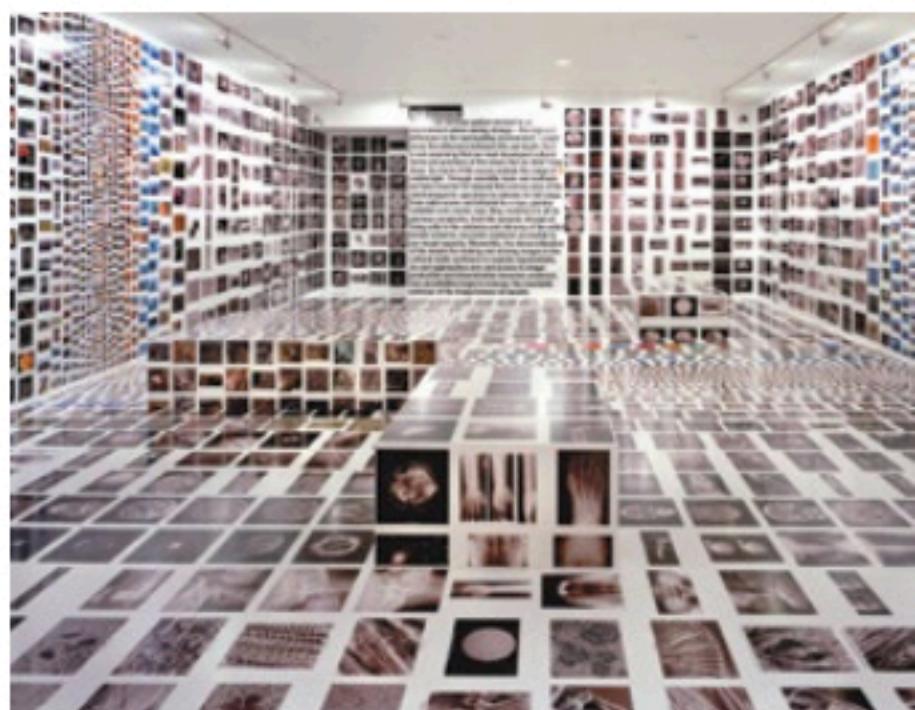


Figure 3.31
Massive Change
exhibition, Museum
of Contemporary Art,
Chicago, 2005
Bruce Mau Design
Mau's exhibition, and the companion book, explored how design methods could be used to solve problems at the level of social, political, environmental, and economic systems. The exhibition not only inhabited large gallery spaces, but the sheer number of average-sized photographs expressed the value of working at a variety of scales on issues of sustainability.

April Greiman's 8,200 square foot media installation on buildings in Koreatown, Los Angeles uses the enormous scale of a hand and rice bowl to contrast with the street-level distraction of Wilshire Boulevard. In this case, unnatural scale relationships attract attention and communicate the cultural content of the area (Figure 3.32). The over-scaled photography in the landscape is reminiscent of photomontages in early twentieth-century work.

James Langdon faced a scale challenge in his design for an exhibition of Tony Arefin's graphic design work (Figure 3.33). Graphic design objects are typically small and can be overwhelmed by gallery walls. Langdon grouped publications on color-blocked horizontal surfaces, creating a bigger impression than would have been possible by simply hanging objects on white walls, but also maintaining the intimacy of printed books. A large typographic panel anchors the space.



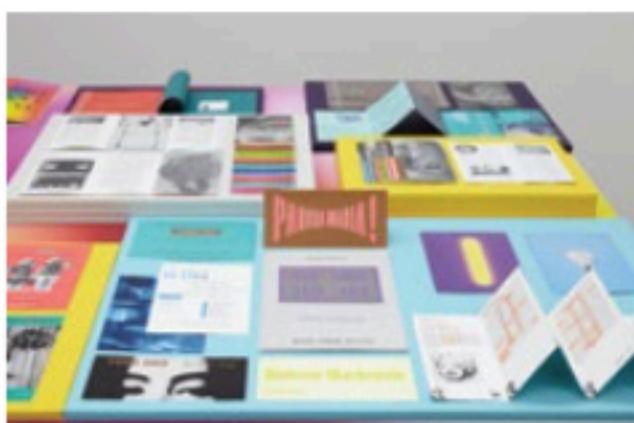
Figure 3.32, above
Koreatown technology wall, 2007

April Greiman
Located at the intersection of Wilshire and Vermont in Los Angeles, Greiman's technology wall on the building by Arquitectonica frames the entrance to the subway station in Koreatown. At 8,200 square feet, the image of the rice bowl was photographed in the area and overshadows the typical chaos of the urban street. The resulting streetscape becomes a photomontage of images at different scales.



Figure 3.33
The Graphic Design of Tony Arefin, 2012
Ikon Gallery, Birmingham, England
Curator: James Langdon
Photography: Stuart Whipp

Langdon's exhibition of Tony Arefin's work clustered small publications on color-blocked tables, massing form for a bigger impression. Langdon used typography on the walls to attract attention and provide a shift in scale.



BIG

small



BIG

small



Bell Centennial M

Figure 3.34, top
Scale and the visual field
While the scale of one element to another is important in determining relative size, the scale of the element to the surrounding visual field is equally expressive. The spider in this illustration is more menacing when it fills the visual space. The relationship between the spider and the hand is the same in both illustrations but zooming in on the spider so it expands beyond the frame of the image makes it scarier. A similar effect can be seen in the typographic compositions.

Figure 3.35
Bell Centennial typeface, 1976
Matthew Carter
The internal relationships of strokes and counterspaces change as type is scaled to different sizes. Similarly, in printing on different surfaces the stroke width and spaces can change as ink bleeds into paper. Carter's design of Bell Centennial marked the 100th anniversary of AT&T and was designed to be legible at extremely small sizes, as in the telephone directory. Ink traps—notches cut into the intersections of strokes—accommodate ink bleed when printed.

The relative scale of elements to the overall size of the composition [as defined by its perimeter] influences how we interpret something. In Figure 3.34, the size of the hand tells us how large the spider is; the size of something we know (the hand) is compared to something that could be many different sizes (the spider). So in this case, scale tells us it is a very big spider. But because the top image enlarges the two objects to exceed the limits of the page, the spider is even more threatening, although the scale relationship between the spider and the hand is the same as in the bottom image. What has changed is not the scale relationship between the two objects, but the scale relationship between the objects and the visual field.

One important aspect of scale is that as the sizes of elements change, so do the internal relationships among their parts. This effect is called *scaling fallacy*; as elements scale up or down, not all relationships remain the same. For example, type can be reduced in size photographically. But doing so alters how strokes meet and the perception of stroke weight at these intersections. Similarly, the spacing between characters may not be optically even or readable when scaled up or down. Digital typefaces generally accommodate for this scaling problem in programming by tracking (adjusting the letterspacing overall) or by kerning (adjusting the spacing between selected letter combinations).

British type designer Matthew Carter created Bell Centennial as a typeface for the telephone book (Figure 3.35). Knowing that it would be printed at six points on highly absorbent paper, Carter drew letterforms that anticipated the spread of printer's ink. He notched the intersections of strokes (a technique called *ink traps*), increased the openness of counterspaces, and widened the gaps on tightly closed forms to make the letterforms legible at very small sizes.



At the other end of the size continuum, environmental graphics like those in New York's Times Square must account for reading at extreme distances and in competition with a very cluttered visual field. In environments such as this, bigger is better, and without enormous scale the elements would be lost in a cacophony of messages. Josh Goldstein's billboard for discount store Target functions at two scales (Figure 3.36). From a distance it reads as the company's corporate logo, dominating other messages in

the city. Closer viewing shows the image is assembled from smaller signs found in New York's bodegas (corner stores).

It is such surprising scale juxtapositions (very small to very large) that attract viewers' attention. Scale is always a comparative relationship, not just among differently sized objects, but also in relation to our own size and position. Perception of scale, therefore, is an embodied experience.

Figure 3.36
Target in Times Square,
2009

Josh Goldstein
The scale of buildings and the chaos of the urban landscape easily overshadow signage and any individual message. Goldstein's Times Square installation for discount store Target displayed the company's familiar bullseye logo, constructed of hundreds of smaller signs from New York's bodegas—small stores selling a variety of items. An estimated 330,000 people pass through the intersection every day.