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.

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.


WOMAN SUFFRAGE!
CONSTITUTIONAL AMENDMENT.
DENIED
abridged
United States
State

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.

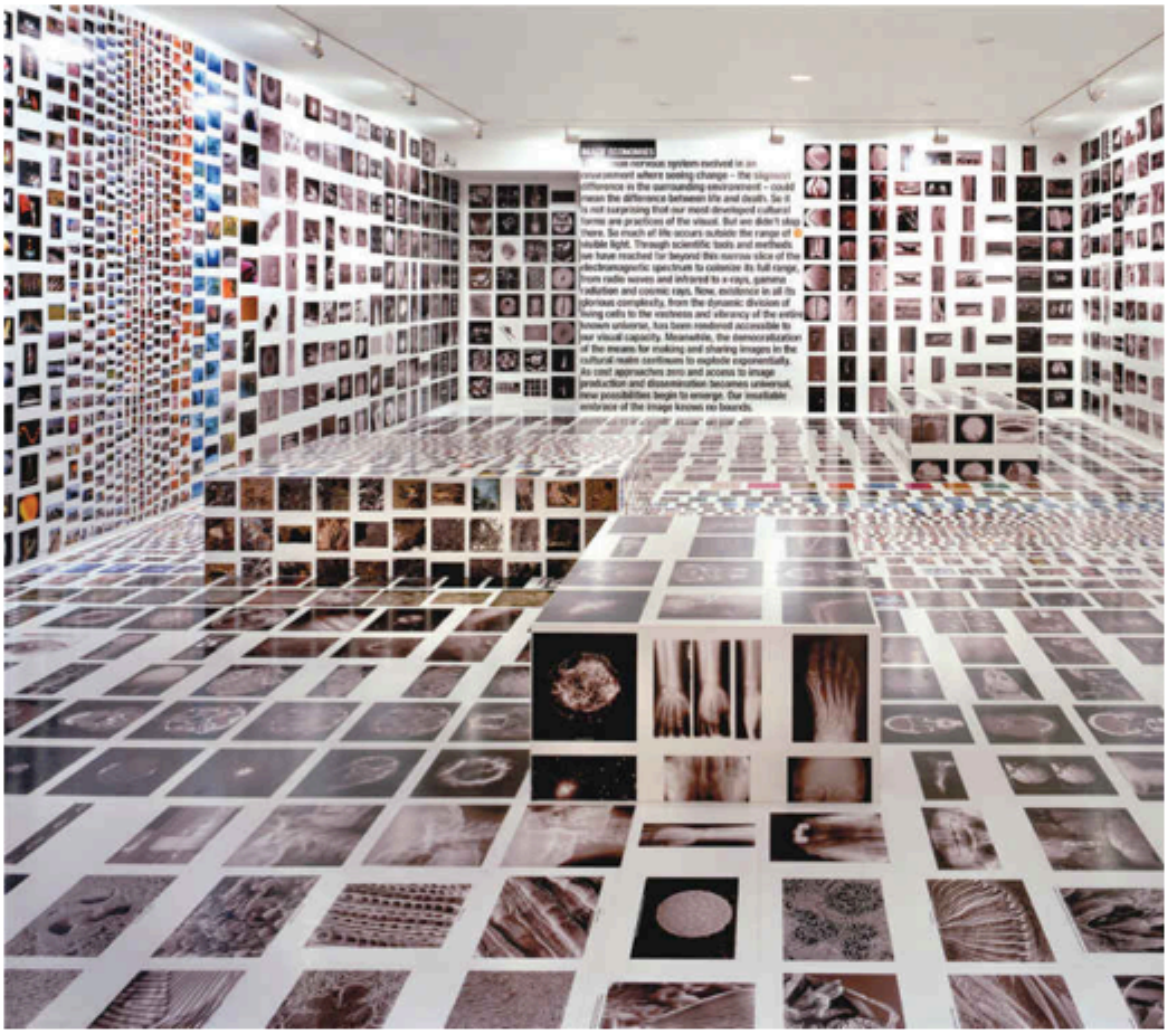


Figure 3.31
***Massive Change* exhibition, Museum of Contemporary Art, Chicago, 2005 Bruce Mau Design**

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.

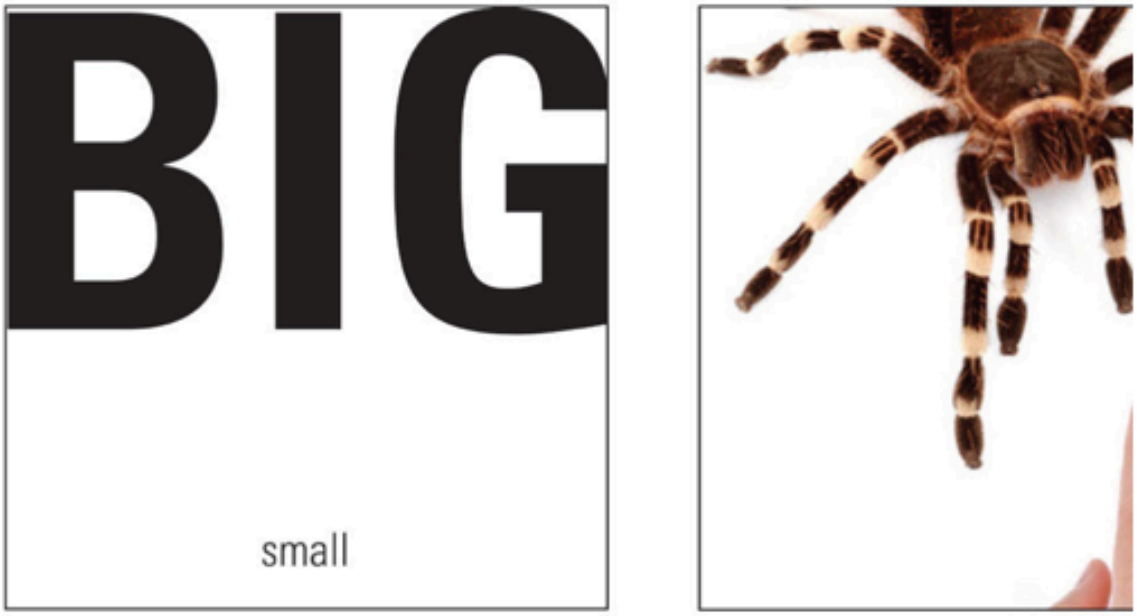
April Greiman's 8,200 square foot media installation on buildings in Koreatown, Los Angeles uses the enormous scale of a hand and rice bowl to contrast with the street-level distraction of Wilshire Boulevard. In this case, unnatural scale relationships attract attention and communicate the cultural content 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
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 Whipps**
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.



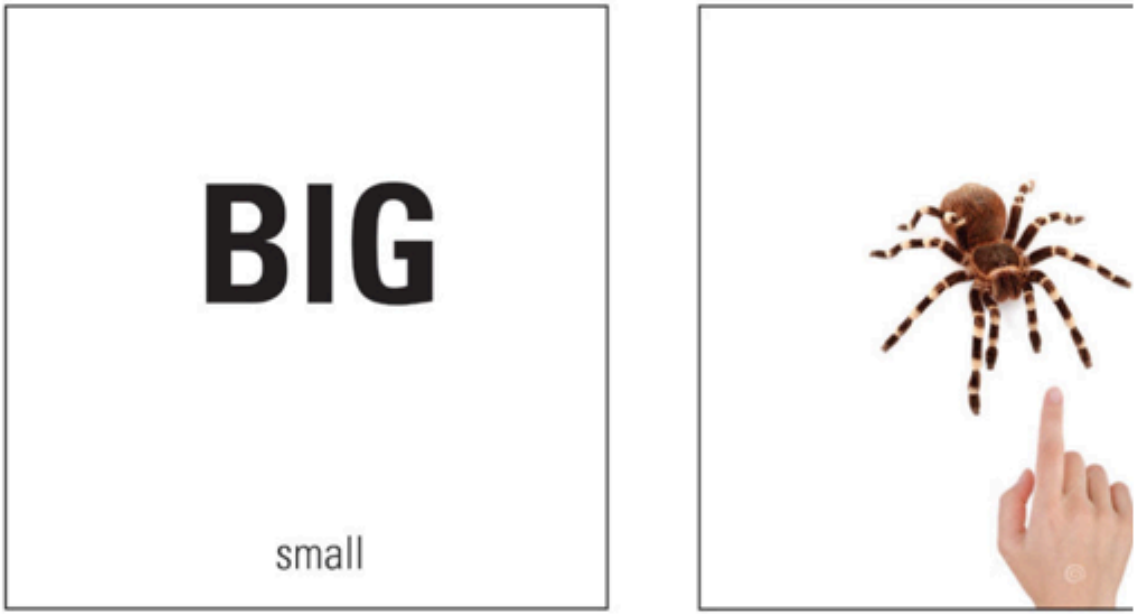


Figure 3.34
Scale and the visual field

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.

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.

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.