Similarity

Elements that are similar are perceived to be more related than elements that are dissimilar.

The principle of similarity is one of several principles referred to as *Gestalt principles of perception*. It asserts that similar elements are perceived as a single group or chunk, and are interpreted as being more related than dissimilar elements. For example, a simple matrix comprising alternating rows of dots and squares will be interpreted as a set of rows only, because the similar elements group together to form horizontal lines. A complex visual display is interpreted as having different areas and types of information depending on the similarity of color, size, and shape of its elements; similar elements are interpreted as being relevant to one another.[1]

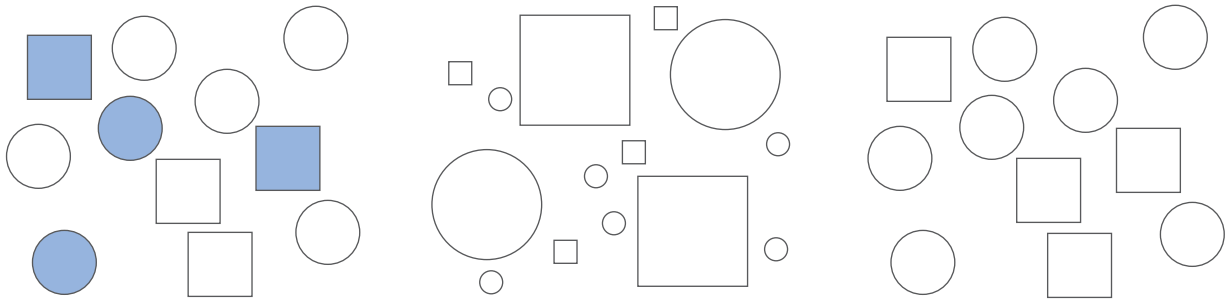
The grouping resulting from similarity reduces complexity and reinforces the relatedness of design elements. Conversely, a lack of similarity results in the perception of multiple, disparate chunks, and reinforces differences among the elements. Certain kinds of similarity work better than others for different situations. Similarity of color results in the strongest grouping effect; it is strongest when the number of colors is small, and is decreasingly effective as the number of colors increases. Similarity of size is effective when the sizes of elements are clearly distinguishable from one another, and is an especially appropriate grouping strategy when the size of elements has additional benefits (e.g., large buttons are easier to press). Similarity of shape is the weakest grouping strategy; it is best used when the color and size of other elements is uniform, or when used in conjunction with size or color.[2]

Use similarity to indicate relatedness among elements in a design. Represent elements such that their similarity corresponds to their relatedness, and represent unrelated or ambiguously related items using different colors, sizes, and shapes. Use the fewest colors and simplest shapes possible for the strongest grouping effects, ensuring that elements are sufficiently distinct to be easily detectable.

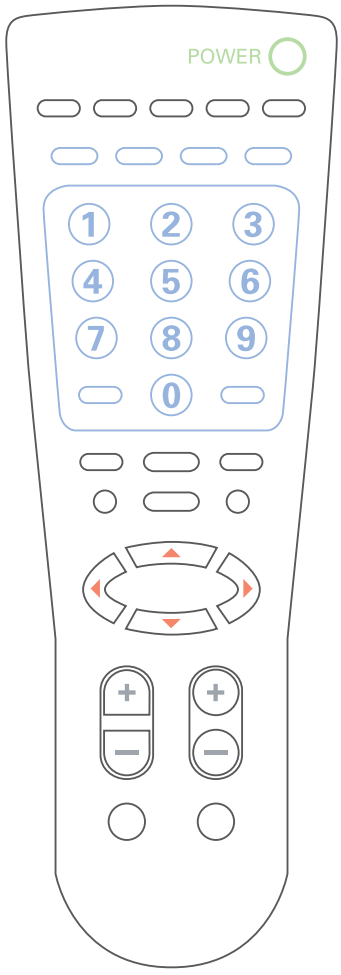
See also Chunking, Inattentional Blindness, Mimicry, and Self-Similarity.

[1] The seminal work on similarity is "Untersuchungen zür Lehre von der Gestalt, II" [Laws of Organization in Perceptual Forms] by Max Wertheimer, *Psychologische Forschung*, 1923, vol. 4, p. 301–350, reprinted in *A Source Book of Gestalt Psychology* by Willis D. Ellis (ed.), Routledge & Kegan Paul, 1999, p. 71–88. See also *Principles of Gestalt Psychology* by Kurt Koffka, Harcourt Brace, 1935.

[2] Note that a significant portion of the population is color blind, limiting the strategy of using color alone. Therefore, consider using an additional grouping strategy when using color.



Similarity among elements influences how they are grouped—here by color, size, and shape. Note the strength of color as a grouping strategy relative to size and shape.



This remote control uses color, size, and shape to group functions. Note the relationship between the anticipated frequency of use of the buttons and their relative size and shape.

Similarity is commonly used in camouflage. For example, the mimic octopus can assume the color, pattern, and approximate form of one of its fiercest predators—the highly poisonous sole fish—as well as many other marine organisms.