Proximity

Elements that are close together are perceived to be more related than elements that are farther apart.

The principle of proximity is one of several principles referred to as *Gestalt principles of perception*. It asserts that elements close together are perceived as a single group or chunk, and are interpreted as being more related than elements that are farther apart. For example, a simple matrix of dots can be interpreted as consisting of multiple rows, multiple columns, or as a uniform matrix, depending on the relative horizontal and vertical proximities of the dots.[1]

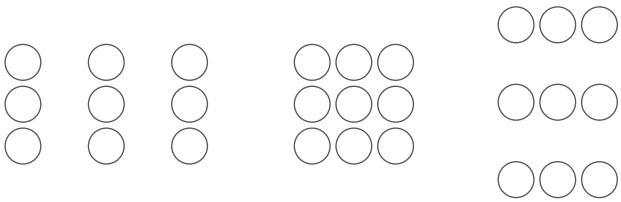
The grouping resulting from proximity reduces the complexity of designs and reinforces the relatedness of the elements. Conversely, a lack of proximity results in the perception of multiple, disparate chunks, and reinforces differences among elements. Certain proximal layouts imply specific kinds of relationships, and should be considered in layout design. For example, connecting or overlapping elements are commonly interpreted as sharing one or more common attributes, whereas proximal but non-contacting elements are interpreted as related but independent.[2]

Proximity is one of the most powerful means of indicating relatedness in a design, and will generally overwhelm competing visual cues (e.g., similarity). Arrange elements such that their proximity corresponds to their relatedness. Ensure that labels and supporting information are near the elements that they describe, opting for direct labeling on graphs over legends or keys. Locate unrelated or ambiguously related items relatively far from one another.

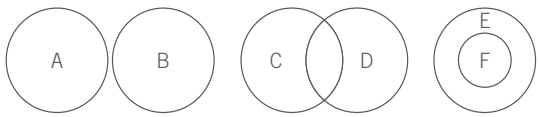
See also Chunking, Performance Load, and Similarity.

[1] The seminal work on proximity 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] Euler circles and Venn diagrams (methods of illustrating the relationships between sets of things in logic and mathematics) utilize this principle.

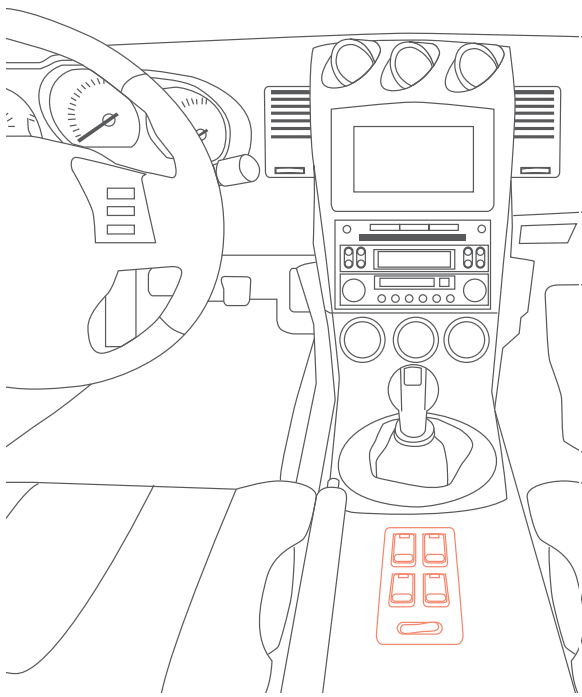


Proximity between the circles influences how they are grouped—as columns, a square group of circles, or rows.



Circles A and B are perceived as independent and sharing no attributes. Circles C and D are perceived as partially dependent and sharing some attributes. Circle F is perceived as dependent on Circle E and sharing all of its attributes.

Window controls are often placed on the center console between seats. The lack of proximity between the controls and the window makes it a poor design. A better location would be on the door itself.



This rendering of a sign at Big Bend National Park has undoubtedly sent many hikers in unintended directions (two hikers for certain). The proximity between unrelated words (e.g., Chisos and South) lends itself to misinterpretation. Positioning the related words closer together corrects the problem.