Ockham's Razor

Given a choice between functionally equivalent designs, the simplest design should be selected.[1]

Ockham's razor asserts that simplicity is preferred to complexity in design. Many variations of the principle exist, each adapted to address the particulars of a field or domain of knowledge. A few examples include:

- "Entities should not be multiplied without necessity."—William of Ockham

- "That is better and more valuable which requires fewer, other circumstances being equal."—Robert Grosseteste

- "Nature operates in the shortest way possible."—Aristotle

- "We are to admit no more causes of natural things than such as are both true and sufficient to explain their appearances."—Isaac Newton

- "Everything should be made as simple as possible, but not simpler."—Albert Einstein

Implicit in Ockham's razor is the idea that unnecessary elements decrease a design's efficiency, and increase the probability of unanticipated consequences. Unnecessary weight, whether physical, visual, or cognitive, degrades performance. Unnecessary design elements have the potential to fail or create problems. There is also an aesthetic appeal to the principle, which likens the "cutting" of unnecessary elements from a design to the removal of impurities from a solution—the design is a cleaner, purer result.

Use Ockham's razor to evaluate and select among multiple, functionally equivalent designs. Functional equivalence here refers to comparable performance of a design on common measures. For example, given two functionally equivalent displays—equal in information content and readability—select the display with the fewest visual elements. Evaluate each element within the selected design and remove as many as possible without compromising function. Finally, minimize the expression of the remaining elements as much as possible without compromising function.[2]
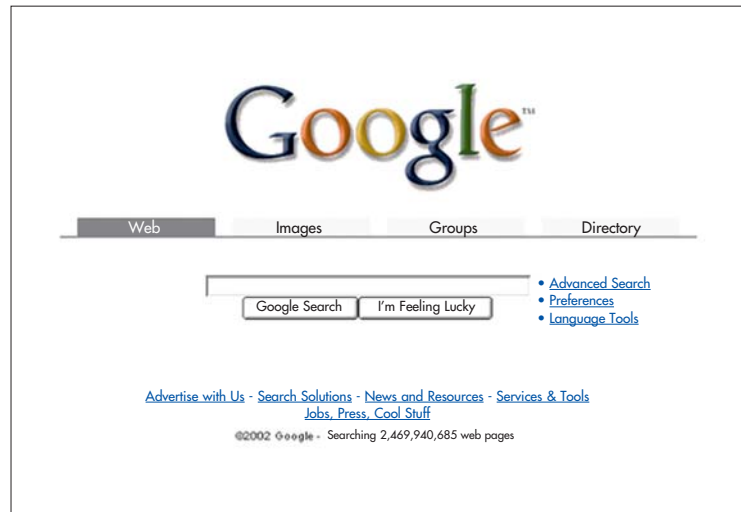
See also Form Follows Function, Horror Vacui, Mapping, and Signal-to-Noise Ratio.

[1] Also known as *Occam's razor*, *law of parsimony*, *law of economy*, and *principle of simplicity*. The term "Ockham's razor" references William of Ockham, a 14th century Franciscan friar and logician who purportedly made abundant use of the principle. The principle does not actually appear in any of his extant writings and, in truth, little is known about either the origin of the principle or its originator. See, for example, "The Myth of Occam's Razor" by W. M. Thorburn, *Mind*, 1918, vol. 27, p. 345–353.

[2] "Make all visual distinctions as subtle as possible, but still clear and effective. " *Visual Explanations* by Edward R. Tufte, Graphics Press, 1998, p. 73.

While other Internet search services were racing to add advertising and ad hoc functions to their Web sites, Google kept its design simple and efficient. The result is the best performing and easiest to use search service on the Web.

The Yamaha Compact Silent Electric Cello is a minimalist cello with only those portions touched by the player represented. Musicians can hear concert-quality cello sound through headphones while creating little external sound, or through an amplifier and speakers for public performances. The cello can also be collapsed for easy transport and storage.

The Taburet M Stacking Stool is strong, comfortable, and stackable. It is constructed from a single piece of molded wood and has no extraneous elements.