

**Effect Ordering for Data Displays**  
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Abstract: This paper outlines a general framework for ordering information in visual displays (tables and graphs) according to the effects or trends which we desire to see. This idea, termed effect-ordered data displays, applies principally to the arrangement of unordered factors for quantitative data and frequency data, and to the arrangement of variables and observations in multivariate displays (star plots, parallel coordinate plots, and so forth).

Along the way, we tell some stories about data display, illustrated by graphs, some surprisingly bad, and some surprisingly good---for showing patterns, trends, and anomalies in data. We hope to raise more questions than we can provide answers for.

As examples of this principle, we present several techniques for ordering items, levels or variables “optimally”, based on some desired criterion. All of these may be based on eigenvalue or singular-value decompositions.