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Challenges for a theory of visualization: what is semantic symmetry?

概要

While there is no theory of visualization, there should be. Such a theory would provide a framework to assess a variety of information visualization techniques, to understand their comparative value in helping humans to draw inferences on large data. One simple concept related to a theory of visualization is semantic symmetry, which can be considered as the property that change in one representation space (e.g., a visual vocabulary space) can be accurately propogated to another space (e.g., a numeric tabular space). We explain the idea of semantic symmetry, and its potential role in a theory of visualization.

Measuring the compositionality of multi-word expressions

概要

For centuries, formal linguists and philosophers have discussed the nature of compositional and non-compositional phrases, sometimes referred to as multi-word expressions (although the concept of ”word” itself is somewhat elusive). Here we show one simple measure of compositionality, and argue that, in addition to providing evidence for a fundamental principle of linguistics, also creates lots of linguistic questions, but still provides a basis for application in search engine query processing.