Scales of Measurement

Scales of measurement are commonly broken down into four types: (1) **nominal (or categorical)**, (2) **ordinal**, (3)**interval**, and (4) **ratio**.

The purpose of this set of notes is to briefly summarize several aspects of scales of measurement including:
(a) the measurement principle involved for each scale
(b) examples of the measurement scales
(c) permissible arithmetic operations for each scale
(d) examples of statistics that are appropriate for each scale

The Measurement Principles

Nominal	Ordinal	Interval/Scale
People or objects with the same scale value are the same on some attribute. The values of the scale have no 'numeric' meaning in the way that you usually think about numbers.	People or objects with a higher scale value have more of some attribute. The intervals between adjacent scale values are indeterminate. Scale assignment is by the property of "greater than," "equal to," or "less than."	Intervals between adjacent scale values are equal with respect the attribute being measured. E.g., the difference between 8 and 9 is the same as the difference between 76 and 77.

Examples of the Measurement Scales

Nominal	Ordinal	Interval/Scale
Gender. Ethnicity. Marital Status.	Movie ratings (0, 1 or 2 thumbs up). SES. U.S.D.A. quality of beef ratings (good, choice, prime). The rank order of anything.	Degrees F. Most personality measures. WAIS intelligence score.