TYPES OF VARIABLES / LEVELS OF MEASUREMENT

1. A survey gathers information about the following variables pertaining to the survey respondents:

   V1  the number of people living in each respondent's household;
   V2  the occupation of the respondent;
   V3  the income of the respondent;
   V4  the self-placement of the respondent into one of these five ideological categories: strong liberal, moderate liberal, middle of the road, moderate conservative, strong conservative.

   (a) Which provides the best example of a nominal variable?
   (b) Which provides the best example of an ordinal variable?
   (c) Which provides the best example of an interval variable?
   (d) Which provides the best example of a quantitative but discrete variable?
   (e) Which provides the best example of a quantitative and continuous variable.

**Note 1.** In answering Questions #2 and #3 pertaining to the SETUPS/ANES Codebook (Handout #1B), please refer to variables by both substantive name/label (e.g., PARTY IDENTIFICATION) and formal name (e.g., V09).

**Note 2.** The nominal/ordinal/interval distinction applies meaningfully only to non-dichotomous variables. In answering Questions #2 and #3, select only such variables (i.e., with at least three values, in addition to missing data [NA, always coded “9”]).

2. (a) Pick two or three variables out of the SETUPS/ANES Codebook (Handout #1B) that are most clearly nominal in nature.
   (b) Pick two or three variables out of the SETUPS/ANES Codebook that are most clearly ordinal in nature.
   (c) Pick two or three variables out of the SETUPS/ANES Codebook that are most clearly interval (or ratio) in nature.

3. All variables in the SETUPS/ANES Codebook are presented as discrete variables — that is, each is assigned just a small number of distinct values. But some of these variables might be regarded as "truly" continuous in nature. Pick out two or three of these variables and explain why they might be so regarded.

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4. Identify the level of measurement (nominal, ordinal, interval, or ratio) of each of the following variables:

(a) The concentration of DDT in a sample of milk, in milligrams per liter.
(b) The species of each insect found in a sample plot of crop land.
(c) A subject’s responses to the following personality test question: “It is natural for people of one race to want to live away from people of other races.”
   
<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>
(d) The pressure in pounds per square inch required to crack specimens of copper tubing.
(e) The positions of baseball teams in their league (or division) standings (e.g., 1st place, 2nd place, etc.)
(f) Baseball teams’ winning percentages (games won/games played) and/or their “games behind leader.”
(g) The numbers on the shirts of a baseball team’s players.
(h) The reaction time of a subject, in milliseconds, after exposure to a stimulus.
(i) Students’ scores on a POLI 300 examination.
(j) People’s occupations as classified by the Bureau of Labor Statistics (managerial, professional, technical, sales, and so on).
(k) House address numbers along a typical city street.