SPECIFYING RELATIONSHIPS: ANSWERS AND DISCUSSION

Note. Some students regressed and did not *identify and name variables* in an appropriate fashion (i.e., they forget the lessons of Problem Set #3A), which often meant that their answers could not be evaluated since pos/neg depends on the names). Also some students were insufficiently explicit in specifying the *independent vs. dependent* variable.

INDEPENDENT VARIABLE $\xrightarrow{+/-}$ DEPENDENT VARIABLE

** word or phrase (if any) that indicates direction of causality, i.e., which (independent) variable influences the other (dependent) variable, and may also indicate direction of association, e.g.,. positive or negative. *Remember*: the positive vs. negative distinction does not apply (NA) if the two variables do not have "matching values."

1.   AMOUNT OF SENIORITY $\underline{\quad + \quad}>$ DEGREE OF PRAGMATISM

    ** not explicit, and one could argue the reverse

2.   AMOUNT OF EDUCATION $\underline{\quad - \quad}>$ LEVEL OF RELIGIOSITY

    ** "undermines" (negative causal effect)

3.   CAPITAL PUNISHMENT? (Y/N) $\underline{\quad - \quad}>$ MURDER RATE

                                     or

    REL. FREQUENCY OF $\underline{\quad - \quad}>$ MURDER RATE
    CAPITAL PUNISHMENT

    ** "deters" (negative causal effect)

4.   COMPETITIVENESS $\underline{\quad + \quad}>$ RESPONSIVENESS OF
    OF DISTRICT   MEMBER

    ** "makes" (positive causal effect)

5.   LEVEL OF PRESIDENT'S $\underline{\quad + \quad}>$ LEVEL OF PRESIDENT'S
    APPROVAL RATING   REELECTION VOTE

    ** "boosts" (positive causal effect)

6.   AMOUNT OF STUDYING $\underline{\quad + \quad}>$ LEVEL OF GPA

    ** "makes for" (positive causal effect)

7. CLOSENESS OF ELECTION   __+__>   LEVEL OF TURNOUT

                                                    or

    MARGIN OF VICTORY   __–__>   LEVEL OF TURNOUT

    ** "stimulates" ("closeness" has positive causal effect; "margin of victory" is the reverse of "closeness")

8. LEVEL OF BADNESS   __–__>   RE-ELECTION RATE OF
    OF ECONOMIC TIMES   INCUMBENT CANDIDATES

    ** "punished" (negative causal effect)

9. GOODNESS OF SLEEP HABITS   __+__>   LEVEL OF SUCCESS

    ** "makes" (positive causal effect)

10. EAT APPLE A DAY? (Y/N)   __–__>   NUMBER OF DOCTOR VISITS

                                                    or

    GOODNESS OF DIET   __+__>   LEVEL OF HEALTH

    ** "keeps away" (negative causal effect; "number of doctor visits" is a negative indicator of "level of health")

11. AMOUNT OF EDUCATION   __+__>   LEVEL OF SUCCESS

    ** "if, then" (positive causal effect)

12. IDEOLOGY OF GOVERNMENT   __NA__>   RATE OF INFLATION

                                                    or

    DEGREE OF LEFTISM   __+__>   RATE OF INFLATION

                                                    or

    DEGREE OF CONSERVATISM   __–__>   RATE OF INFLATION

    ** "bring about" (IDEOLOGY is not LO / HI)

13. LEVEL OF POLITICAL   __+__>   VOTE? (Y/N)
    INTEREST

    ** implicit and plausible positive causal effect

14.   DIRECTION OF IDEOLOGY   __NA__ >   VOTE CHOICE

                                                          or

       DEGREE OF LIBERALISM   __+__ >   DEGREE OF DEM VOTING

                                                          or

       DEGREE OF LIBERALISM   __–__ >   DEGREE OF REP VOTING

                                                          or

       DEGREE OF CONSERVATISM   __+__ >   DEGREE OF DEM VOTING

                                                          or

       DEGREE OF CONSERVATISM   __–__ >   DEGREE OF REP VOTING

       ** implicit and plausible

15.   LEVEL OF DISSATISFACTION   __+__ >   PROPENSITY TO VOTE
       WITH ECONOMY   AGAINST INCUMBENTS

       ** "leads to" (positive causal effect)

16.   TYPE OF ELECTORAL   __NA__ >   TYPE OF PARTY SYSTEM
       SYSTEM (Maj., Prop.)   (two-party, multi-party)

                                                          or

       DEGREE OF PROPORTIONALITY   __+__ >   NUMBER OF POLITICAL OF
         IN ELECTORAL SYSTEM   PARTIES

       ** "results in," "produces" (nominal variables)

17.   TIME/YEAR   __–__ >   STRENGTH OF PARTY ID

       ** "weakened" — cause and effect not explicit, but presumably nothing can affect the passage
       of time

18.   LEGISLATIVE SIZE   __–__ >   LEGISLATIVE
                                                      EFFECTIVENESS

       ** "reduces" (negative causal effect)

19.   IMPOSITION OF TERM LIMITS (Y/N) __–__ > LEGISLATIVE EFFECTIVENESS
       ** "reduces" (negative causal effect)

20.   SAMPLE SIZE   __–__ > MARGIN OF SAMPLING ERROR

       ** margin of error is a consequences of sample size, not *vice versa*

21.   FATHER'S HEIGHT   __+__ >   SON'S HEIGHT

      ** "produce" [through genetic inheritance] (positive causal effect)

Note 1. Ordinarily, if the direction of association is to be characterized as positive or negative, *both* variables must be named in such a way that a range of values from LO to HI is suggested. (In any case, the values of the two variable must be comparable or "matching" or "in the same currency.") If a dichotomous variable has "yes / no" values, "no" is usually considered LO and "yes" HI; e.g. #3, 10, and 13.

Note 2. Remember that a positive or negative sign will change if you change the "polarity" of one variable, e.g., different versions of #12 & 14.

Note 3. Some people said (or implied) that, if the two variables did not have "matching values," there was no relationship or association between the two variables. This is a misstatement: there may be a very substantial association between such variables — the point is that the *direction of this association* cannot be summarized in *positive vs. negative terms* but must rather be explicitly specified (as in #14, there is a strong association between IDEOLOGY and VOTING CHOICE — namely, liberals vote mostly Democratic and conservatives mostly Republican).