**Statistics-I (1st continuous evaluation activity, November 2017)**

A schoolteacher wants to know whether eating breakfast has a positive impact on math performance in primary school and also whether this effect is modulated by gender. To that end, the teacher generates two groups from her class: 1) those students who typically don’t eat breakfast (N=18; 10 boys); and 2) those students who typically eat breakfast (N=22, 12 boys). To determine the role of breakfast on math performance, the students take a math test.

**1**

1a) Which is/are the independent variable/s? Which is/are the dependent variable/s?

1b) How would you organize the data in SPSS? (#rows, #columns)

**2**

2a) Is this an experiment or a quasi-experiment? Indicate why

2b) Let’s assume that the schoolteacher finds better math scores in the individuals who eat breakfast on a regular basis. Can you think of a better, more controlled follow-up study?

We have the following dataset (<http://www.uv.es/mperea/perfectionism.sav>) in which we have data from a number of individuals who are either only-children or middle siblings. We have data on a perfectionism scale with 4 questions (each from 1 to 7 in a Likert scale; the 3rd question is INVERSE), their age, a measure on sincerity (out of 5 questions), data on an Introversion scale, data on a creativity scale, and data on nonverbal IQ.

**3**

Are there any differences in the level of perfectionism (i.e., the sum of the FOUR questions on perfectionism; once Question#3 is in the right order) between only-children and middle siblings? Copy/paste the box plot and write down the conclusions in two/three sentences—you may want to use some statistics to support your conclusions.

**4**

First of all, we want to exclude those individuals who were not too sincere in their responses (i.e., scores of 3 or more). Then, can you see any differences in Introversion between only-children and middle siblings? Copy/paste the box plot and write down the conclusions in two/three sentences—you may want to use some statistics to support your conclusions.