Session 3: *„In the disguise of a simpleton…“*

Question 1:

Assume you have data from two (otherwise closely matched) groups of L2 learners from two different L1 backgrounds. Both groups have participated in a grammar test. For each participant, you calculate the percentage of correct items. You subsequently use these individual accuracy scores two calculate a mean percentage of accuracy for each of the two groups, and then compare these two groups with each other.

1a) It turns out that the first L2 group performs extremely well in the grammar test, with a mean accuracy of 98%. Based on this mean percentage alone, can you already conclude anything about the degree of variation within this group of people (i.e. how different the individual scores of the people within this group are from each other)?

1b) The first L2 group shows a mean accuracy of 98%, while the second group shows a mean accuracy of 96%. You decide to use an independent-samples t-test to check whether this difference is statistically significant. Based on what you already know about significance testing, can you have a guess whether the difference might reach significance or not? Think about which sources of information classical frequentist significance tests such as t-tests take into account to determine whether an effect is significant or not.

1c) The t-test turns out to be statistically significant; t(79)=2.54; ***p<.05***. You are nonetheless somewhat sceptical about this effect, simply because the numerical difference between the groups is so small. However, in a lab meeting, a colleague of yours points out that, given that both groups are already very proficient (and therefore both perform very well in the grammar test), you cannot really expect a very large effect here anyway. Also, the two groups turn out to be extremely well-matched with regard to other potentially relevant properties other than native-language background, such as age, years of learning the language, etc. Your colleague

thus argues that the fact that L1 background apparently still has a small but significant effect even in such highly proficient learners is a striking and unexpected finding, which you should consider writing up. Do you think your colleague is correct?