**Ideas for assignments (or indeed Masters thesis topics)**

* Generic things from other sources
  + More extensive simulation of something from class
  + Replicate (part of) a published simulation you have read
* Impact of violating other assumptions
  + t-test: Continuous data (**ordered, bounded**), normal distribution (skewed, **bounded**), random sampling (**preselection eg regression to the mean**)
* Simulate impact of other statisical choices
  + Illustrate how effect coding vs other forms of coding change regression beta estimates (but not marginal means)
* Simulate compound effect of conditional rules between tests (if assumptions test failed, run X, otherwise Y)
  + False positive rate of a given common analytic workflow for a given task or specific type of analytic flexibility
    - E.g., like the IRAP RM-ANOVA simulation. Laken’s etc have power analyses for many types of ANOVA, but what about false positive rates?
  + Common rules of thumb or practices that are probably bad
    - Pre-selection of covariates in regression based on bad and flexible rules (Gets into causal modelling, maybe too complex?)
* *p*-hacking
  + Replicate (some of) Stefan and Schonbrodt’s “a compendium of p-hacking strategies”
* Extend compendium to data tampering and fraud
  + Condition switching
  + Participant duplication
  + Alternation of data (eg how few cells do you have to offset or by how much to get significance)
* Measurement hacking / schmeasurement
  + Replicate Kopalle and Lehman – kinda done
  + Extend Kopalle and Lehman to what we would have liked them to do, eg conditional alpha based dropping – working on this myself
  + Multiverse of EFA
* Replicate “Why most of psychology is statistically unfalsifiable” – kinda done
* The influence of rounding on tests applied to extracted values, eg meta analyses calculated from summary stats, or p values calculated from test stats.
* Siulation of selection effects
  + Matthew effect
  + Regression to the mean
  + Trade-offs between efficacy and attrition / Efficacy paradox / Average Treatement Effect vs Average Treatment on the Treated effect
    - <https://bsky.app/profile/quentinandre.bsky.social/post/3lk4nqotlss2k>
* Scientific ponzi scheme probabalistic extension
* “Everything is a linear model” – demonstrate equality of different methods in the results they produce
* Robustness of ML vs OLS models to data missingness
* Other ideas you come up with - but run them by me for feasibility.