We will focus on the following article Przybylski, A. K., & Weinstein, N. (2017). A large-scale test of the Goldilocks Hypothesis: Quantifying the relations between digital-screen use and the mental well-being of adolescents. *Psychological Science*, 28(2), 204-215. It investigates the relation between mental well-being and digital screen use.

The paper can be found here <http://journals.sagepub.com/doi/pdf/10.1177/0956797616678438>

The living OSF project can be found here <https://osf.io/82ybd/>. There is no frozen version of this project.

However, if you go to the *Data and Code* component (<https://osf.io/4vfy7/>), and click *Registrations*, you’ll land on the frozen version of that component (<https://osf.io/49rmq/>), which contains the data in csv format (<https://osf.io/kvuuh/>).

If you go to the *Methodology* component (<https://osf.io/hvnq8/>), and click *Registrations*, you’ll land on the frozen version of that component (<https://osf.io/4dv6p/>), which contains the registered protocol in pdf format (<https://osf.io/c535z/>).

Sidenote: The paper itself provides another link to the registered protocol (<https://osf.io/b4cgq/>), which is a frozen component leading to this pdf (<https://osf.io/kx8bg/>) , but minor differences aside, both pdfs are the same. The frozen component is part of a frozen project (<https://osf.io/jkz9s/>) which is the frozen version of the fork of the original project. The live version of the fork of the original project is private (<https://osf.io/pg59e/>). Are you lost? So am I. This is unnecessarily complex, and is an example of non-optimal use of the OSF. Having to compare different versions of a preregistered protocol is annoying as a consumer of science. As a producer, please make sure not to annoy your readers.

Your task is to check the reproducibility status, robustness status and pre-registration status of the published result. Write up your results in a report (maximum 2222 words, not including figures, tables and references) using R Markdown. The R code should not be visible in your final report.

The report should be submitted to the TA, no later than June 8 2018, 11.59am. Send in the Rmd file, and the output in the format of your choice (pdf, html, word). Note that to use R Markdown to produce a pdf file you need to have MikTeX installed (free). Don’t sweat too much on layout. Make sure the report looks nice and is readable, but I won’t be measuring margins. Include the names of all the group members on a separate title page (that can be removed, for anonymous grading).

Check the reproducibility status of the published results

* + - redo the key analyses in R (descriptive statistics, p-values, test statistics, effect sizes, degrees of freedom, etc). The exploratory analyses and the Figures are optional, and the stuff about inflection points can be ignored. At least check the reproducibility of the descriptive statistics and the confirmatory analyses.
    - to what extent do you get the same output?
    - why do you think the output is different?
    - is the difference important?
    - which difficulties did you encounter during your reproducibility analysis (e.g., unclear which variable to use; lack of detail in the description of the statistical model)? how did you solve them?
    - …

Check the robustness status of the confirmatory analyses (again, you can ignore the stuff about inflection points)

* + - by using a multiverse analysis (constructing different reasonable data sets)
    - by using a model driven approach (e.g., controlling variables; also see lecture vera)
    - by using a combination of the above
    - explain why your data-processing and data-analytic choices are reasonable
    - obvious dimensions are exclusions (which data to include?) and outliers
    - the multiverse or model driven approach shouldn’t be as large as the one in the examples discussed in class

Check the pre-registration status of the published results by comparing the pre-registered protocol to the published paper

* + - are the data collected as indicated (e.g., stopping rule)?
    - are the data processed and the analyses performed as indicated in the pre-registration document?
    - are all pre-registered analyses performed?
    - if there are deviations from the pre-registered protocol, are they clearly indicated in the paper?
    - are there clear distinctions between confirmatory (pre-registered) and exploratory (non-pre-registered analyses)
    - etc

You can ask feedback after the Bayes Factor class on Friday March 30

If you have formed a group of three, go to <https://docs.google.com/spreadsheets/d/1RNj6mSiJe3serniDaUDfiIMvLEFXI13jtiRTyczF0Fs/edit?usp=sharing>. Behind your own name, write the names of all the team members of your group in alphabetical order (first name based), including your own. For example, I would use Tom Heyman, Vera Heininga, Wolf Vanpaemel. Fair play, please. Don’t delete other people’s names. Only put your name in a group if you agreed with the other members. This sheet is just for communicating the groups with the teaching team, and to see which groups still have a missing member, not as a mean to decide which group to be in.