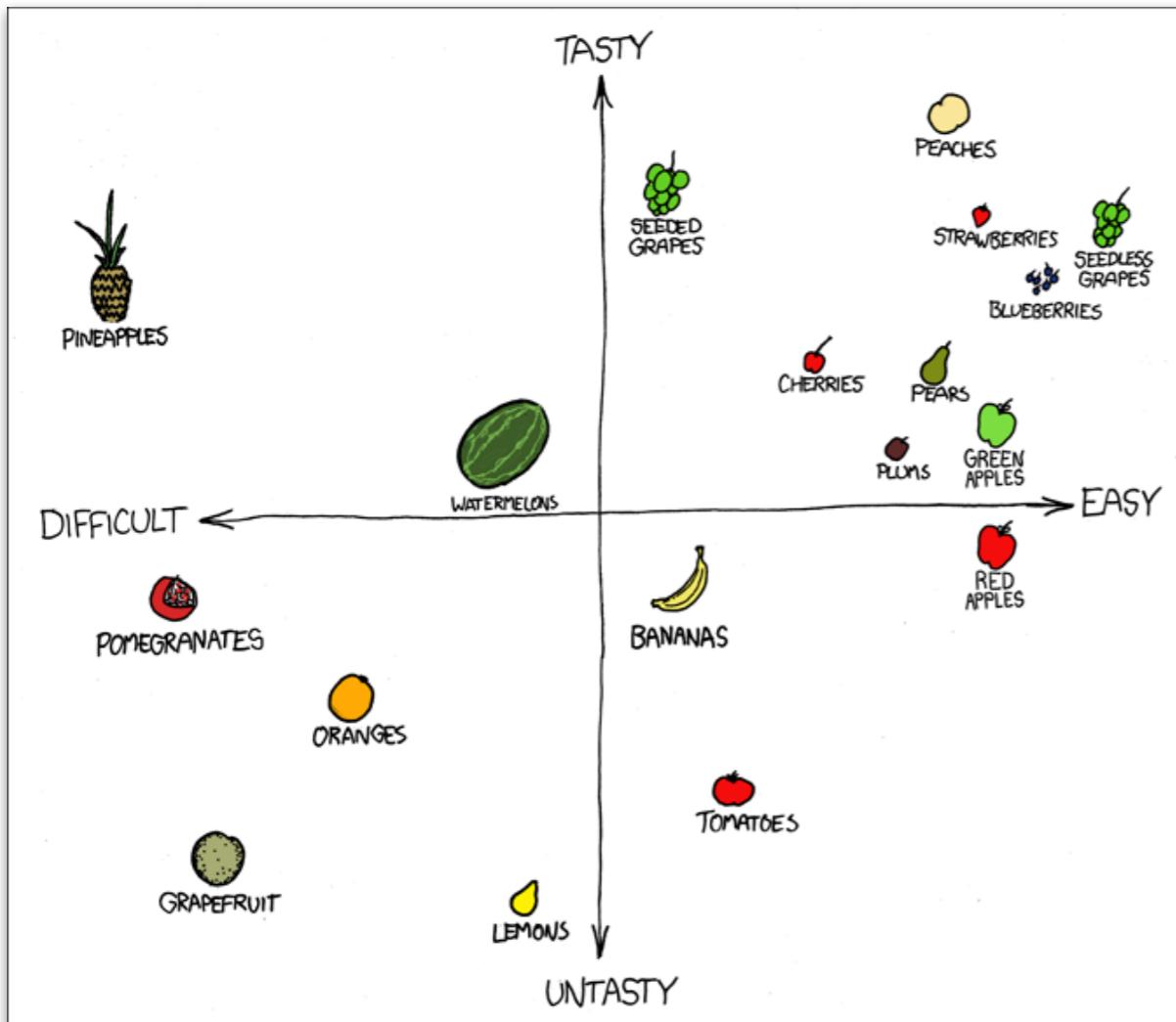


Visualization 1



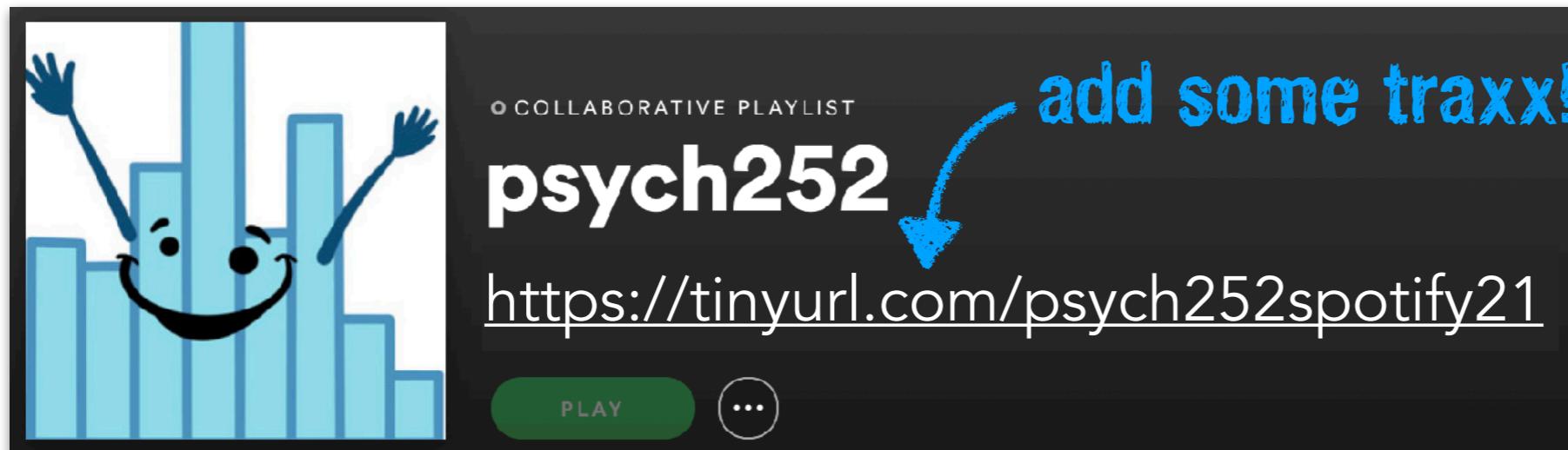
Chat

What's your newest COVID hobby or routine?

To: Everyone ▾

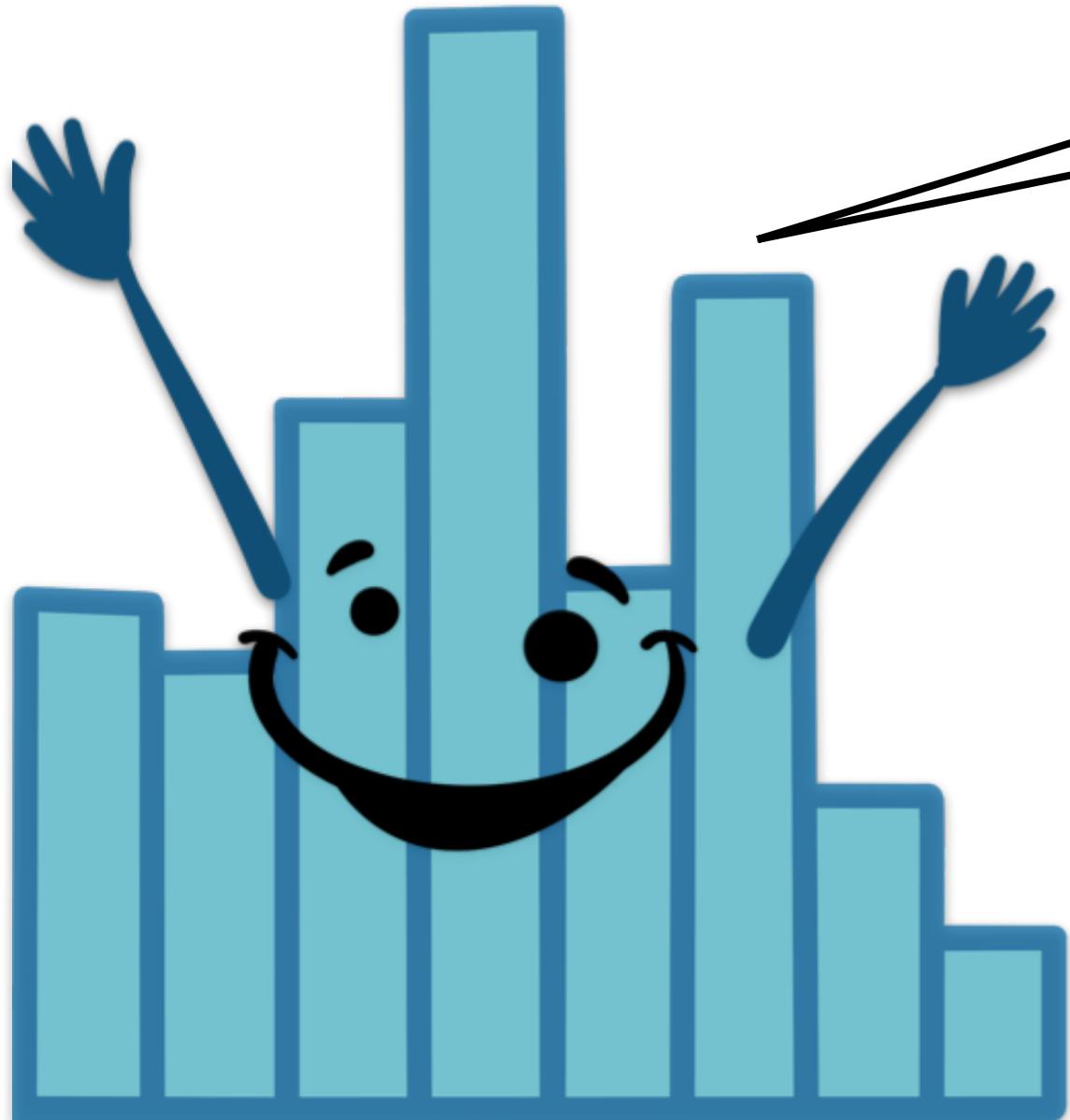
Type message here...

More ▾

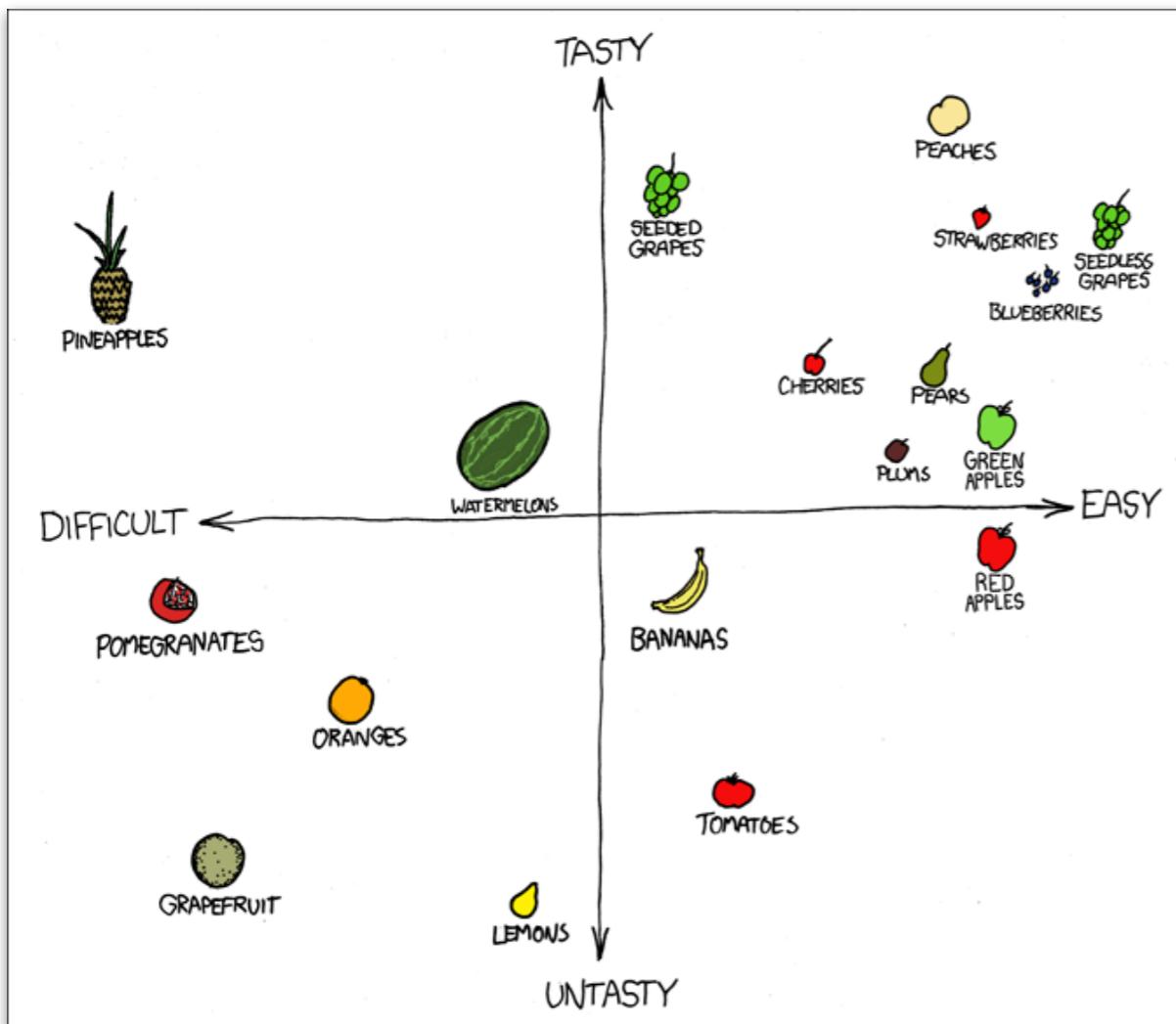


01/13/2021

Remember to
record the
lecture!



Visualization 1



Chat

What's your new COVID hobby or routine?

To: Everyone ▾

Type message here...

More ▾

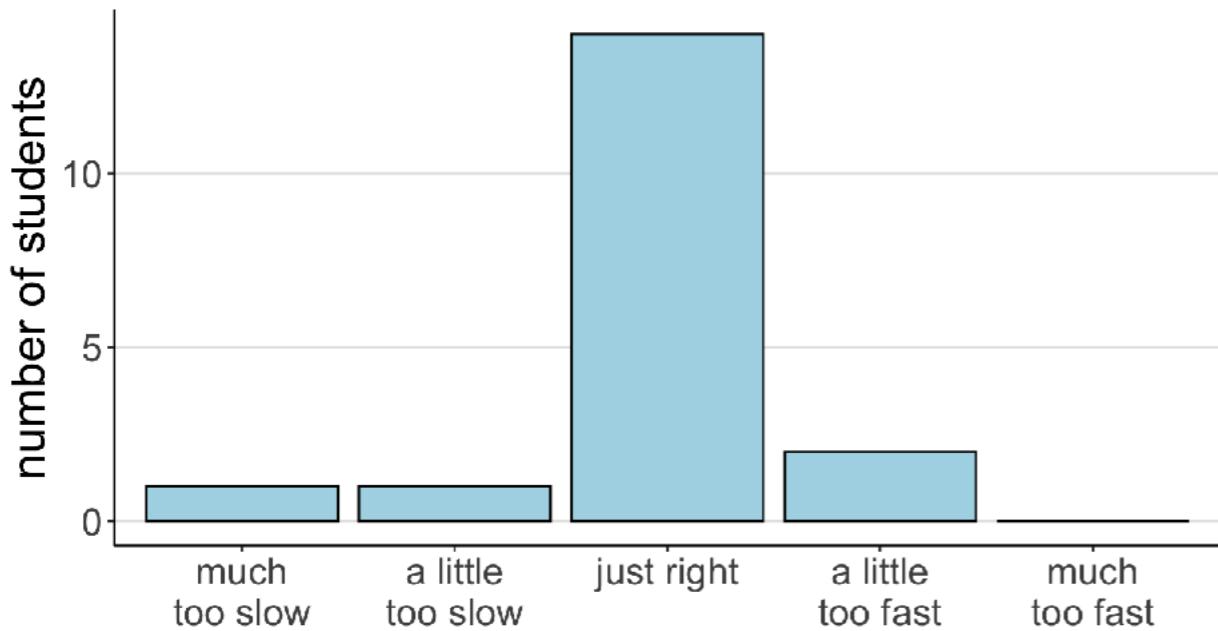


01/13/2021

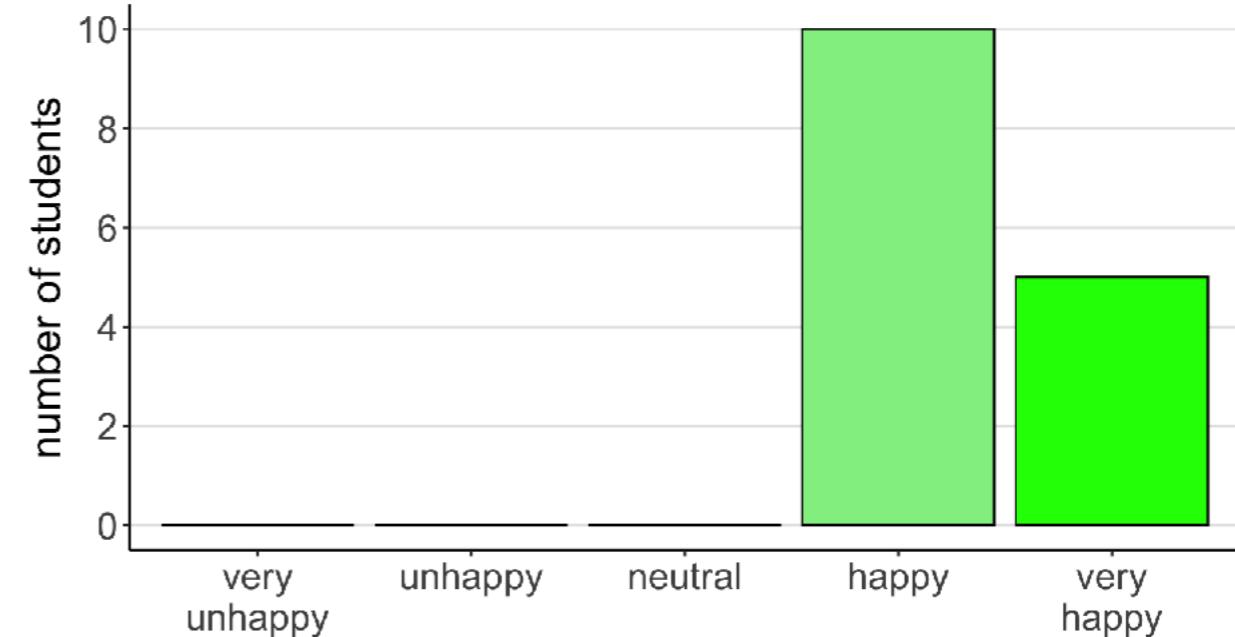
Your feedback

Your feedback

How was the pace of today's class?



How happy were you with today's class overall?



Screenshot of the Stanford University Canvas LMS interface. The left sidebar shows navigation links: Home, Course Website, Piazza, Announcements, Assignments, Files (selected), Grades, Discussions, People, Zoom, Calendar, Inbox, History, and Help. The main content area shows the course structure: Winter 2021 > W21-PSYCH-252-01 > Files > slides > 01_introduction. A search bar shows "Search for files" and "0 items selected". A file list table shows the following files:

Name	Date Created	Date Modified	Modified By	Size
01_introduction_feedback.html	7:52pm	7:52pm	Tobias Gerste...	1.3 MB
01_introduction.pdf	Yesterday	Yesterday	Tobias Gerste...	18.1 MB

The file "01_introduction_feedback.html" is circled in black.

Your feedback

01_Introduction

Tobias Gerstenberg

1/11/2021

- [Student feedback](#)
 - [PollEverywhere results](#)
- [What to do next time](#)

Student feedback

I liked the culture setting slide and wished it was introduced earlier, at the beginning of the class. It also helps to start each class with a culture setting slide (e.g., on collaborative learning and growth, emphasizing progress over “perfect” codes).

Love the transparency about anonymous feedback collection, the one minute stretch, and the acknowledge on Data camp.

i liked the breakout groups and getting to talk to new people, as well as hearing more about the teaching team.

Show 10 ▾ entries

Search:

Response

- 1 Really impressed with the slides! The stretch break was great and I appreciate the music to set the vibes in the class. Although it was fine since I didn't need (I think) to take notes this time, the pace felt a little fast for if we were reviewing concepts.
- 2 Liked having a defined break! Hope that continues :)
- 3 Love starting class with new music. Great intro to class lecture didn't feel like I'm missing any info and I know class expectations. No improvements necessary
- 4 Tobi is nice! I like how he talks
- 5 music, break , flow of class
- 6 Love the transparency about anonymous feedback collection, the one minute stretch, and the acknowledge on Data camp.

Your feedback

i liked the breakout groups and getting to talk to new people, as well as hearing more about the teaching team.

Love the transparency about anonymous feedback collection, the one minute stretch, and the acknowledge on Data camp.

I liked the culture setting slide and wished it was introduced earlier, at the beginning of the class. It also helps to start each class with a culture setting slide (e.g., on collaborative learning and growth, emphasizing progress over "perfect" codes).

we will try to keep it up!

What would you like to say about this course to a student who is considering taking it in the future?

- "It will be a lot of work, but it will teach you a lot!"
- "I would absolutely recommend taking this class. I came into this class with random/haphazard stats knowledge (ex. STATS60) and no coding experience, and I left as pretty much a convert to R and model comparison approaches."
- "It can sometimes feel like a ton of work but I advise that **you use office hours at least once**. Even if you think you don't need it. It will help you during the midterm (I struggled a bit with this) and the problem sets."
- "This is a great course to get more comfortable running your own stats and to secure proficiency in R. There is a ton of course material, though, and sometimes that felt really overwhelming. It was **hard to balance actually understanding the stats with bringing my coding skills up** to where they need to be to do this course."
- "Don't take it unless you are an R wizard before the start of the class. It is impossible to get the R skills in 2 weeks. And the class gets REALLY high level just before the midterm (and it just gets worse...)."

Feedback

Help us help you!

- ask questions in class
- use the polls at the end of class to provide feedback
- post questions on Piazza (you can post anonymously)
- send us an email (but use Piazza for questions about homework or class!)
- use anonymous feedback form
<https://tinyurl.com/psych252feedback21>
- come to sections and ask questions there
- meet us during office hours

Things that came up

Final project

Stanford University Winter 2021

Home Course Website Piazza Announcements Assignments **Files** Grades Discussions People Zoom

Search for files  0 items selected

W21-PSYCH-252-01 > Files > final_project > final_report

Name ▲ Date Created Date Modified Modified By Size

Name	Date Created	Date Modified	Modified By	Size
exams_project_report.pdf	Jan 9, 2020	Jan 9, 2020		3.8 MB
meditation_project_report.pdf	Jan 9, 2020	Jan 9, 2020		2.7 MB
sleep_project_report.pdf	Jan 9, 2020	Jan 9, 2020		8.6 MB
tunes_project_report.pdf	Jan 9, 2020	Jan 9, 2020		7.6 MB

All My Files



examples are on canvas now

Final project

Does one-night sleep predict emotional reactivity?

Sleep

2019-03-19 20:54:17

Contents

1	Background	1
2	The present research	2
2.0.1	Load data	2
2.0.2	Process task data	2
2.0.3	Process PSG data	3
2.0.4	Merge the task and PSG data	7
3	Methods	8
3.1	Participants	8
3.2	Procedures	9
3.3	Planned analyses	9
4	Results	9
4.1	Distributional information	9
4.2	Confirmatory analysis	11
4.2.1	Correlations	11
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4.2.5	Comparison among all sleep stages	20
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Final project

Background and research question

1 Background

Sleep seems to have an influence on how we function emotionally. Indeed, experimental studies have found that sleep influences how individuals react to emotional stimuli. However, existing studies diverge in the direction of the sleep-emotional reactivity relationship. For example, one study found that individuals who were sleep deprived for approximately 35 hours categorized more pictures as negative than controls who had normal nighttime sleep (Yoo et al. 2007). In contrast, a more recent study using a within-subject design found that negative pictures were rated as less negative after sleep deprivation than the baseline (Alfarra et al. 2015).

Sleep happens in cycles, and a typical sleep cycle consists of Stage 1, Stage 2, Slow Wave Sleep (SWS), and Rapid-Eye-Movement (REM) sleep. A number of studies have argued the important role of REM sleep in the relationship between sleep and emotional reactivity. For instance, Baran et al. (2012) found that higher percentage of REM sleep was correlated with the less attenuation of reactivity to previously exposed emotional stimuli, suggesting that REM sleep consolidates emotional charge. Another study using a selective

1

REM sleep deprivation paradigm found that compared to participants whose non-REM sleep was interrupted, those who were selectively deprived of REM sleep had larger reactivity to emotional stimuli (Rosales-lagarde et al. 2012). This finding, however, suggests that REM sleep seems to function in de-potentiate emotional reactivity. SWS has been found to be associated with reduced emotional reactivity even though the evidence is from only a handful of studies. For example, with the occurrence of SWS during a nap, corrugator EMG reactivity to negative stimuli was attenuated while no attenuation was observed after a nap without SWS (Pace-Schott et al. 2011). Taken together, REM sleep and SWS seem to play some roles in the relationship between sleep and emotional reactivity but existing findings are inconclusive. One reason for the mixed findings in the literature may be the small sample sizes in existing studies ($n < 30$).

2 The present research

The overarching research question of the present study is how sleep is related to emotional reactivity. We measured participants' one-night sleep with ambulatory polysomnography (PSG) and their emotional reactivity in a picture-based laboratory task. Specifically, this study seeks to understand whether total sleep time (TST) predicts the emotional reactivity, and whether certain sleep stages such as REM sleep or SWS can predict emotional reactivity beyond TST. Based on the literature, we hypothesize:

Data wrangling

2.0.3 Process PSG data

The chunk of code below shows how the PSG data was processed but is not executed to save time in knitting the document

```
## This chunk of code shows how the PSG data is processed
## but is not executed to save time in knitting the document

# the path of raw PSG data
psg_path = "Z:/SBER/SBER1_physio_R56/data/brux_scored/raw_exports"
# list and select the hypnogram data files
psg_files <- list.files(psg_path, full.names = T)
psg_txt_files <- psg_files[grep("hypno.TXT$", psg_files)]
# get the participant numbers
psg_pids <- str_sub(psg_txt_files,
                     str_length(psg_txt_files)-13,
                     str_length(psg_txt_files)-10)

##### read files and calculate the sleep staging information #####
# the raw psg data fram
df.psg <- data.frame()
# the data frame of psg summary report
df.psg_summary <- data.frame()

for (j in 1:length(psg_pids)){
  # read a single psg file
  psg <- read.csv(psg_txt_files[j]) %>%
    rename("stage" = "X.") %>%
    mutate(pid = psg_pids[j],
          time = row_number()/2) %>% # t - time in minute
    select(pid, stage, time)

  # form some cases: replace 1, 2, 3 with N1, N2, N3
  psg$stage = as.character(psg$stage)
  psg$stage[psg$stage == "1"] <- "N1"
  psg$stage[psg$stage == "2"] <- "N2"
  psg$stage[psg$stage == "3"] <- "N3"

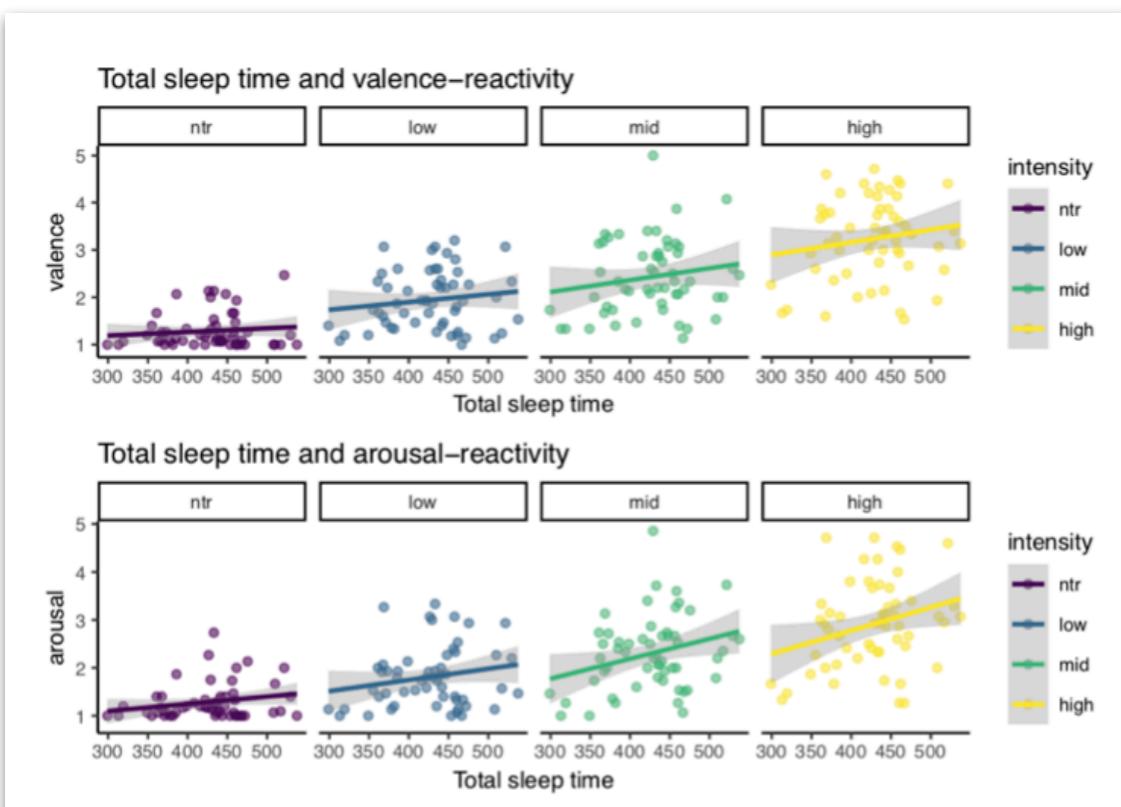
  # combine the single psg file to the whole data frame
  df.psg = rbind(df.psg, psg)

##### calculate the PSG report for each participant #####
# time point of lights out
```

Final project

Visualizations

Statistics



```
## arousal reactivity: no-interaction model
mod_tst2c <- lmer(arousal ~ psg_tst + intensity_num + (1|participant),
                     data = df.er_psg)
anova(mod_tst2c, mod_tst2)

refitting model(s) with ML (instead of REML)

Data: df.er_psg
Models:
mod_tst1c: valence ~ psg_tst + intensity_num + (1 | participant)
mod_tst1: valence ~ psg_tst * intensity_num + (1 | participant)
      Df   AIC   BIC logLik deviance Chisq Chi Df Pr(>Chisq)
mod_tst1c 5 345.92 362.98 -167.96  335.92
mod_tst1  6 345.63 366.10 -166.82  333.63 2.2868      1 0.1305
Data: df.er_psg
Models:
mod_tst2c: arousal ~ psg_tst + intensity_num + (1 | participant)
mod_tst2: arousal ~ psg_tst * intensity_num + (1 | participant)
      Df   AIC   BIC logLik deviance Chisq Chi Df Pr(>Chisq)
mod_tst2c 5 343.35 360.41 -166.68  333.35
mod_tst2  6 337.66 358.13 -162.83  325.66 7.6961      1 0.005534 **
---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

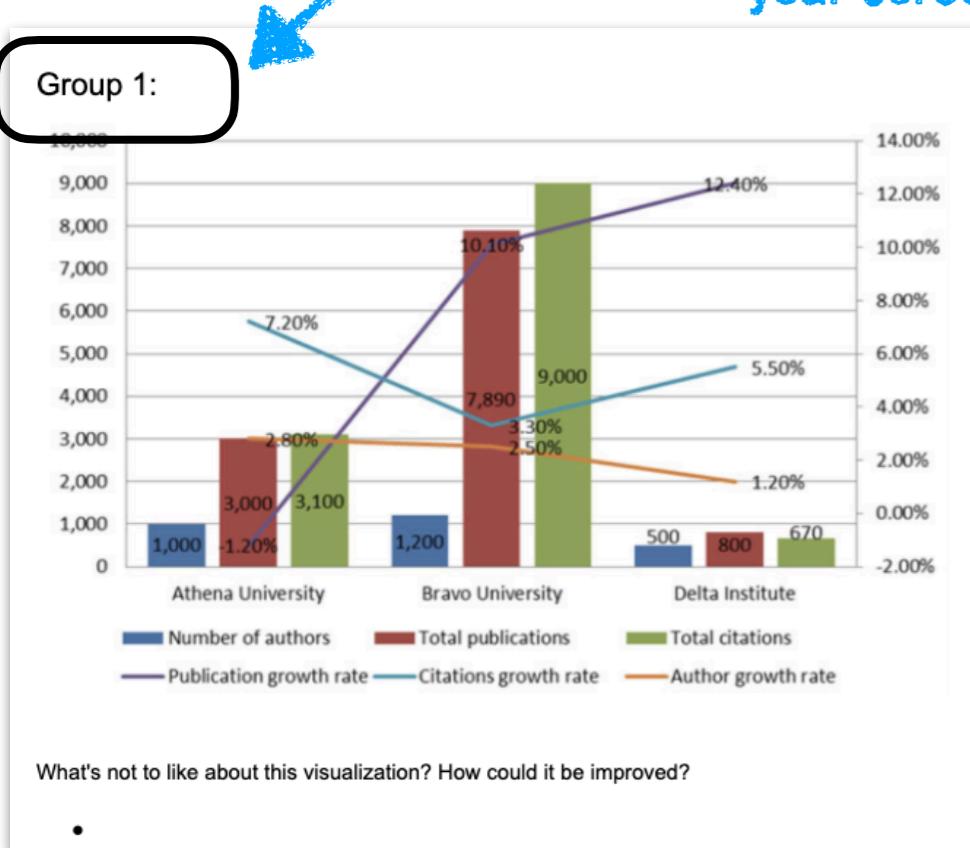
Final project

- most students in the past chose to work on the final project on their own
- you can submit a research project that you're already working on as your final project
- but you can also do something new for this class of course

Visualization

Breakout rooms

Tasks:



Size: ~4 people

Time: 8 minutes

Report: I'll ask a few groups to share with the class.



Discuss and take some notes as a group: What's not to like about the plot? How could it be improved?

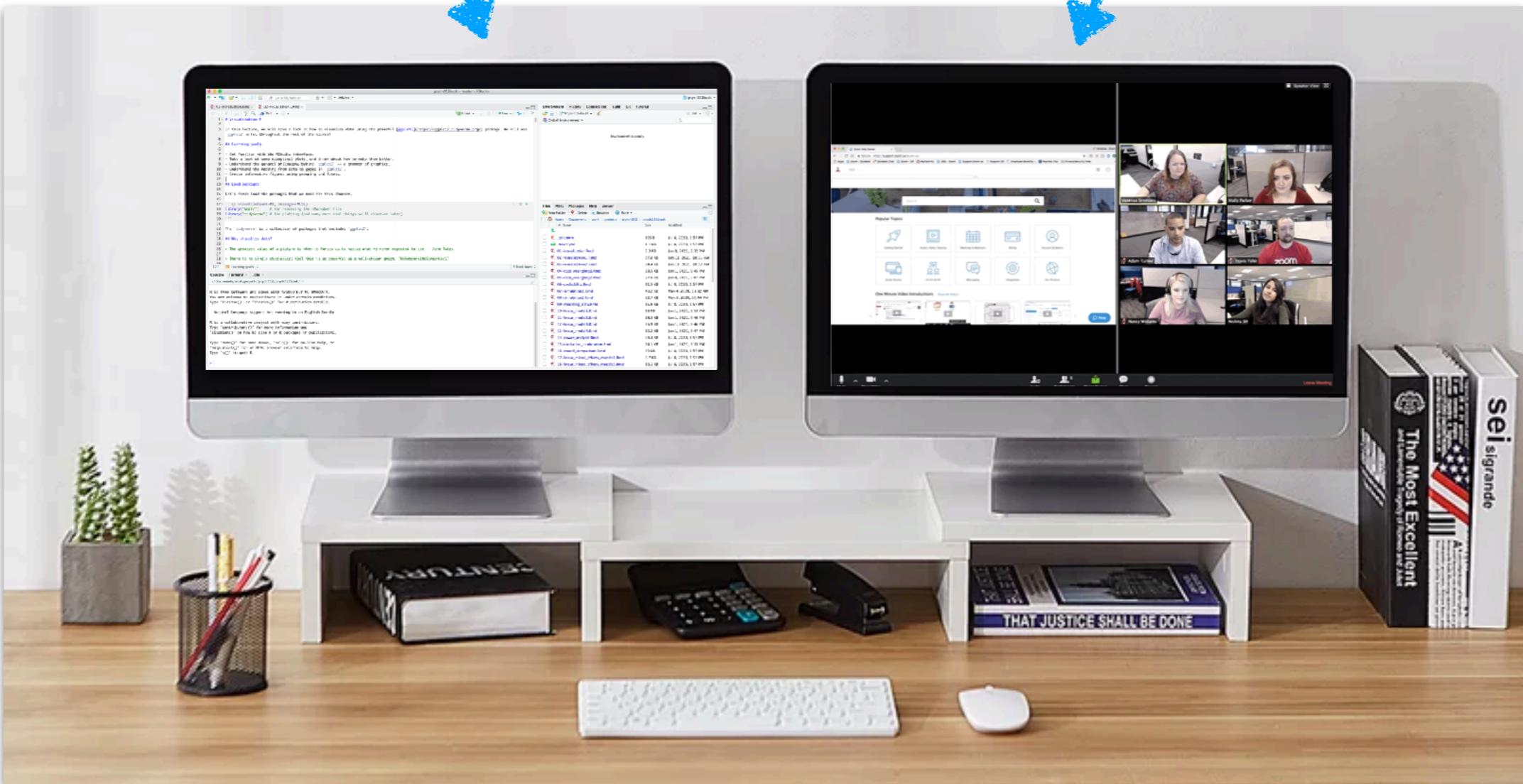
Logistics



Follow me

RStudio

Zoom



Follow me

Document outline

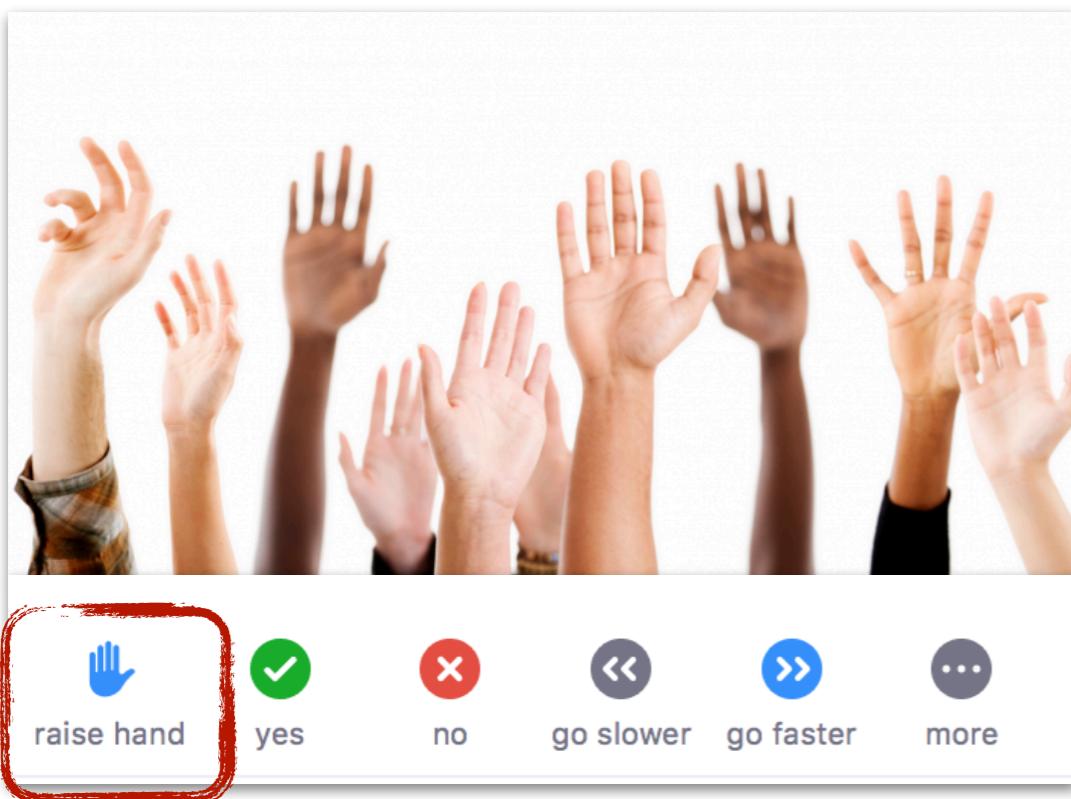
The screenshot shows the RStudio interface with the following elements:

- Document Outline:** Located on the right side of the interface, it displays a tree view of the document structure. A blue arrow points to the icon for opening the outline.
- Code Editor:** The main left pane contains an R Markdown file named "data_wrangling1.Rmd". The code includes chunks for loading packages and a section titled "# Some R basics". A blue arrow points to the "# Some R basics" chunk.
- Code Chunk Viewer:** A large window on the right displays the output of the "# Some R basics" chunk, which includes a table and some text. A blue arrow points to the top-left corner of this viewer area.
- Status Bar:** At the bottom, the status bar shows the line number (47:1), the chunk identifier ("# Some R basics"), and the mode ("R Markdown").

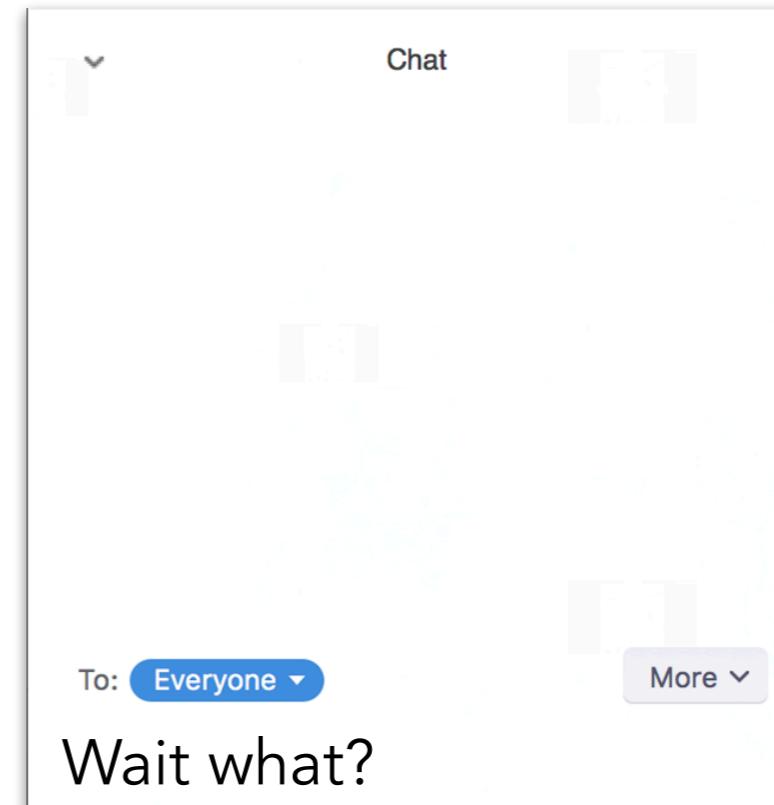
Code chunk viewer

Getting help #1

Raise hand



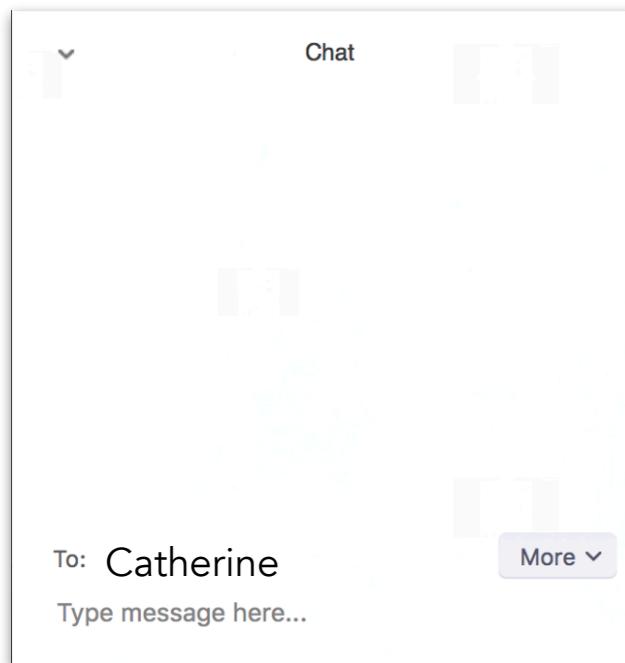
Ask in the chat



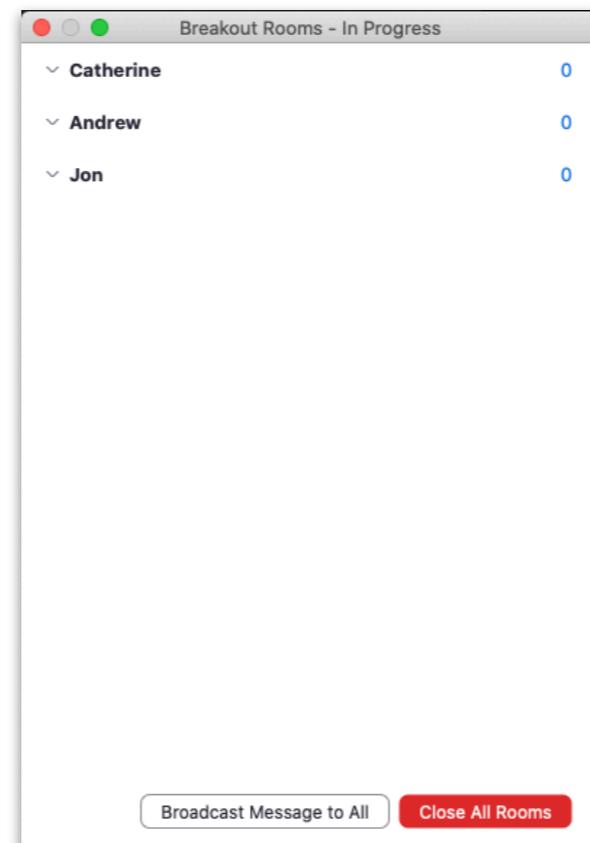
Andrew will monitor
the chat today

Getting help #2

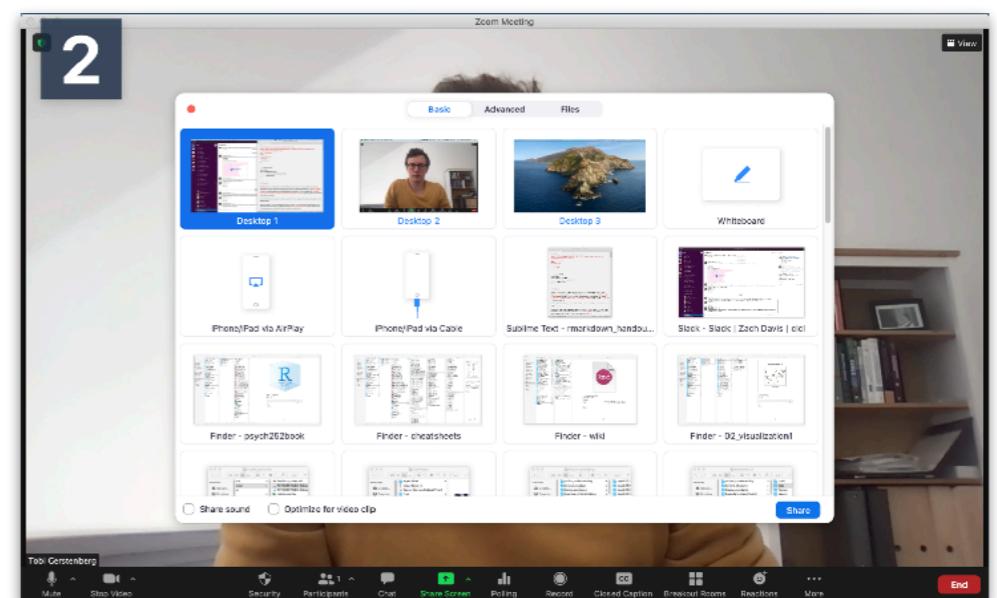
private message a TA to meet you in a breakout room



go to breakout room

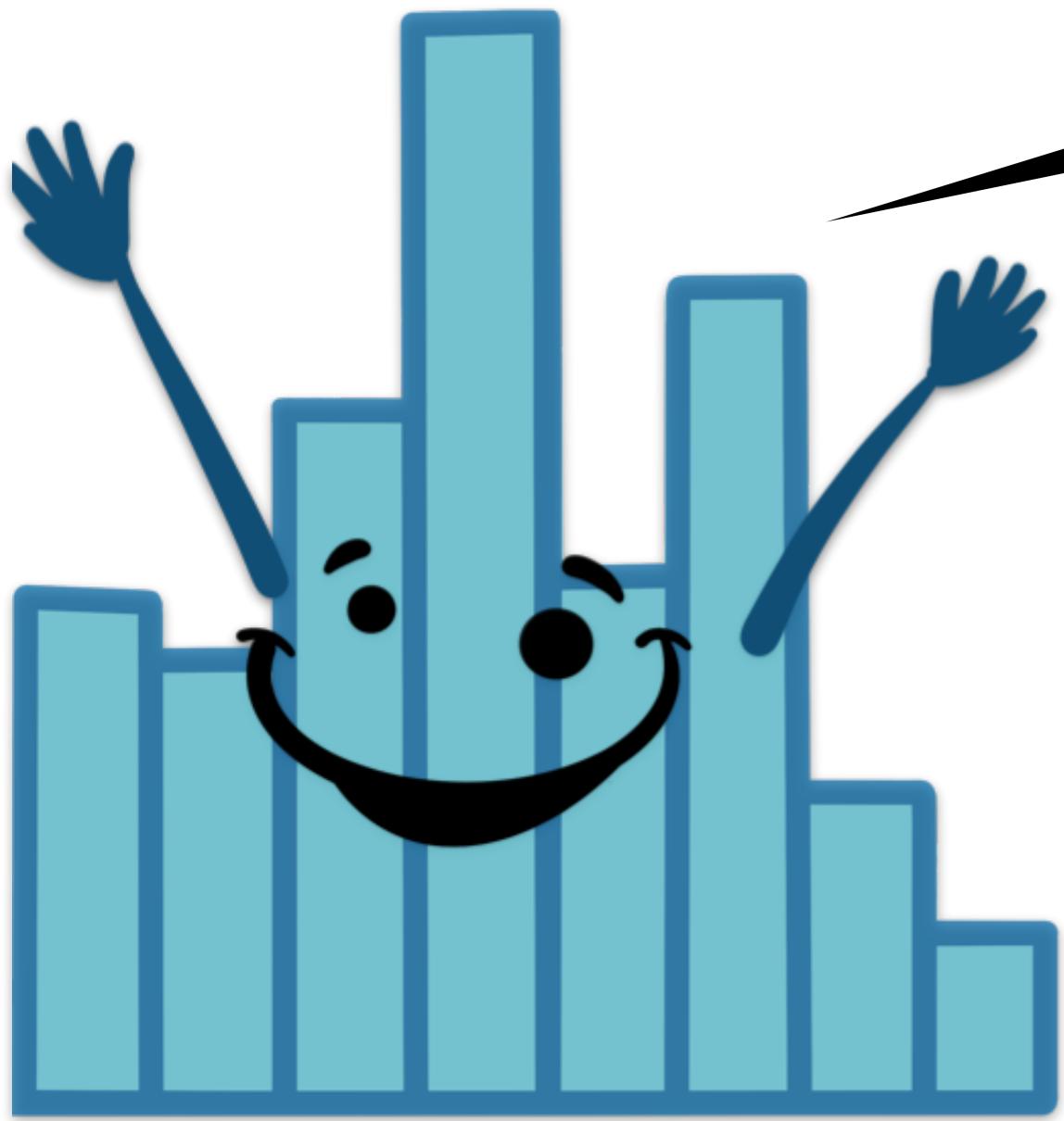


share your screen (and grant remote access if you like)



01:00

stretch break!



Feedback

How was the pace of today's class?

much a little just a little much
too too right too too
slow slow

How happy were you with today's class overall?



What did you like about today's class? What could be improved next time?

Thank you!