CogLab: Data Collection

WEEK 13

coming up

13	Thursday, November 23, 2023	**THANKSGIVING BREAK!!! NO CLASS**
14	Tuesday, November 28, 2023	W14: Odds and Ends
14	Wednesday, November 29, 2023	**Project Milestone #7 (Analyses) Due**
14	Thursday, November 30, 2023	W14 continued…
14	Sunday, December 3, 2023	**Project Milestone #8 (Poster Draft) Due**
15	Tuesday, December 5, 2023	W15: Wrapping Up
15	Thursday, December 7, 2023	**Project Milestone #9 (Poster Symposium) Due**
16	Sunday, December 17, 2023	**Project Milestone #10 (Final Report) Due**

today's agenda

- formative assignment #3 check-in

- data collection check-in

- prolific-ready study

- poster design principles

formative assignment #3

- the data are non-independent
- therefore, all models need to be lmer()
- resubmission deadline is Nov 28 midnight
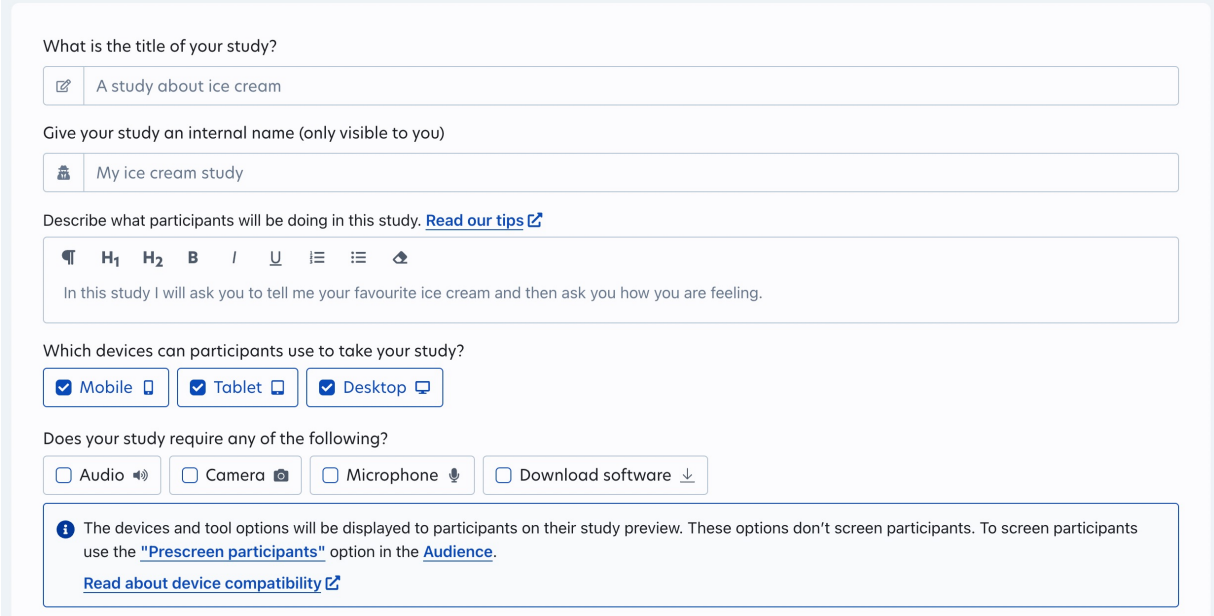
easystats universe

What is *easystats*?

easystats is a collection of R packages, which aims to provide a unifying and consistent framework to tame, discipline, and harness the scary R statistics and their pesky models.

However, there is not (yet) an *unique* "easystats" way of doing data analysis. Instead, start with one package and, when you'll face a new challenge, do check if there is an *easystats* answer for it in other packages. You will slowly uncover how using them together facilitates your life. And, who knows, you might even end up using them all.

go to prolific.co

- a team member was sent an invite to the psyc2740-23 workspace on prolific

- create a new study: same name as Sona

- description same as longer description on Sona

- only check Desktop

What is the title of your study?

| ✎ | A study about ice cream |

Give your study an internal name (only visible to you)

| 🏷 | My ice cream study |

Describe what participants will be doing in this study. Read our tips ⎘

| ¶ | H₁ | H₂ | B | I | U | ☰ | ☰ | ⌫ |

In this study I will ask you to tell me your favourite ice cream and then ask you how you are feeling.

Which devices can participants use to take your study?

☑ Mobile 📱   ☑ Tablet 🔲   ☑ Desktop 🖥

Does your study require any of the following?

☐ Audio 🔊   ☐ Camera 📷   ☐ Microphone 🎤   ☐ Download software ↓

ℹ The devices and tool options will be displayed to participants on their study preview. These options don't screen participants. To screen participants use the **"Prescreen participants"** option in the **Audience**.

Read about device compatibility ⎘

data collection

How do you want to collect your data?

Find out about common **survey**, **experiment**, **cloud based** and **open-source** integration options.

External study link	Survey builder (beta)
Provide your own URL	Create surveys with up to five questions on Prolific

How to record Prolific IDs

To link answers in your survey tool to participants in Prolific, you'll need to set up your survey tool to record our participants' unique Prolific IDs.

This enables you to match our participant **demographic data** with their answers. If you receive a poor quality submission, you can also **reject it in our platform**.

What is the URL of your study?

	https://my-awesome-ice-cream-study.com

How do you want to record Prolific IDs? *(Select an option below for instructions)*

◯ I'll add a question in my study   ◯ I'll use URL parameters   ◯ I don't need to record these

open cognition.run

- make a copy of your Sona study
- rename the study to indicate it is the prolific version

Last modified	Actions	
10th November 2023 4:34:pm	Source code	Make a copy

modify source code for prolific study

- record prolific IDs via a new plugin

- copy code from [this document]

- add the prolific_id trial at the beginning of your jsPsych.run() statement(s)

```
var prolific_id = {
    type: jsPsychSurveyText,
    preamble: "Welcome to the study!",
    questions: [
        {
            prompt: "Before you begin, please copy your unique Prolific ID and paste it in the box below",
            required: true,
            name: "prolific_id"}
    ],
    data: {
        type_of_trial: "prolific_id",
        },
    on_finish: function(data) {
            data.response = data.response.prolific_id;
    }
}
```

completion code

Completion Codes

Provide participants with a code to prove they completed your study. Add multiple codes for different reasons. Perform actions when a participant uses a code.

Communicate your code

You will need a way to communicate the completion code between your study and Prolific. As a final step in your study, you can either redirect participants OR provide a code to copy and paste.

A. Redirect participants

Set up your study to automatically send participants to the provided URL. This is the ideal experience, as we can capture the completion code in the URL, and participants are not required to take additional action.

B. Provide a code to copy and paste

Give participants a code to copy from your study to paste on Prolific.

Read more about recording participants ↗

Edit

Default ✎

Process submissions

🔘 **Manually review**
Review the submission before taking further action.

⭕ **Approve and pay**
Automatically approve the submission and pay the participant.

Redirect URL		Copy and paste code	
https://app.prolific.com/submissions/complete?cc=C1MP22ZE	Copy	C1MP22ZE	Copy

completion codes within cognition.run

- modify your thank_you plugin trial/screen
- copy code from this document
- replace XXXXX with the completion code within prolific

```
var thank_you = {
  type: jsPsychHtmlKeyboardResponse,
  stimulus: `<p>You've finished the last task. Thanks for participating!</
  If you want to learn more about this study, feel free to read this <a ta
          which explains the purpose and theory behind this research, ar
          <br><br>
  <p><a href="https://app.prolific.co/submissions/complete?cc=XXXXXXX">Cl;

      </p>`,
  choices: "NO_KEYS",
  data: {
        typeoftrial: 'thank_you'
    },
}
```

enter new cognition.run link

DATA COLLECTION

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sample

- 85 participants
- USA participants
- standard sample

RECRUIT PARTICIPANTS

Source Beta

- ◉ Find new participants on Prolific
- ○ Use a saved group of participants

Recruit participants

How many participants are you looking to recruit?

[👥 |]

Screening

How do you want to screen your participants?

- ◉ Choose new screeners
- ○ Use a saved screener set

Location

Where should your participants be located?

- ☐ 🌐 All countries available
- ☐ 🇬🇧 UK
- ☐ 🇺🇸 USA
- ☐ More

Study distribution

How do you want to distribute your sample?

Representative sample 💐	Balanced sample ▦	Standard sample ⊕
Distribute your study based on UK or USA census data.	Distribute your study evenly to male and female participants.	Distribute your study to available participants.
✓ Selected		

REPRESENTATIVE SAMPLE CRITERIA

- ◉ **United States of America**
  Factors: Sex, Age, Ethnicity (Simplified US Census)   View sample breakdown

- ○ **Political Affiliation**
  Factors: Sex, Age, Political Affiliation   View sample breakdown

screener

- select first language english

Prescreen participants

+ Add screener

ℹ️ We've found 131,221 eligible participants who have been active in the past 90 days.

Find the participants you need		131,221 eligible participants	✕

🔍 Search for screeners

Demographics	First Language	›
Work	English speaking Monolingual	›
Languages	Were you raised monolingual?	›
Other	Bilingual	›
Geographic	Fluent languages	›
Finance	Language related disorders	›
Health	Primary Language	›
Education	Earliest Language in Life	›

payment

- 15 minutes
- $3.00

STUDY COST

How long will your study take to complete?   ⓘ Max. time: 56 mins

Participants are paid according to your estimated study completion time. If the median completion time exceeds your estimate we will ask you to make additional payments. **Read more about study completion time** ↗

🕐 | 15 minutes

How much do you want to pay them?

$ | 3.00   12.00/hr

Hourly rate

$8.00 $12.00 *Good* $16.00+

review

- download the Sona data
- start scoring (creating revised_response and revised_correct columns)
- import into R
- start writing analysis code!
- DO NOT PUBLISH Prolific study until Nov 29 milestone

designing a poster

The Science of Visual Data Communication: What Works

Steven L. Franconeri[1], Lace M. Padilla[2], Priti Shah[3],
Jeffrey M. Zacks[4], and Jessica Hullman[5]

[1]Department of Psychology, Northwestern University; [2]Department of Cognitive and Information Sciences, University of California, Merced; [3]Department of Psychology, University of Michigan; [4]Department of Psychological & Brain Sciences, Washington University in St. Louis; and [5]Department of Computer Science, Northwestern University

Abstract

Effectively designed data visualizations allow viewers to use their powerful visual systems to understand patterns in data across science, education, health, and public policy. But ineffectively designed visualizations can cause confusion, misunderstanding, or even distrust—especially among viewers with low graphical literacy. We review research-backed guidelines for creating effective and intuitive visualizations oriented toward communicating data to students, coworkers, and the general public. We describe how the visual system can quickly extract broad statistics from a display, whereas poorly designed displays can lead to misperceptions and illusions. Extracting global statistics is fast, but comparing between subsets of values is slow. Effective graphics avoid taxing working memory, guide attention, and respect familiar conventions. Data visualizations can play a critical role in teaching and communication, provided that designers tailor those visualizations to their audience.

poster draft

- general tips:
  - de-clutter, keep the text to a minimum
  - use tables/figures wherever possible (procedure, results, etc.)
  - use symmetry and colors to guide the reader
  - think of what you will say and organize in a logical manner
- sample posters/resources up on course website

poster contents

- introduction
    - why is this topic important, what can we learn?
    - background & current research question
    - ideas: venn diagrams, smart art, etc.
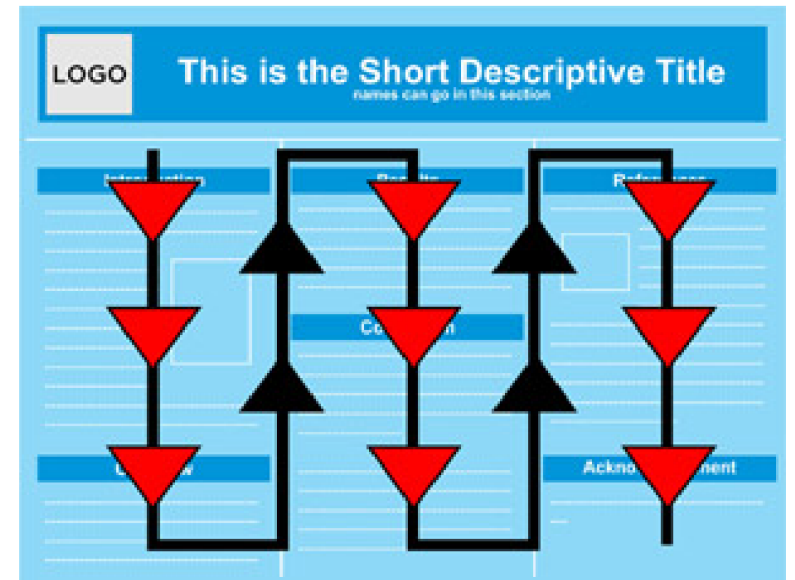- methods
    - IV/DV, items, counterbalancing etc.
    - ideas: design figure, sample trial, etc.
- analysis
    - statistical tests & results, inclusion/exclusion criteria, etc
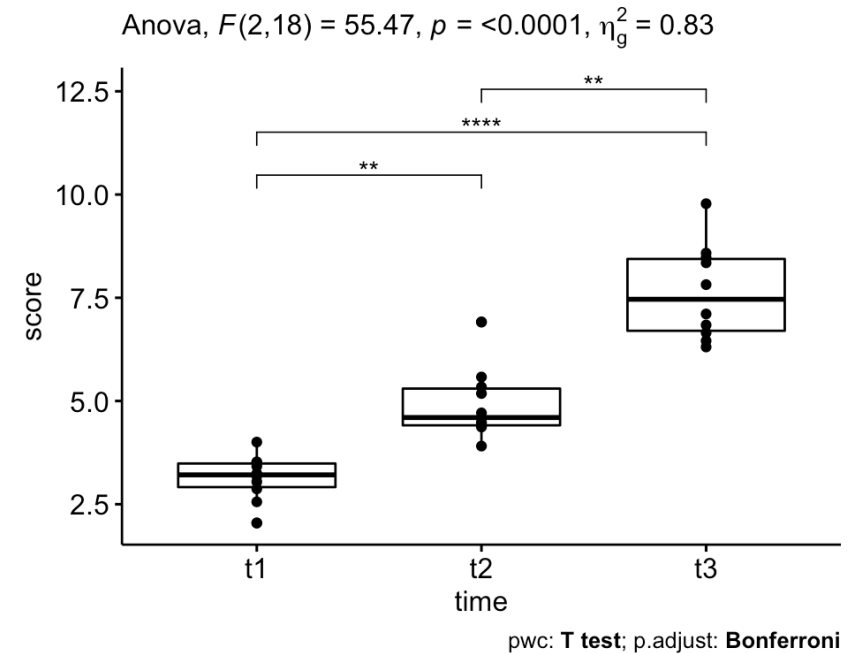   - ideas: tables, datanovia figure with p-values, regular figure
- conclusion / future steps
    - small and picture: what did you learn? where do you see it going?

statistics in posters

- **less text**, more images & numbers

- use the same format to report statistics but edit out all the text and **point to figures**

Anova, $F(2,18) = 55.47$, p = <0.0001, η^2_g = 0.83

pwc: **T test**; p.adjust: **Bonferroni**

next time

- **before** class
    - *complete:* Week 13 quiz (inferences, due Nov 28)
    - *monitor:* data collection on Sona + Prolific
    - *work on:* project milestone #7 (analyses, due Nov 29)
- **during** class (Nov 28)
    - understand and plotting variation
    - poster design