GG606

Workflows

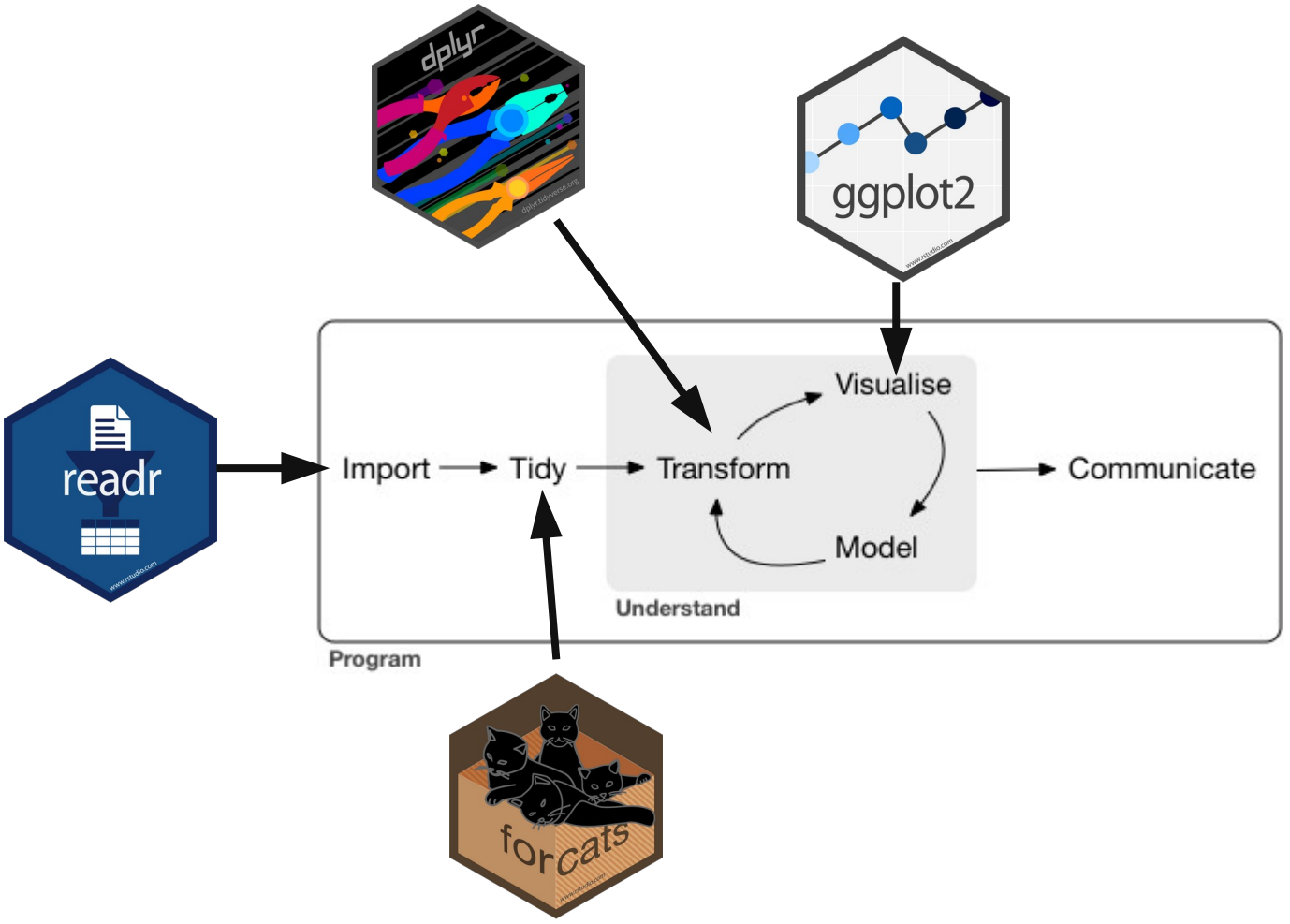
Homework

- `install.packages("palmerpenguins")`
- Make some interesting plots with new `geom_` and try out some `theme_`
- ggplot2.tidyverse.org
- Try out `ggsave`
- pangaea.de & www.frdr-dfdr.ca

Homework

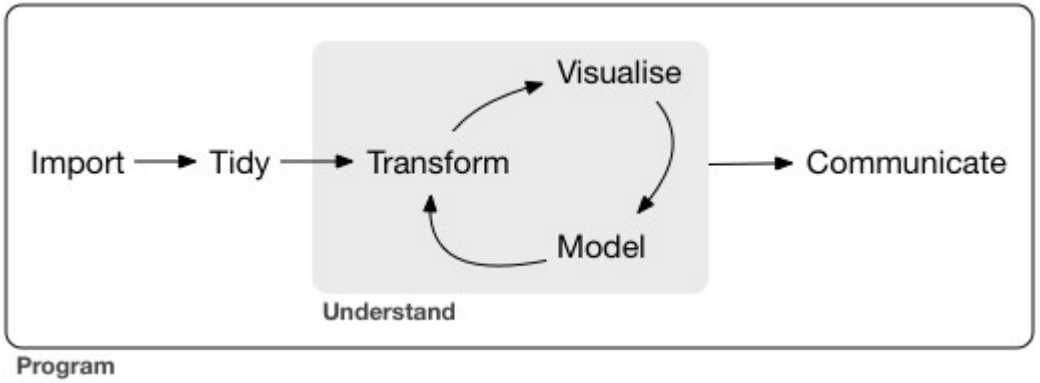
Workflows

- Organisation
- Reproducible
- Inputs & Outputs
- R-Script vs R-Markdown vs Function


dplyr
ggplot2
readr
Import
Tidy
Transform
Visualise
Model
Communicate
Understand
Program
forcats

R-Script

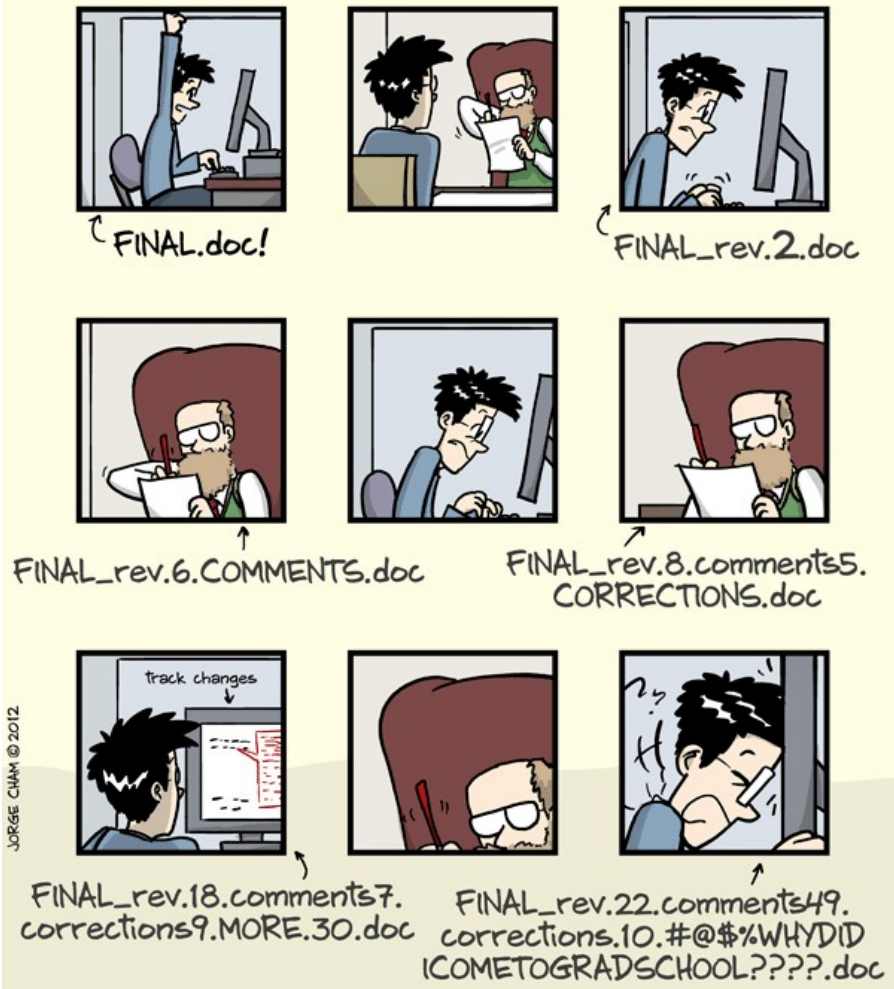
- File > New File > R Script
- Series of command *and comments*
- Sequence & Story



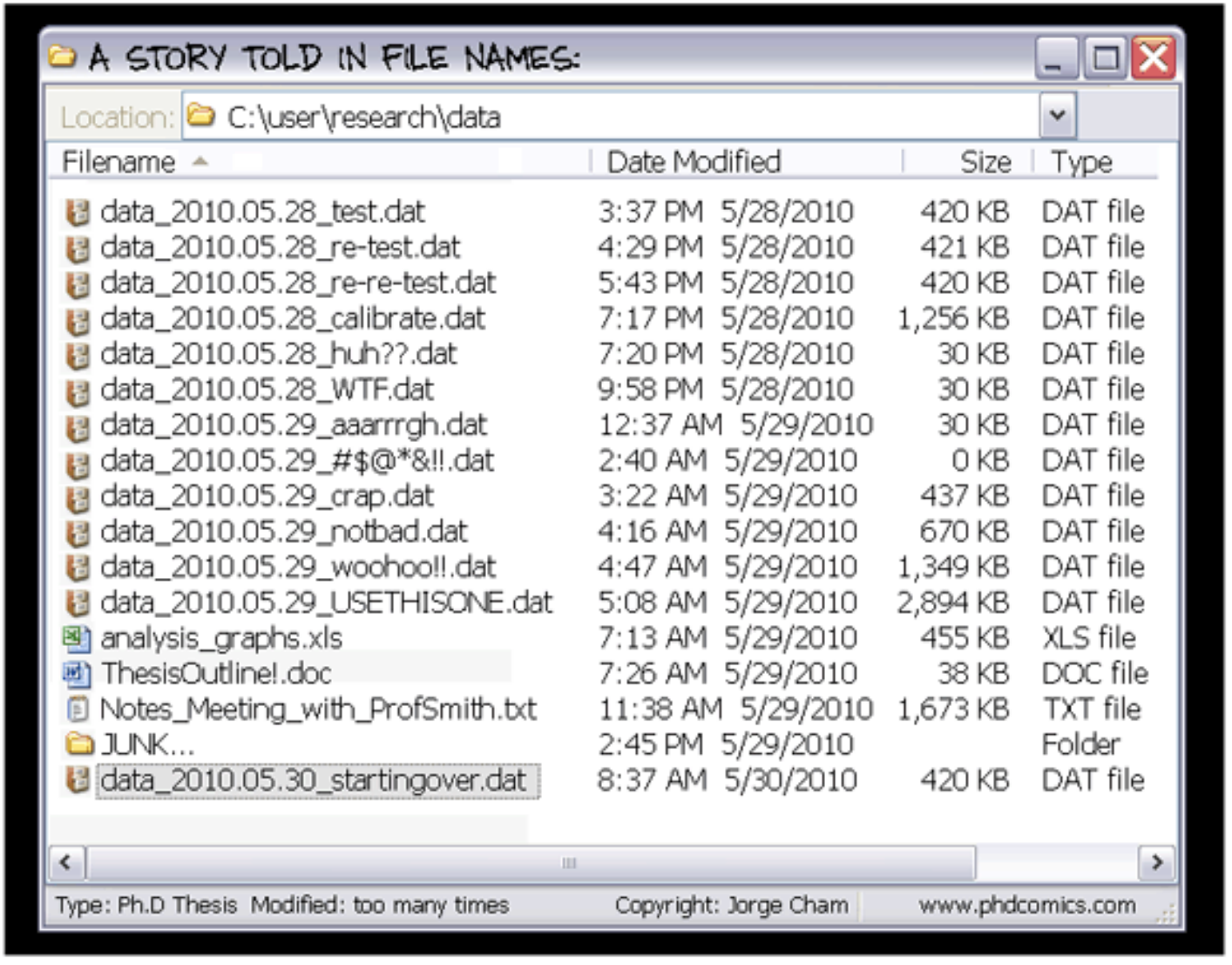
New Computer/Collaborator

- You are your own (future|past) collaborator
- *New computer?*
- *Sent files to collaborators?*

"FINAL".doc



WWW.PHDCOMICS.COM


A STORY TOLD IN FILE NAMES:
Location: C:\user\research\data
Filename
Date Modified
Size
Type
data_2010.05.28_test.dat 3:37 PM 5/28/2010 420 KB DAT file
data_2010.05.28_re-test.dat 4:29 PM 5/28/2010 421 KB DAT file
data_2010.05.28_re-re-test.dat 5:43 PM 5/28/2010 420 KB DAT file
data_2010.05.28_calibrate.dat 7:17 PM 5/28/2010 1,256 KB DAT file
data_2010.05.28_huh??.dat 7:20 PM 5/28/2010 30 KB DAT file
data_2010.05.28_WTF.dat 9:58 PM 5/28/2010 30 KB DAT file
data_2010.05.29_aaarrrgh.dat 12:37 AM 5/29/2010 30 KB DAT file
data_2010.05.29_#$@*&!!.dat 2:40 AM 5/29/2010 0 KB DAT file
data_2010.05.29_crap.dat 3:22 AM 5/29/2010 437 KB DAT file
data_2010.05.29_notbad.dat 4:16 AM 5/29/2010 670 KB DAT file
data_2010.05.29_woohoo!!.dat 4:47 AM 5/29/2010 1,349 KB DAT file
data_2010.05.29_USETHISONE.dat 5:08 AM 5/29/2010 2,894 KB DAT file
analysis_graphs.xls 7:13 AM 5/29/2010 455 KB XLS file
ThesisOutline!.doc 7:26 AM 5/29/2010 38 KB DOC file
Notes_Meeting_with_ProfSmith.txt 11:38 AM 5/29/2010 1,673 KB TXT file
JUNK... 2:45 PM 5/29/2010 Folder
data_2010.05.30_startingover.dat 8:37 AM 5/30/2010 420 KB DAT file
Type: Ph.D Thesis Modified: too many times
Copyright: Jorge Cham
www.phdcomics.com

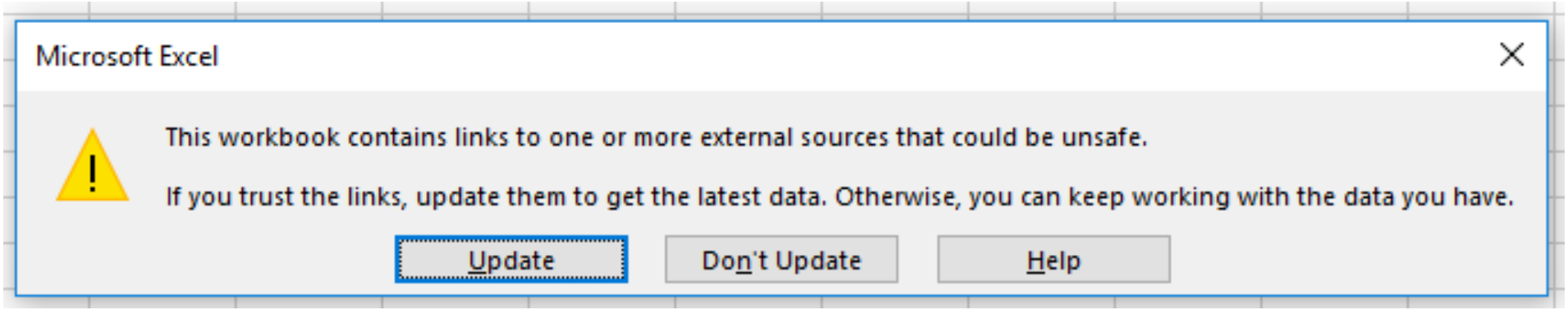
New Computer/Collaborator

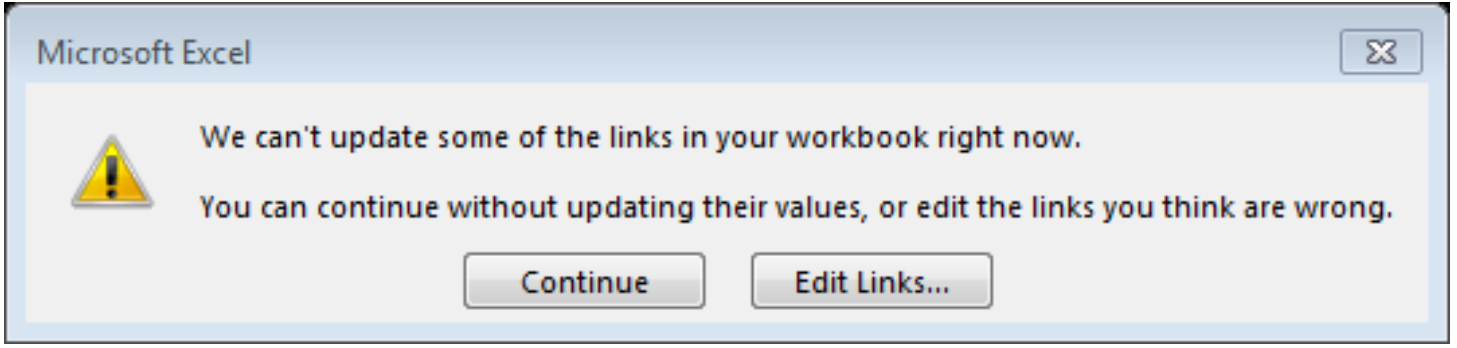
- Will your files always be here?
- Where should your data, code, outputs go?
- File paths can be a nightmare

New Computer/Collaborator

- Will your files always be here?
- Where should your data, code, outputs go?
- File paths can be a nightmare
- RStudio Project helps

```
> getwd()
[1] "/home/jason/school/Laurier teaching/GG606 Winter 2023"
```


Microsoft Excel
This workbook contains links to one or more external sources that could be unsafe.
If you trust the links, update them to get the latest data. Otherwise, you can keep working with the data you have.
Update
Don't Update
Help


Microsoft Excel
We can't update some of the links in your workbook right now.
You can continue without updating their values, or edit the links you think are wrong.
Continue
Edit Links...

Project-Oriented Workflow

- Commands
- R Scripts (series of commands)
- R Project (series of related things)
- `here` package
  (project-oriented workflow & portability)

github.com/allisonhorst

"~/mm/nope.csv"
non-portable pa
setwd("/haha/good/luck/")
"/NOT/HERE"
Setwd("C:\userlohln
setwd("c:/iamyournightmare/!")

here

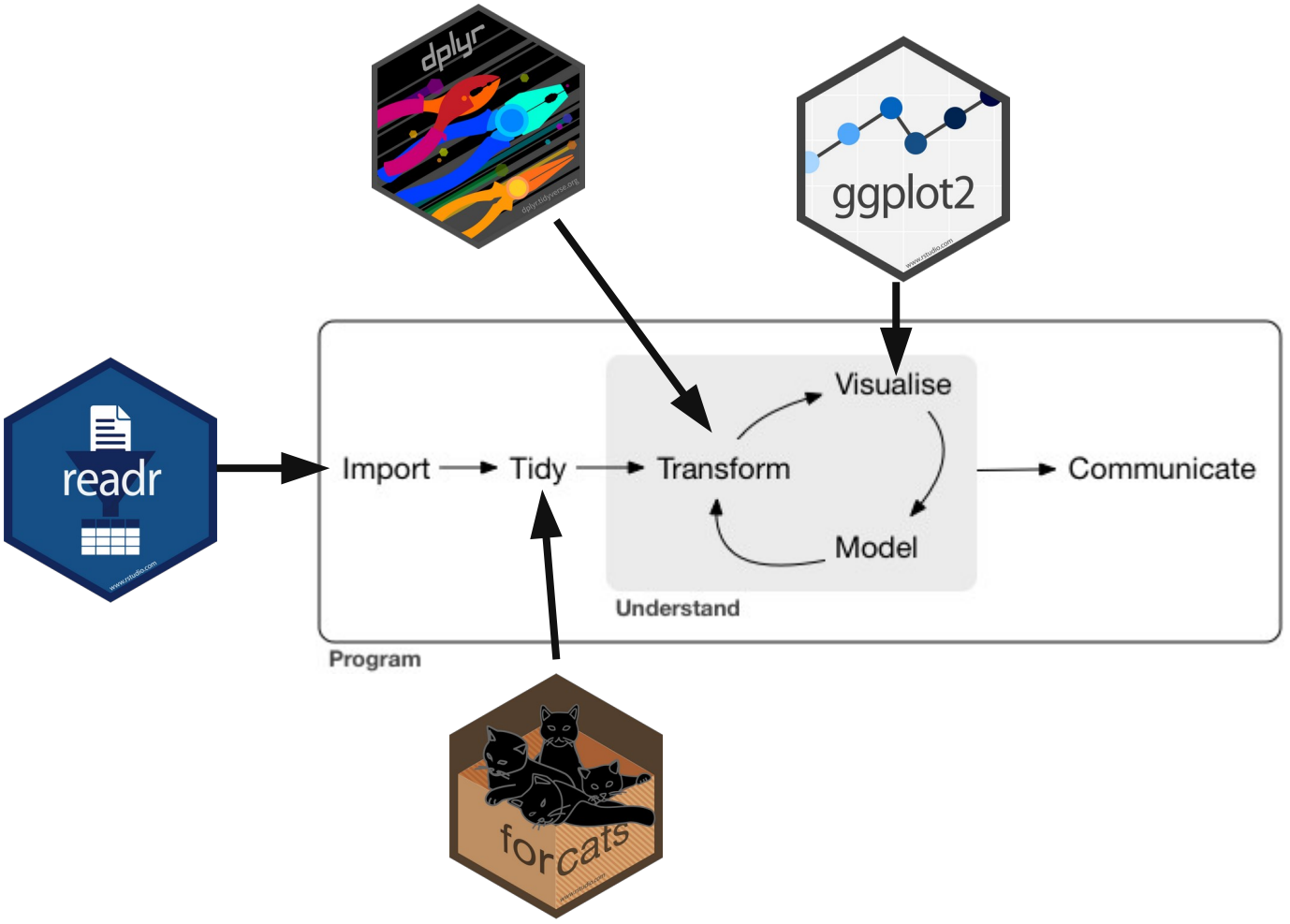
- It figures out *real* path to project

  - `"C:\Users\jenny\path\that\only\I\have"`
  - `"/Users/jenny/cuddly_broccoli/verbose_funicular/foofy/data"`

here

- It figures out *real* path to project

  - `here("folder", "file")`
  - `ggsave(here("figures", "beak_size_by_species.pdf"))`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Template

- What folders do you want in each project?
- Inputs & Outputs
- Code
- Documents

Build a basic template

readr
www.rstudio.com

Wrap Up

- Make folders that make sense
- Put a data file in there
- `library(readr)`
- `read_csv()` for your found data and `penguins_raw.csv`
- Update your code to use `here`, load data, save figures
- Think about metadata

Why are Jenny Bryan & Timothée Poisot So Worked Up?

If the first line of your R script is

```
setwd("C:\Users\jenny\path\that\only\I\have")
```

I* will come into your office and
SET YOUR COMPUTER ON FIRE 🔥.

* or maybe Timothée Poisot will

If the first line of your R script is

```
rm(list = ls())
```

I will come into your office and
SET YOUR COMPUTER ON FIRE 🔥.

Homework

- folder structure for the workflow
  - we spoke about keeping raw data separate from processed data and keeping figures and/or tables together)
- use the `here` package and function
- R script to load data from pangaea.de or www.frdr-dfdr.ca
  - example, `read_csv(here("folder", "file"))`
- create and save a figure to an appropriate folder
  - hint, use the `ggsave` and `here` functions
- look at the metadata fields & make list of metadata required to deposit data