How I became an R lady

(and why I still am)

Molly Lewis

University of Chicago/University of Wisconsin-Madision

Chicago R-Ladies
18 July 2017

About me

https://home.uchicago.edu/~mollylewis

About me

`https://home.uchicago.edu/~mollylewis`

- Post-doctoral scholar interested in language acquistion and language evolution

About me

`https://home.uchicago.edu/~mollylewis`

- Post-doctoral scholar interested in language acquistion and language evolution
- Graduate training in cognitive and developmental psychology at Stanford University

About me

`https://home.uchicago.edu/~mollylewis`

- Post-doctoral scholar interested in language acquistion and language evolution
- Graduate training in cognitive and developmental psychology at Stanford University
- Conduct online and in-lab behavioral experiments, and repurpose existing large datasets to explore theoretical questions ("computational social science")

About me

`https://home.uchicago.edu/~mollylewis`

- Post-doctoral scholar interested in language acquistion and language evolution
- Graduate training in cognitive and developmental psychology at Stanford University
- Conduct online and in-lab behavioral experiments, and repurpose existing large datasets to explore theoretical questions ("computational social science")
- Currently studying developmental shifts and cross-linguistic variability in semantic space with Gary Lupyan (UW-Madision) and James Evans (Knowledge Lab, U. Chicago)

How I became an R lady

How I became an R lady

How I became an R lady

- Introduced to R in intro statistics class in undergrad

How I became an R lady

- Introduced to R in intro statistics class in undergrad
- My first programming language

How I became an R lady

- Introduced to R in intro statistics class in undergrad
- My first programming language
- As I began doing my own research, slowly acquired more skills

How I became an R lady

- Introduced to R in intro statistics class in undergrad
- My first programming language
- As I began doing my own research, slowly acquired more skills
- Attractive to new programmers because:

How I became an R lady

- Introduced to R in intro statistics class in undergrad
- My first programming language
- As I began doing my own research, slowly acquired more skills
- Attractive to new programmers because:
  (1) logistical stuff is easy (i.e. package management)

How I became an R lady

- Introduced to R in intro statistics class in undergrad
- My first programming language
- As I began doing my own research, slowly acquired more skills
- Attractive to new programmers because:
  (1) logistical stuff is easy (i.e. package management)
  (2) active online community

How I became an R lady

- Introduced to R in intro statistics class in undergrad
- My first programming language
- As I began doing my own research, slowly acquired more skills
- Attractive to new programmers because:
  (1) logistical stuff is easy (i.e. package management)
  (2) active online community
  (3) well-documented (see `browseVignettes()`)

How I became an R lady

- Introduced to R in intro statistics class in undergrad
- My first programming language
- As I began doing my own research, slowly acquired more skills
- Attractive to new programmers because:
  (1) logistical stuff is easy (i.e. package management)
  (2) active online community
  (3) well-documented (see `browseVignettes()`)
  (4) open source

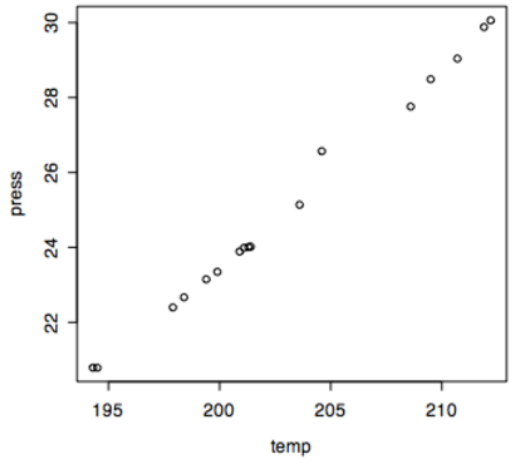
How I became an R lady

- Introduced to R in intro statistics class in undergrad
- My first programming language
- As I began doing my own research, slowly acquired more skills
- Attractive to new programmers because:
  (1) logistical stuff is easy (i.e. package management)
  (2) active online community
  (3) well-documented (see `browseVignettes()`)
  (4) open source

Molly Lewis
Math 141
4/10/08

REGRESSION
Homework

1. Scatterplot: press vs. temp



...and why I still am

- Rapidly growing library of package resources (12,351 this morning)

...and why I still am

- Rapidly growing library of package resources (12,351 this morning)
  - `http://www.crantastic.org/`

...and why I still am

- Rapidly growing library of package resources (12,351 this morning)
  - `http://www.crantastic.org/`
  - `https://github.com/ropenscilabs/packagemetrics`

...and why I still am

- Rapidly growing library of package resources (12,351 this morning)
  - `http://www.crantastic.org/`
  - `https://github.com/ropenscilabs/packagemetrics`
- Including packages that allow you to interface with other languages (e.g., `reticulate`, `feather`), and APIs (e.g., `googleway`, `twitteR`)

...and why I still am

- Rapidly growing library of package resources (12,351 this morning)
  - `http://www.crantastic.org/`
  - `https://github.com/ropenscilabs/packagemetrics`
- Including packages that allow you to interface with other languages (e.g., `reticulate`, `feather`), and APIs (e.g., `googleway`, `twitteR`)
- tidyverse - Hadley Wickham

...and why I still am

- Rapidly growing library of package resources (12,351 this morning)
  - `http://www.crantastic.org/`
  - `https://github.com/ropenscilabs/packagemetrics`
- Including packages that allow you to interface with other languages (e.g., `reticulate`, `feather`), and APIs (e.g., `googleway`, `twitteR`)
- tidyverse - Hadley Wickham

- **Powerful graphical tools**—allows graphics to be exploration tool *for the researcher*, rather than just a tool for communicating research

...and why I still am

- Rapidly growing library of package resources (12,351 this morning)
  - `http://www.crantastic.org/`
  - `https://github.com/ropenscilabs/packagemetrics`
- Including packages that allow you to interface with other languages (e.g., `reticulate`, `feather`), and APIs (e.g., `googleway`, `twitteR`)
- tidyverse - Hadley Wickham

- **Powerful graphical tools**—allows graphics to be exploration tool *for the researcher*, rather than just a tool for communicating research
  - ggplot (grammar of graphics)

...and why I still am

- Rapidly growing library of package resources (12,351 this morning)
  - `http://www.crantastic.org/`
  - `https://github.com/ropenscilabs/packagemetrics`
- Including packages that allow you to interface with other languages (e.g., `reticulate`, `feather`), and APIs (e.g., `googleway`, `twitteR`)
- tidyverse - Hadley Wickham

- **Powerful graphical tools**—allows graphics to be exploration tool *for the researcher*, rather than just a tool for communicating research
  - ggplot (grammar of graphics)
  - Shiny (web application framework)

Shiny in my own research

- Why do the world's languages vary so drastically?

Shiny in my own research

- Why do the world's languages vary so drastically?
- One answer: Languages vary because the people who speak them differ!

Shiny in my own research

- Why do the world's languages vary so drastically?
- One answer: Languages vary because the people who speak them differ!
- But, languages and people differ in so many ways...

Shiny in my own research

- Why do the world's languages vary so drastically?
- One answer: Languages vary because the people who speak them differ!
- But, languages and people differ in so many ways...
- Exploring the hypothesis with an interactive Shiny App:

Source: `https://github.com/mllewis/langLearnVar/tree/master/app`

Shiny in my own research

- Why do the world's languages vary so drastically?
- One answer: Languages vary because the people who speak them differ!
- But, languages and people differ in so many ways...
- Exploring the hypothesis with an interactive Shiny App:

`https://mlewis.shinyapps.io/lnhBrowser/`

Source: `https://github.com/mllewis/langLearnVar/tree/master/app`

Building a Shiny App

- No web development knowledge necessary

Building a Shiny App

- No web development knowledge necessary
- Structure of an app:

Building a Shiny App

- No web development knowledge necessary
- Structure of an app:
  - 2 files in directory named "my_app/"

Building a Shiny App

- No web development knowledge necessary
- Structure of an app:
  - 2 files in directory named `"my_app/"`
  - user-interface script (`ui.R`) - control layout

Building a Shiny App

- No web development knowledge necessary
- Structure of an app:
  - 2 files in directory named `"my_app/"`
  - user-interface script (`ui.R`) - control layout
  - server script (`server.R`) - code to build app

Building a Shiny App

- No web development knowledge necessary
- Structure of an app:
  - 2 files in directory named `"my_app/"`
  - user-interface script (`ui.R`) - control layout
  - server script (`server.R`) - code to build app
- Running the app:

Building a Shiny App

- No web development knowledge necessary
- Structure of an app:
  - 2 files in directory named `"my_app/"`
  - user-interface script (`ui.R`) - control layout
  - server script (`server.R`) - code to build app
- Running the app:
  - `install.packages("shiny")`; `library(shiny)`

Building a Shiny App

- No web development knowledge necessary
- Structure of an app:
  - 2 files in directory named `"my_app/"`
  - user-interface script (`ui.R`) - control layout
  - server script (`server.R`) - code to build app
- Running the app:
  - `install.packages("shiny"); library(shiny)`
  - `runApp("my_app")`

Building a Shiny App

- No web development knowledge necessary
- Structure of an app:
  - 2 files in directory named `"my_app/"`
  - user-interface script (`ui.R`) - control layout
  - server script (`server.R`) - code to build app
- Running the app:
  - `install.packages("shiny")`; `library(shiny)`
  - `runApp("my_app")`
- Work flow: Develop locally, then deploy online to `shinyapps.io`

Building a Shiny App

- No web development knowledge necessary
- Structure of an app:
  - 2 files in directory named `"my_app/"`
  - user-interface script (`ui.R`) - control layout
  - server script (`server.R`) - code to build app
- Running the app:
  - `install.packages("shiny")`; `library(shiny)`
  - `runApp("my_app")`
- Work flow: Develop locally, then deploy online to `shinyapps.io`
- Integrated with RStudio

Building a Shiny App

- No web development knowledge necessary
- Structure of an app:
  - 2 files in directory named `"my_app/"`
  - user-interface script (`ui.R`) - control layout
  - server script (`server.R`) - code to build app
- Running the app:
  - `install.packages("shiny"); library(shiny)`
  - `runApp("my_app")`
- Work flow: Develop locally, then deploy online to `shinyapps.io`
- Integrated with RStudio
- Online tutorials `https://shiny.rstudio.com/tutorial/`

Thanks!

Email: mollyllewis@gmail.com
Github: https://github.com/mllewis
Webpage: https://home.uchicago.edu/~mollylewis