# POLS-Y 575

## Political Data Analysis I

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August 28, 2024

Indiana University

# Introductions

- Your instructor

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- Your instructor
  - Me (Caleb Lucas)

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  - Briefly: if you could have access to any data you can think of for your research, what would you choose?

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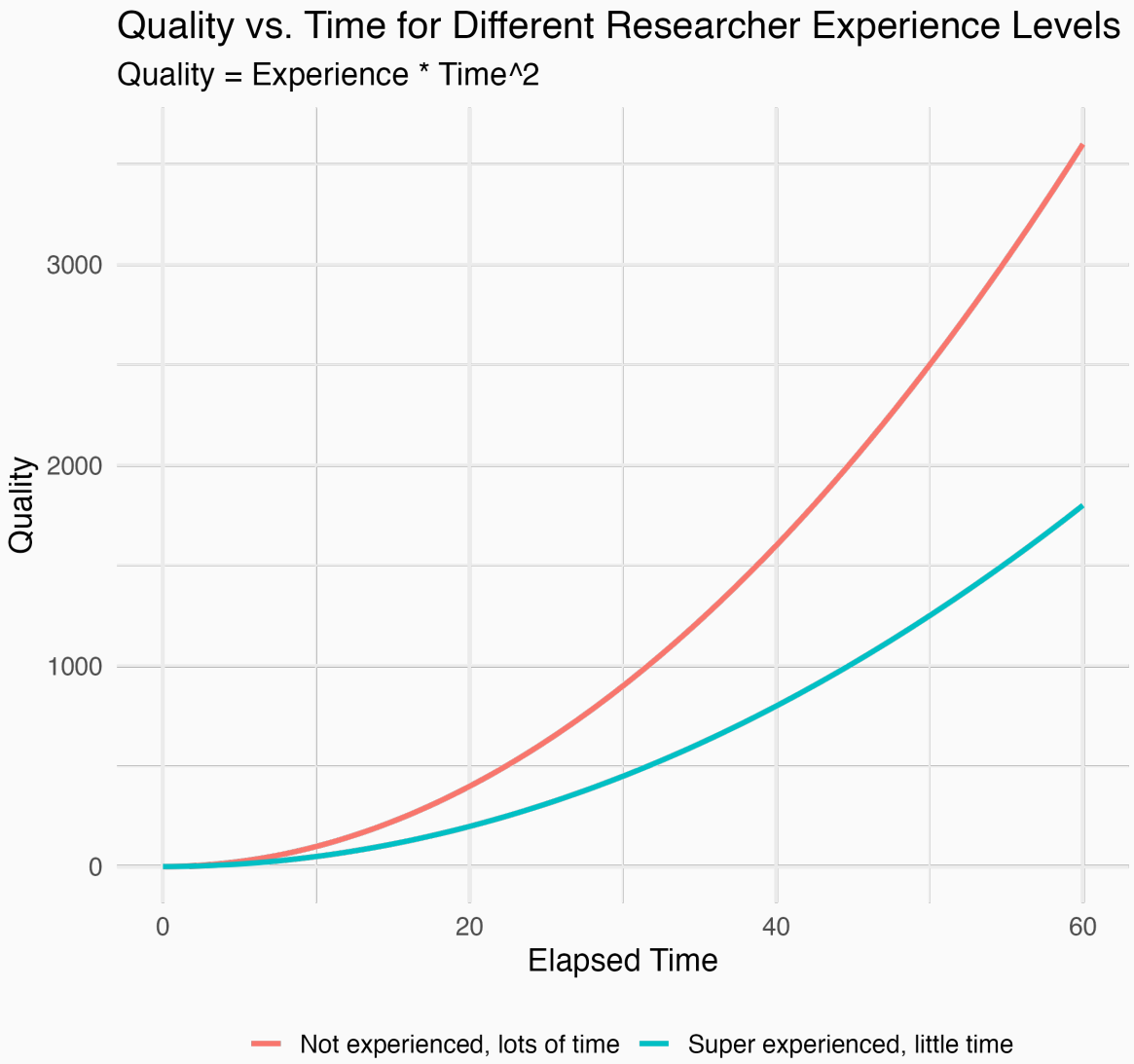
- Professionalization

# Importance of Effort for Research (and PhD-getting)



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- Statistical literacy now mandatory to be informed consumer of social science

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- Becoming the de facto programming language of political science

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  - *Learn* R
- Programming scripts enable **reproducible research**

# For Today

1. Questions?
2. Syllabus Review
3. Pre-test
4. Programming Lab

# Functions in R

- Sets of statements organized together to perform a specific task
- R has built-in functions and users can create their own functions
- Incredibly useful:
  - Provide a set of inputs, receive a consistent output
  - Allows Decreases repetition in code (and possibility of errors)
  - Easy to recycle
  - Easy to edit multiple calls (relative to repetition)
  - Protects the objects within it (more on that)

# Functions in R

You have been using functions! All the dplyr verbs:

```
dplyr::group_by(country,year)
```

And those base R calls as well:

```
sum(c(1:4))
```

But what are ‘arguments’ exactly? When do we need to name them?

# Parts of Functions

1. Function Name: Actual name of function/object. Stored in R environment.
2. Arguments: Fancy placeholders. When you use a function, you pass a value to the argument for function to use. Sometimes optional (if there is default), sometimes required.
3. Function Body: The collection of statements that defines what the function does.
4. Return value: The last expression in the function body to be evaluated or what is passed explicitly

# Function Formula

```
function(arglist){body}
```

```
function_name <- function(arguments){
  computations on the arguments
  some other code
  return(value)
}

# return without using return() explicitly
function_name <- function(arguments){
  computations on the arguments
  some other code
  value
}
```