intro

Adam Okulicz-Kozaryn

adam.okulicz.kozaryn@gmail.com

this version: Thursday 19th January, 2023 14:44

outline

why data science?

stata v sas v r v python

python: fun and useful

[*] bonus–data sources [skim quickly; look at home more]

introductions

- `https://theaok.github.io` and my goog sch
- what data and vis i have been using

  eg py map in livability paper, scatterplots
- if your res is similar, i can help more
-
- you? (see if others overlap: collaborate!):
  - research interests
  - software
  - and data?

outline

why data science?

stata v sas v r v python

python: fun and useful

[*] bonus–data sources [skim quickly; look at home more]

data revolution!!

- ◇ most jobs/tasks require or benefit from programming
- ◇ qualitative data (pictures, text, etc.) are just rich quantitative data and can be analyzed like quantitative!
- everything can be quantified or not? any examples of non-quantifiable things ?

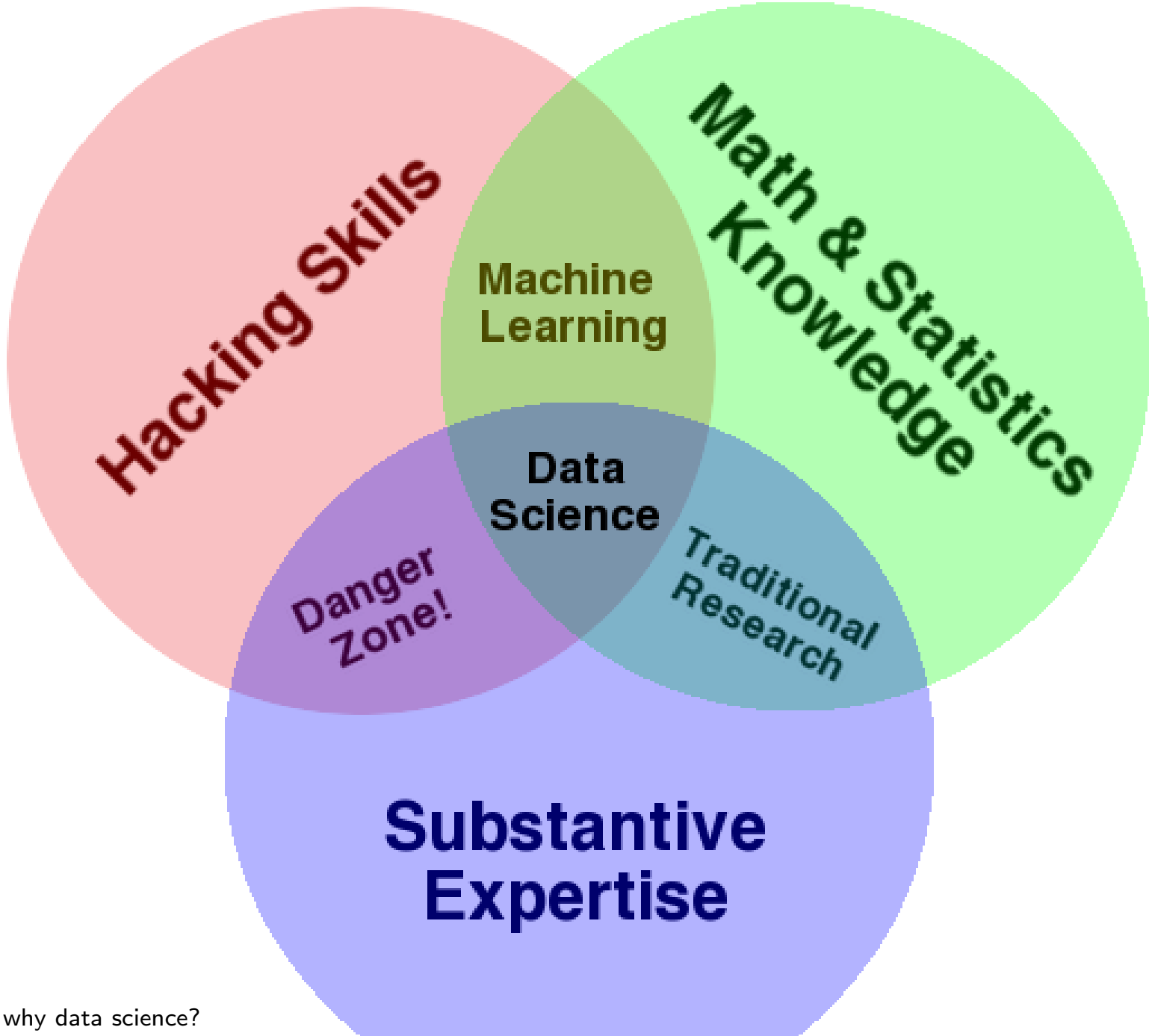
data management is fundamental

- takes more time to prepare data than to analyze it
- start early with the right data!
  - sth you're passionate about
  - sth that will advance your career/think beyond school

(social) data science or comp soc sci

- see venn diag next p
- http://gking.harvard.edu/files/LazPenAda09.pdf
- http://radar.oreilly.com/2010/06/what-is-data-science.html
- http://tdwi.org/Articles/2011/01/05/Rise-of-Data-Science.aspx?Page=1
- http://www.quora.com/Educational-Resources/How-do-I-become-a-data-scientist

already have stat/math and subst, need hacking!



outline

why data science?

stata v sas v r v python

python: fun and useful

[*] bonus–data sources [skim quickly; look at home more]

which one?

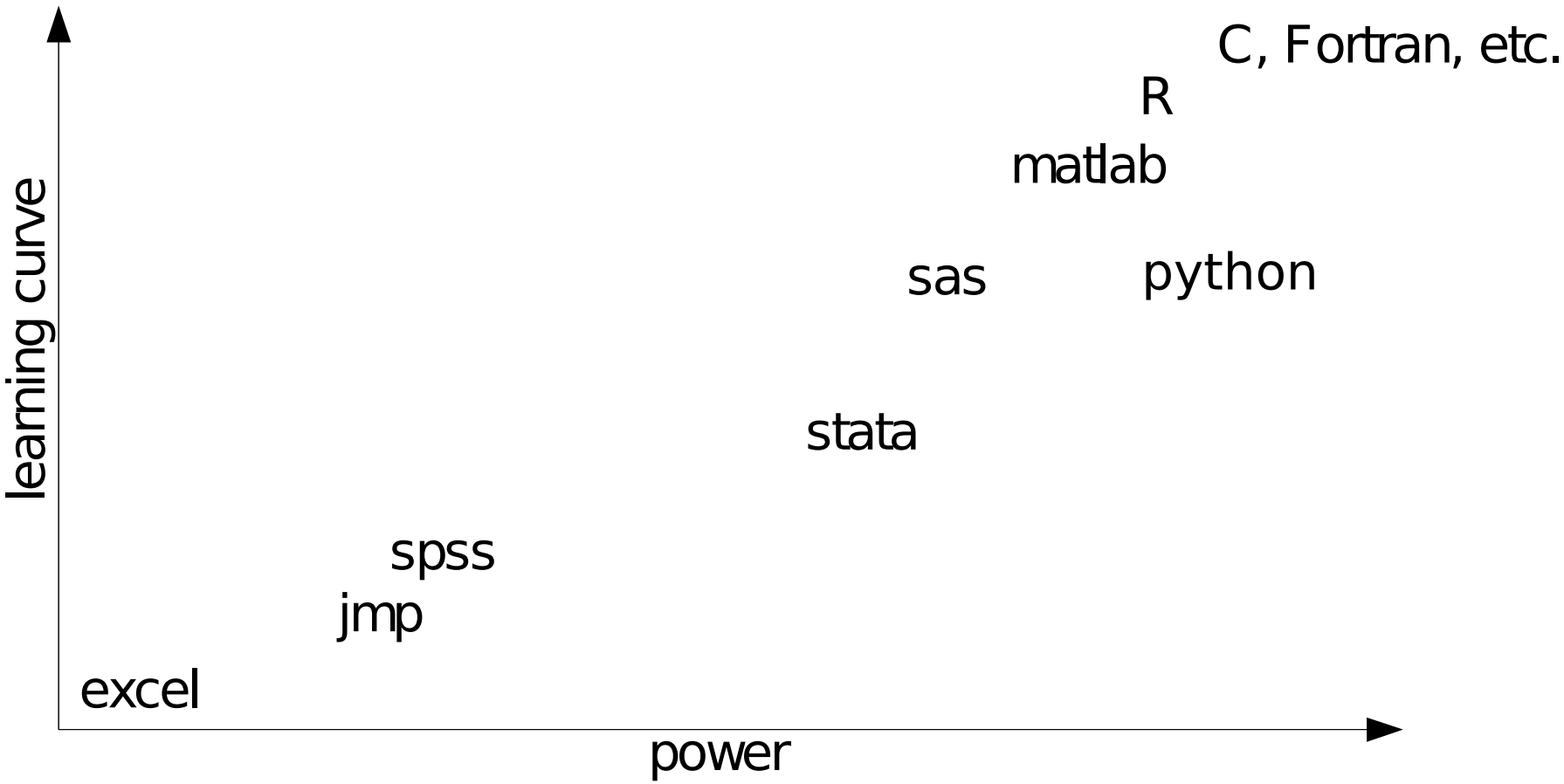
- stata: powerful, no need to learn any other soft; sufficient for vast majority of projects
- r: most powerful stat soft (py seems to be taking over)
- stata: user friendly, fast, very concise code
- r: user unfriendly, slow; weird code!
- py: somewhere in between
- all: great user community: listserv, websites, etc.
- sas: a dinosaur (still, often industry standard), very verbose
- r,py: free, stata: around $200; sas over $1k

sas

spss

R

which one?


C, Fortran, etc.
R
matlab
sas
python
stata
spss
jmp
excel
learning curve
power

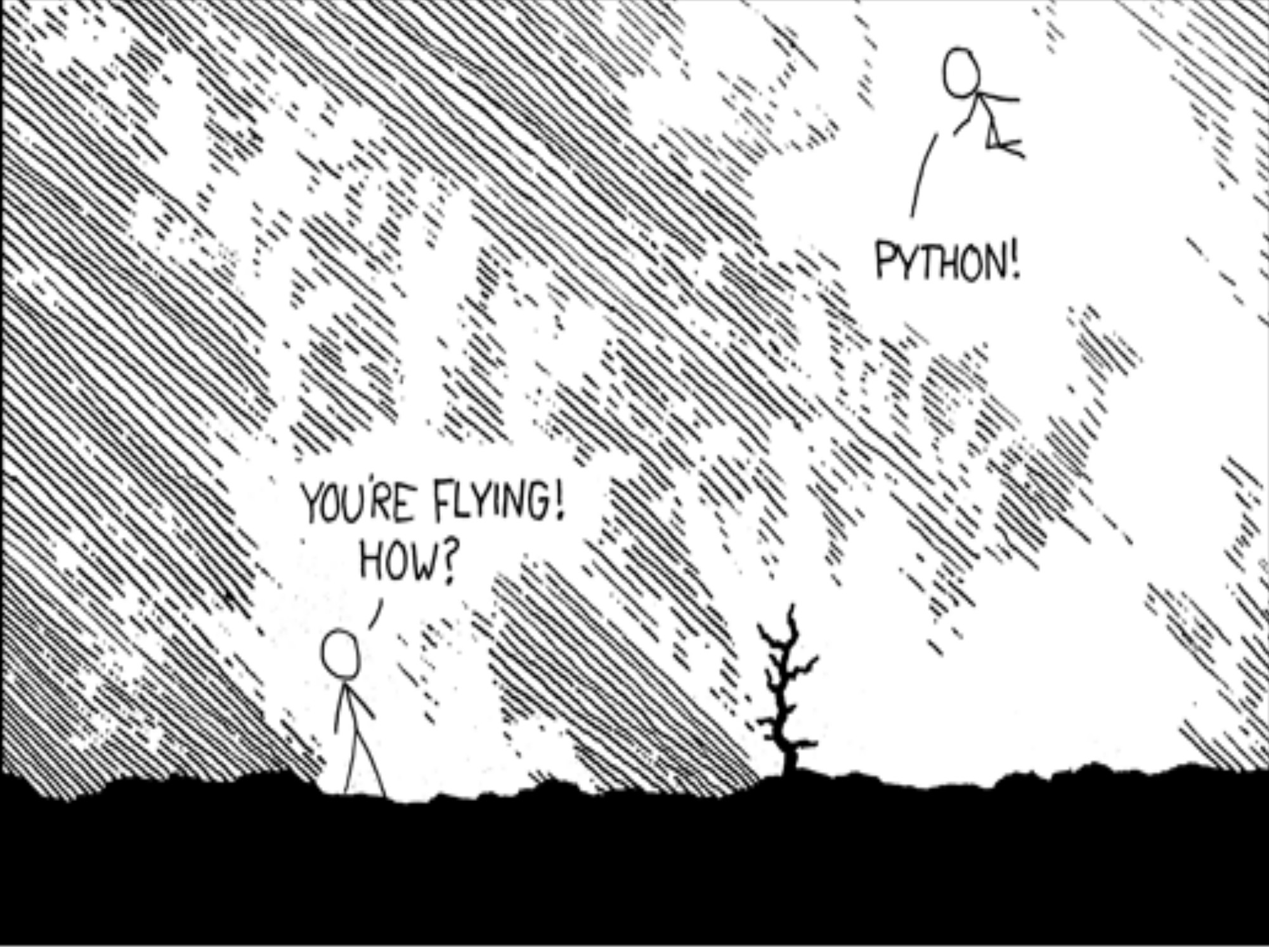
outline

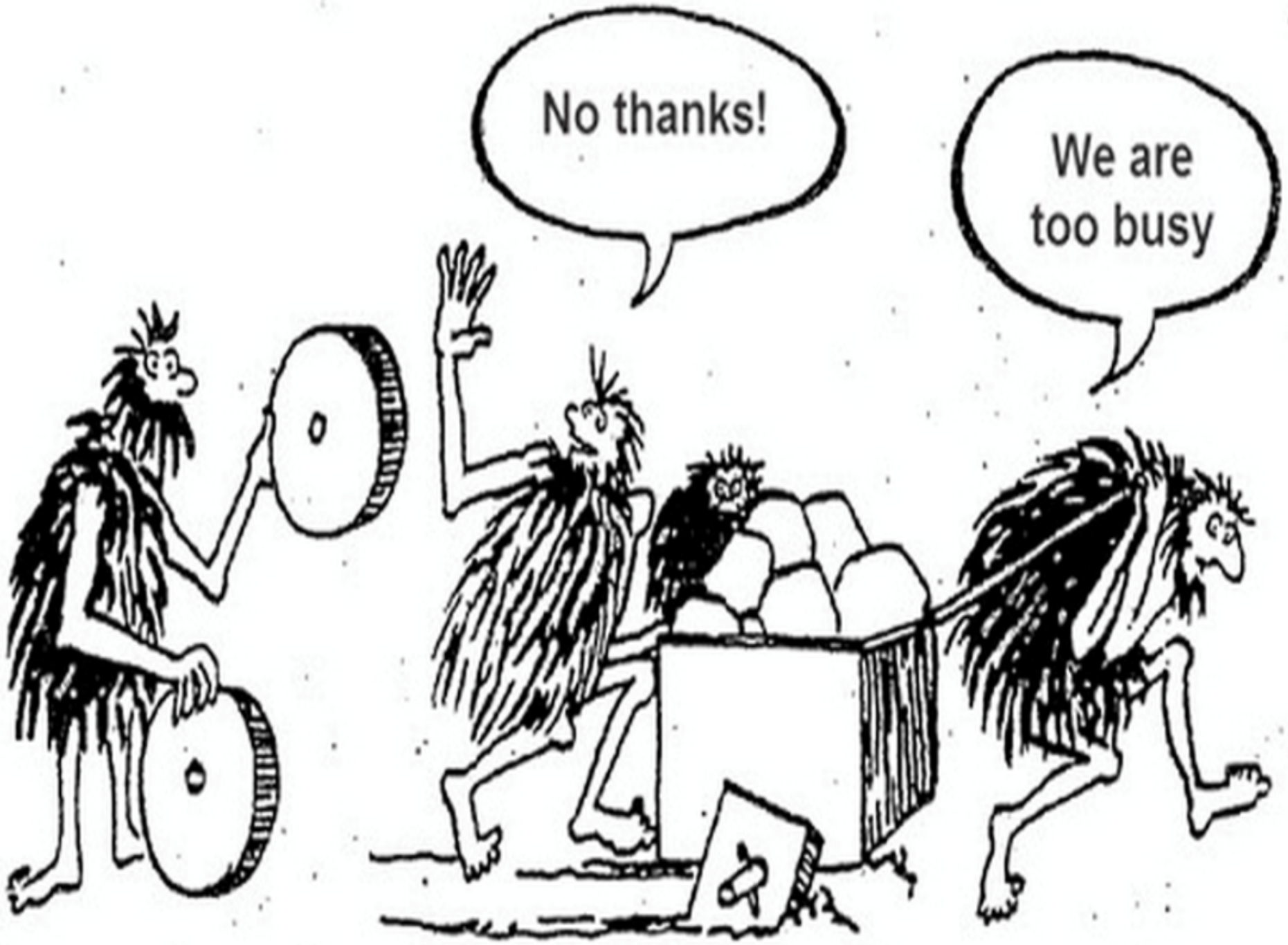
why data science?

stata v sas v r v python

python: fun and useful

[*] bonus–data sources [skim quickly; look at home more]


PYTHON!
YOU'RE FLYING!
HOW?


No thanks!
We are too busy

general references/tutorials

- we'll skip a lot of stuff, for more see:
- com sci, quick, readable! `http://code.google.com/edu/languages/google-python-class/`
- looks fun `https://automatetheboringstuff.com/#toc`
  - eg email/text `https://automatetheboringstuff.com/chapter16/`
  - manipulate images `https://automatetheboringstuff.com/chapter17/`
- general, complete, lengthy `http://www.diveintopython3.net/`
- for soc sci, comprehensive `http://nealcaren.github.io/python-tutorials/`

Python for dat sci

- automating os, like BASH scripts (os, system)
- data management (pandas)
- text processing (re, nltk)
- statistics (pandas, scipy, statsmodels, scikit-learn)
- API (urllib, rauth)
- gis (pysal)
- web scrapping (beautifulsoup, scrappy, html5lib)
- beautiful graphs, I'd say THE BEST (pandas, matplotlib)

outline

why data science?

stata v sas v r v python

python: fun and useful

[*] bonus–data sources [skim quickly; look at home more]

data sources

- http://icpsr.umich.edu
- http://www.worldvaluessurvey.org/
- https://gss.norc.org/
- http://www.thearda.com/
- https://www.pippanorris.com/data

more data sources

- http://www.measureofamerica.org/
- http://usa.ipums.org/usa/
- https://international.ipums.org/international/

"non-traditional" data

- http://dvn.iq.harvard.edu/dvn/dv/patent
- http://www.trustlet.org/wiki/Trust_network_datasets

happiness data

- http://www.bmj.com/content/337/bmj.a2338.full
- http://www.wefeelfine.org/