

misc: rules, tips, tricks, ethics

adam okulicz-kozaryn

`adam.okulicz.kozaryn@gmail.com`

this version: Wednesday 17th October, 2018 21:33

outline

data

tips and tricks

some rules

ethics

an example of my research

research design again

outline

data

tips and tricks

some rules

ethics

an example of my research

research design again

outline

data

tips and tricks

some rules

ethics

an example of my research

research design again

have a big screen

- ◇ again, i cannot overemphasize, that
- ◇ a big screen is key for gis work
- ◇ (it's inexpensive, too)

useful tools

- ◇ zoom to layer extent
- ◇ un-select features if a tool behaves unpredictably
- ◇ use identify features tool
- ◇ explore plugins

workflow

- ◇ save the whole project (with many layers) and next time just open it
- ◇ can move layer around
- ◇ can have many layers with say different symbology of the same shapefile

misbehaving software

- ◇ most of the software sometimes misbehaves...
 - it crashes; refuses to do something, etc
- ◇ troubleshooting:
 - email me
 - do what you are doing in a different way-e.g try different dataset; different var; different approach etc (usually can do same thing in many ways)
 - shut it down and fire it up again
 - reinstall (last resort)

google it

- ◇ depressing, but whatever you are mapping, someone has already done it
- ◇ accept it, and make use of it!
- ◇ google and see images, say: 'nj counties contamination sites' <https://www.google.com/search?q=nj+counties+contamination+sites&tbm=isch>
- ◇ or "Philadelphia healthy stores map" (sometimes need word 'map' otherwise get pics of healthy food)
 - <https://www.google.com/search?q=philadelphia+healthy+stores+map&tbm=isch>
- ◇ get ideas, inspiration from these googled maps
- ◇ try to make your map better than the competition
- ◇ still, the key to be innovative is to join data!

google

- ◇ cannot overestimate the usefulness of google for finding data
- ◇ e.g. “what you are looking for, shapefile”
- ◇ e.g. “new jersey public schools, shapefile”
- ◇ tips:
 - may need to look for a higher level; e.g. NJ schools instead of Depford Twshp schools
- ◇ if you cannot find it, contact govt; e.g. city of Camden, state of NJ, etc—they will be happy that you want to use their data
- ◇ again, may find only traditional data and need to join with gis data

google it

- ◇ likewise, if you want to map it, and not sure how
- ◇ or perhaps just want to visualize it, google it
 - say 'census regions or divisions'
 - instead of reading about what this could be
 - a map is worth 1,000 words!
 - https://www.google.com/search?q=us+census+divisions&client=firefox-a&hs=VPH&rls=org.mozilla:en-US:official&source=lnms&tbm=isch&sa=X&ei=sgUzVLSeOoeoyQTVh4LIBQ&ved=0CAgQ_AUoAQ&biw=1147&bih=1261

join data

- ◇ the real value comes from joining data!
- ◇ again, a map about any single var was already made
 - but 2 given vars in a map or in 2 maps are rare
- ◇ there are so many data and variables out there
- ◇ use your creativity and imagination
- ◇ and you'll easily come up with something that no one did
- ◇ then join the data and make a map
- ◇ eg `http://people.hmdc.harvard.edu/~akozaryn/myweb/rel_inn.pdf`
 - see 2 maps at the end
- ◇ sure, gis is mostly a technical skill; but there's some art here too!

outline

data

tips and tricks

some rules

ethics

an example of my research

research design again

- ◇ GIGO: Garbage In, Garbage Out
- ◇ 'Cos it's in the computer, don't mean it's right

unknowns by Rumsfeld (be humble in your findings)

- ◇ There are known unknowns.
- ◇ That is to say there are things that we now know we don't know.
 - (these are benign, but be explicit about them)
- ◇ But there are also unknown unknowns. There are things we do not know we don't know.
 - (these are tricky: you can't do anything about unknown unknowns other than acknowledge that they exist; and never say you "proved" something)
 - (your statements are valid until disproved: all Swans are white, only until you see one day a black Swan)

what does it mean for you

- ◇ double, triple check
- ◇ ask yourself if it makes sense... (Camden richer than Cherry Hill?)
- ◇ use several datasources and or several variables to measure the same thing
- ◇ are you getting similar results? why not?

outline

data

tips and tricks

some rules

ethics

an example of my research

research design again

integrity/honesty

- ◇ be explicit about problems in your data
 - eg non-joins, missing data, miscodings
- ◇ be explicit about problems in your models:
 - eg don't throw away variables from maps just because they contradict your story
 - discuss it: how, why; ask audience to comment/criticize
- ◇ instead of forcing data to tell your story,
listen carefully; let data tell you her story !
- ◇ if you work for somebody: e.g. a bank or NGO: they will ask you to find something; use a disclaimer saying that

ethics

- ◇ everybody wants to sell something
- ◇ we academics or thinkers or students, too!
- ◇ we try to sell some idea or point of view
- ◇ rarely if ever anyone is 100% objective
- ◇ keep that in mind !
- ◇ and always try to present alternative/opposite points of view
- ◇ present the whole picture

ethics: bad examples

- ◇ cherry picking of vars or samples or timeframes, etc
- ◇ eg using only variables or operationalizations that fit your story
- ◇ eg using year in which you find what you wanted to find
- ◇ classification bins: playing with bins will always emphasize your story
- ◇ in short: force yourself to be objective, because by default humans aren't
- ◇ see fascinating <https://righteousmind.com/>

outline

data

tips and tricks

some rules

ethics

an example of my research

research design again

happiness in Europe

- ◇ have a look at <https://sites.google.com/site/adamokuliczkozaryn/pubs/gesis3.pdf>
- ◇ first, on p.5 I show a histogram of happiness
 - again qgis has native histograms
 - or can use plugins; search for 'stat'
- ◇ and then on p. 6 and 7 two maps using quantiles and natural breaks/jenks
- ◇ note, that you can be creative, and calculate other interesting quantities sch as variation e.g. p. 11

outline

data

tips and tricks

some rules

ethics

an example of my research

research design again

important for paper

- ◇ think (and address them) about those things below
- ◇ when working on a paper

error of measurement

- ◇ keep in mind that measurement is always imprecise...and ask yourself how imprecise
- see literature; e.g. happiness has been cross-validated: PET scans, opinions of friends etc

error of measurement

- ◇ who produced data ? e.g. Chinese data are less reliable than US data
- e.g. national govt reports lower pollution to look good internationally
- local govt reports higher pollution to show that it develops and produces a lot...
- disclaimer: i have read it somewhere, not sure how true is that
- the point is to always think about quality of data
- for Chinese case it would be good to triangulate it with some intl data, say satellite images...

think about incentives

- ◇ who is producing that data?
- ◇ again, you can measure a concept in many different ways
- ◇ people have an incentive to measure it in a way that benefits them

construct validity

- ◇ are you measuring what you say you are measuring?
- ◇ say you want measure ability, or IQ, but you only have data about education
- ◇ <http://www.socialresearchmethods.net/kb/constval.php>
- ◇ seven sins map
http://2.bp.blogspot.com/_R3SXJVojagU/SwLzZJL1E2I/AAAAAAAAAIE/7GbMzcZPDDk/s1600/sevendeadlysins.bmp

external validity

- ◇ are your data representative ?
- ◇ how big is the sample ?
- ◇ e.g. I was geocoding WVS at province level only to find out it was unrepresentative

triangulate

- ◇ triangulation=use different measures for the same concept
- ◇ e.g. education:
 - years of schooling
 - highest degree obtained
 - avg SAT score
 - avg ranking of schools in the area
 - etc etc

time matters, too

- ◇ we are exploring spatial variation
- ◇ but there is also time variation
- ◇ usually it is nice to show time changes in your maps
- ◇ e.g. can display a variable as a difference say
 - $POP_{10} - POP_{00}$ —which county gained most population (let's do it with nj_counties)
- ◇ other time issue is that things fluctuate over time, say due to business cycle
 - if you want to show a more reliable estimate. take an average
 - say avg. 5-yr unemployment rate

go places

- ◇ when you make maps and find things, go and visit that place—i drove through MI from TX to NJ