

misc: rules, tips, tricks, ethics

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this version: Thursday 10th October, 2019 01:11

outline

data

tips and tricks

some rules

ethics

an example of my research

research design again

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have a big screen

- ◇ again, i cannot overemphasize, that
- ◇ a big screen is key for gis work
- ◇ (it's inexpensive, too)
- ◇
- ◇ and of course if you dont have it yet, get a mouse

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=sgUzVLSe0oeoyQTVh4LIBQ&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!

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quality

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

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)

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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/>

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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

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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