Translating Questions

Data Analysis

Built with blogdown and Hugo. Theme Blackburn.

What statistics should do about big data: problem forward not solution backward

Jeff Leek 2013/05/29

There has been a lot of discussion among statisticians about big data and what statistics should do to get involved. Recently Steve M. and Larry W. took up the same issue on their blog. I have been thinking about this for a while, since I work in genomics, which almost always comes with "big data". It is also one area of big data where statistics and statisticians have played a huge role.

A question that naturally arises is, "why have statisticians been so successful in genomics?" I think a major reason is the phrase I borrowed from Brian C. (who may have borrowed it from Ron B.)

> problem first, not solution backward

One of the reasons that "big data" is even a term is that there is that data are less expensive than they were a few years ago. One example is the dramatic drop in the price of DNA-sequencing. But there are many many more examples. The quantified self movement and Fitbits, Google Books, social network data from Twitter, etc. are all areas where data that cost us a huge amount to collect 10 years ago can now be collected and stored very cheaply.

As statisticians we look for generalizable principles; I would say that you have to zoom pretty far out to generalize from social networks to genomics but here are two:

https://simplystatistics.org/2013/05/29/what-statistics-should-do-about-big-data-problem-forward-not-solution-backward/

A year as told by fitbit

Nick Strayer
Dec 27, 2017 11 min read
visualization wearables time series

I managed to wear a fitbit the entirety of 2017, this is exciting for a few reasons: one I have commitment problems, and two: it's a lot of data that I have to play with. While fitbit's app has some nice pretty graphs, they make it rather hard to actually dump all of your data into something nice like a csv.

Shijing Yao Follow
Senior Machine Learning Scientist @ Airbnb
May 2 · 11 min read

Categorizing Listing Photos at Airbnb

Large-scale deep learning models are changing the way we think about images of homes on our platform.

Authors: *Shijing Yao, Qiang Zhu, Phillippe Siclait*

- When I run more do I lose weight?
- Are customers more likely to click on ads with puppies?
- Do I need to take an umbrella with me when I leave the house today?

- What or who am I trying to understand with data?
- What measurements do I have on those people or objects that help me answer the question?
- How do the data I have limit the type of question I can answer?
- What is the type of data science question we are trying to answer?

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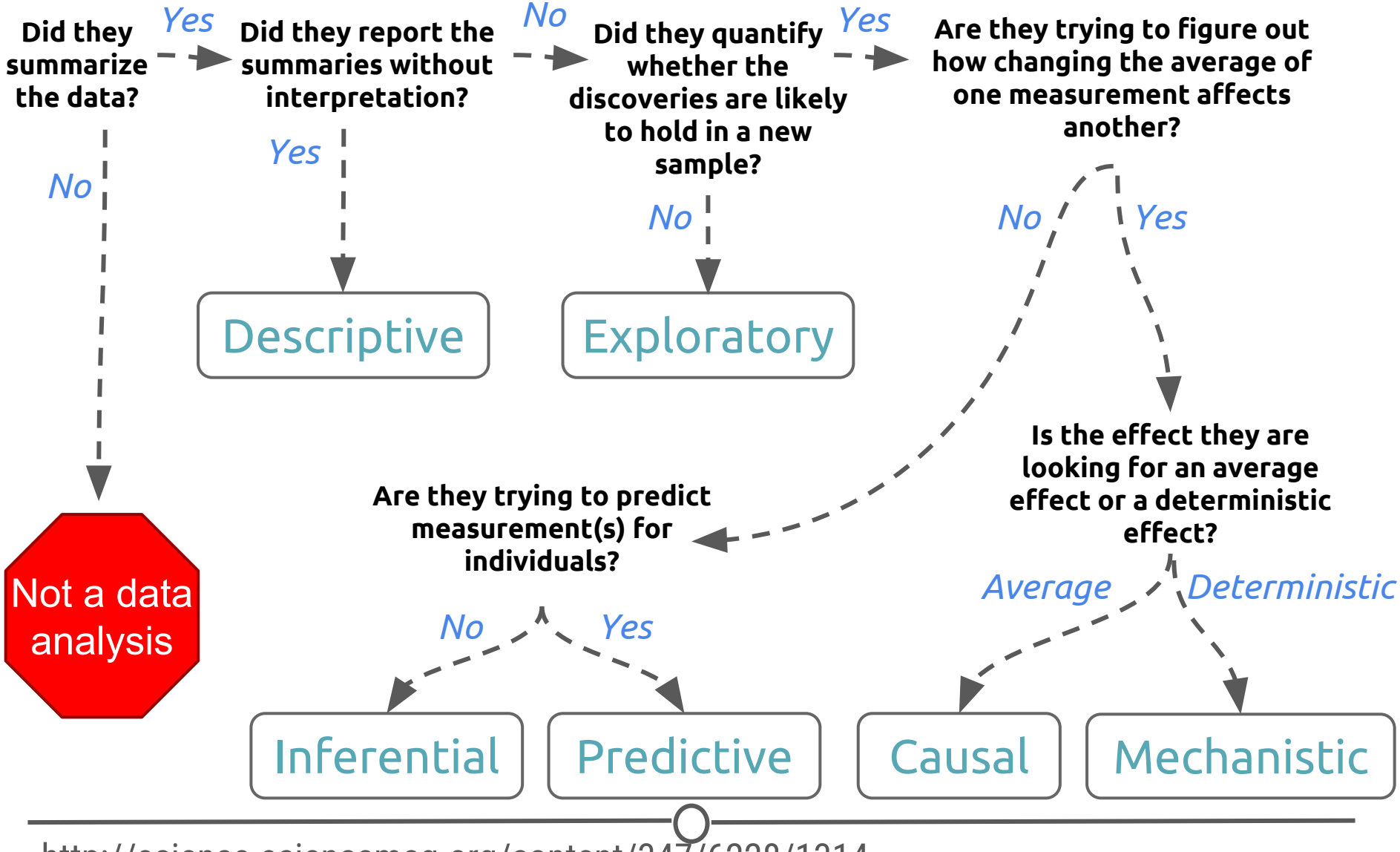


http://science.sciencemag.org/content/347/6228/1314

When I run more do I lose weight?

Who?

What?

Limitations?

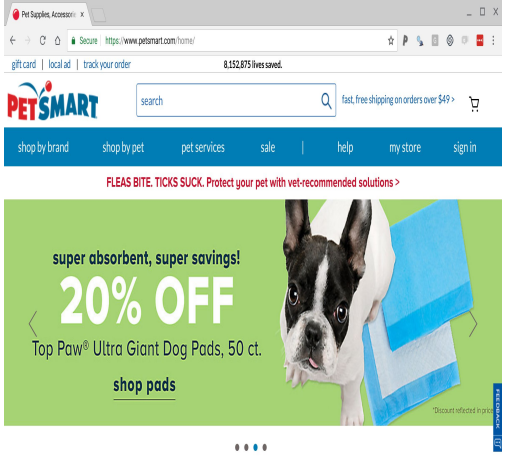
- Only applies to Jeff
- Missing diet info
- Run data limited

Question Type

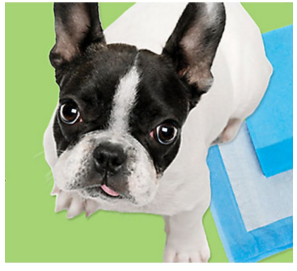
Exploratory

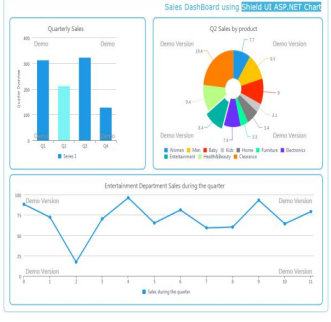
Are customers more likely to click on ads with puppies?

Who?



What?





Limitations?

- Applies to customers of Pets.com
- Only one days worth of data

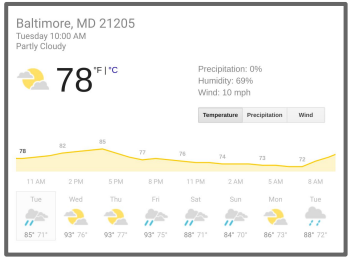
Question Type

Inferential

Do I need to take an umbrella with me when I leave the house today?

Who?

What?



Limitations?

- Only applies to one person
- Limited training data
- The future may be different from the past

Question Type

Predictive

David Robinson

Chief Data Scientist at DataCamp, works in R and Python.

Email
Twitter
Github
Stack Overflow

Recommended Blogs

- DataCamp
- R Bloggers
- RStudio Blog
- R4Stats

Text analysis of Trump's tweets confirms he writes only the (angrier) Android half

I don't normally post about politics (I'm not particularly savvy about polling, which is where data science has had the largest impact on politics). But this weekend I saw a hypothesis about Donald Trump's twitter account that simply begged to be investigated with data:

Tweets 38.5K | Following 47 | Followers 53.8M | Likes 25 | Moments 6

Donald J. Trump

@realDonaldTrump

45th President of the United States of America

Washington, DC

Instagram.com/realDonaldTrump

Joined March 2009

Tweet to Donald J. Trump

24 Followers you know

Tweets | Tweets & replies | Media

Donald J. Trump @realDonaldTrump · 2h

Lou Dobbs: “This cannot go forward...this Special Counsel with all of his conflicts, with his 17 Angry Democrats, without any evidence of collusion by the Trump Campaign and Russia. The Dems are the ones who should be investigated.” Thank you Lou, so true!

8.3K 7.2K 26K

Donald J. Trump @realDonaldTrump · 2h

Strzok started the illegal Rigged Witch Hunt - why isn’t this so-called “probe” ended immediately? Why aren’t these angry and conflicted Democrats instead looking at Crooked Hillary?

9.1K 7.6K 28K

https://twitter.com/realDonaldTrump

Search all documentation...

- Basics
- Accounts and users
- Tweets
- Direct Messages
- Media
- Trends
- Geo
- Ads
- Metrics

Docs

Stay Informed

Staying informed about changes to our APIs is important for those developing on the platform and can be critical to maintaining your applications. We have a number of channels to help you stay in-the-loop.

Learn how >

Search Tweets

Use the Search API to find historical Tweets. Free to enterprise versions available.

Filter realtime Tweets

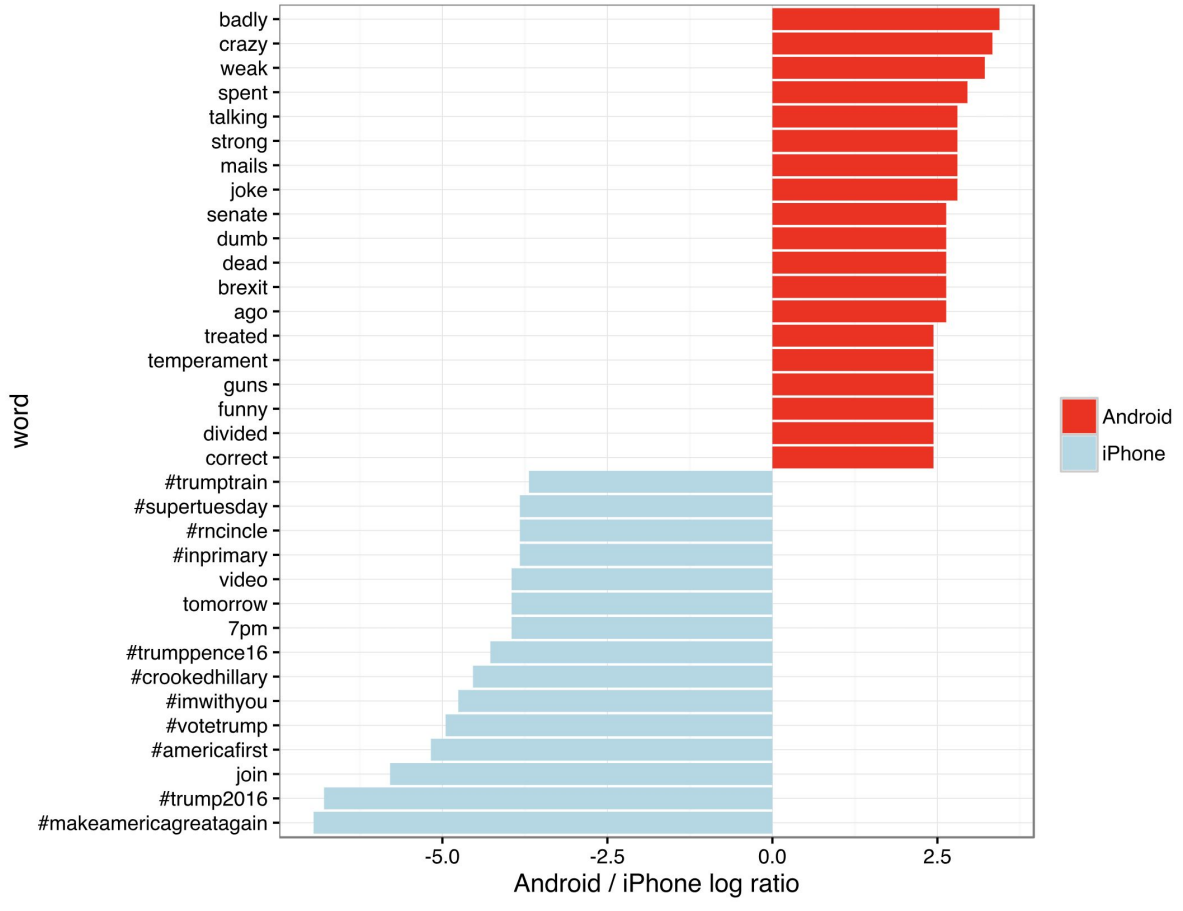
Get only the Tweets you need by using advanced filtering tools with the realtime streaming API.

https://developer.twitter.com/en/docs.html

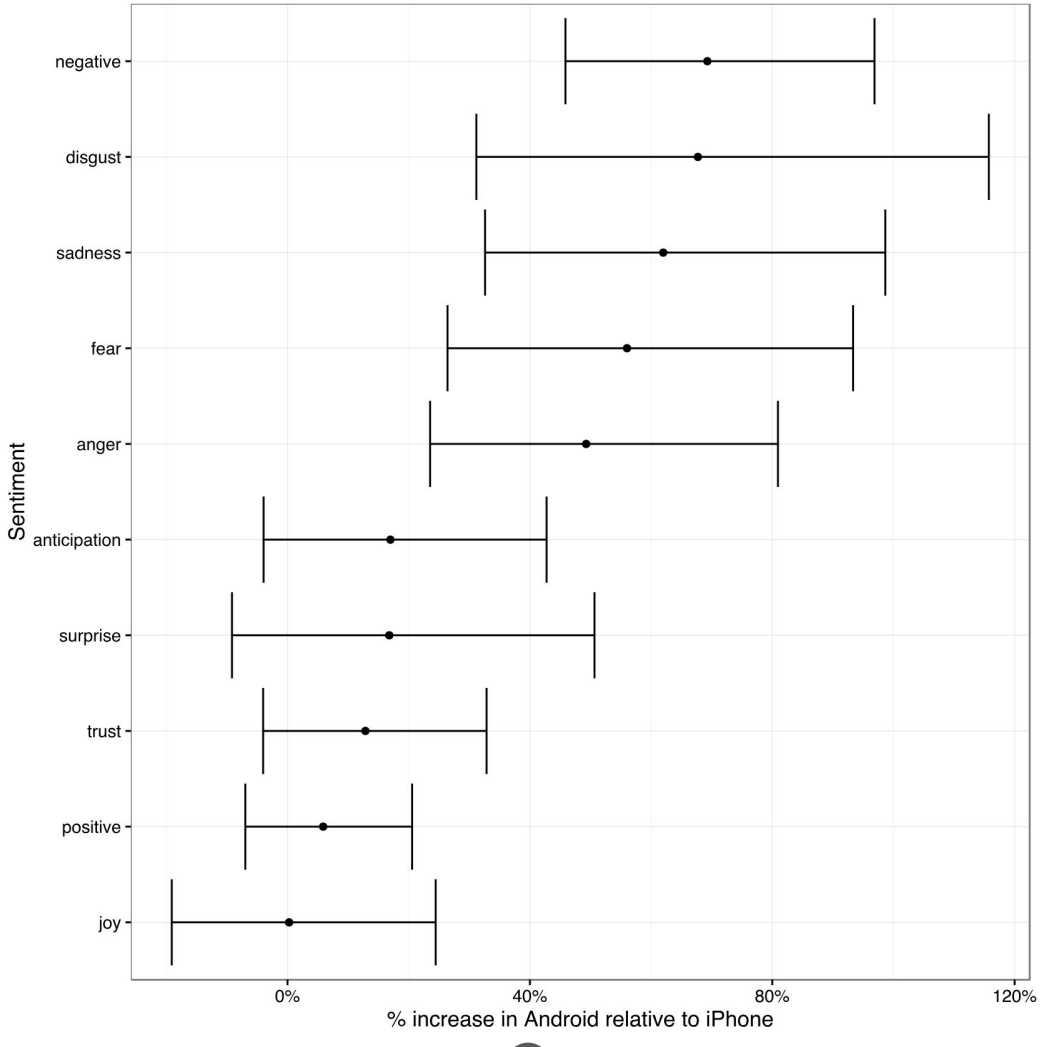
Are the Android and iPhone tweets clearly different?

Are the Android tweets angrier and more negative?

Which are the words most likely to be from Android and most likely from iPhone?



Source: http://varianceexplained.org/r/trump-tweets/



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