Data Visualization Crash Course

Overview

- What is data viz?
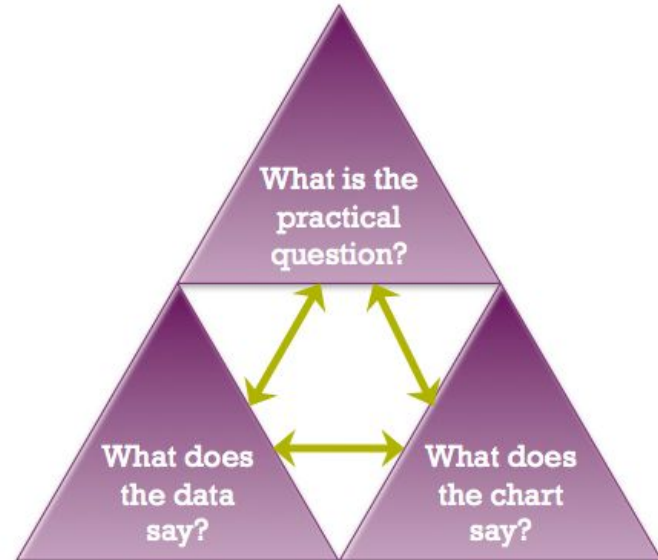- Overview of d3
- An example

What is data visualization?

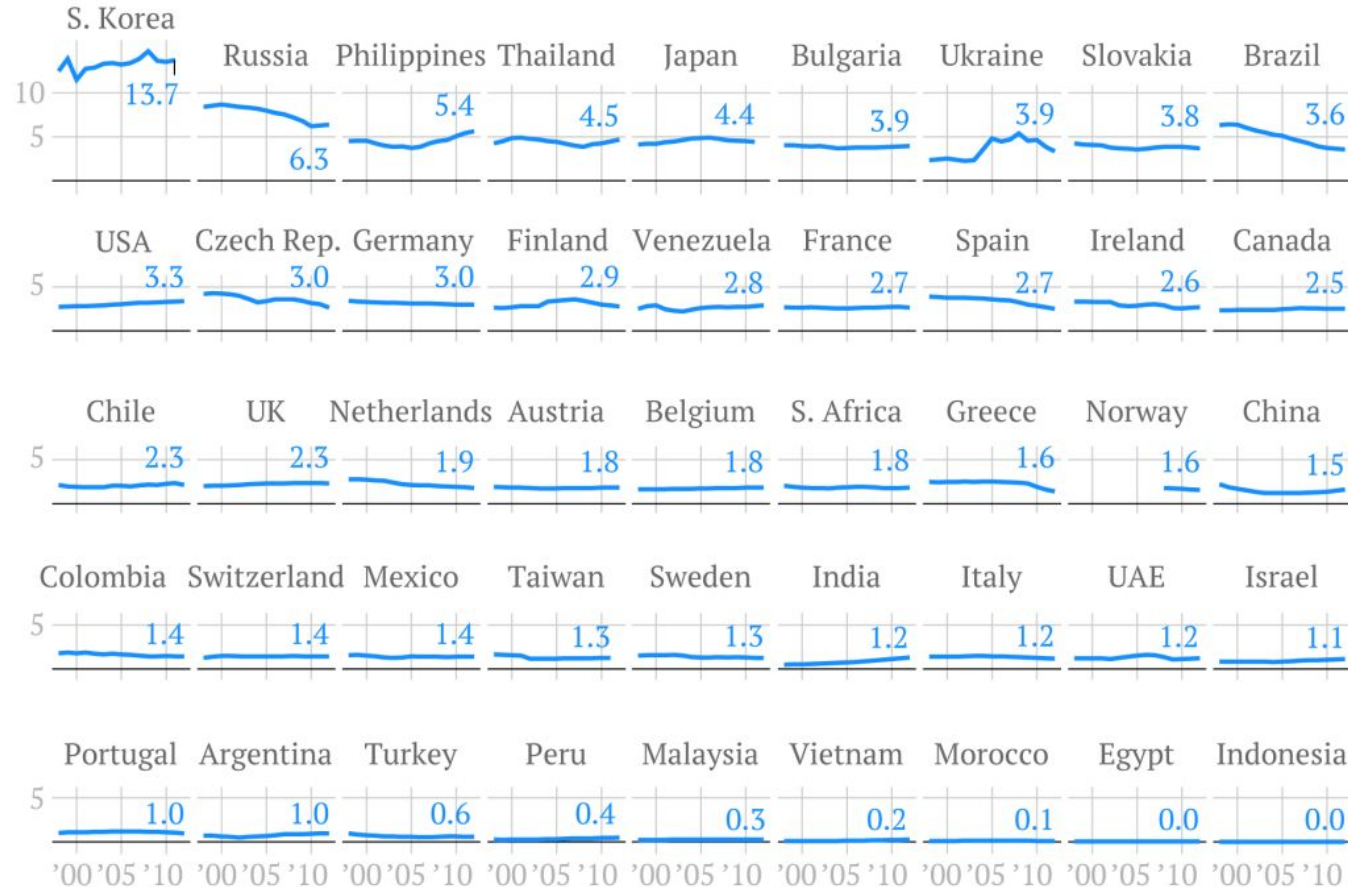# What makes a good data visualization?

The Junk Charts Trifecta

Junk Charts Trifecta Checkup

- What is the **question?**
- What does the **data** say?
- What does the **visualization** say?

The average amount of liquor consumed by a person of drinking age

Shots per week of any spirit

S. Korea 13.7	Russia 6.3	Philippines 5.4	Thailand 4.5	Japan 4.4	Bulgaria 3.9	Ukraine 3.9	Slovakia 3.8	Brazil 3.6
USA 3.3	Czech Rep. 3.0	Germany 3.0	Finland 2.9	Venezuela 2.8	France 2.7	Spain 2.7	Ireland 2.6	Canada 2.5
Chile 2.3	UK 2.3	Netherlands 1.9	Austria 1.8	Belgium 1.8	S. Africa 1.8	Greece 1.6	Norway 1.6	China 1.5
Colombia 1.4	Switzerland 1.4	Mexico 1.4	Taiwan 1.3	Sweden 1.3	India 1.2	Italy 1.2	UAE 1.2	Israel 1.1
Portugal 1.0	Argentina 1.0	Turkey 0.6	Peru 0.4	Malaysia 0.3	Vietnam 0.2	Morocco 0.1	Egypt 0.0	Indonesia 0.0

'00 '05 '10   '00 '05 '10   '00 '05 '10   '00 '05 '10   '00 '05 '10   '00 '05 '10   '00 '05 '10   '00 '05 '10   '00 '05 '10

Costs for Americans ...

... have soared for education, child care and health care ...

+40 pct. pts.

Change in prices relative to a 23% increase in prices for all items, 2005-2014

+20

... and have plummeted for televisions, toys and phones, relative to other prices.

-20

-40

-60

-80

-100

College tuition and fees

Child care/nursery school
Health care

Vehicle maintenance/repair
Food and beverages

Housing
Personal care
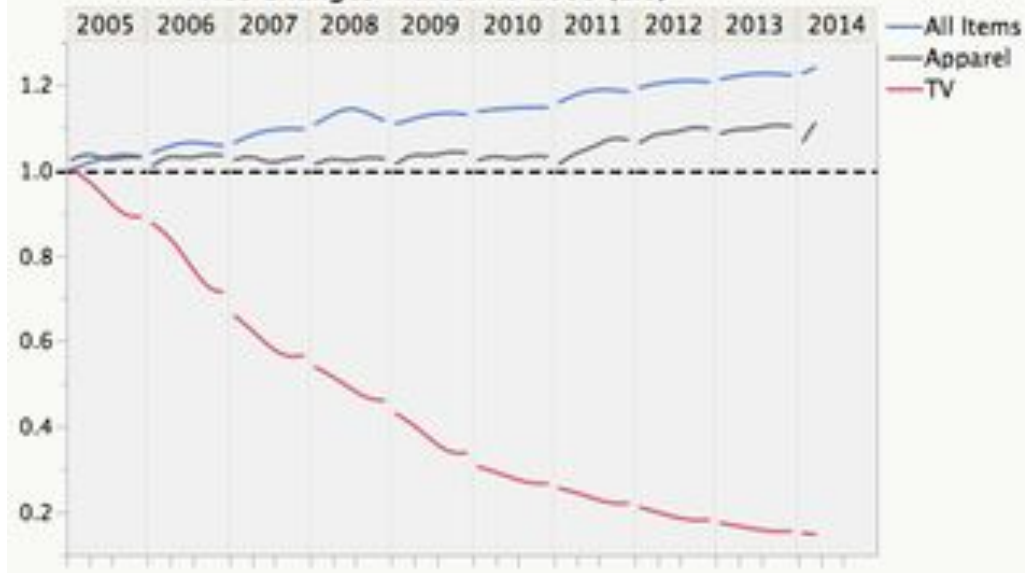
Clothing
New and used vehicles

Cellphone service

Toys

Phones and accessories
Reflect prices unsubsidized
by service providers

Personal computers
and equipment

Televisions

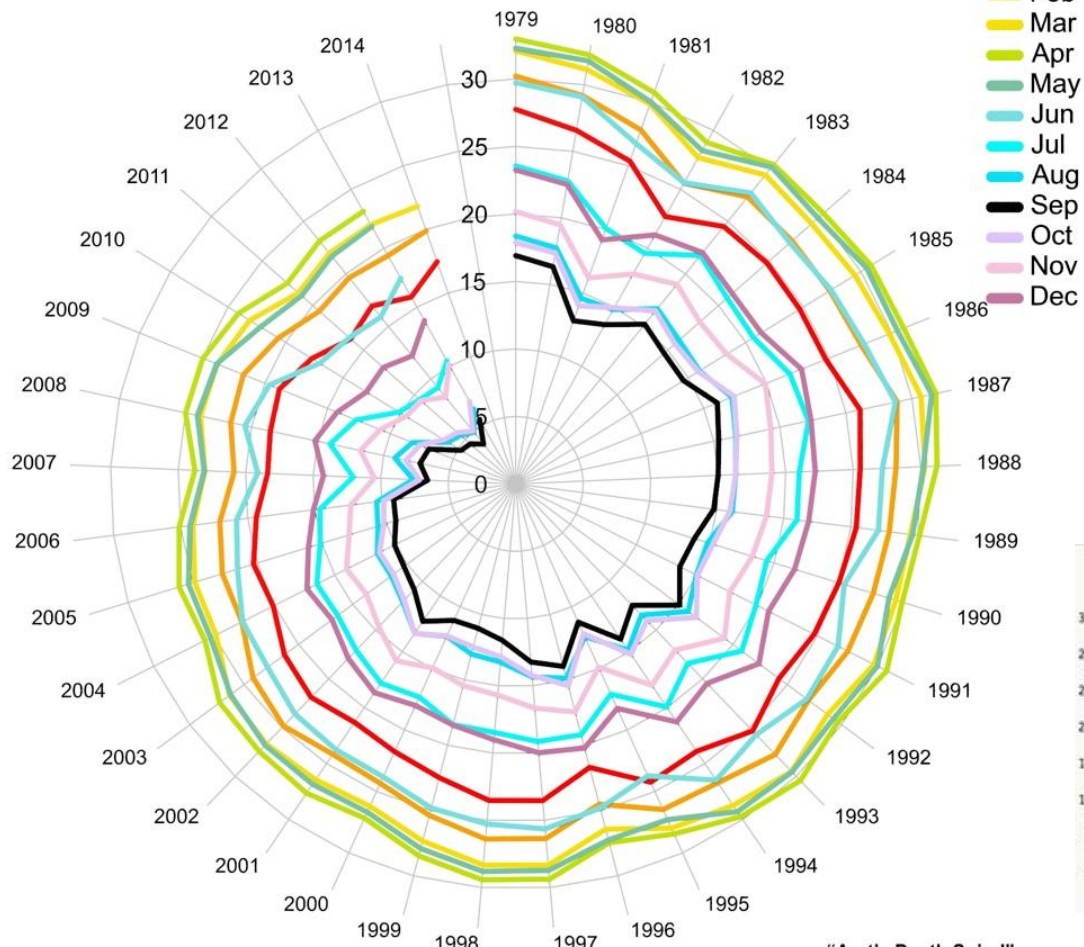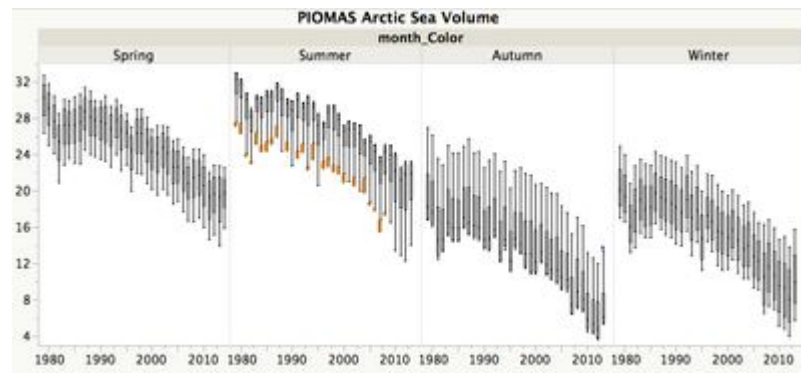BY LARRY BUCHANAN and ALICIA PARLAPIANO

Note: Based on the Consumer Price Index for All Urban Customers. Data is collected from retail stores and adjusted by specialists to reflect changes in quantity offered in a product or an increase in quality. Much of the drop in prices for electronics reflects an increase in quality over the past 10 years.

Price Changes Indiced to 2005 (1.0)

| 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |

— All Items
— Apparel
— TV

1.2

1.0

0.8

0.6

0.4

0.2

PIOMAS Arctic Sea Ice Volume (10³km³)

Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

Monthly Averages from Jan 1979 to Mar 2014
Data: http://psc.apl.washington.edu/wordpress/research/projects/arctic-sea-ice-volume-anomaly/
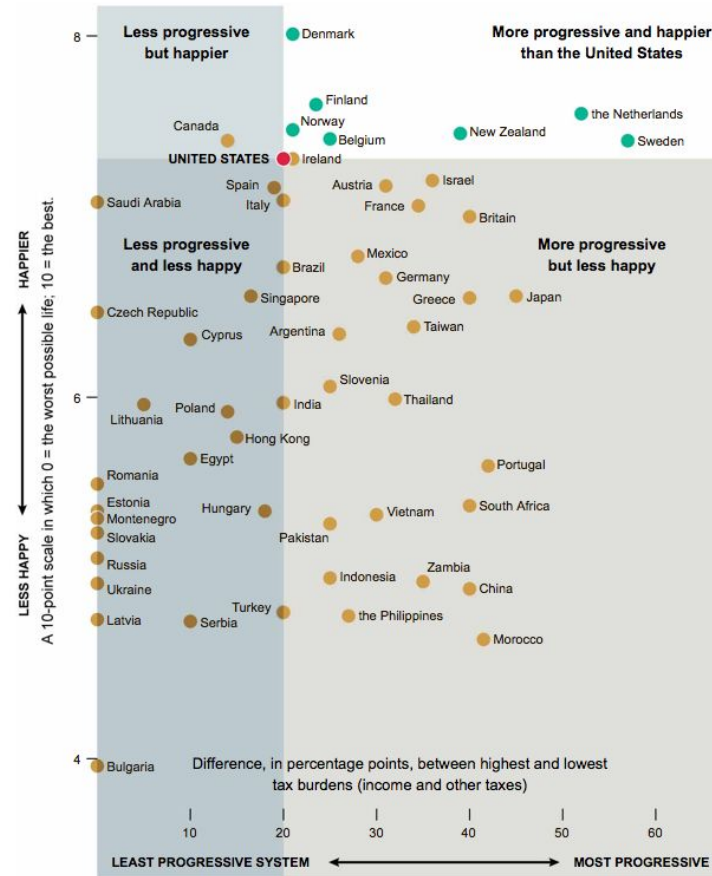
"Arctic Death Spiral"
©2014 Andy Lee Robinson andy@haveland.com
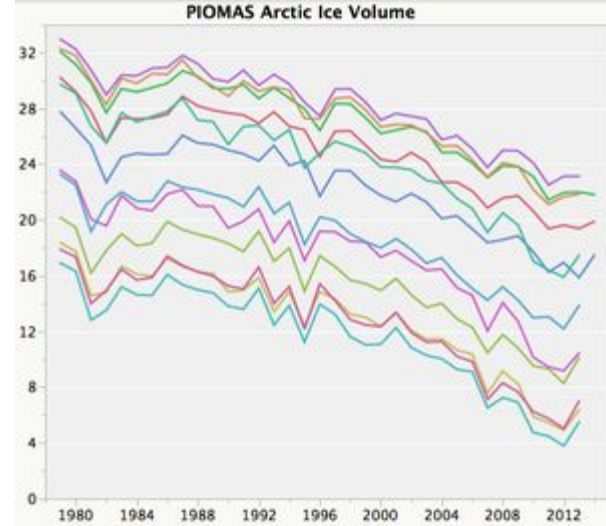
Mirth and Taxes

A study of 54 nations — ranked below — found that those with more progressive tax rates had happier citizens, on average.
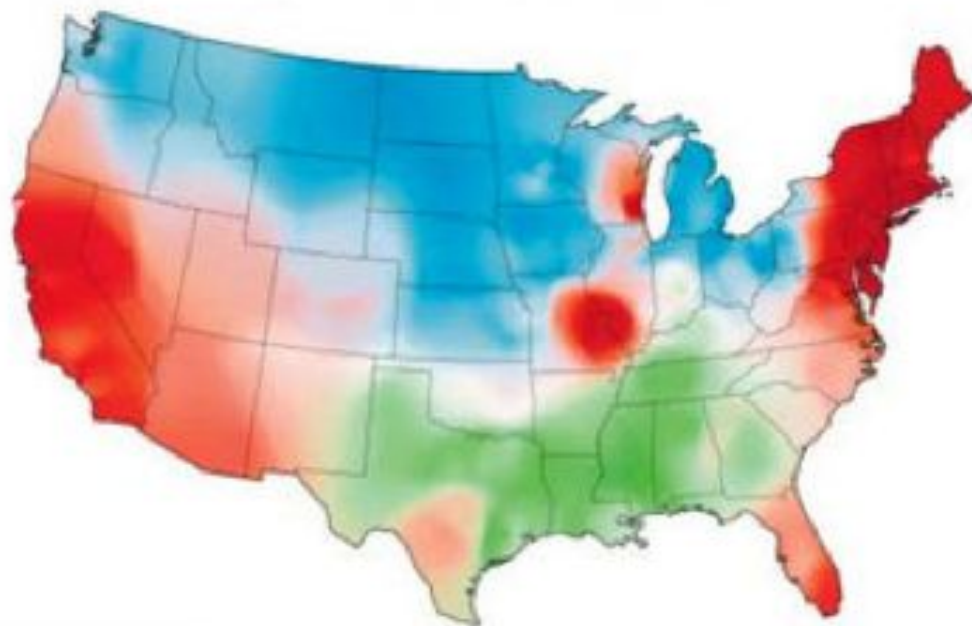
Less progressive but happier

More progressive and happier than the United States

8 — ● Denmark

● Finland
● Norway
● Belgium
● New Zealand
Canada ●
● the Netherlands
● Sweden

UNITED STATES ● Ireland

HAPPIER — A 10-point scale in which 0 = the worst possible life; 10 = the best.

Spain ● Austria ● ● Israel
● Saudi Arabia ● Italy ● France ● ● Britain

Less progressive and less happy

More progressive but less happy

● Mexico
● Brazil ● Germany
● Singapore ● Greece ● Japan
● Czech Republic ● Taiwan
● Cyprus ● Argentina

● Slovenia
6 — ● India ● Thailand
● Poland
Lithuania ● ● Hong Kong
● Egypt
● Portugal
● Romania
● Estonia ● Vietnam
● Montenegro ● Hungary ● South Africa
● Slovakia ● Pakistan
● Russia ● Zambia
● Ukraine ● Indonesia ● China
● Turkey
● Latvia ● Serbia ● the Philippines
● Morocco

LESS HAPPY

4 — ● Bulgaria

Difference, in percentage points, between highest and lowest tax burdens (income and other taxes)

10   20   30   40   50   60

LEAST PROGRESSIVE SYSTEM ◄——————► MOST PROGRESSIVE

Average number of weekday active Citi Bike riders during a two-day sample last autumn

- 78 — 12 a.m.
- 65 — 6 a.m.
- 714
- 366.5
- 876.5
- 166.5 — 11 p.m.
- 12 p.m.
- 6 p.m.
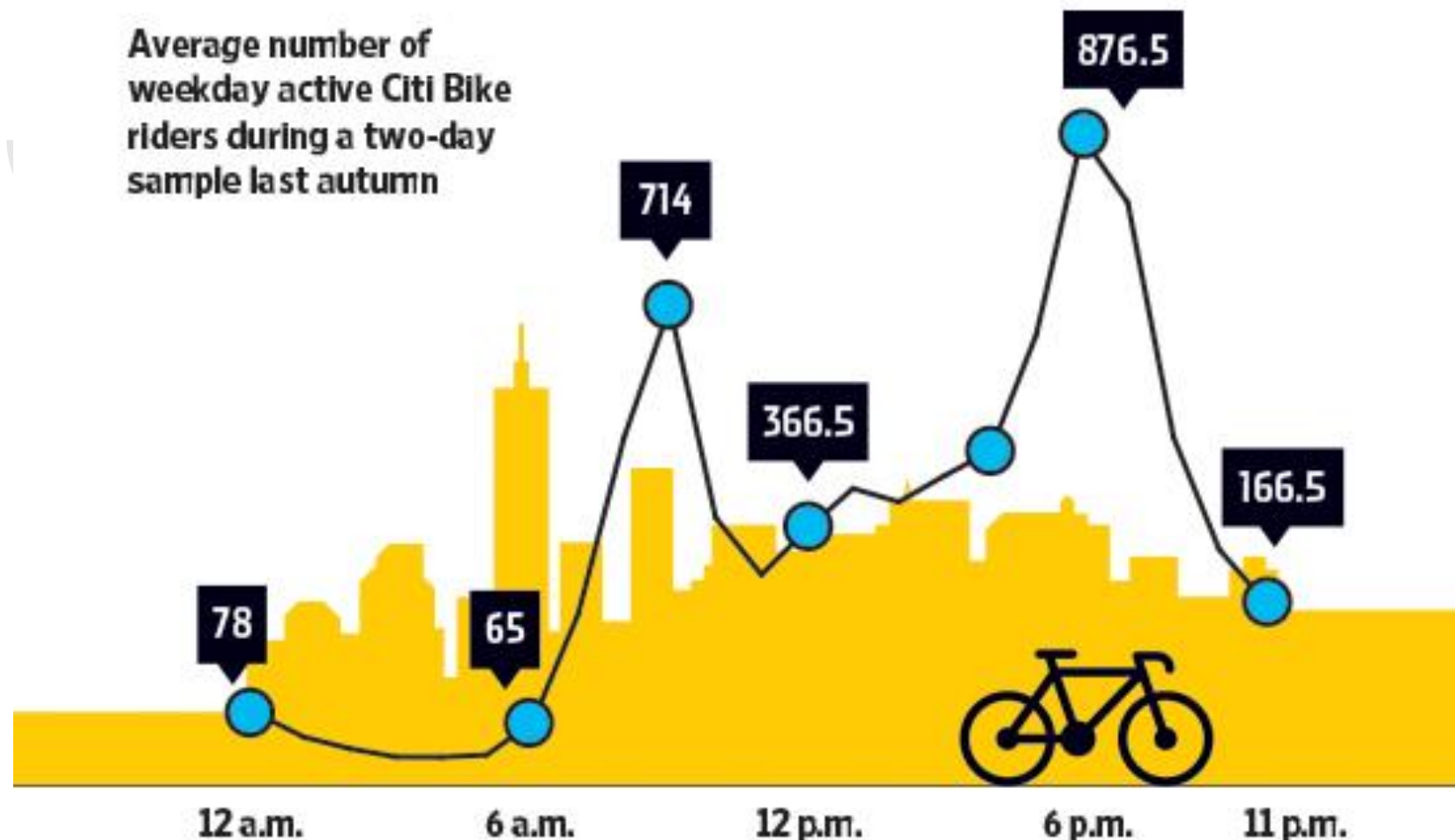
Source: Jeff Ferzoco, Sarah Kaufman and Juan Francisco Saldarriaga, Linepointpath.com

Question:
What is your generic term for a sweetened carbonated beverage?

- Soda
- Pop
- Coke

Finally, back to D3