



open data **&** **road safety**

huong nguyen

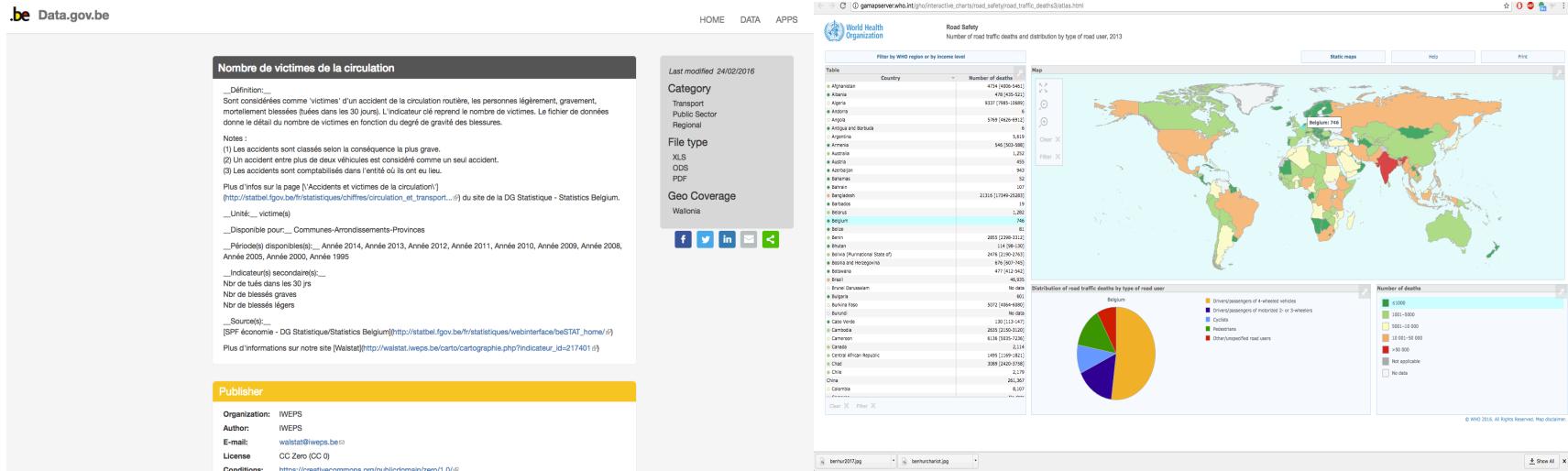
what is open data?

- certain data should be freely available for use and re-use
 - democratise access to certain data collected by government
 - lower cost of data collection
 - facilitate innovation and research
 - encourage participation of citizens and government transparency



open data - an ocean of opportunity?

- 70% of the earth surface is water
- 97.5% of that is seawater – not ready for consumption and needs a lot of filtering



almost everyone is in the game

desalination of open data – road safety

- geolocation
- date and time
- road users: motorist, cyclist, pedestrian
- modes of transport involved
- severity of injury



desalination – clean road crash data

```
ny = read.csv("/Volumes/YODA/ny crashes/NYPD_Motor_Vehicle_Collisions.csv")

# take out rows that don't have a nyc zipcode
ny1 = ny %>% filter(grepl("10[0-4]\\d\\d|1100[45]|11[1-46]\\d\\d", ZIP.CODE))
# 1194091-854704 = 339387

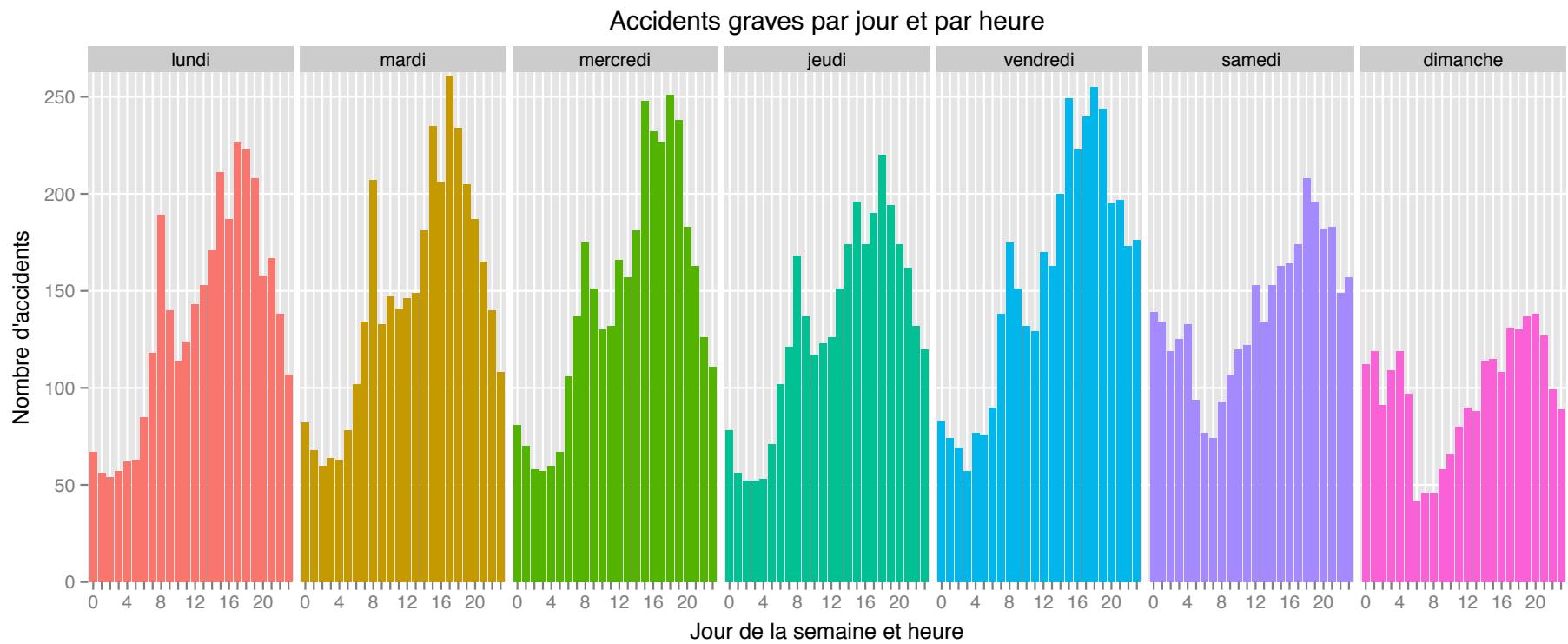
# take out rows without geolocations
ny2 = ny1 %>% filter(!is.na(LATITUDE)) %>% filter(!is.na(LONGITUDE))

# table of fatalities, injuries per road user | per borough
crash.table = ny2 %>% group_by(BOROUGH) %>%
  summarise(total.injured = sum(NUMBER.OF.PERSONS.INJURED),
            total.killed = sum(NUMBER.OF.PERSONS.KILLED),
            total.pedes.injured = sum(NUMBER.OF.PEDESTRIANS.INJURED),
            total.pedes.killed = sum(NUMBER.OF.PEDESTRIANS.KILLED),
            total.cyc.injured = sum(NUMBER.OF.CYCLIST.INJURED),
            total.cyc.killed = sum(NUMBER.OF.CYCLIST.KILLED),
            total.motor.injured = sum(NUMBER.OF.MOTORIST.INJURED),
            total.motor.killed = sum(NUMBER.OF.PERSONS.KILLED))

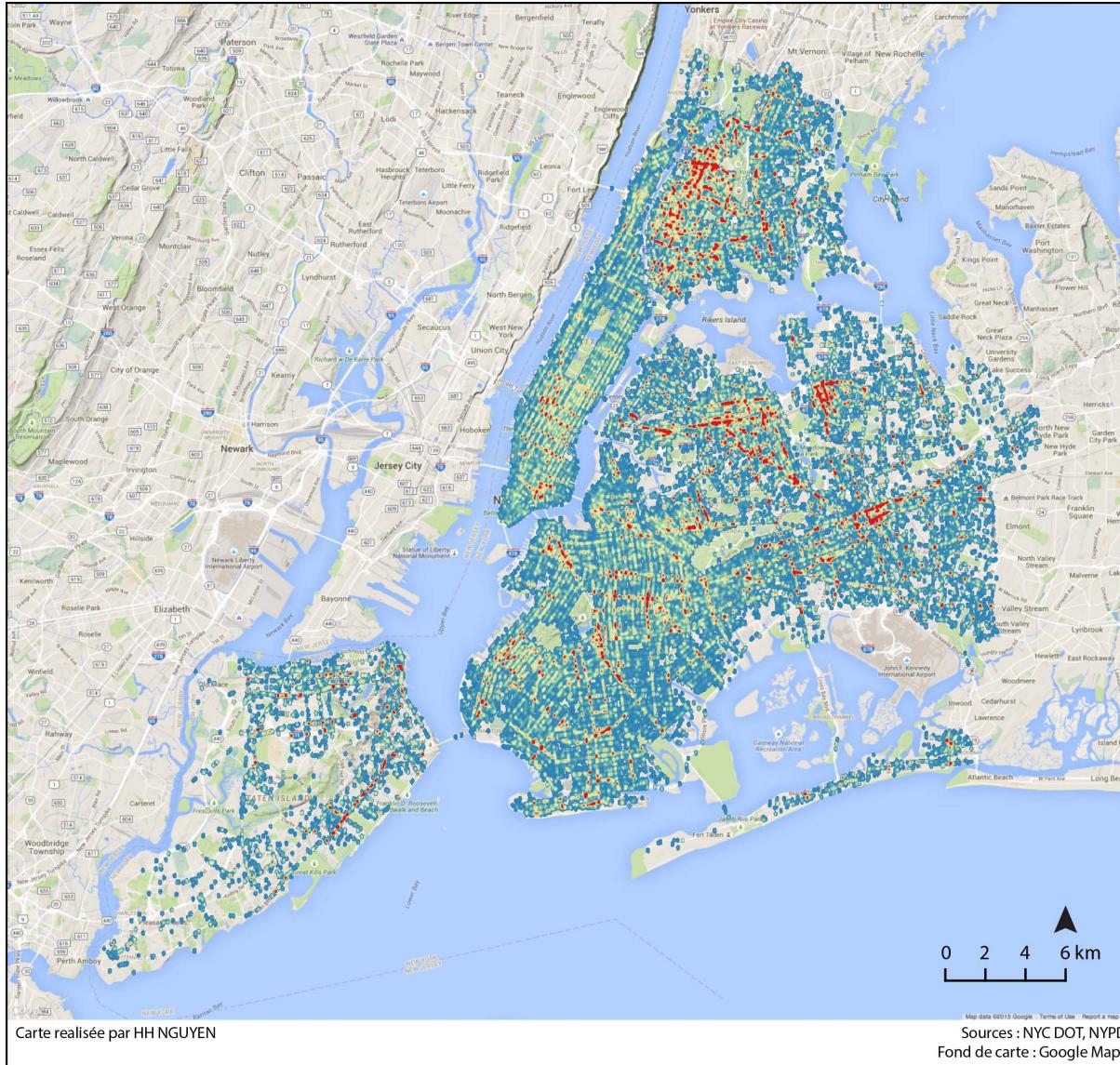
pct.total = function(x){
  return(x/sum(x) * 100)
}

# make pct table
pct.crash.table = crash.table %>% mutate_at(vars(-BOROUGH), pct.total)
```

visualisation – ggplot2 in r



r & qgis – mapping



mapping crash count
weighted by severity
of injury

thank you



The Bicycle Path from Prospect Park, Brooklyn, to Coney Island.

Drawn by J. M. Gleason.