data visualization HM-01

by Pang

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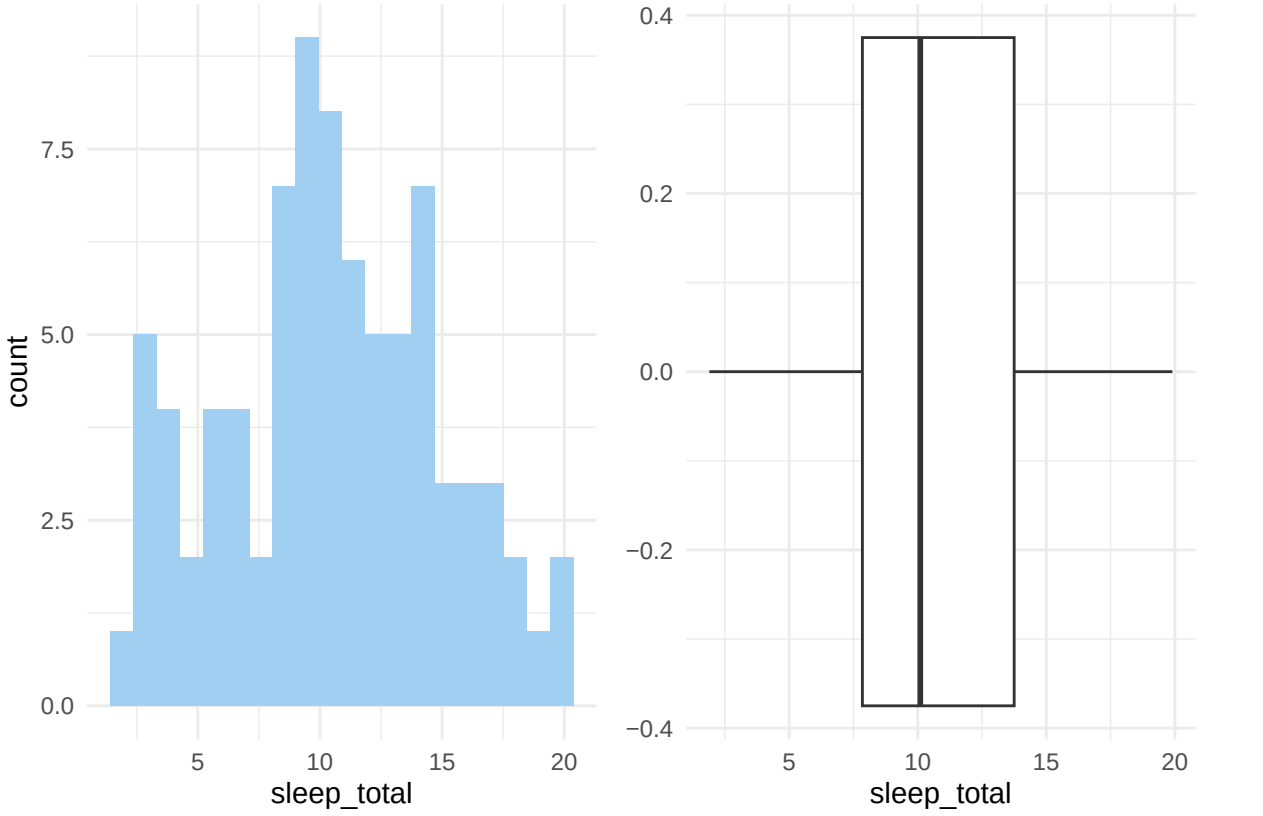
msleep

msleep is mammals sleep dataset for understanding mammalian sleep

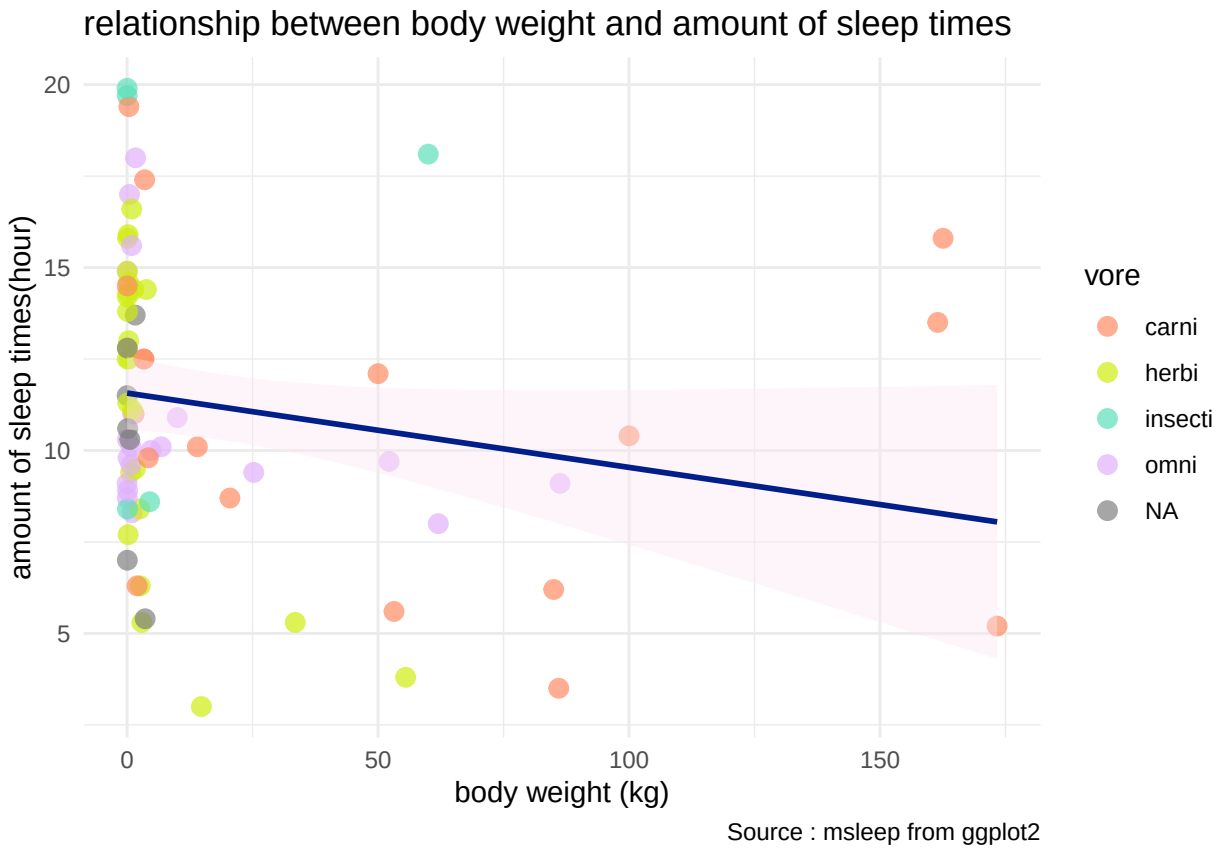
let's explore msleep!

The first chart illustrates time that mammals take sleep. They take from 2 hours until 20 hours, but most of mammals sleep approximately 10 hours.




```
fivenum(msleep$sleep_total)
```

```
## [1]  1.90  7.85 10.10 13.75 19.90
```



This graph shows relationship between weight and sleep time. Smaller mammals tend to sleep longer than bigger mammals. Carnivore mammals are different. They, love sleeping, sleep more than 10 hours.

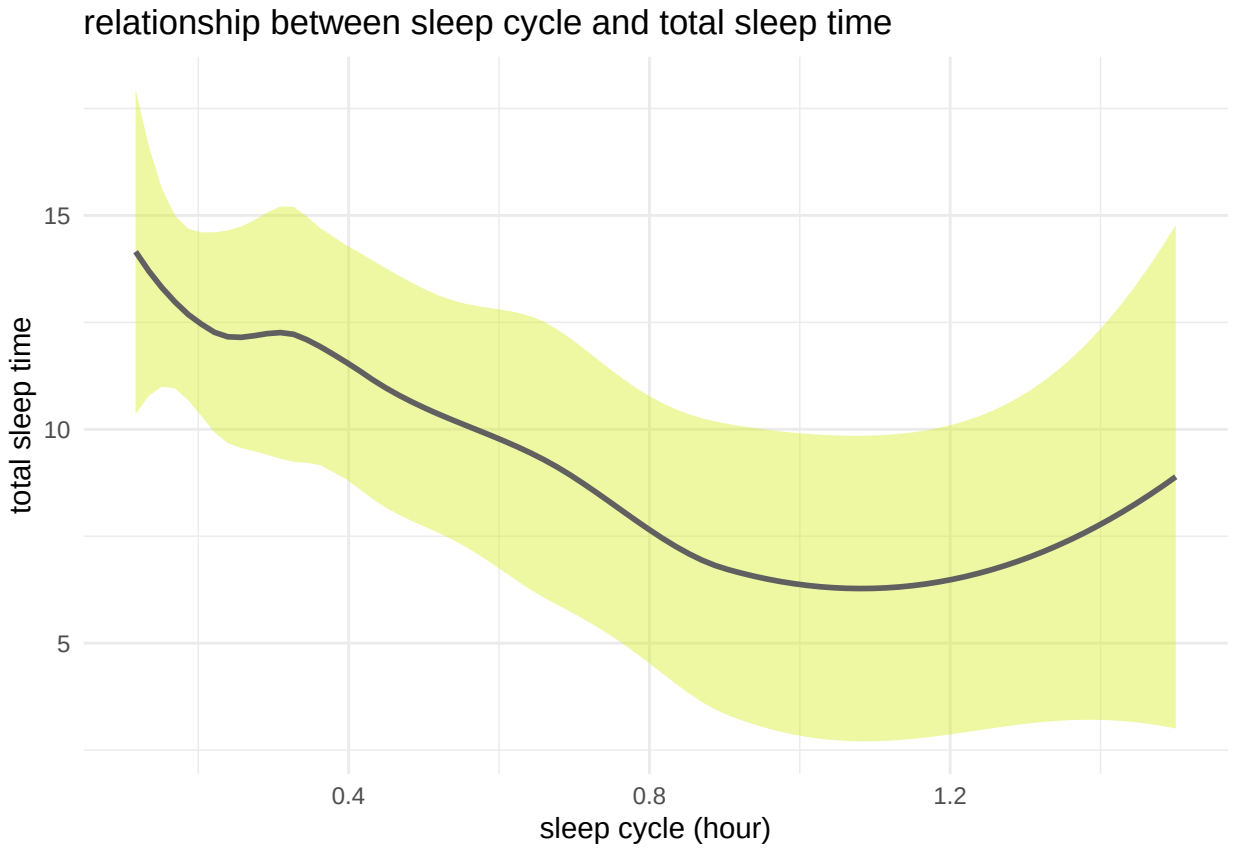
Example of carnivore mammals

```
## # A tibble: 23 x 3
##    name            bodywt sleep_total
##    <chr>            <dbl>       <dbl>
##  1 Giant armadillo   60          18.1
##  2 Tiger            163.         15.8
##  3 Lion             161.         13.5
##  4 Cheetah           50          12.1
##  5 Jaguar           100          10.4
##  6 Chimpanzee        52.2         9.7
##  7 Baboon            25.2         9.4
##  8 Pig               86.2         9.1
##  9 Human             62           8
## 10 Gray seal         85           6.2
## # i 13 more rows
```

Sleep Cycle

During sleep, the mammalian brain transitions through repeated cycles of non-rapid-eye-movement (NREM) and rapid-eye-movement (REM) sleep. The physiological implementation of this slow ultradian brain rhythm is largely unknown. Two differing dynamical mechanisms have been proposed to underlie the NREM-REM cycle. And total sleep is made up of several rounds of the sleep cycle.Not all sleep cycles are the same length

Source : Modeling the mammalian sleep cycle, sleepfoundation



This graph shows that mammals which have low sleep cycle tend to take longer sleep than mammals which have high sleep cycle.

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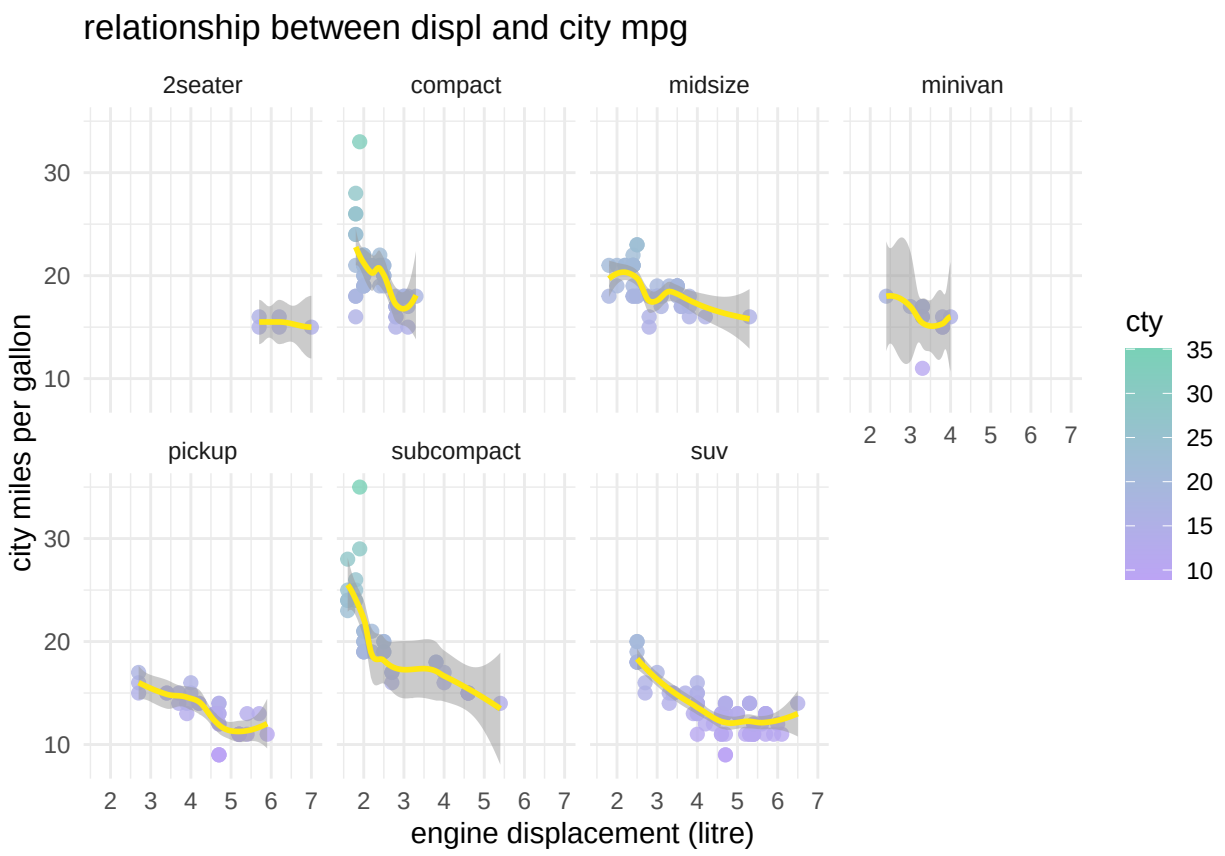
mpg

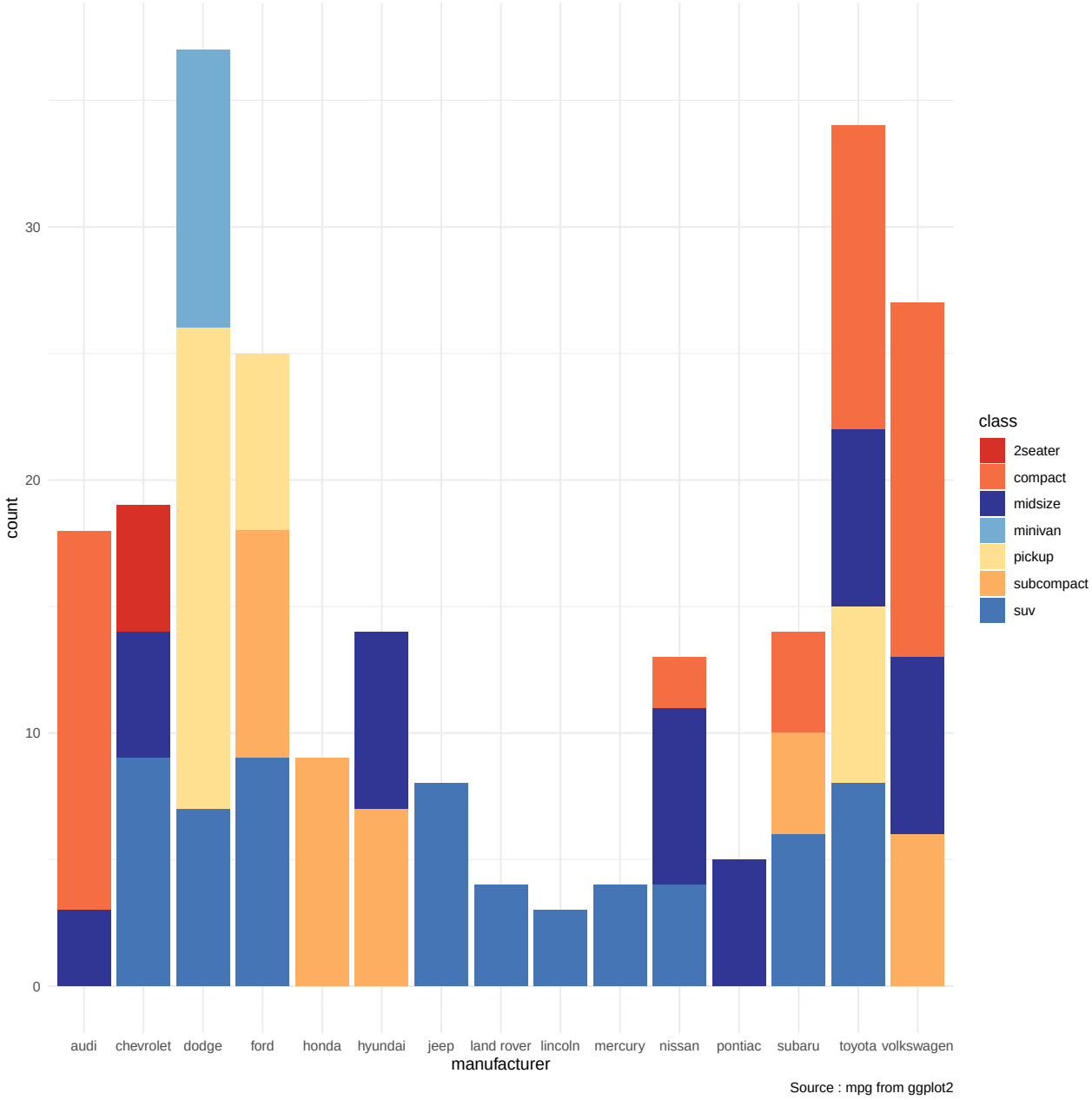
The mpg is data set contains a subset of the fuel economy data. It contains only models which had a new release every year between 1999 and 2008 - this was used as a proxy for the popularity of the car.



let's explore mpg!

Those graphs show that engine displacement affects city miles per gallon. If engine displacement is low, city miles per gallon will be high. If engine displacement is high , city miles per gallon will be lower.

Final graph shows classes of car from each manufacturer



If you are looking for eco car for driving in a city, I would recommend subcompact car and compact car. choice 1 : subcompact cars

```
## # A tibble: 10 x 7
##    manufacturer model       year displ   cyl trans        cty
##    <chr>        <chr>      <int> <dbl> <int> <chr>      <int>
##  1 volkswagen   new beetle  1999   1.9     4 manual(m5)    35
##  2 volkswagen   new beetle  1999   1.9     4 auto(l4)      29
##  3 honda        civic       1999   1.6     4 manual(m5)    28
##  4 honda        civic       2008   1.8     4 manual(m5)    26
##  5 honda        civic       1999   1.6     4 manual(m5)    25
##  6 honda        civic       2008   1.8     4 auto(l5)      25
```

```
##  7 honda        civic       1999   1.6     4 auto(l4)      24
##  8 honda        civic       1999   1.6     4 auto(l4)      24
##  9 honda        civic       2008   1.8     4 auto(l5)      24
## 10 honda        civic       1999   1.6     4 manual(m5)    23
```

choice 2 : compact cas

```
## # A tibble: 10 x 7
##    manufacturer model         year displ   cyl trans        cty
##    <chr>        <chr>        <int> <dbl> <int> <chr>      <int>
##  1 volkswagen   jetta         1999   1.9     4 manual(m5)    33
##  2 toyota       corolla       2008   1.8     4 manual(m5)    28
##  3 toyota       corolla       1999   1.8     4 manual(m5)    26
##  4 toyota       corolla       2008   1.8     4 auto(l4)      26
##  5 toyota       corolla       1999   1.8     4 auto(l3)      24
##  6 toyota       corolla       1999   1.8     4 auto(l4)      24
##  7 toyota       camry solara  2008   2.4     4 auto(s5)      22
##  8 volkswagen   gti           2008   2       4 auto(s6)      22
##  9 volkswagen   jetta         2008   2       4 auto(s6)      22
## 10 audi         a4            1999   1.8     4 manual(m5)    21
```