

*“Oh Say, Can you see ...?”*

**An Edu-tainment**

*Chris Wild*  
University of Auckland

*“Oh Say, Can you see ...?”*

**Speaking into these elements of GAISE II**

*Thanks*

- **multivariate thinking**
- **visualisation ...**
- **use of technology**
- **“Big” data**

**A better metaphor than gilding ...**

**Adding *Zing* to home-cooked meals**



***Herbs and spices***



**All graphics in this talk were from ...**



just search for **iNZight**  
(Google or Bing)

*Online (cloud) version*



just search for **iNZight lite**  
(Google or Bing)

**Webpage for this talk**

<http://bit.ly/2q9xkHu>

# Today's cooking demonstration

## RAW INGREDIENTS

- Bar charts
- Dot plots
- Scatter plots




## ADDED SPICES

- Colouring
- Sizing
- Transparency
- Subsetting
- Identification
- Bait & switch



## MAGIC SUPER SPICE

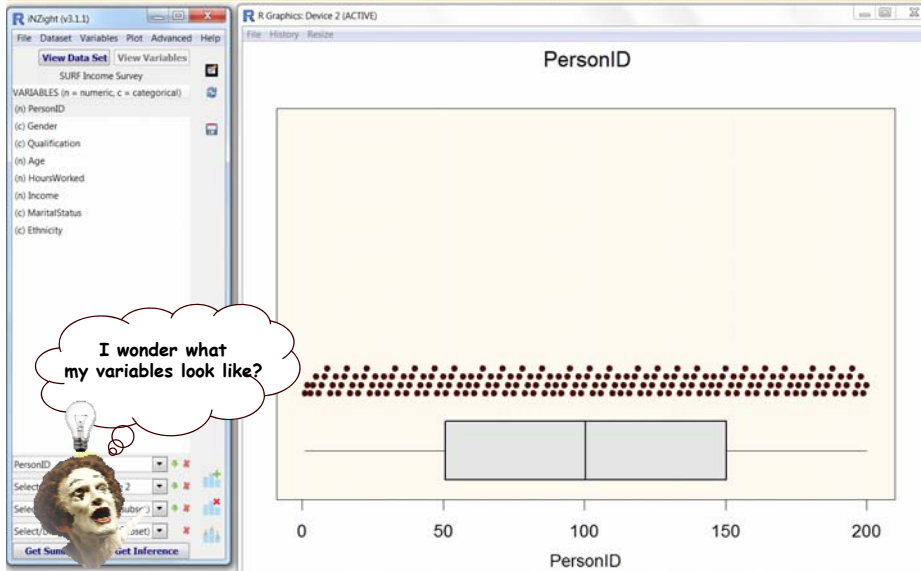
- Stepping 



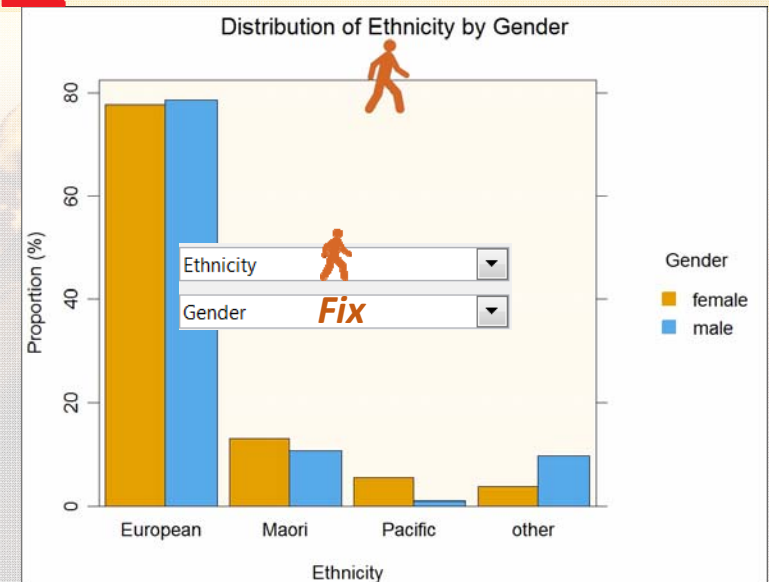
# ... Stepping through Variables



# Stepping through Variables



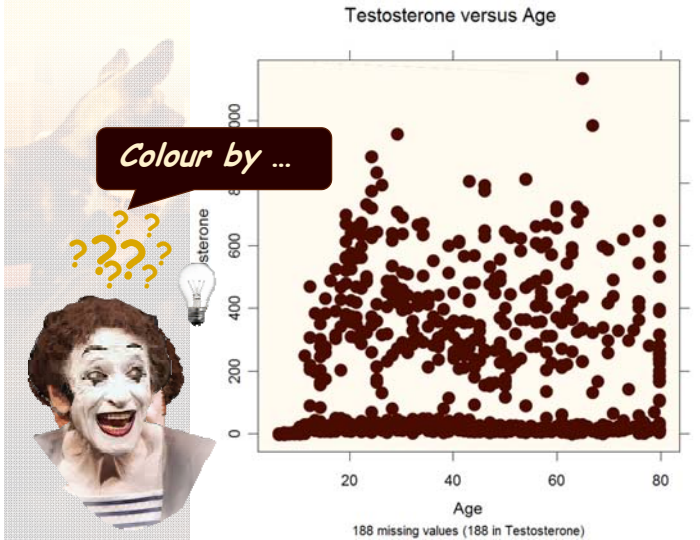
# Relationships to Gender



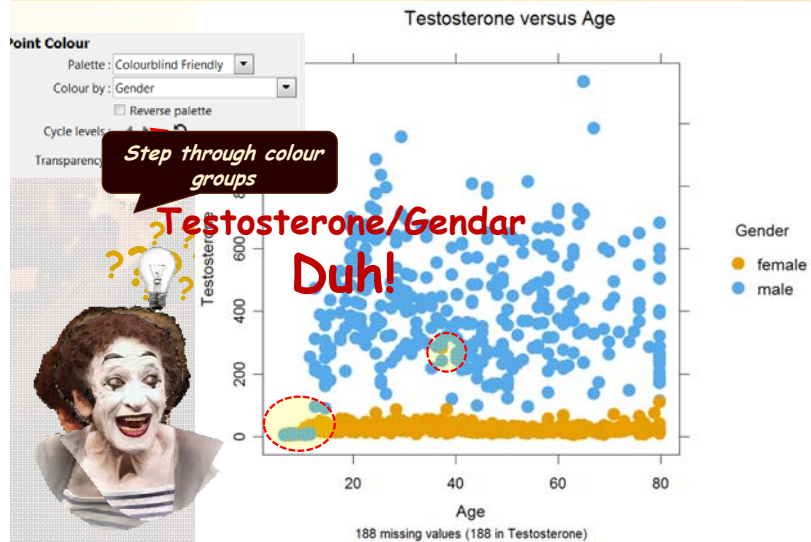
## Tasting Colour ...



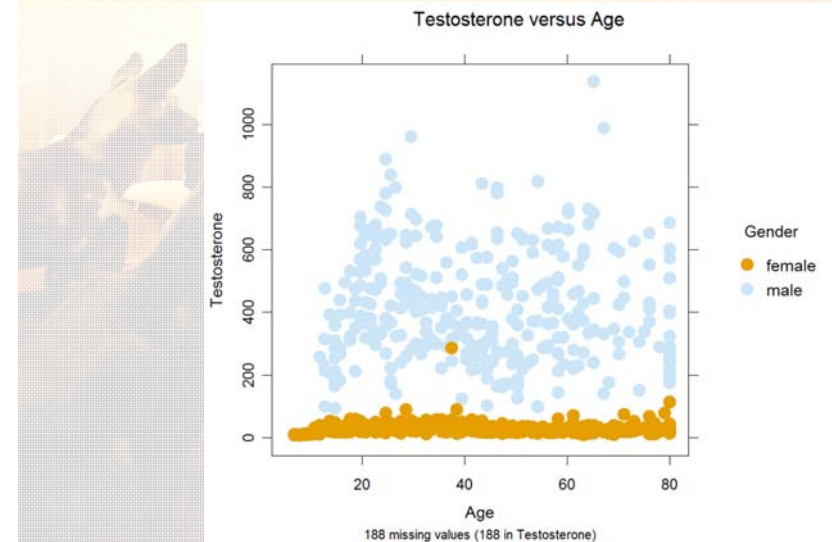
## Testosterone levels by Age



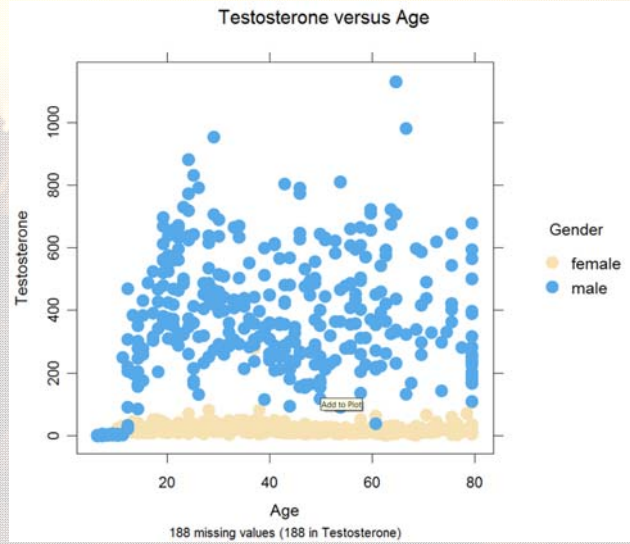
## Colour by Gender



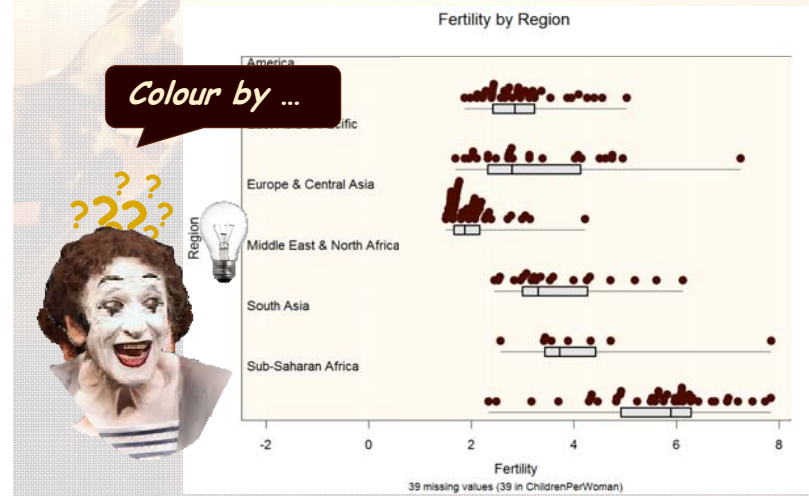
## Highlighting the females



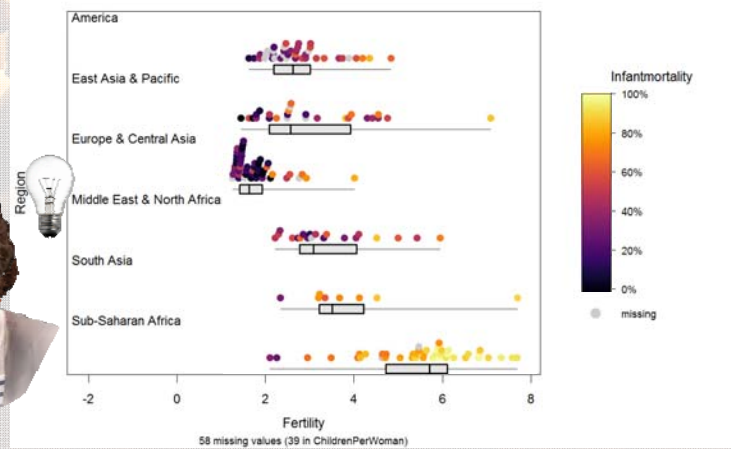
# Highlighting the males



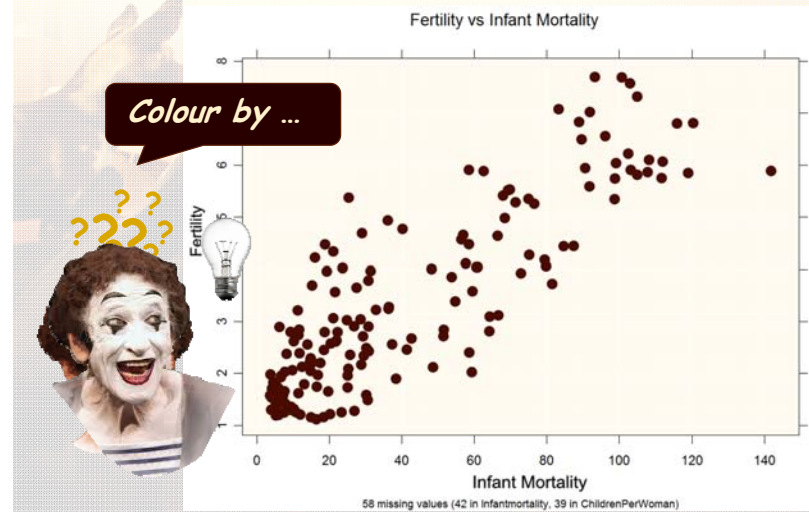
# Fertility by Region



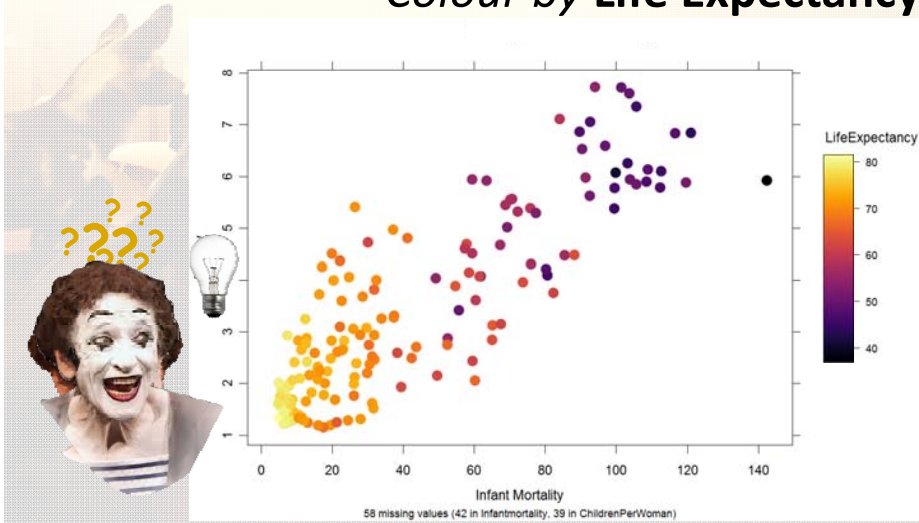
# Colour by Infant Mortality



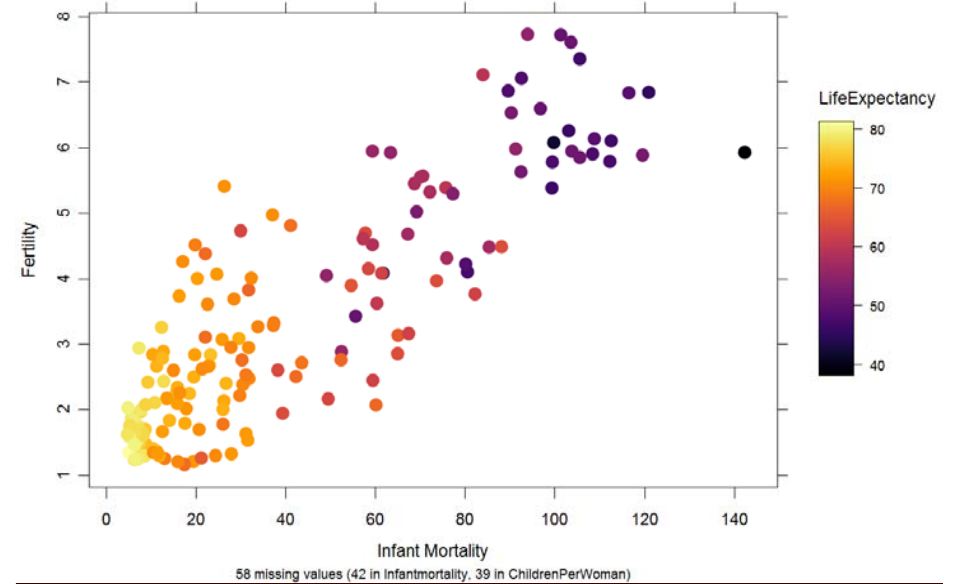
# Fertility vs Infant Mortality



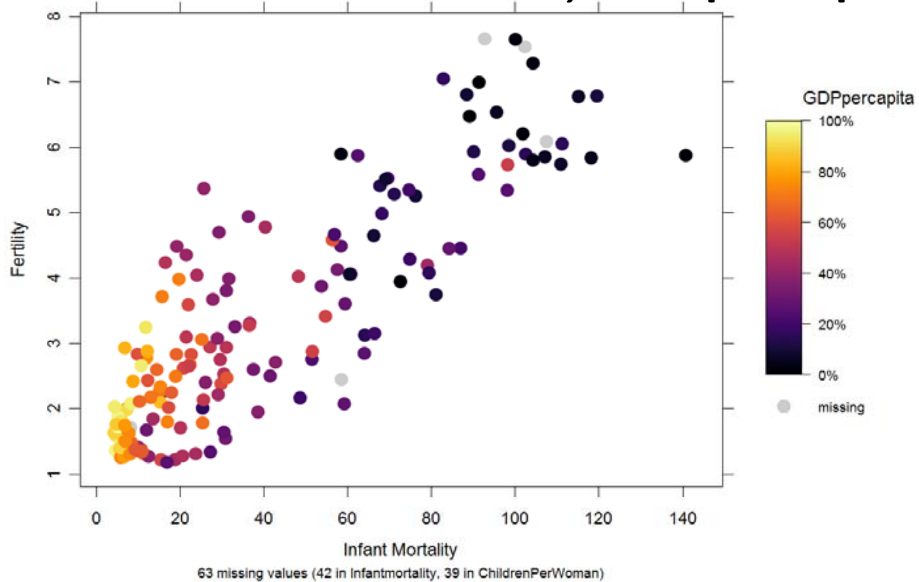
## Colour by Life Expectancy



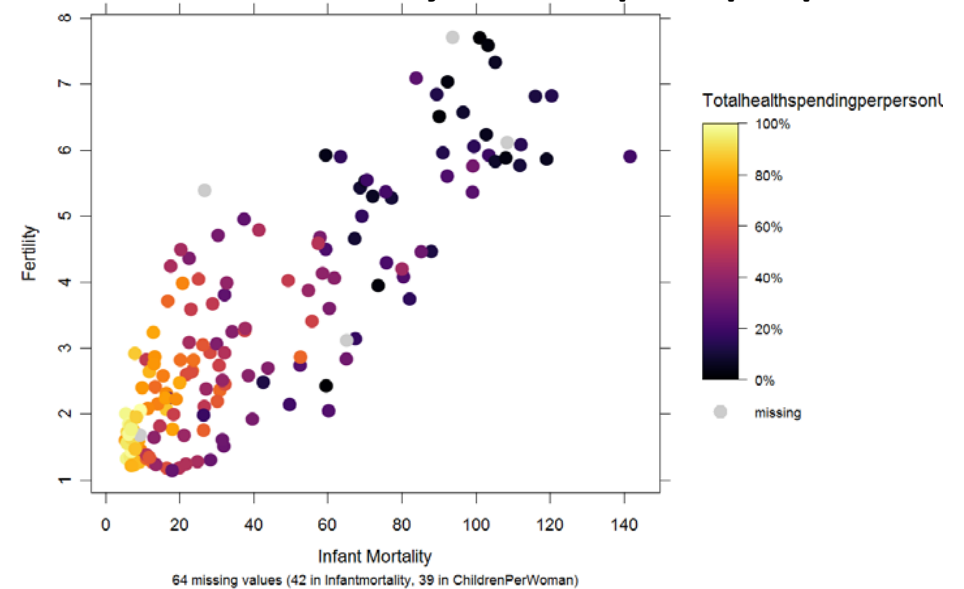
## Colour by Life Expectancy

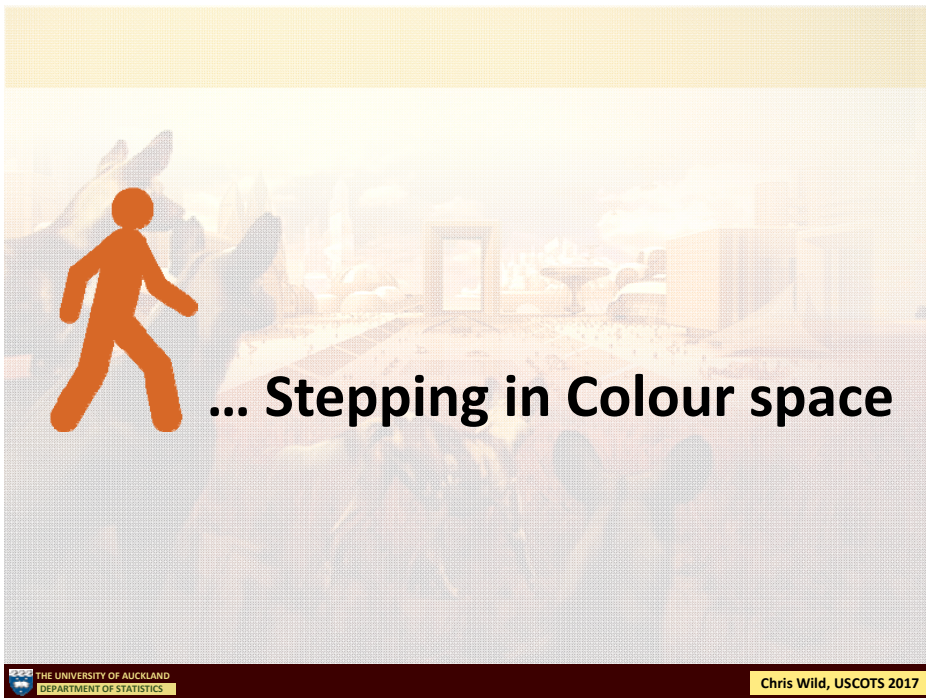


## Colour by GDP per capita



## Colour by Health spend per person

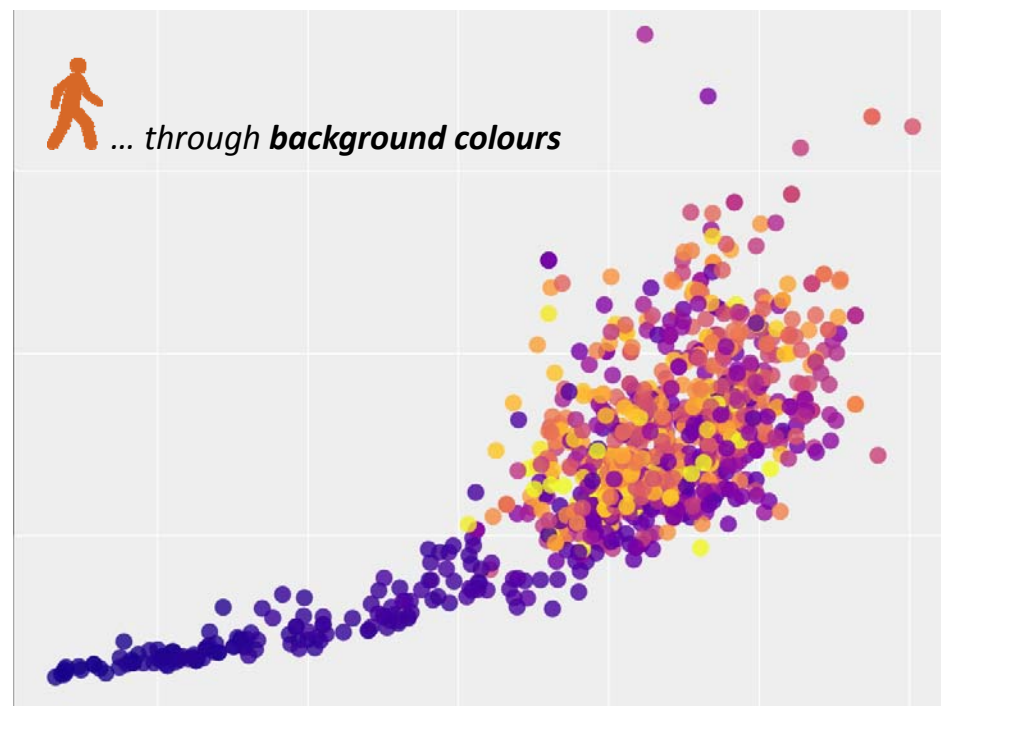
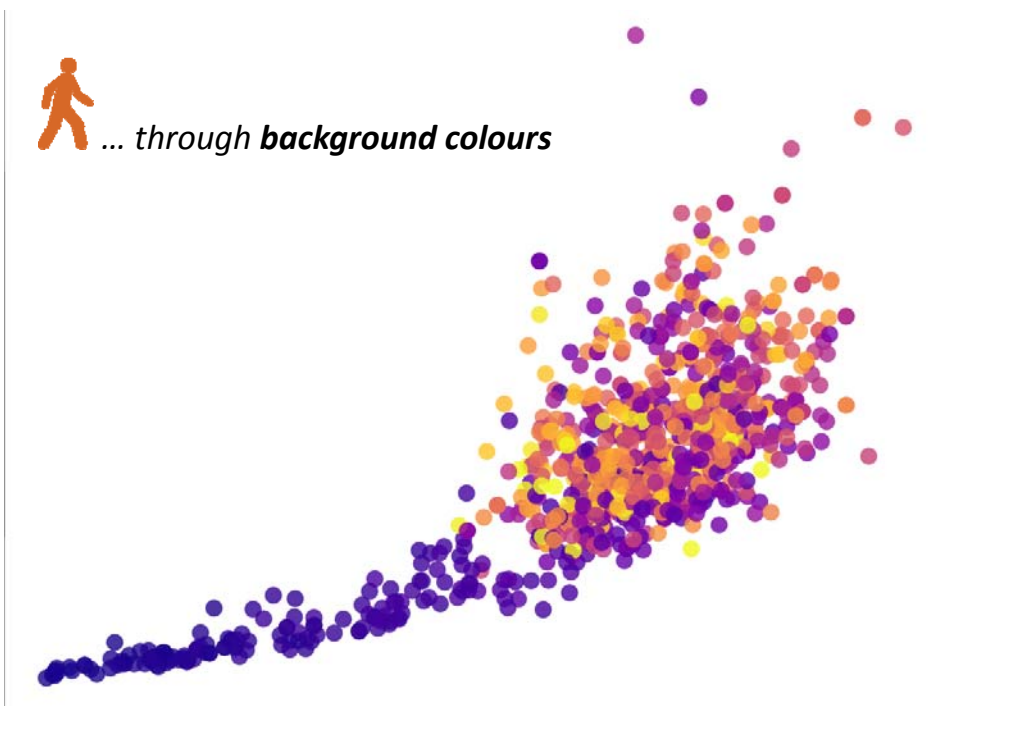
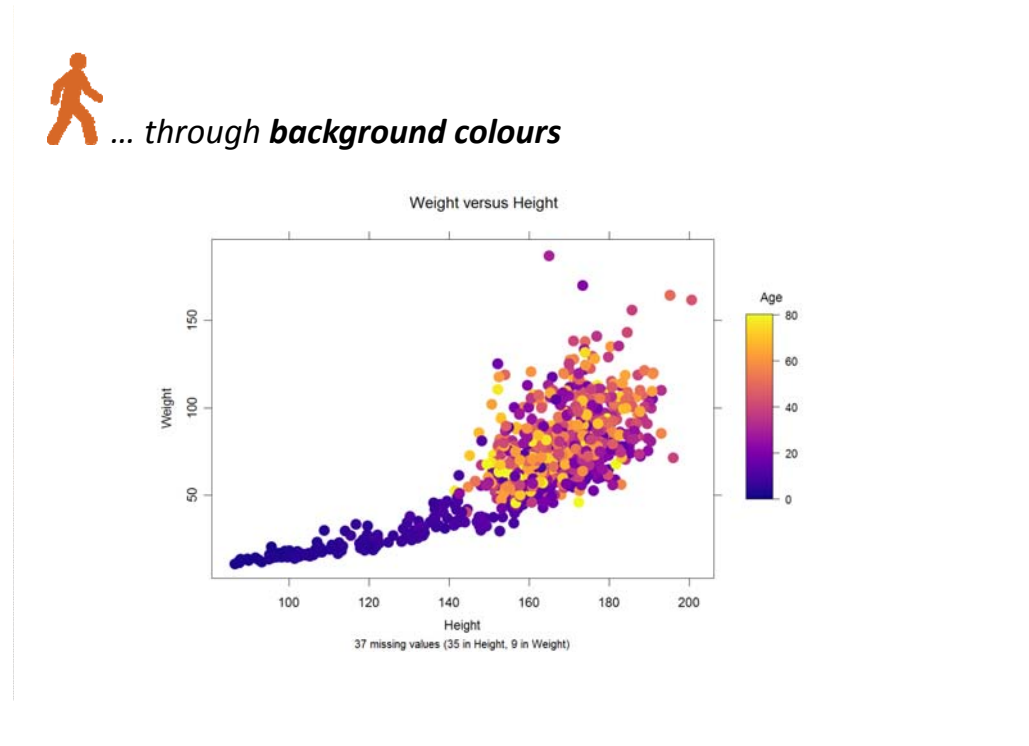


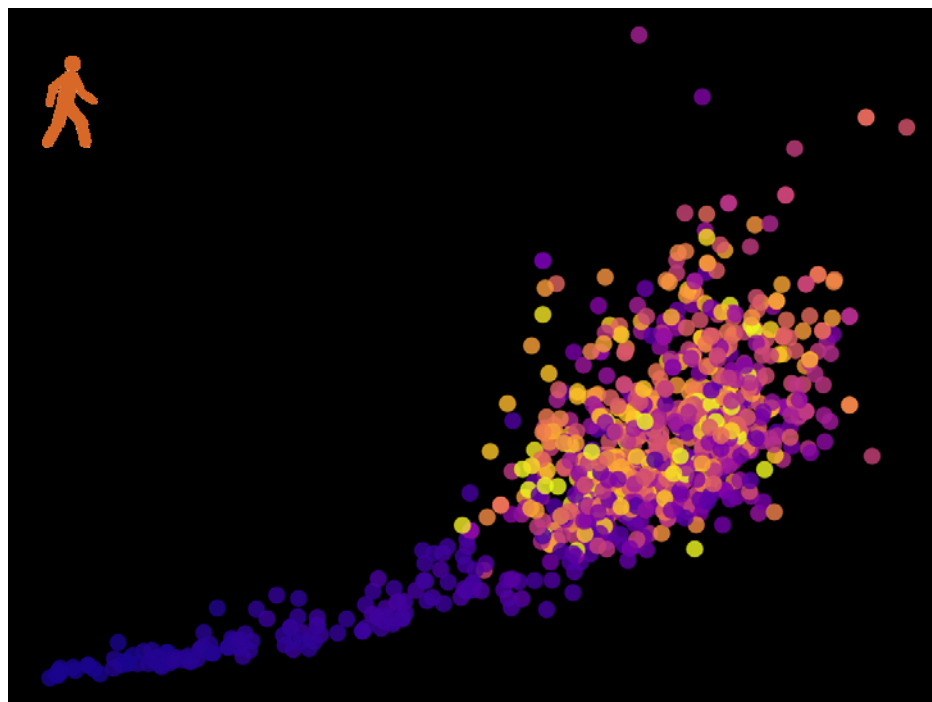
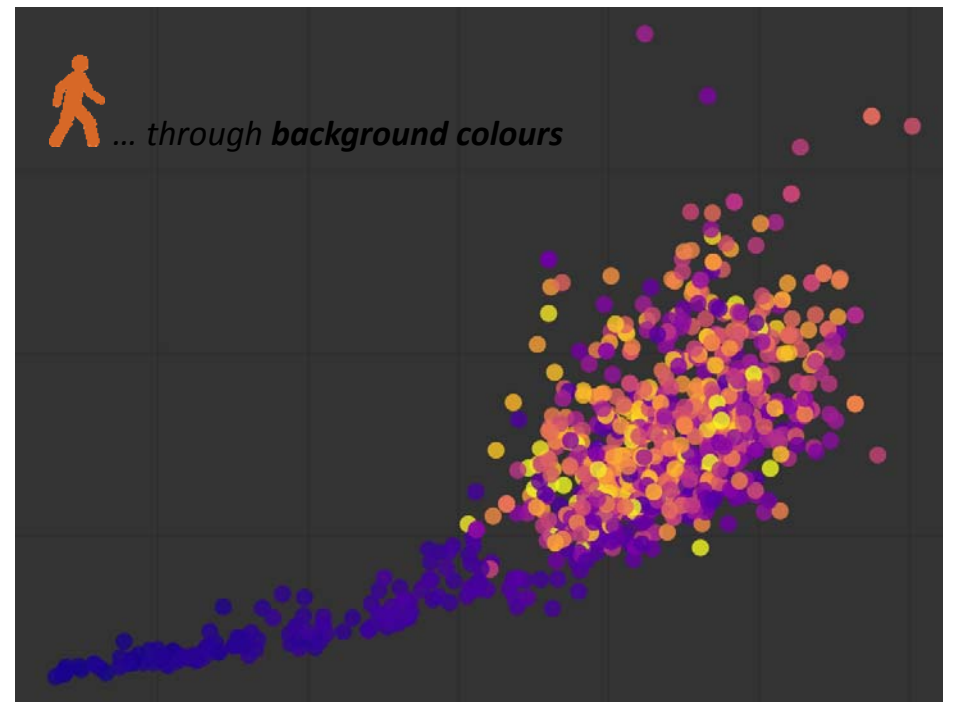
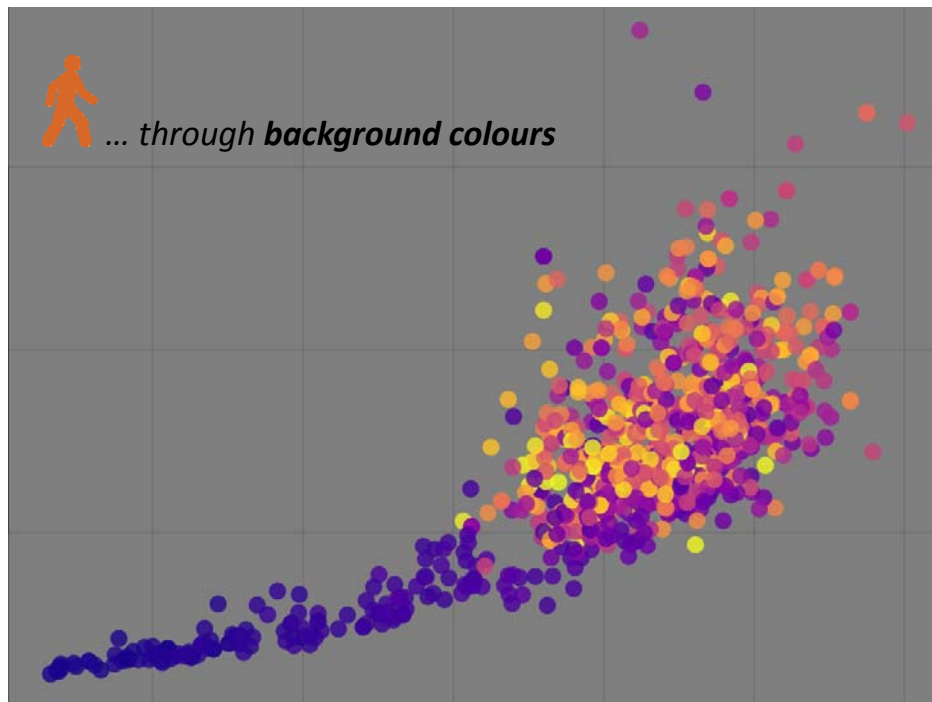


... Stepping in Colour space

THE UNIVERSITY OF AUCKLAND  
DEPARTMENT OF STATISTICS

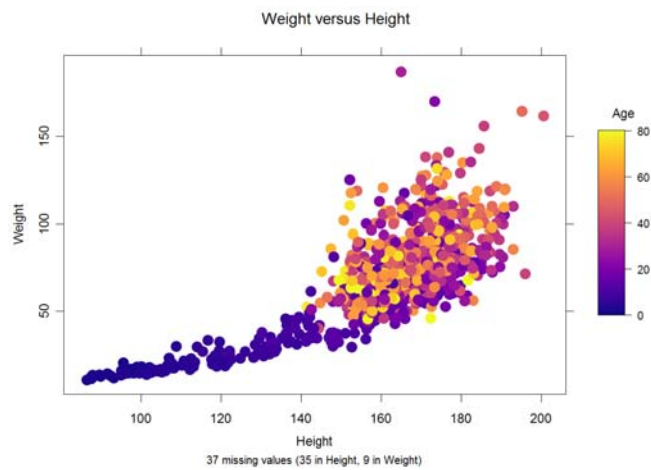
Chris Wild, USCOTS 2017



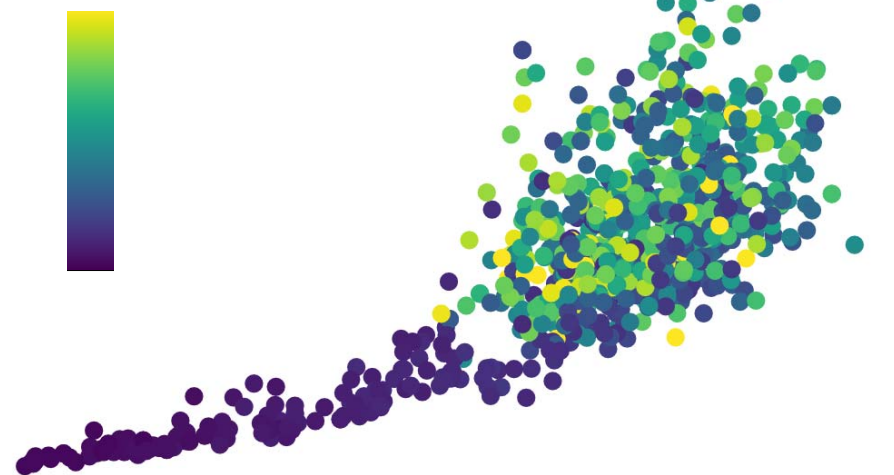




... through *colour palettes*



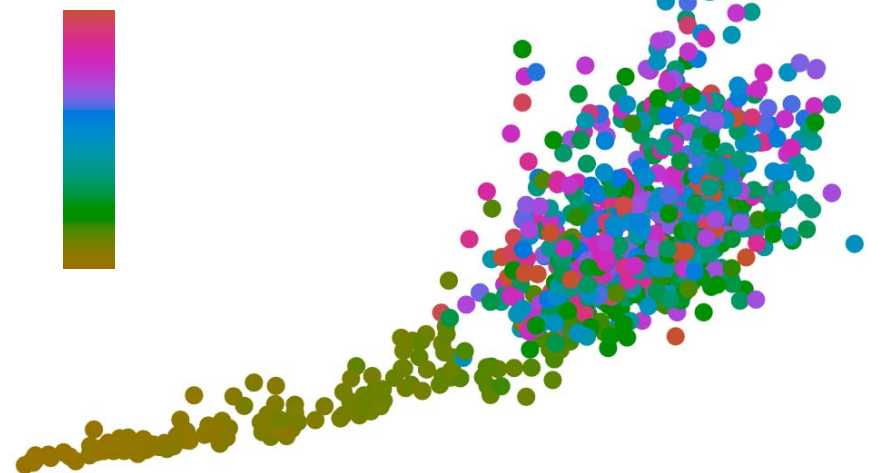
... through *colour palettes*



... through *colour palettes*

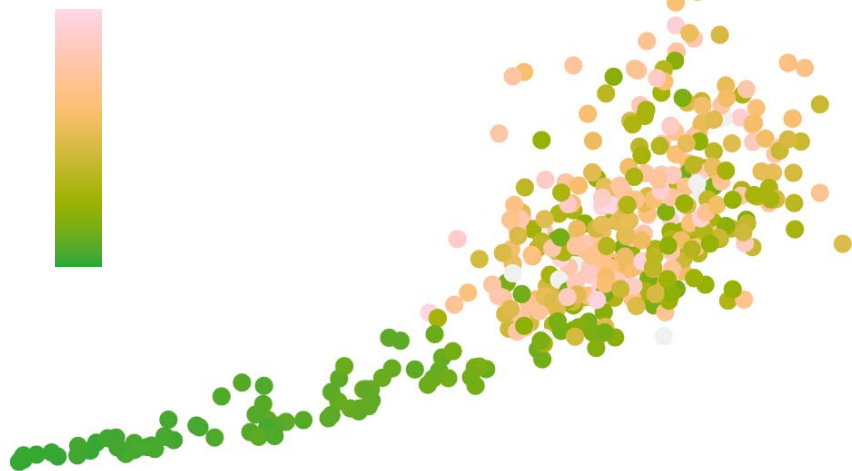


... through *colour palettes*





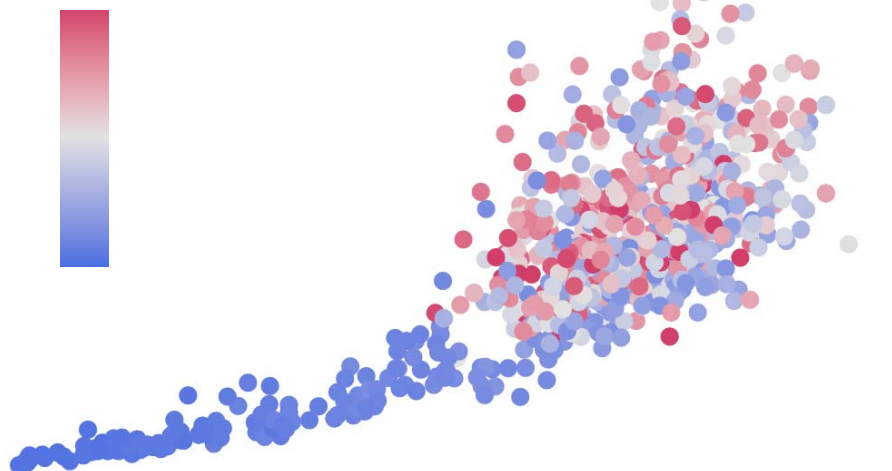
 ... through *colour palettes*



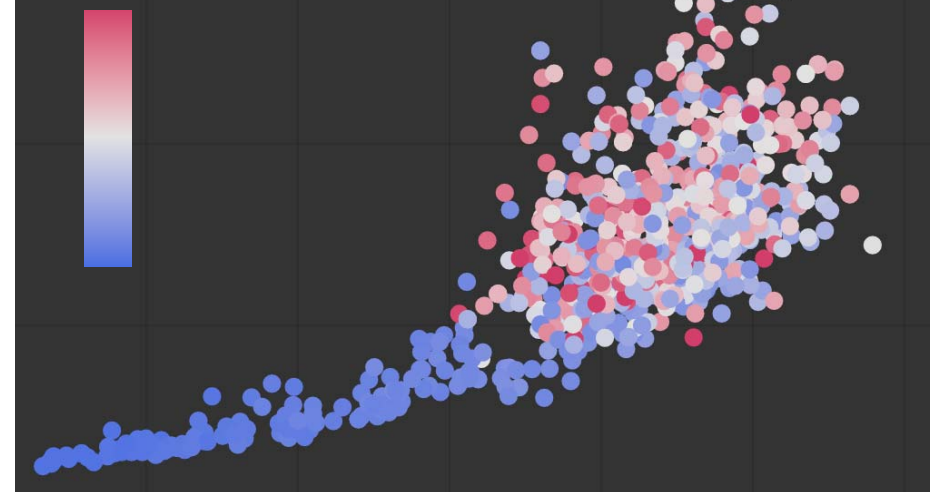
 ... through *colour palettes*



 ... through *colour palettes*

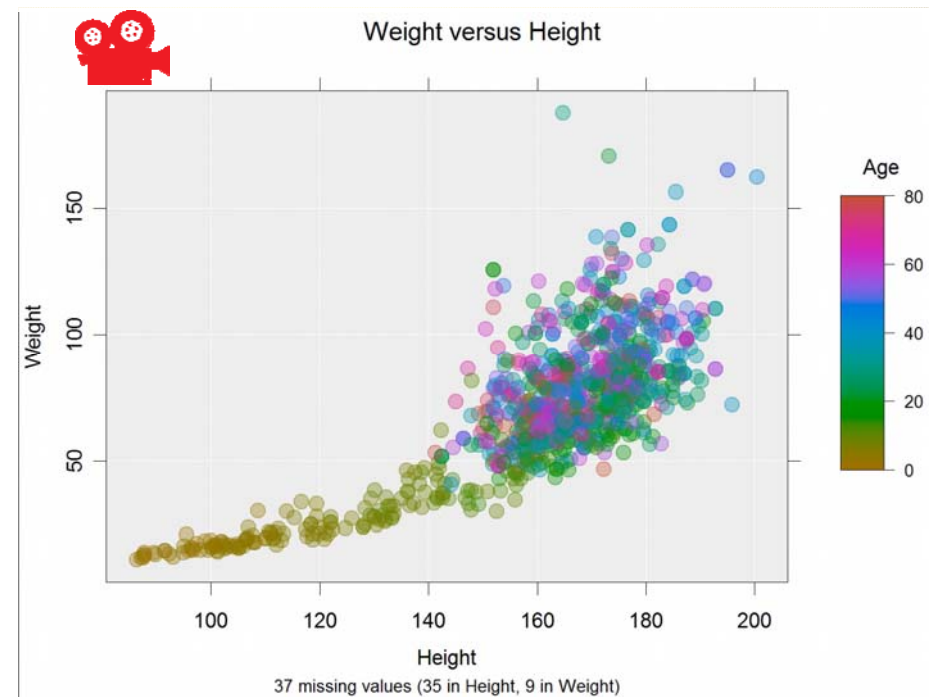


**BUT ...**

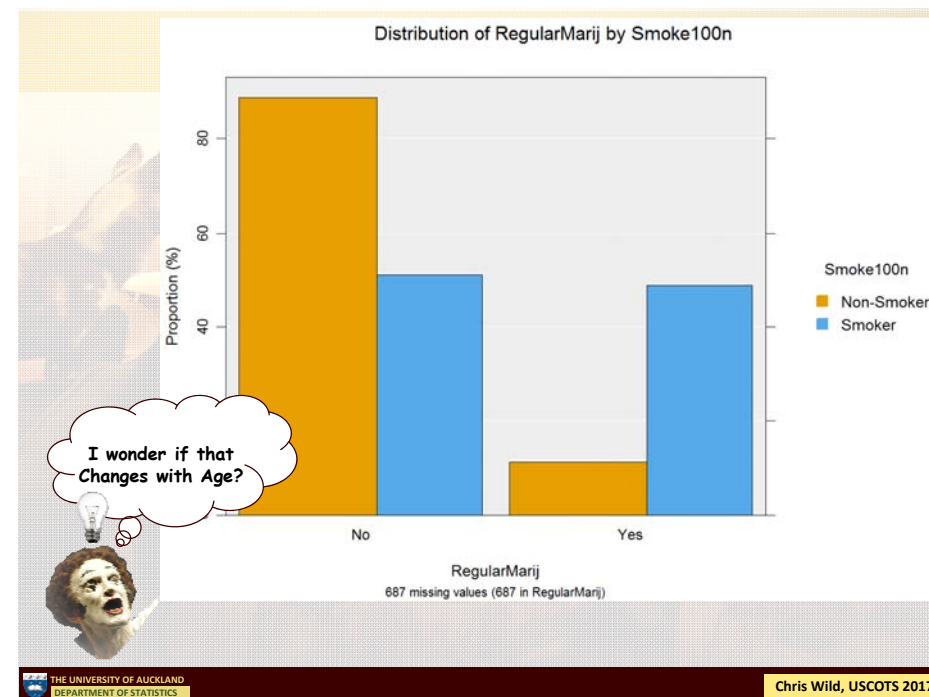




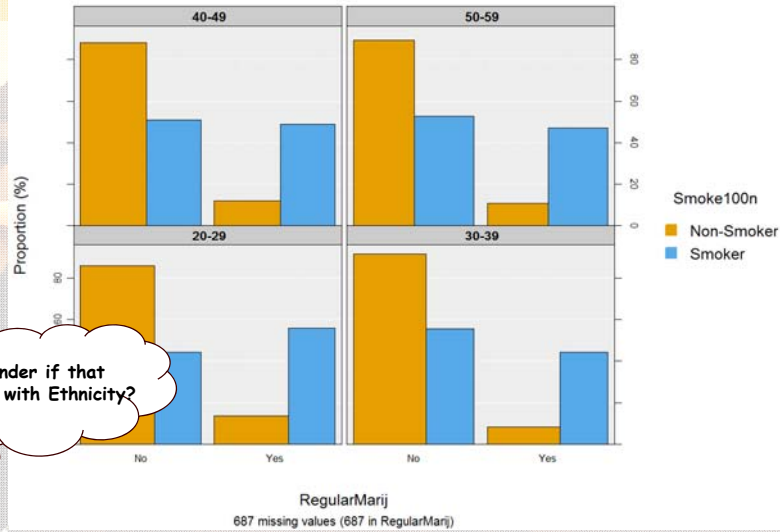
... through **colour groups**



Subsetting ...



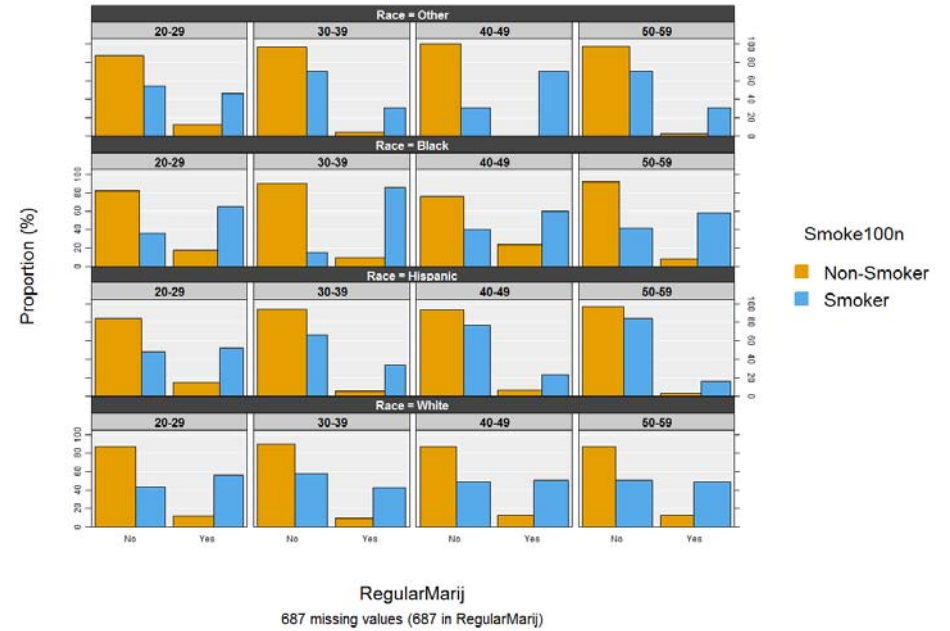
Distribution of RegularMarij by Smoke100n subset by AgeDecade



I wonder if that changes with Ethnicity?



Distribution of RegularMarij by Smoke100n subset by AgeDecade and Race



*Mathematically speaking ...*

Subsetting



+



... Stepping through subsets

=



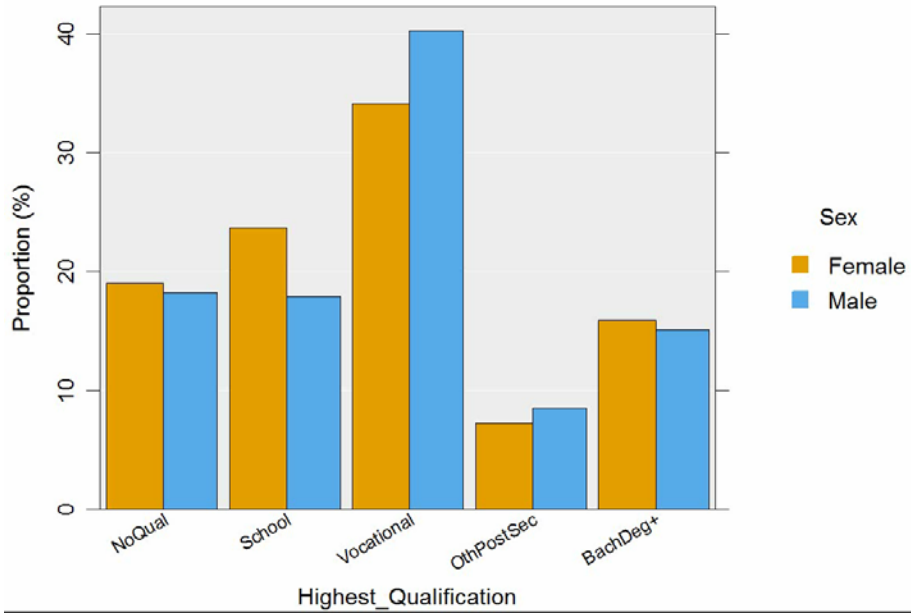
Motion ...

Motion ...





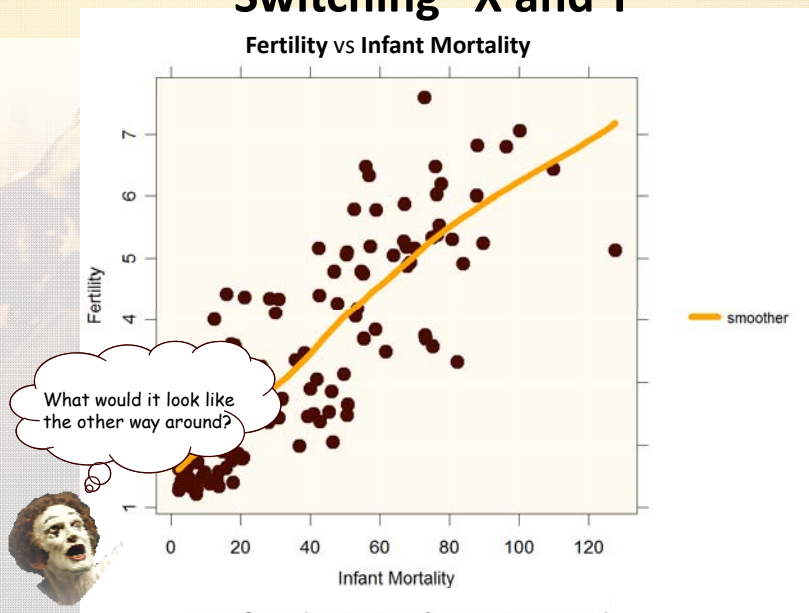
### Distribution of Highest Qualification by Sex



## Bait & switch ...

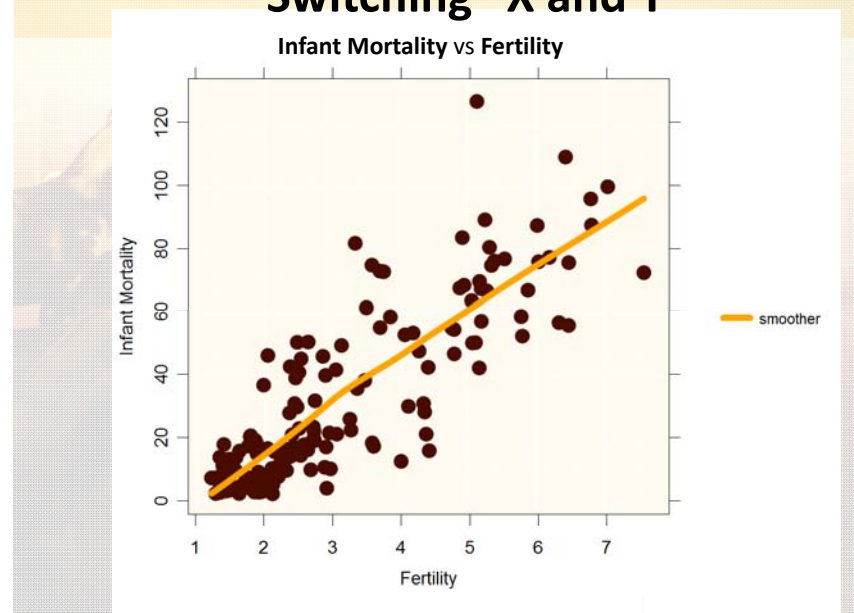
### Switching "X and Y"

#### Fertility vs Infant Mortality



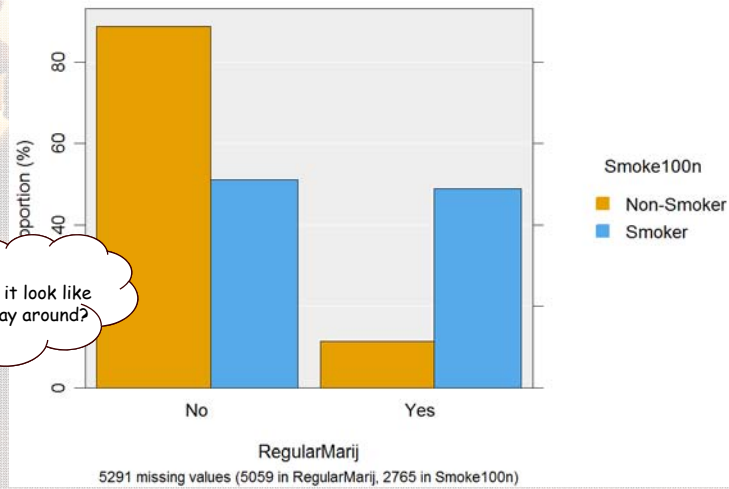
### Switching "X and Y"

#### Infant Mortality vs Fertility



## 2-way table switching "X and Y"

Distribution of RegularMarij by Smoke100n

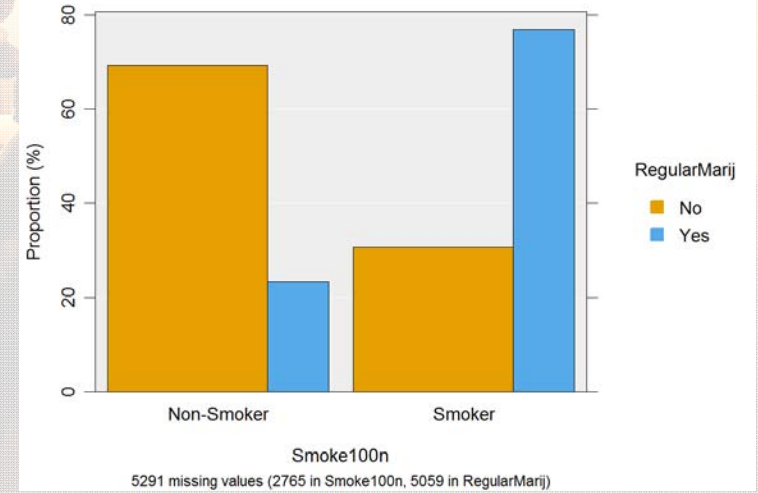


What would it look like the other way around?



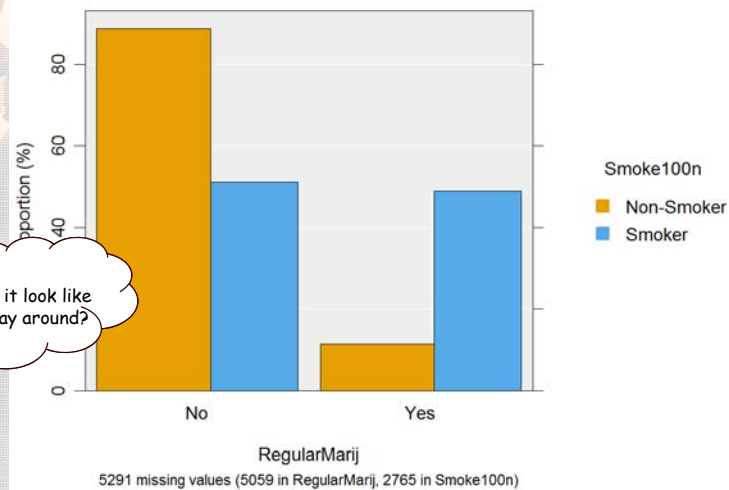
## 2-way table switching "X and Y"

Distribution of Smoke100n by RegularMarij



## 2-way table switching representations

Distribution of RegularMarij by Smoke100n

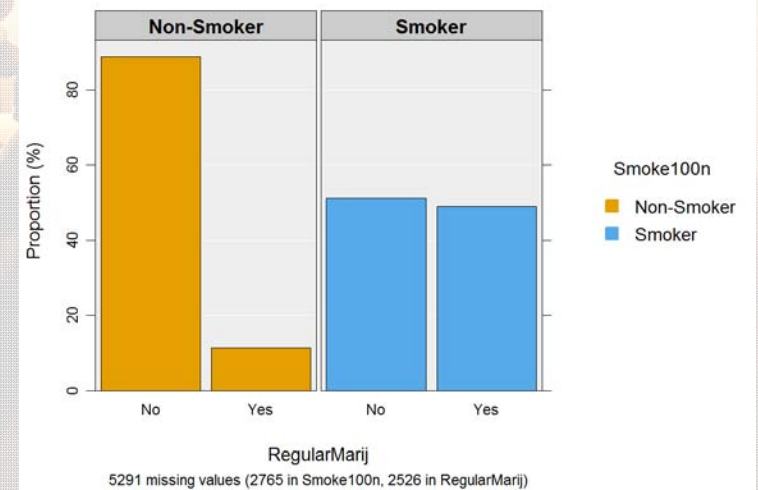


What would it look like the other way around?

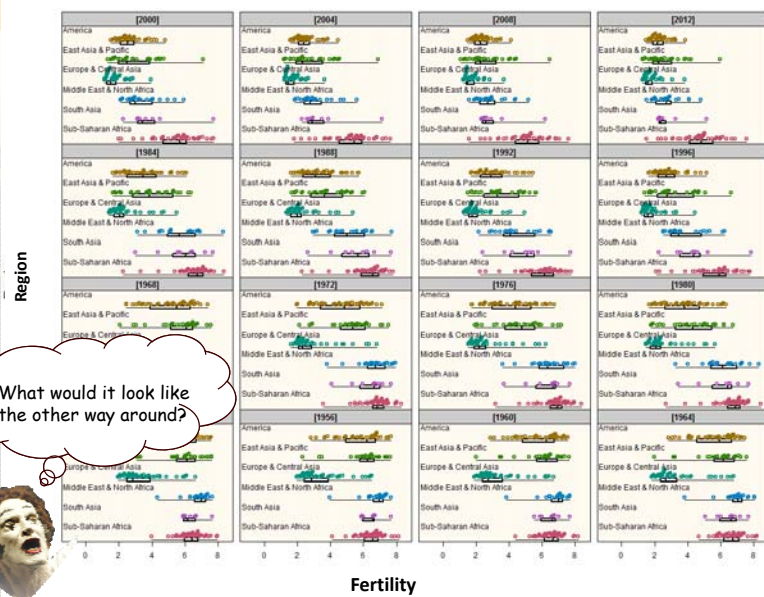


## 2-way table switching representations

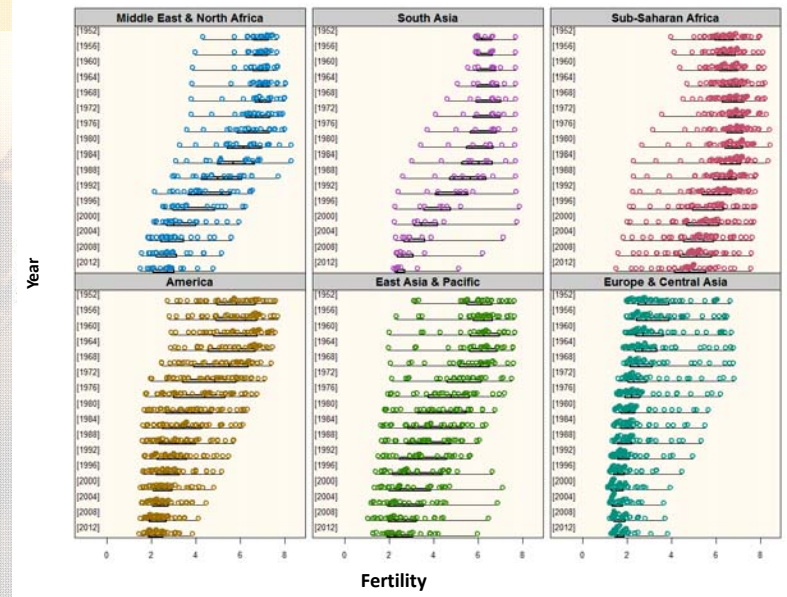
Distribution of RegularMarij subset by Smoke100n



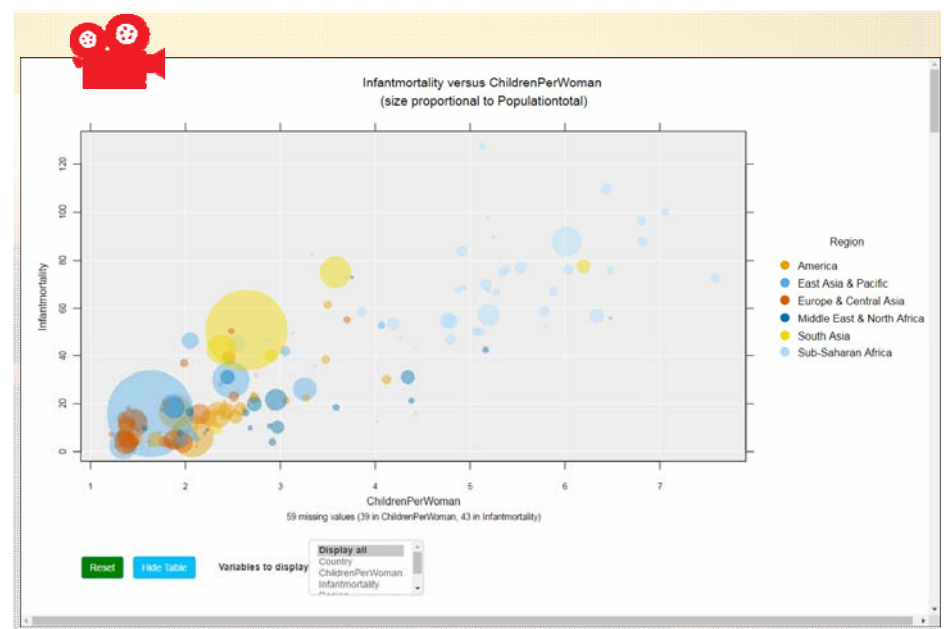
### Fertility by Region subset by Year



### Fertility by Year subset by Region

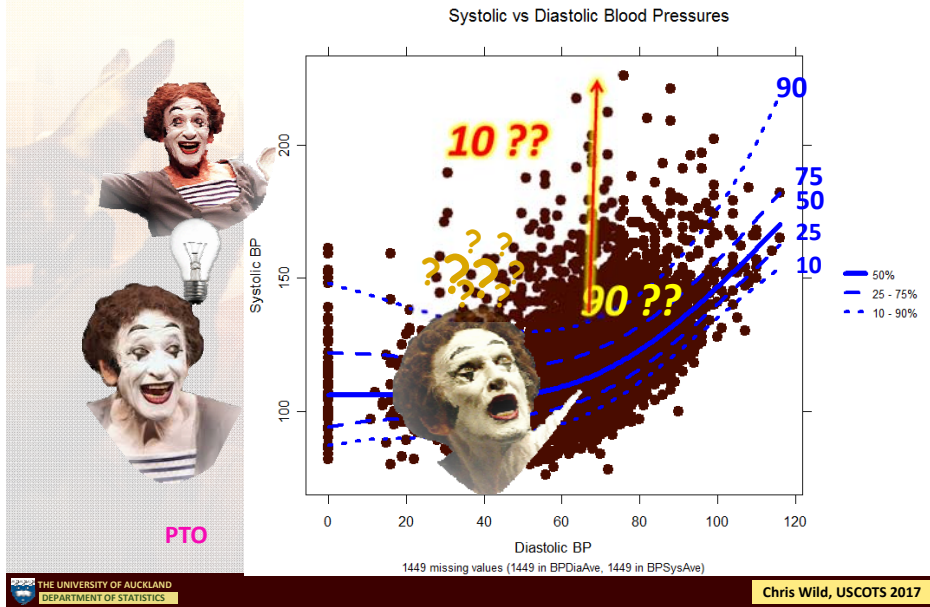


### Identification & brushing ...

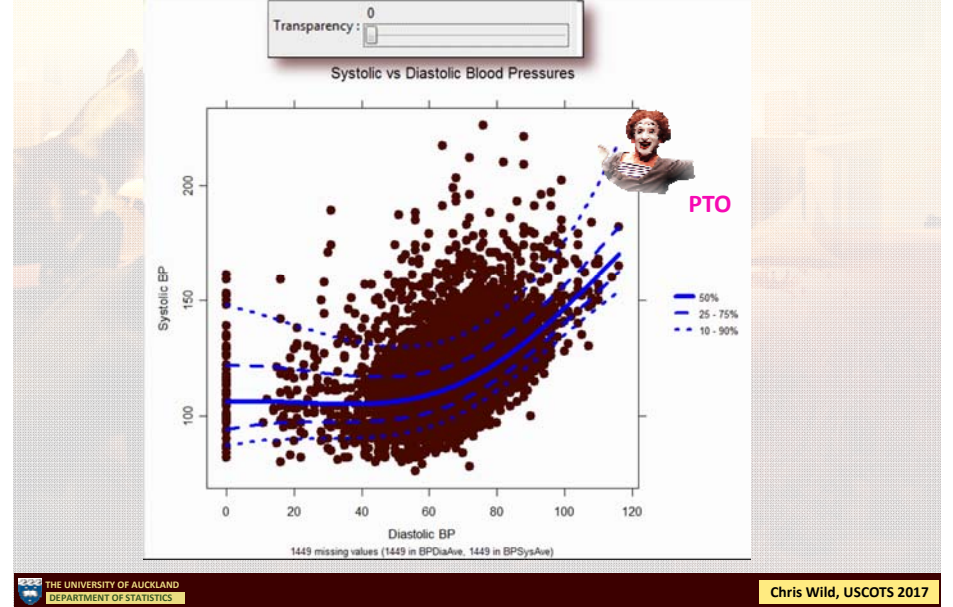




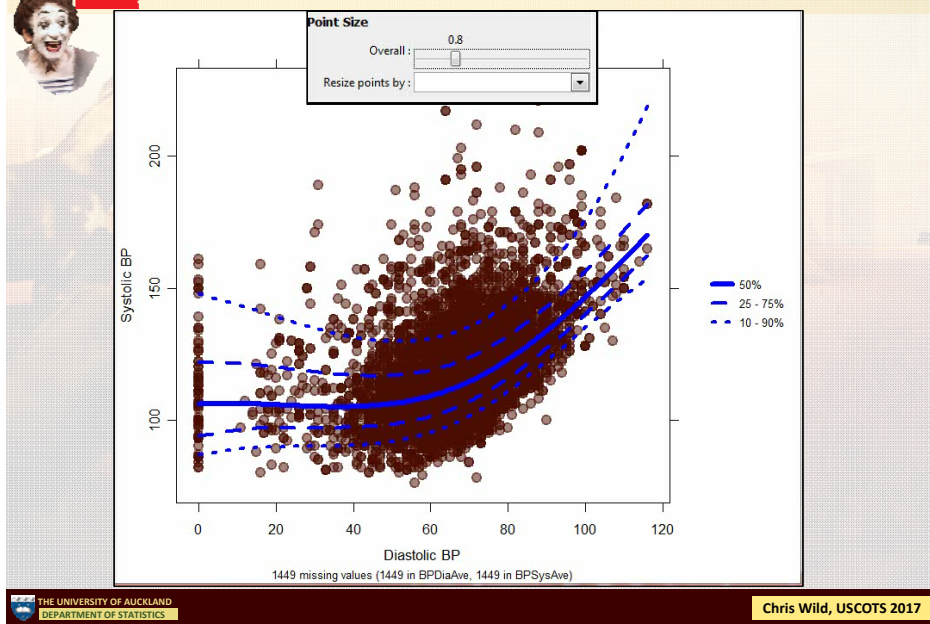
# Blood Pressures for 10,000 people



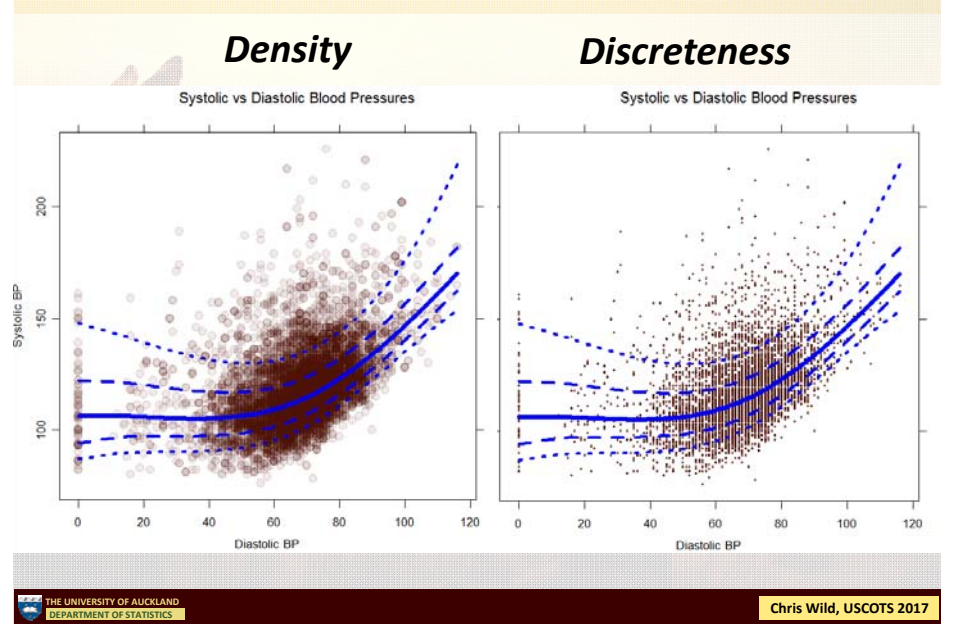
# Transparency



# Reducing Point Size

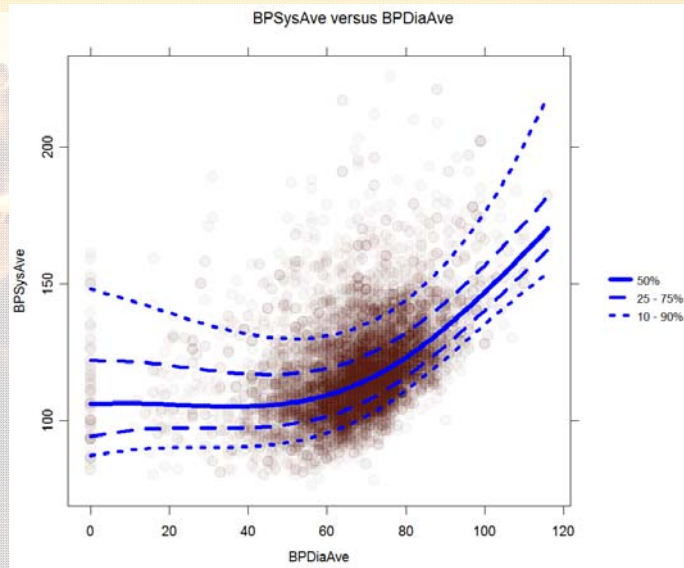


# Emphasizing ...

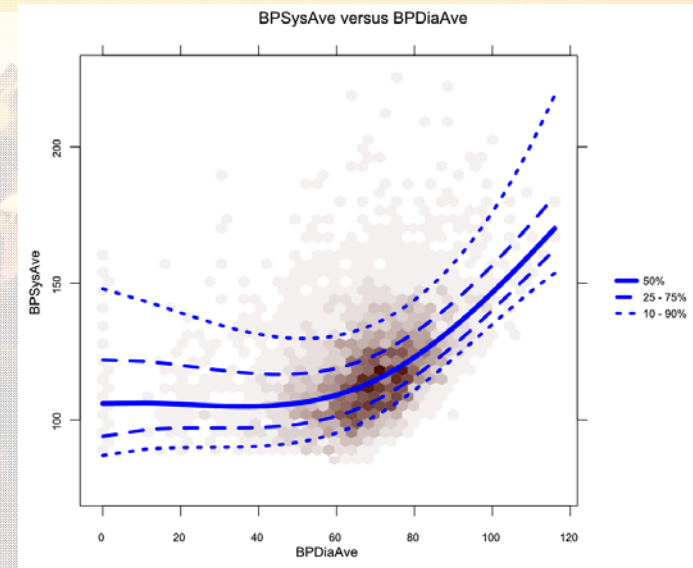




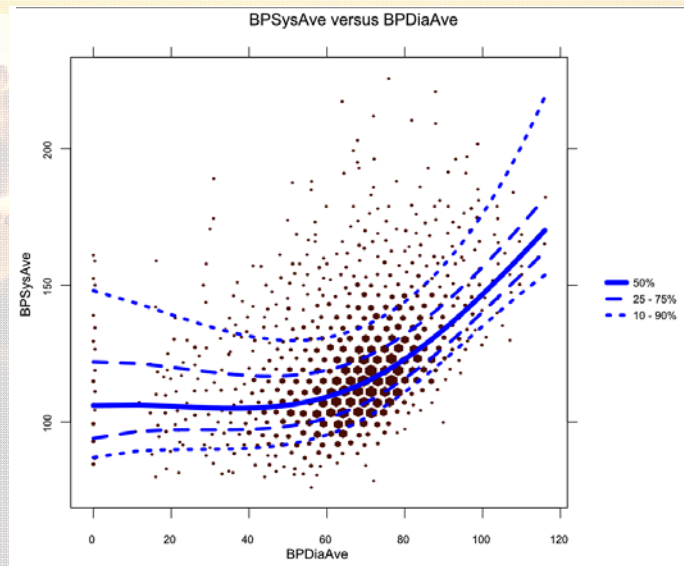
# Scatter plot with transparency



# "Big data" version ... Hexbin (alpha)



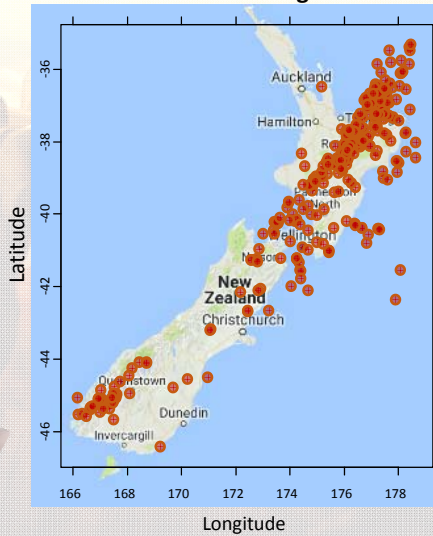
# "Big data" version ... Hexbin (size)



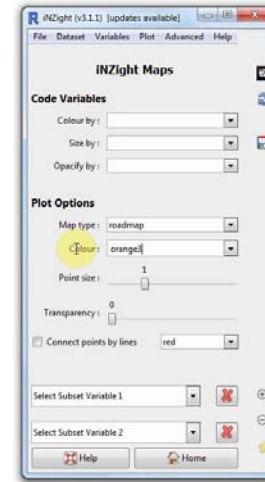
# Earthquakes ...

# New Zealand Earthquakes (in 2000)

Latitude versus Longitude



# Locations of Earthquakes



# Today's cooking demonstration

## RAW INGREDIENTS

- Bar charts
- Dot plots
- Scatter plots



## ADDED SPICES

- Colouring
- Sizing
- Transparency
- Subsetting
- Identification
- Bait & switch



## MAGIC SUPER SPICE

- Stepping



*Populating*

*the imagination*

*with possibilities*



## All graphics for this talk were from ...



just search for **iNZight**  
(Google or Bing)

*Online (cloud) version*



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