



Create Interactive Motion Charts Using R Package GoogleVis

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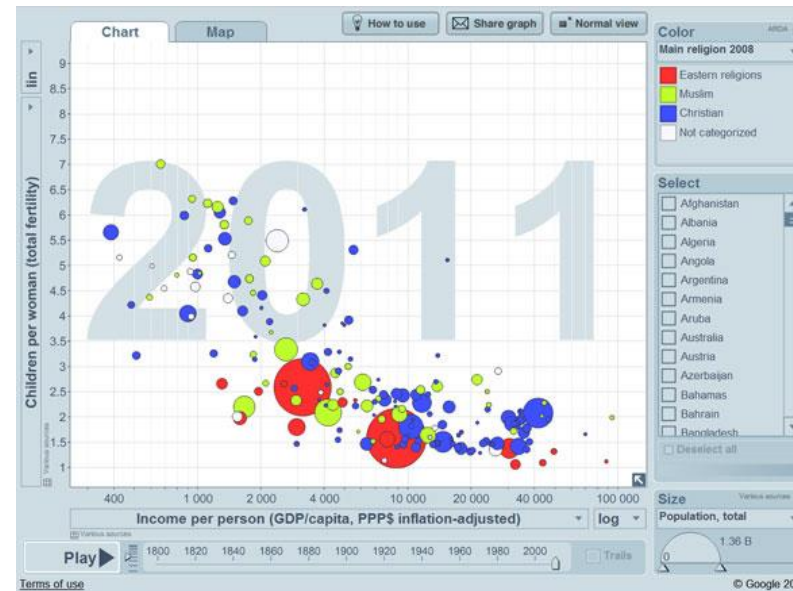
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Motion Chart

- ▶ Show changes over time
- ▶ Popularized by Dr. Hans Rosling



(https://www.ted.com/talks/hans_rosling_reveals_new_insights_on_poverty)



(<https://www.newsecuritybeat.com>)

Motion Chart by GoogleVis

- ▶ An interface between R and the Google Charts API
- ▶ by Markus Gesmann and Diego de Castillo
- ▶ [Demo with Medical Expenditure Panel Survey \(MEPS\) data](#)

Features

- ▶ Bubble chart, bar chart and line chart
- ▶ INTERACTIVE bubble chart:
 - ▶ Five dimensions to present data (X-axis, Y-axis, Size, Color, Time)
 - ▶ Multiple measures for each dimension
 - ▶ Can highlight bubbles of interest
 - ▶ Measure values can be easily observed
 - ▶ Have trails to show changes over time
 - ▶ Zoom in to display movements in a small range

How to generate?

Step 1: Prepare data

```
#setup directory
```

```
setwd("C:/Users/bliu/Desktop/R_GoogleVis")
```

```
#read file into R
```

```
mydata = read.csv("Cond.csv", check.names=FALSE)
```

How to generate? (continue)

Step 2: Generate motion chart

```
#Loading package  
library(googleVis)
```

```
#set initial state for motion chart
```

```
mysettings<-'
```

```
{"iconType":"BUBBLE", "yAxisOption":"4", "yLambda":1, "xAxisOption":"3",  
"xLambda":1,"colorOption":"6", "sizeOption":"9", "time":"1996",  
"duration":{"multiplier":1,"timeUnit":"Y"}, "playDuration":23955,  
"nonSelectedAlpha":0.2, "showTrails":false}
```

```
'
```

How to generate? (continue)

```
Motion=gvisMotionChart(mydata, idvar="Condition", timevar="Year",  
options=list(state=mysettings, width=800, height=400))
```

```
#display the motion chart  
plot(Motion)
```

How to generate? (continue)

Step 3. Publish the motion chart

```
# generate JavaScript file which will be used for web  
print(Motion,"chart", file="Cond.txt")
```

Paste the JavaScript file to the target website

Reference

- ▶ Introduction to googleVis 0.6.4

<https://cran.r-project.org/web/packages/googleVis/vignettes/googleVis.pdf>

- ▶ Google Motion Charts

<https://developers.google.com/chart/interactive/docs/gallery/motionchart>

- ▶ Medical Expenditure Panel Survey (MEPS)

<https://www.meps.ahrq.gov/mepsweb/>