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Digital methods for historians
1/12/2021

W47: Visualize global development or historical homicides

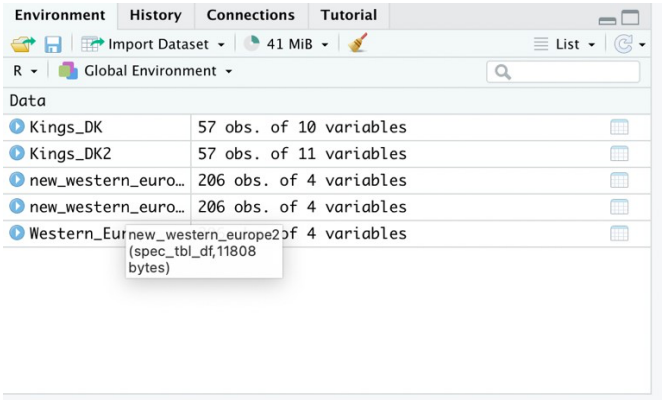
Task 1: The column name Western_Europe$`Homicide rate in Europe over long-term (per 100,000) is not very easy to work with. Relabel it to 'homicides_per_100k' inside R after loading the dataset and then edit all the ggplots.

Answer:

To change the name of the column the following code was used:

```
# Task 1
new_western_europe <- rename(Western_Europe, homicides_per_100k =`Homicide rate in Europe over long-term (per 100,000) (homicides per 100,000 people)`)
```

To be able to change the name it is a good idea to get a new data in the environment so that's why the first part of the code is new_western_europe ←



Here the code rename() was used to change the column name from homicides_per_100k =`Homicide rate in Europe over long-term (per 100,000) (homicides per 100,000 people) to homicides_per_100k

Task 2: The basic plot and following facet-plot (combination plot) is great, but geom_point - a scatterplot - is not the best choice for showing long-term data. Can you change both plots to more suitable type of rendering?

Answer:

To change the plots to a better solution (so it is easier to see the data) the following code was used:

```
# Task 2
ggplot(data = new_western_europe) +
  geom_line(mapping = aes(x = Year,
                          y = new_western_europe$homicides_per_100k, )) +
  labs(x = "Year",
       y = "Number of Homicides per 100,000 people",
       title = "Homicide rate in Europe from 1300-2000")
```

Here the code geom_line() was used to make the graph a line instead of the dots and the code labs() to name the axes and give the graph a title.

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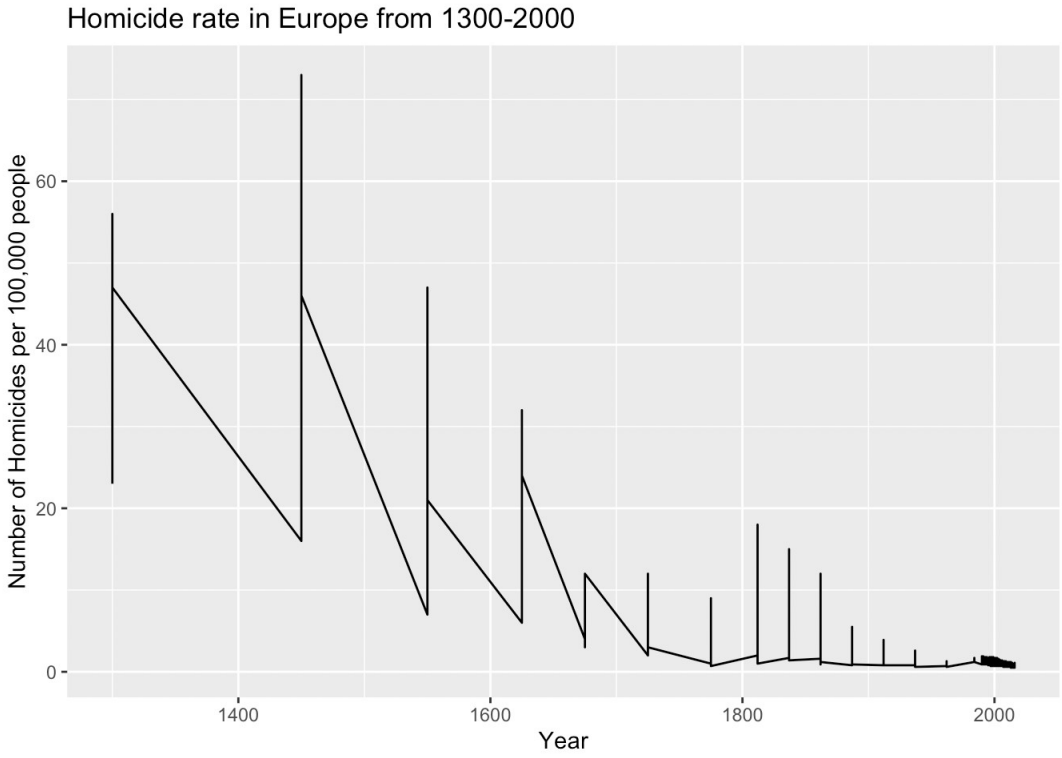

But this graph is very hard to analyse so to get a better look at the data we decided to separate them by country so the following code was used:

```
#first try to seperate by country
ggplot(data = new_western_europe) +
  geom_line(mapping = aes(x = Year,
                          y = new_western_europe$homicides_per_100k,
                          color = Entity)) +
  facet_wrap(~ Entity, nrow = 2) +
  labs(x = "Year",
       y = "Homicides per 100,000",
       title = "Homicide rate in Western Europe from 1300-2000")
```

Here there is added color=entinity and facet_wrap(~ Entity, nrow = 2) to the code to separate them by country

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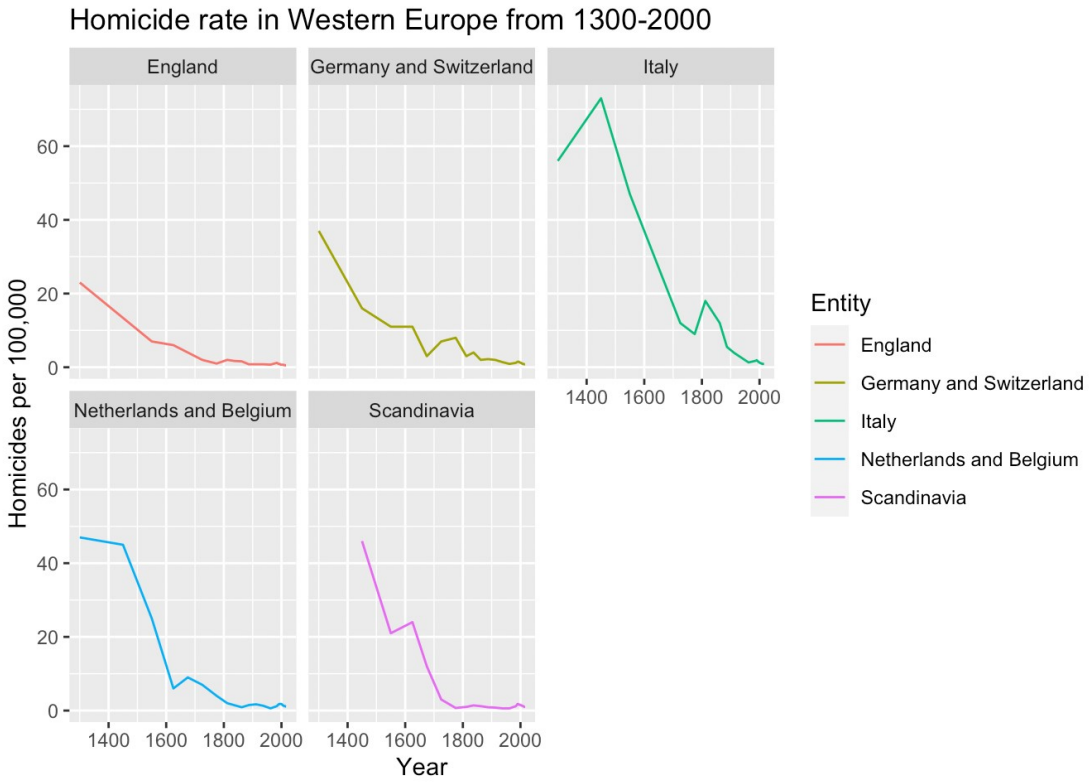

Task 3: Can you change the facet "layout" to two columns and three rows so that the trends are easier to see?

Answer:

To change the layout the same code but in the part facet_wrap(~ Entity, nrow = 2) we changed it to facet_wrap(~ Entity, nrow = 3)

```
#Task 3
ggplot(data = new_western_europe) +
  geom_line(mapping = aes(x = Year,
                          y = new_western_europe$homicides_per_100k,
                          color = Entity)) +
  facet_wrap(~ Entity, nrow = 3) +
  labs(x = "Year",
       y = "Homicides per 100,000",
       title = "Homicide rate in Western Europe from 1300-2000")
```

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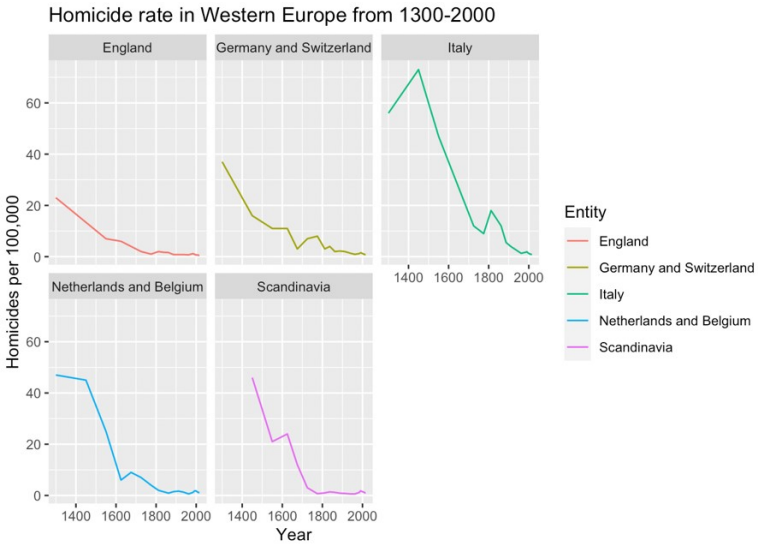


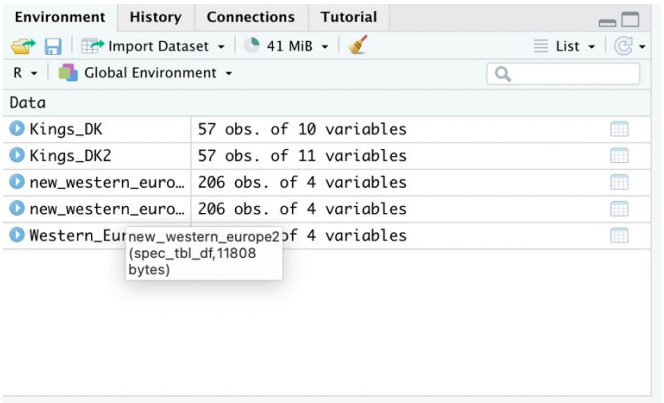
Task 4: Move the legend from the current position on the side to below the facets, and label it "Country" instead of "Entity".

Answer:

To change the name from Entity to Country the following code was used as the first step:

```
#Task 4
#skifte navn fra entity til country
new_western_europe2 <- rename(new_western_europe, Country = Entity)
```

To be able to change the name it is a good idea to get a new data in the environment so that's why the first part of the code is new_western_europe2 ←



To change the name in we changed the code so that it was color = Country

To change the position of the legend the following code was added: theme(legend.position = "bottom")

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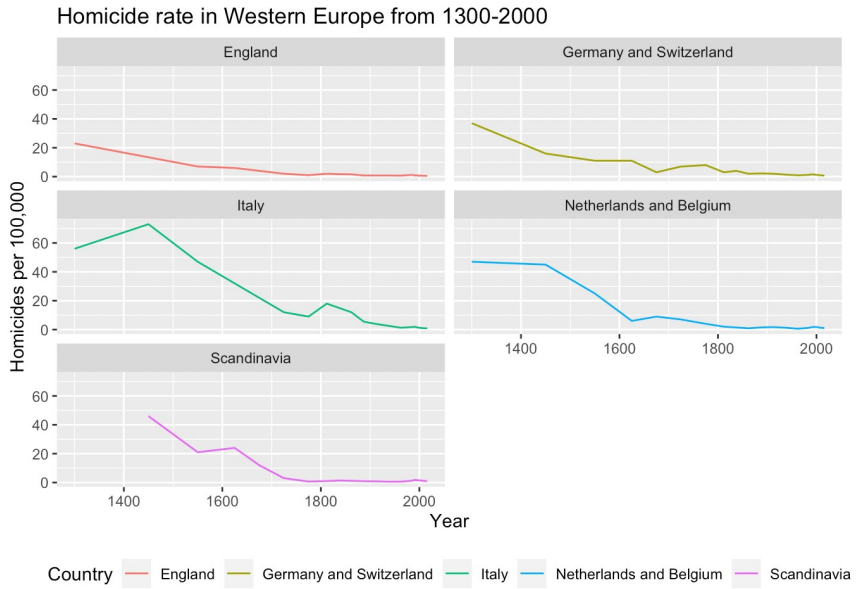
```
#skifte navn i ggplot + flytte legend
ggplot(data = new_western_europe2) +
  geom_line(mapping = aes(x = Year,
                          y = new_western_europe2$homicides_per_100k,
                          color = Country)) +
  theme(legend.position = "bottom") +
  facet_wrap(~ Country, nrow = 3) +
  labs(x = "Year",
       y = "Homicides per 100,000",
       title = "Homicide rate in Western Europe from 1300-2000")
```



Task 5: Add a floating table of contents to your Rmarkdown document, provide informative chunk-names to all your R chunks, and automatically generate a timestamp to show when the document was last updated. (Hint: check the Rmarkdown episode in our Data Carpentry tutorial) Answer:

To get the table to float and to make aa automatically timestamp the following code was used:

```
title: "Are we more civilized today?"
author: "Adela Sobotkova, Andreas Emil Mikkelsen and Lea Skriver Hansen"
date: "`r format(Sys.time(), '%d/%m/%Y')`"
output:
  html_document:
    toc: true
    toc_float: true
---
```

To get it to float it was the following part of the code there was used: output:

html_document:

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toc: true

toc_float: true

To make the time stamp this code was used: date: "`r format(Sys.time(), '%d/%m/%Y')`" Here we see that the format should be systematic time in day/month/year The result can be seen in the linked html file in Github

Task 6: Fill in the empty code chunk with a ggplot of your Danish kings: loading the data, calculating the mid-year, and plotting the duration of reign (y axis) over the mid-year (x axis), using geom_smooth() Answer:

To make a ggplot graph with the Danish kings dataset I start by loading the dat by using the following code:

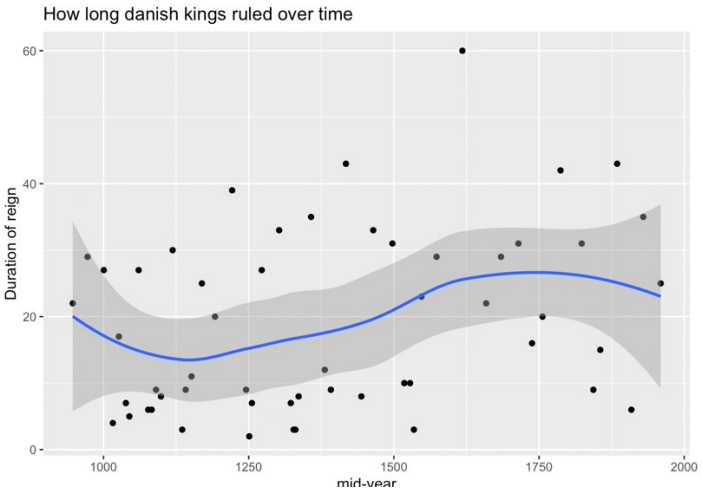
```
# Task 6
Kings_DK <- read_csv2("data/Kings_DK.csv")
```

After the data have been loaded, I used the following code to remove NA values:

```
Kings_DK %>%
  filter(!is.na(Reign_Total_Year)) %>%
  #filter(!is.na(Reign_Start)) %>%
  #filter(!is.na(Reign_End)) %>%
```

To calculate the midyear I used the following code mutate() followed by the code ggplot () to make the graph:

```
mutate(midyear = Reign_End -(Reign_End-Reign_Start)/2) %>%
ggplot(aes(x= midyear, y = Reign_Total_Year)) +
geom_point()+
geom_smooth()+
labs(title = "How long danish kings ruled over time", x="mid-year", y="Duration of reign")
```



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Task 7: Comment briefly what is your opinion on the basis of the data visualisations: are we more civilized today?

Answer:

If we say that being civilized is not killing each other then yes, we can see in task 4 on the graph that the homicides rates are falling, so based on that we have stopped killing each other as much as we did in earlier years. Based on this data we cannot comment on being civilized because we cannot see if their duration is longer based on the kings not killing each other

Github link:

https://github.com/Digital-Methods-HASS/AU644020_Hansen_Lea.git