Children drawing more women in science

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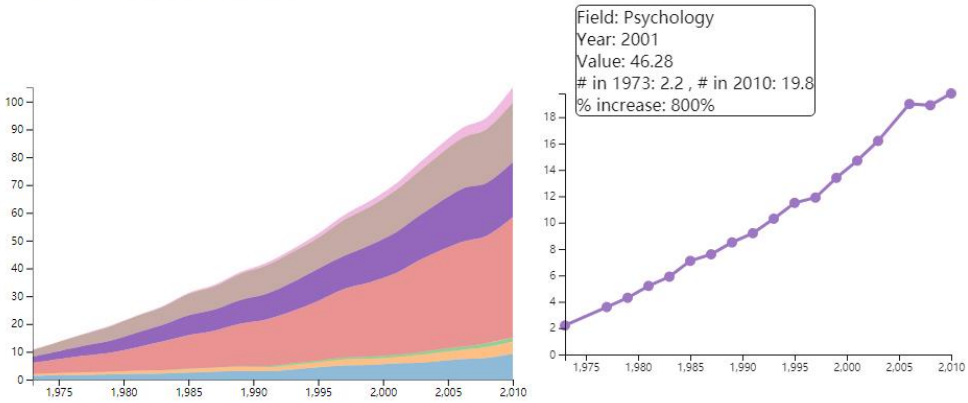
The Draw A Scientist Test has been used in schools around the world.

> *The "Draw A Scientist" test has been administered by sociologists in various studies since the 1960s.*
> *According to the recent result, children in the US are drawing more women scientists than in previous decades.*

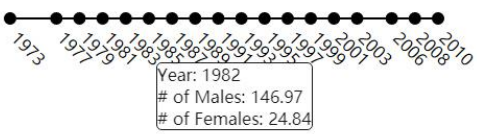
In the last 40 years, the incerease in the number of women in science is obvious to us all.
The following stacked chart shows the change of number in years. Different color area refer to different science field.

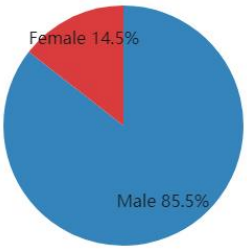


Move mouse over the chart to check the detailed data for certain field.
Press mouse on an area to show the increase of number in that field. (Line Chart)
(Data reported in thousands.)

> *When asked to draw a scientist, less than one per cent of children in the 1960s and 1970s drew a woman. This rose to 28% between the 1980s and present day.*
> *However, children are still far more likely to draw a traditionally male figure when asked to depict a scientist.*
> *"The fact that children are still drawing more male than female scientists reflects their environment," said David Miller, the lead author of the study. "Given the underrepresentation of women we observe in several science fields, we should not except equal numbers. Encouragingly though, we can see that the stereotypes of children change over time."*

Although the number of female scientists has been increasing, men still have dominance in the area.





Move mouse over the yearbar to show the percentage change of female in science.(Pie Chart)
Those dots on the yearbar imply actual data.
Values between them are estimated by ratio.
(Data reported in thousands.)

Dataset: Science, engineering, and health doctorate holders employed in academia (1973-2010)

The News article I chose:

BBC: Children drawing more women in science

http://www.bbc.com/news/science-environment-43460528

I use the first half of the article to add some visualization into that. (The rest part of the article talks about the analysis of the experiment and stereotypes among several other occupations.)

It is an article about the result of an experiment on children's drawing of scientists. It shows that more and more children are drawing female scientists in their painting. This result matches the fact. In the past 40 years, the number of women in science has increased dramatically.

For this part, I use a stacked chart to show the number change in the past 40 years. The data I found has the numbers of 6 different area of science: Physical Science, Life Science, Computer Science, Social Science, Mathematics, and other Engineering. I used the stacked chart to show them in different colors. By doing this, I am able to show both the total number and the number of a certain area.

When move your mouse on the area, I set a dashboard to show the detailed information about the area. Information includes: Field name, number in the year 1973 and 2010, I also computed the percentage of increment in this part.

Press down your mouse on a color, a line chart will show up. I choose the line chart here because a line chart is the best/simplest way to show the number change to times. The line and data points are shown in the same color of its in the stack chart.

Followed by the result of "children in the US are drawing more women scientists than in previous decades", the author of the article mentioned that although children are more likely to draw female scientists in their painting than the past, they still drawing more male scientists. In fact, science is still dominated by males.

To visualize this part, I chose to implement a pie chart. Pie chart is the best way to imply percentage among total number. In this part, we are trying to convey that the number and percentage of women in science are increasing, but there are still more men in those fields.

For the interaction of the pie chart, I designed a year bar. When you put your mouse on the bar, it will show you a pie chart with the percentages at that time. If you move mouse along the bar, the pie chart will update in real time. Our data is discrete in time, and the year bar are continuous. I use the length between the mouse and the closest data to estimate the value by ratio.

Dataset:

SEH doctorate holders employed in academia, by type of position, sex, and degree field: 1973–2010

https://www.nsf.gov/statistics/seind14/content/chapter-5/at05-15.pdf

I used the data to draw my charts.

for the first stacked chart, I used the number of women in 6 fields for all positions.

for the line chart, I used the number of women in the selected field for all positions.

For the pie chart, I picked the total number of man and women for all positions. I computed the value between two actual data points by the ratio of the mouse axis to their real axis.