Amelia Racky

Strong (Effective) Visual

https://www.ipcc.ch/assessment-report/ar6/

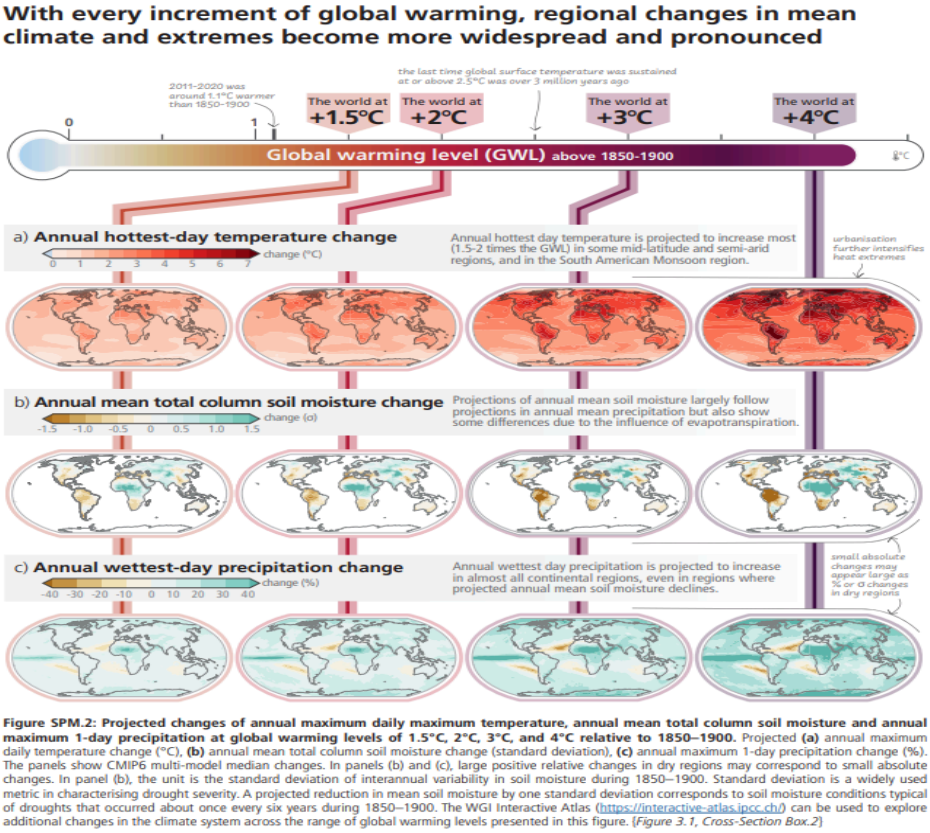


Figure SPM.2: Projected changes of annual maximum daily maximum temperature, annual mean total column soil moisture and annual maximum 1-day precipitation at global warming levels of 1.5°C, 2°C, 3°C, and 4°C relative to 1850–1900. Projected **(a)** annual maximum daily temperature change (°C), **(b)** annual mean total column soil moisture change (standard deviation), **(c)** annual maximum 1-day precipitation change (%). The panels show CMIP6 multi-model median changes. In panels (b) and (c), large positive relative changes in dry regions may correspond to small absolute changes. In panel (b), the unit is the standard deviation of interannual variability in soil moisture during 1850–1900. Standard deviation is a widely used metric in characterising drought severity. A projected reduction in mean soil moisture by one standard deviation corresponds to soil moisture conditions typical of droughts that occurred about once every six years during 1850–1900. The WGI Interactive Atlas (https://interactive-atlas.ipcc.ch/) can be used to explore additional changes in the climate system across the range of global warming levels presented in this figure. (*Figure 3.1, Cross-Section Box.2*)

This graphic was taken from the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, specifically from the “Summary for Policymakers” chapter on page 30. The AR6 was published in 2021 and is the most recent publication from the IPCC.

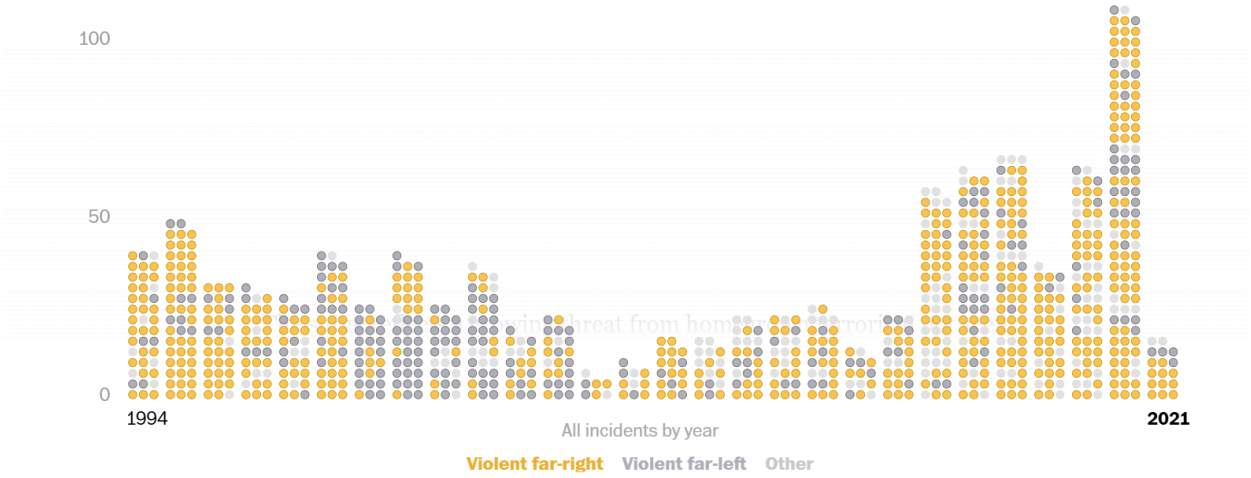
In my opinion, this graphic does an excellent job conveying multivariate data with clarity, precision, and efficiency. I find the title of this graphic helpful, as it properly summarizes what this graphic is made to convey. The labels and descriptions of the data sets were also helpful for a deeper understanding of the data. If the words were necessary for interpretation, I would not consider this an effective graphic. However, I find the words optional for proper interpretation of the graphic and rather can be used to enhance the reader's understanding if they find it helpful.

Moving on to the image itself, the reader is able to intercept massive amounts of information in such a succinct fashion through the use of small multiples. This graphic takes three different data sets, annual hottest-day temperature change, annual soil moisture change, and annual wettest-day precipitation change to convey the projected changes over various increments of global warming. My eyes are first drawn to the thermometer, used to display different degrees of global warming over a certain time-scale. This visualization is very effective for the reader to quickly interpret that warming is moving from colder to warmer, left to right.

The first small multiple uses sequential color, ordered from a low to high saturation of red, conveying an increase in annual hottest days as the Earth's global temperature increases. The second two small multiples, b. and c., used complementary colors, a cool and a warm color on opposite sides of the color wheel. They incorporated a technique of color diverging, using a brown and a blue/green with a neutral midpoint, ranging from a darker brown to indicate dryness and eventually to a blue/green which darkens as soil-moisture and wettest day precipitation rise. These color choices help the reader visualize dryer and cooler regions on the map as global temperatures rise. I find this graphic to be an impressive display of a massive amount of data.

Weak (Ineffective) Visual

https://www.washingtonpost.com/investigations/interactive/2021/domestic-terrorism-data/



This article written on April 12th, 2021 by the Washington Post, talks about the rise of domestic terrorism in America. As you scroll down through the article, the animated charts move to show you different statistics relating to the article. Taking advantage of Healey's preattentive feature of animation is helpful in drawing the gaze downward towards the data. I did not come here to solely praise this work however. As I'm beginning to understand the complexities of putting together a "good" graphic, I found glaring issues with their work.

This first graphic groups all domestic terrorist incidents by year, from 1994-2021. The lack of labels on the x-axis can bring frustration to the interpreter of this graphic. I might want to quickly compare the years 2007 and 2010, but to do this, I'd have to count out the groupings just to track down these two columns. My next issue is color choice. A vibrant yellow was chosen to highlight violent far-right incidents, but is then contrasted by a dull gray to highlight incidents from the far-left. This becomes even more confusing to the interpreter when an even duller gray is used to label the "other" group. These two tones of gray are too similar. Furthermore, research shows that your eyes are drawn to the brighter color initially. Some might

see highlighting the far-right incidents as a biased choice. I'm assuming that this choice was made because of the fact that far-right incidents make up the vast majority of these incidents. What would have made that apparent without using highlighter yellow would be through the Gestalt principle that proximity beats color. By separating each grouped year by color, the reader would immediately be able to determine that the far-right exceeds the other groups in annual incidents. For example, putting all of the far-left incidents on the left side of the grouping and the far-right incidents on the opposite side. This would help the interpreter of the graphic quickly be able to see which group had the most incidents per year. The last issue I have with this graphic is the confusion it could bring the reader by including 2021 in the visual. This article was written only halfway through the year, and to some, this fact would be taken into account, but not for all. Inaccurate comparisons could be drawn between year 2021 and previous years, especially since 2020 was the peak of all domestic terrorism incidents.