Deutsche Welle: Flooding, Heat Waves, and Severe Storms: Can Cities Adapt?

A visual analysis by Tim Prause

**Exercise 1:  
*What is the overall story of the resource?***The Deutsche Welle article describes how climate hazards like heatwaves and flooding affect people unequally worldwide. Cities are mostly impacted, because of their infrastructure vulnerability that traps heat and amplifies flooding. There are many ways to prevent the impacts of these hazards, like sustainable drainage, tree planting and green spaces. Vulnerable groups, especially older adults and those in poorer areas, also face higher risks due to inadequate urban infrastructure in those cities. Addressing these inequalities requires urban redesign, and funding which could in some regions completely remove impact inequalities.

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**Exercise 2:  
*Critically evaluate the overall design of the resource based on the “CRAP” Principles (contrast, repetition, alignment, and proximity):***

* **Give examples of where and how your resource uses these principles effectively.**
* **Also, if applicable, give examples where and how the resource could improve in terms of these principles.**

Generally, the article is very visually pleasing due to factors like the color choice but also the many Crap principles which can be observed in the article.

In regard to the contrast important things are highlighted in different ways, starting with the headline of the article, which is presented in a large blue bold fond. The following headlines are also highlighted, but slightly different to contrast their different meanings. The text headlines stay black like the rest of the text and are only slightly larger in a bold fond and the headlines of the plots on the other hand are also in bold but now again in the same blue as the first headline. The article generally doesn’t use too many colors but uses them in different ways to highlight certain aspects. Another example of that are the links throughout the article that are also in blue but now in the same fond as the rest of the article and underlined which fits the design of the article very well. The plots also show different instances of contrast to highlight specific information by either shading parts of the plots differently or highlighting parts by drawing arrows to it or having thicker edges.

The second CRAP principal Repetition can also be observed throughout the article in different ways that keep the article very structured. For example, the color palette that the article chooses is used in almost every plot with the same or very similar colors in it. We are first introduced to that pallet in the illustration under the headline of the article in which red and orange houses are flooded by blue and light blue water. In the background we see shades of grey and we have some yellow highlights in the form of lightning strikes and the moon. All these colors keep occurring in the article to represent either different nature hazards, regions or groups. Even the small green sheets hanging outside the houses are later used again in one of the plots. Another form of repetition can be observed in the general plot layout in which the headline of each plot as well as the legends and other information below the graphic are always placed the same. All these repetitions give the article a very coherent look that doesn’t overwhelm when reading the article or scrolling though it for the first time.

The alignments of the articles elements also add to its coherence. The article has a very simple but clean alignment, as it features only one block of text that flows from top to bottom with the plots inserted between the text blocks. This creates a flowing narrative, since there are no separate columns or pages of text.

Lastly the principle of proximity can also be observed. I think the best example of that is in the placement of the plots. They are always placed right under the text blocks, that describe a certain situation or statistic, which is then visualized by a plot right underneath it. The text blocks also can be clearly made out by the proximity of each paragraph to each other inside of a block.

There are also a few improvements that I would suggest where certain design choices could have been executed differently. Starting with the before mentioned color pallet. The creators of the article repeatedly chose the same colors that they used in every plot. This has some benefits to it, but it also conflicts with the Contrast principle which tells us that if elements are not the same, to then highlight those differences in a way. The color light blue for example appears in every plot. It represents low numbers in the first two, then Africa in the third plot, Asia in the fourth, the flooding category in the fifth and the richest 20% group in the last plot. By this use of repetition, it seems like some of these should be related even though they probably aren’t. At least the colors of the continents should have been used more consistently.

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**Exercise 3  
*Choose one visualization from your resource and work through the following aspects:***

**a) Describe in one sentence the main insight that the visualization conveys.**Adaptation for climate hazards, reduces their impact globally and also decrease the impact inequality almost everywhere, potentially eliminating the disparity in Africa and Central/South America.

**b) Describe in a systematic way (bullet points, table, . . . ) the following aspects of the visualization:**

* Does it focus attention on a specific aspects of the data, and if so how?
  + Two lines have different shades of blue that draw attention
  + Area difference between the lines is shaded, which highlights that difference and the change over time
* Presence of clutter?
  + The description under the headline could be considered clutter, since this information can also be found in the text
* How are text elements used within the visualization?
  + Text is used for the title as well as the main insight the plot conveys right under the title
  + Y-Axis categories are described with text, making it easier to understand instead of numbers that could be hard to interpret
  + Text inside the plot is used once to describe each of the three possible time points
* Where does it follow the CRAP principles?
  + Contrast: Highlights the difference between two groups with shading. Also, the midline described as "occasional impacts" has a thicker line which centers the whole plot in a way
  + Repetition:
  + Alignment: The explanatory text for the three timepoints is placed on the right of the plot instead of the left which might've been more natural for reading purposes, but this way the left side would be cluttered so it fits better on the right side.
  + Proximity: Proximity is deliberately used to separate the different regions, by making the space between them a lot bigger than the space between the three time points
* How is the visualization perceived by color blind people?
  + Since the plot uses two very different shades of blue, the difference can be made out with every type of colorblindness even total color blindness

***c) How do you personally evaluate the chosen visualization? Justify your answer. It may be based on the above aspects or other aspects that you find important.***I personally like the plot for its visualization and the small details that follow the CRAP principles that make the plot easy to understand and visually pleasing. My only problem I have with the plot is, that I would've liked a better explanation of the Y-Axis as well as the three timesteps and what exactly is meant by them.

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