1. Project overview

This project will seek to critically analyse a data driven journalism piece titled “How the virus got out” written by Jin WuWeiyi, CaiDerek Watkins and James Glanz. This data driven journalism piece was published by the New York times on the 22nd of March in 2020, where the piece attempts to illustrate how the Covid-19 rapidly moved across the world, from its origin in Wuhan, China.

Despite efforts to contain the virus, with the travel restrictions being a priority to prevent Covid -19 from further spreading to the rest of the world. The piece makes use of visualization through a series of maps, with a series of basic animations on each of the maps that define the movement of the virus.

2. Data visualization Techniques

Figure 2.1

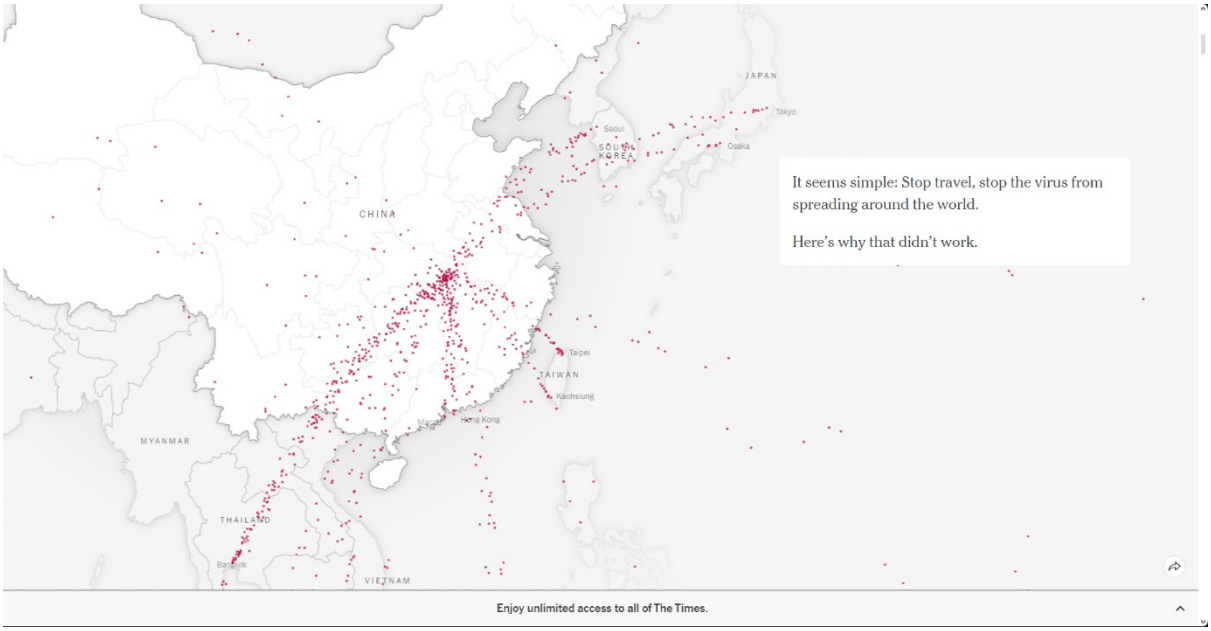

Figure 2.1: Visual representation of the virus’s(red dots) movement through a map.

- **Why was this method of representation/visualization chosen?**

  Firstly, maps are effective in the representation of any form of spatial data, especially data in relation to that of regions and/or any form of geographical location of any nature. Tufte alluded to this idea of maps in his book "*The Visual Display of Quantitative Information”*, where he expressed the utility in maps to show geographic distributions and

movement, and how this directly translates to spatial relationships. [CITATION Edw83 \l 7177]

Figure 2.2

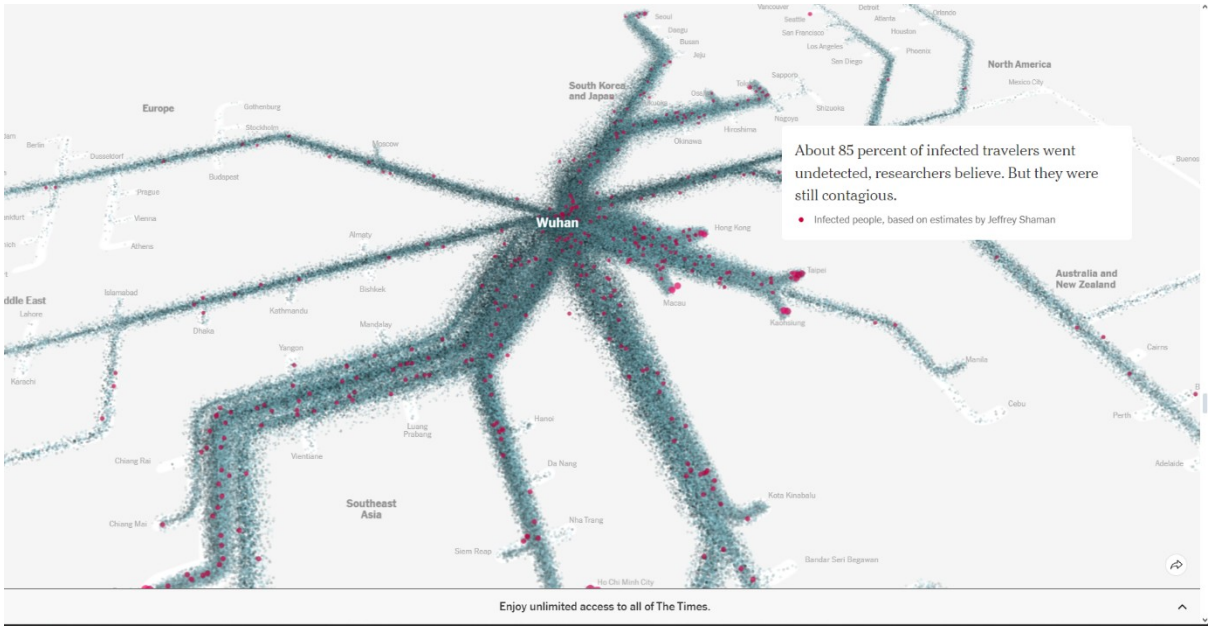

Figure 2.2: Visual representation of the blue dots (travellers) the red dots(infections).

- **The clarity of information and the effectiveness of colours**

  The map is clear in the way that conveys this idea of spatial relationships. For example, this idea of space through the way the red dots are effectively scattered from one location on the map to another, and it show the effectiveness of the transportation and the movement of the virus from one location to another. With certain areas having more dots scattered on top of each other showing the effectiveness, of also identifying areas with a greater number of cases of Covid-19 infections.

  Moreover, and adding into this idea of how clear the information is we can see that the choice of the colour red amongst the plain white and grey background, and in contrast to the dark blue shade o that is used for the non-infected travellers, clarifies the data and allows for the data to be read more accurately. The colour stands out and allows for one to interpret the data much easier and more accurately and accessible in the sense of trying to comprehend.

Figure 2.3

Figure 2.3: Start of the infection animation and the map.

- **How do design elements enhance the message?**

  The use of red dots would have created this feeling of urgency and seriousness, that directly corresponds with this idea of a pandemic. Red creates an emotional touch, therefore making the visualization impactful.

  Furthermore, the visualization includes animations, that firstly show the movement of the virus in Figure 2.1 and Figure 2.2. Secondly, the animations convey how the rate of infection gradually increases over about 1-2 second of viewing the visualization, with the animations starting of as Figure 2.3 and ending off as Figure 2.1. This animation enhances the rapidness of the infections spreading, and it's done through showing the viewer how fast that transition takes place between starting with so few dots and thereafter rapidly increasing the number of dots on the screen as well as the locations they have spread to.

3. Interactivity and User Engagement

Figure 3.1

Figure 3.1: Upon the third scroll the user will see this, the first site of the red dot which is known as the infection.

Figure 3.2

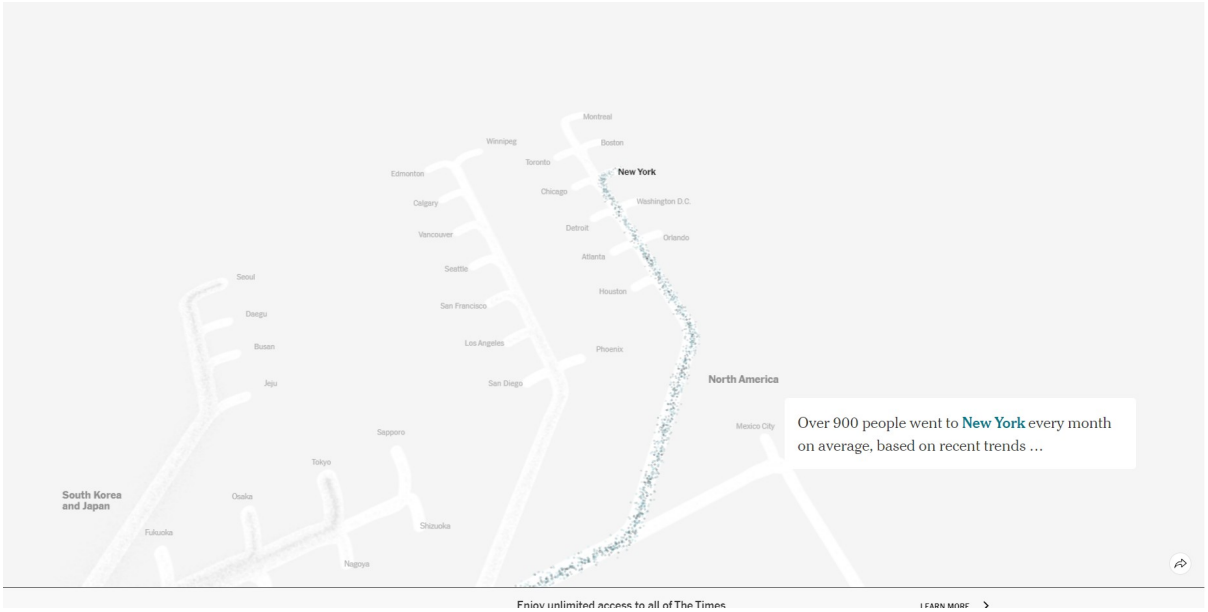

Figure 3.2: Change in the map locations after scrolling down.

Interactivity

In his book *Interactive Data Visualization for the Web*, Murray expressed the idea that interactivity allows for deeper user engagement, as a user is afforded the ability to manipulate and explore the data through interactive elements of some sort, thereby having a greater chance potentially making the visualization more informative and insightful. [CITATION Mur13 \l 7177]

In the case of this piece, interactivity and /or an interactive element is defined through the user scrolling. Upon each time the user scrolls down once, the user is fed with new information on the outbreak, seeing that this piece is progressive in the sense of the information and the data that is tries to convey as we see rapid movements of the red dots but also the rapid change in the map location as a user scrolls down , which can be seen in Figure 3.1 which directly relates to Figure 2.1 that shows the direct relationship of the red dots. Each time the user scrolls the user is fed with new and even at times a new map or new location that continues the story as seen in Figure 3.2. The take way is that more and progressive information is constantly updated after a scroll, that not only keeps the user engaged but also encourages the user that to explore at the own pace.

As mentioned earlier with Figure 2.1 and Figure 3.1, the information and the visuals are all interconnected with previous information obtained, as this journal seeks to tell a story about COVID 19, however this all directly relates to the progression of the outbreak.

Personal Reflection

While I explored the ways in which visual data could be represented using interactivity, I found the user engagement and understanding were vastly improved. An example of an award-winning website that shows real-time data browsing can be more interesting with sites like Zentry. It allows users to engage with live data through features such interactive graphs and updates of real-time data inputs. This gives them an interesting experience so they can understand difficult information better.

Looking into the New York Times article "How the Virus Got Out.” it shows similarities with Zentry's interactive features as both prompt users to interact and participate instead of passively reading information. Every scroll uncovers something new that package the progress of the virus in an engaging dance, as a user continues to discover new findings. Much like Zentry's graphs and interactive, real-time updates facilitate deep understanding, the scrolling article from the New York Times reveals an active investigation of temporal developments with the pandemic.

This efficiency of interaction, in contrast with my own experiences through Zentry, simply shows the fact that interaction with interactive elements develops deep insight into complex data. Both demonstrate how such informed interactivity could transform the simple static presentation of data into dynamic, user-oriented inquiry. By allowing users to take control

over their data exploration, the New York Times article and Zentry enable much greater user engagement and a more in-depth understanding of the given information.

4. Personal Theoretical Insights from UX and UI Design Principles

- **Stiving for clarity and aiming for simplicity**
  As mentioned earlier and directly in line with a course reading, *“The Basic Principles of User Interface Design”*, the clear use of red dots against a white/grey background demonstrates an effective approach to clarity in terms of reading the data of infections as well as understanding it’s visual representation and significance. This choice certainly makes the data stand out and helps users easily interpret the data, as well as keeps the consistency through the data journalism piece. The choices do reflect the importance of visual clarity in communication and makes use of one method of interaction, and when piecing all these important design choices together we are able to see showing a direct relation to the core principles that are often outlined in UX and UI Design principles and more so emphasized in the course reading.

- **Usability**
  The piece makes use of scrolling to reveal different stages of the virus's spread aligns with my insights into usability. It allows users to explore the data at their own pace, making the interaction intuitive and engaging.

- **Feedback**
  The nature of the of this journalism piece updates as users scroll, and this provides immediate feedback on a user’s interactions.

- **Emotional Impact and UX**
  According to a course reading, *“User experience - a research agenda”* by Marc Hassenzahl & Noam Tractinsky, design should engage users emotionally and should also be able to provide an experience beyond interaction, this way an artefact is able to create a more immersive experience which can enhance the understanding of presented information. [CITATION Mar06 \l 7177]

  "How the Virus Got Out", not only uses visual storytelling to convey information, but it also evokes emotion and connects the user to that information. For example, the movements of the red dots that show the sense of urgency and rapid spreading of the virus through the animation of the moving dots, as well as the rapid movement of the map changes from location to location as a user scrolls. The animations, timelines and maps and their movements are a fundamental guide to the progressive spread of the COVID-19 outbreak in such a way that is emotionally resonant to the user.

5. Conclusion

In my analysis of "How the Virus Got Out" within the framework of well-articulated data-driven journalism, especially about the way these portrayals speak to more than global complex issues. It was a great article discussing approaches to the visualization of data through the showing, among many other things, the way the virus could spread rapidly but, in a manner, both clear and emotional for the user. This adds to the value and increased ease of looking at the visualization since the viewer has an opportunity to scroll, going deeper into presented data.
Finally, the application of UI/UX design principles, primarily seeking clarity, usability, and emotional appeal, causes the user to understand what is meant and feel emotionally attached through well-thought-out design. Red, as the colour of the spread, linked with straight, progressive, very well-timed animations, transfers the sense of how urgent and severe the pandemic is, making not only information but also feelings touching in its data-driven narratives.

In sum, this analysis highlights the necessity of developing narrative elements in visualizations that clearly and effectively tell complex data. In fact, it has thrown to light, first, the demand for accuracy in design, the second power associated with interactivity in enhancing user engagement, and third, the results of affective design in the narrative.

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