DataLab Preparation (Week 1, DataLab I, Monday)

**2a Explain how the terms 'fairness' and 'cooperation' relate to each other by giving a real-life example. Write your answer down.**

From the TED video entitled 'Why monkeys (and humans) are wired for fairness' by Sarah Brosnan we can derive a couple of statements. Fairness refers to treatment or behaviour from another person that one considers to be impartial and without favoritism or discrimination. Cooperation refers to the act of two or more people working together towards a common goal. The principle of fairness correlates to the action of cooperation by one giving more in favor of the other for establishing a sort of equilibrium in terms of what one considers to be 'fair'. As an example, when I was a child, my sister and I would always get ice cream during summer. She always preferred chocolate over any other flavour. One day I wanted to go in the forest next to our home and build a fort out of some twigs and blankets. When we went to get ice cream, there was only one chocolate ice cream left. Even though it was also my favorite flavour, I decided to give the ice cream to her otherwise she wouldn't come play with me as she thought me getting the last sweet chocolate treat was unfair. I sacrificed personal comfort in order to fulfil my sister's idea of 'fairness' and gain cooperation on a task I wanted to achieve.

**3a Fill the gaps in the 'text' Post-Its by connecting it to the correct 'concept' Post-It.**

Concept 1 (Equity)-> Text 1

Concept 2 (Equality) -> Text 2

**3b Look at Figure 3, and provide clear, and concise answers to the following questions:**

1. Looking at the images in Figure 3, why does the difference between equity and equality matter?

The difference between these two concepts matters because equality does not ensure equal opportunities, only equal chances. This implies that the individual problems that people face are considered negligible in favor of the overall good of a population that was most likely already advantaged in the first place (e.g., in the picture showcasing equality, the tallest boy is the most advantaged as he can see over the fence no matter if the box is there or not).

1. How does the baseball game metaphor relate to the guiding quote about shoes?

In the baseball game metaphor, the same box is given to all three children, even though they all differ in height. This is similar to the shoe metaphor, where the same shoes are given to all players, even though they vary in shoe size. This is equality. Equity means that as many boxes as the child needs are used, and that each player is given their necessary shoe size.

1. What are some other real-world examples of equity and equality?

An example of equality is that every student in my home country follows the same school system in high school regardless of their abilities, whereas in terms of equity, in the Netherlands there are different types of secondary education systems that are more catered to the child's personality and interests.

1. How are equality and equity related to fairness? In school, sports, society, etc.?

I believe the concept of 'fairness' is subjective, but the majority of society would more or less agree on a common perception of fairness in relation to equality and equity. Most people believe equality to be fairness. That is how a lot of our societal beliefs regarding academics, sports, behaviour, expression of religion, etc., got founded. For example, we consider it fair that everybody pays taxes to the government to fund public systems such as healthcare or transport. This would be viewed as equality. However, as not all households have the same income, taxes are calculated at an individual level, based on earnings. This is equity.

1. Are there other ways to achieve fairness besides equity and equality? (For example, the removal of the wooden fence eliminates the structural barrier to access.)

I believe the basis of achieving fairness besides these two concepts is empathy. Sometimes an individual needs to be empathised with in order to be truly understood from a personal needs point of view. For empathy to take place, education is the starting point. Implementing policies that promote inclusivity and diversity can contribute to fairness. These policies aim to ensure that all individuals, regardless of their background or characteristics, have equal access to opportunities and resources.

**3c Team up with at least one fellow student, and discuss your answers to the exercises 3a and 3b. Write down the name(s) of your teammate(s), and the differences/commonalities in your provided answers.**

Kees Klijs

For exercise 3a, we had the same answer.

For exercise 3b:

1.⁠ ⁠For question 1 we responded pretty much the same, except I chose to focus on the people who are already considered advantaged, while Kees gave a general definition

2.⁠ ⁠Same answer

3.⁠ ⁠He gave a general example, while I gave an example focused on the education system. Ironically, you can tell by our answers what our minds run to when thinking of terms like equality and equity. We both focused on education for equality, but not for equity.

4.⁠Kees' answer is focused on the equality and equity described through the lens of 'fairness', while my answer focuses specifically on what is generally considered fairness in our society

5.⁠ I focused on the emotional part, while he focused more on an action-based solution

**4a List, and describe at least two types of bias presented in either Fairness & Friends or A Framework for Understanding Sources of Harm throughout the Machine Learning Life Cycle.**

In 'Fairness and Friends', we can distinguish between two types of bias in the context of Artificial Decision Systems. One of them is Pre-existing, where the model is biased due to the underlying data used to train it, that is itself biased. Another one is Emergent, referring to biases that arise unintentionally or unexpectedly in complex systems or interactions.

**4b Give an example for each type of bias listed in exercise 4a, and connect it to one of the CRISP-DM phases. Write your answer down, and limit your word count to a maximum of 100 words.**

Pre-existing bias -> for a job position candidate selection ADS, if the model uses data from the last 10 years, then it might pick individuals that are male, young adults and caucasian due to systematic racism.

This could be connected to the Data Understanding phase of the CRISP-DM model.

Emergent bias -> in online platforms, emergent biases may arise from the collective behaviour of users, leading to the amplification or reinforcement of certain viewpoints or the marginalisation of others.

This could be connected to the Evaluation phase of the CRISP-DM model.

**4c Reflect upon your result of the Implicit Bias test:**

**- Are we all bigots?**

**- What is more dangerous implicit or explicit bias?**

**- etc.**

**Write down your answer, and limit your word count to a maximum of 150 words.**

I believe it is impossible to be 100% unbiased or not bigoted, simply because it is in our nature as a survival mechanism to recognise and classify something as dangerous in order to be wary of it. Based on our childhood environment, we have biases that we aren't aware of, which been passed down to us thorough other people or through association of events. Even more so, conscious biases can exist, rooted in subjective beliefs or lack of empathy (for example, Americans that believe Mexicans should be denied entry into the US even if they are not aware that those people are simply trying to better their personal situation due to their country not providing enough financial opportunities, and therefore not being able to feed their families; i.e. said Americans who do not care that what they say is hurtful because they are not directly affected by these opinions).

**4d How does the Mercator map fit within the Eurocentric worldview? In your answer, refer to the concept of 'bias' and/or 'fairness'. Write your answer down.**

By distorting the size and shape of landmasses, particularly those closer to the poles, the Mercator projection prioritised accurately representing navigational routes for European sailors. Europe and North America appear larger and more central, while continents such as Africa and South America are diminished in size. This distortion perpetuated a Eurocentric worldview by centring the perspectives and interests of European powers, reflecting historical power dynamics and colonialist agendas. The Mercator projection's Eurocentric bias is evident in its inaccurate representation of the true scale and significance of various regions worldwide, perpetuating misconceptions and biases about the relative importance of different parts of the world.

In terms of fairness, the Mercator projection fails to provide equitable representation of global geography, distorting the sizes of continents and reinforcing biases. Fair cartography would involve using map projections that accurately represent the size and shape of landmasses without privileging one region over another. Therefore, addressing the Eurocentric bias inherent in the Mercator projection is essential for promoting fairness and accuracy in representing the diverse realities of our world.

**4e Give at least one example of how a worldview such as Eurocentrism can lead to bias in a dataset? Write your answer down.**

One example of how Eurocentrism can lead to bias in a dataset is in historical records or archives. Eurocentrism can result in the underrepresentation or marginalisation of non-European perspectives and experiences. Historical datasets compiled primarily from European sources may overlook or minimise the contributions, achievements, and narratives of non-European civilisations and cultures. This bias can lead to an incomplete or skewed understanding of global history and perpetuate Eurocentric narratives of superiority and dominance.