

Climate Change Calculated, Corona Update 2

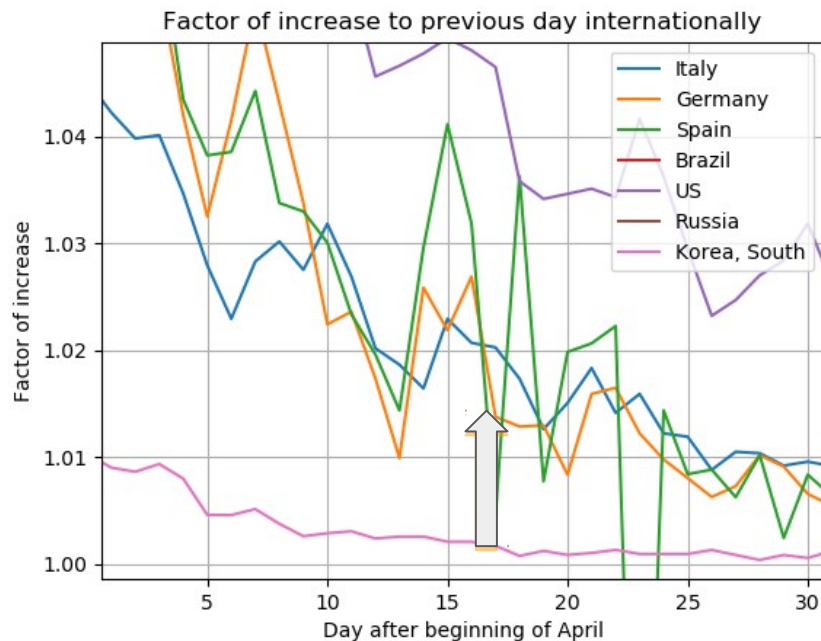
Prof. Dr.-Ing. G. Schuller
Ilmenau University of Technology
Institute for Media Technology
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Conclusion from my last video in early April

- I calculated that we need to reach a daily increase factor of **1.02 (doubling in about 35 days)**,
- This **increase factor** also has the advantage that it is **independent of the underdetection rate** (see my video “Corona Special” and “Corona Update”) in different areas and countries.
- **Germany** indeed **reached this factor** in mid April, and as a consequence the Corona measures indeed where relaxed.

Curve of the increase factor in April

- Note: The increase factor did indeed fall below 1.02 in mid-April.
- Then the relaxation of measures also began



Comparison of infection risk in different countries

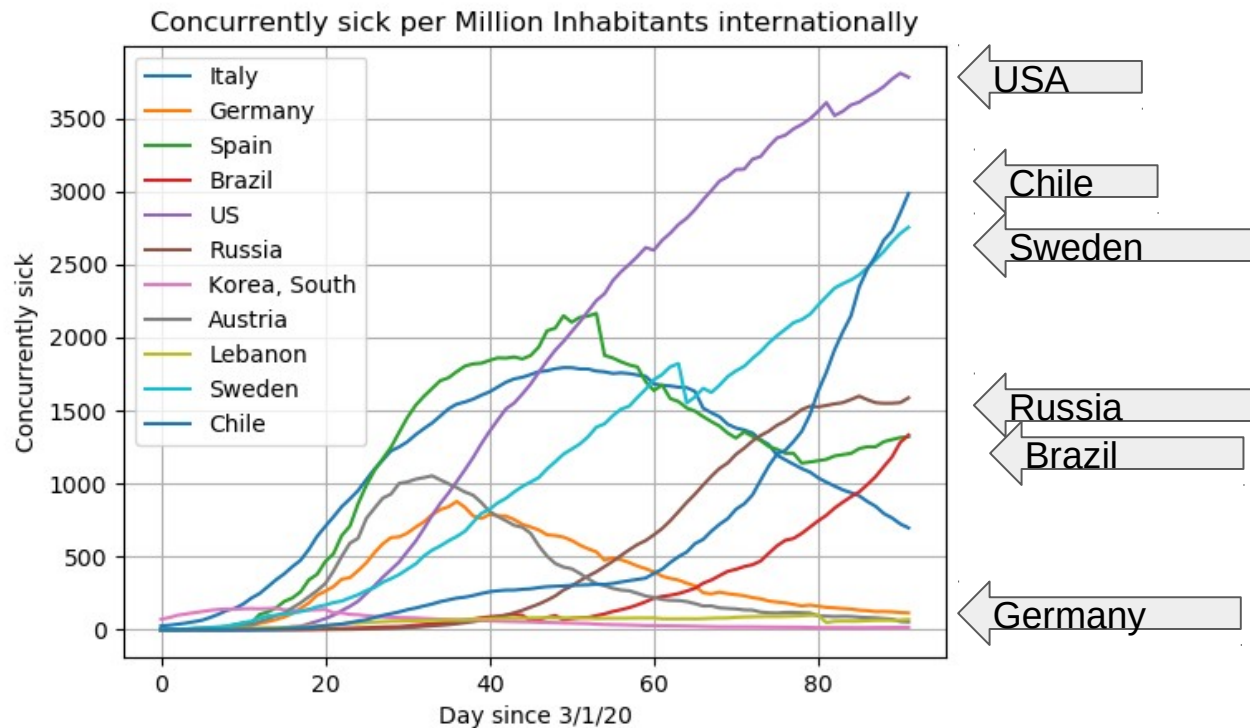
- In the meantime, the numbers of recovered and deaths became significant, so that they must be taken into account in the calculation.
- The number of concurrently sick is the number of infected minus the number of recovered and deaths.
- Database is again the Johns-Hopkins GitHub repository
- *https://raw.githubusercontent.com/CSSEGISandData/COVID-19/master/csse_covid_19_data/csse_covid_19_time_series*

Concurrently sick per million inhabitants

- Since countries have very different populations, it makes sense to calculate the concurrently sick **per million inhabitants**.
- This is also what is needed to **estimate the risk of infection**.
- It is obtained by dividing the number of concurrently sick by the number of inhabitants in millions.

Concurrently sick per million inhabitants

The resulting plot shows the risk of infection since the beginning of March



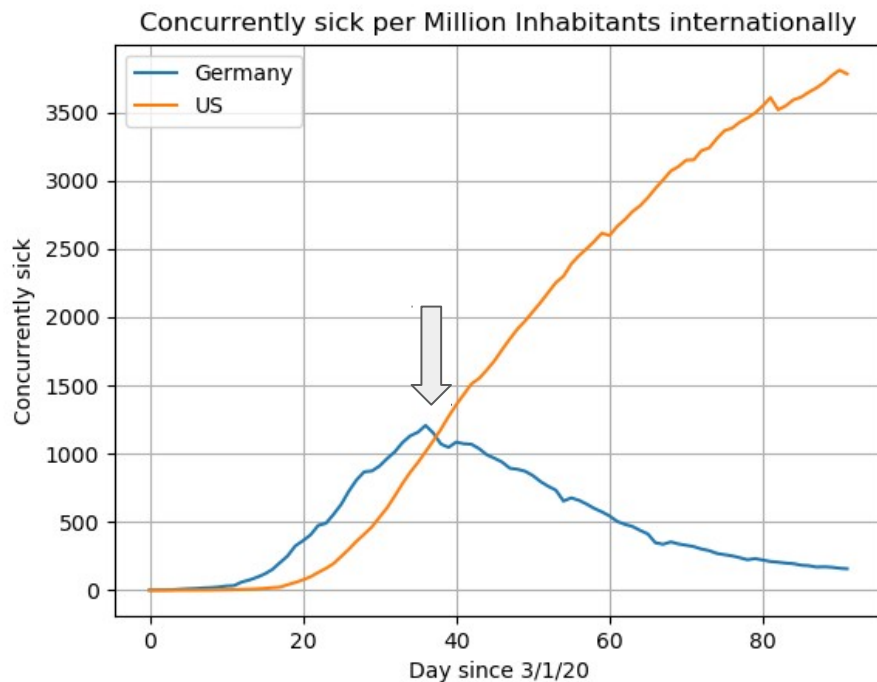
Concurrently sick per million inhabitants

Notice:

- The **US** has the highest risk of infection with over **3500 concurrently sick per million inhabitants**, and the number is **still rising**.
- Then come Sweden and Chile. Sweden is rising at about the same rate as the US, Chile (where is fall) rising faster.
- **Germany** is in a good position with about **160** concurrently sick people per million inhabitants.
- How did Germany and the USA get into their positions?

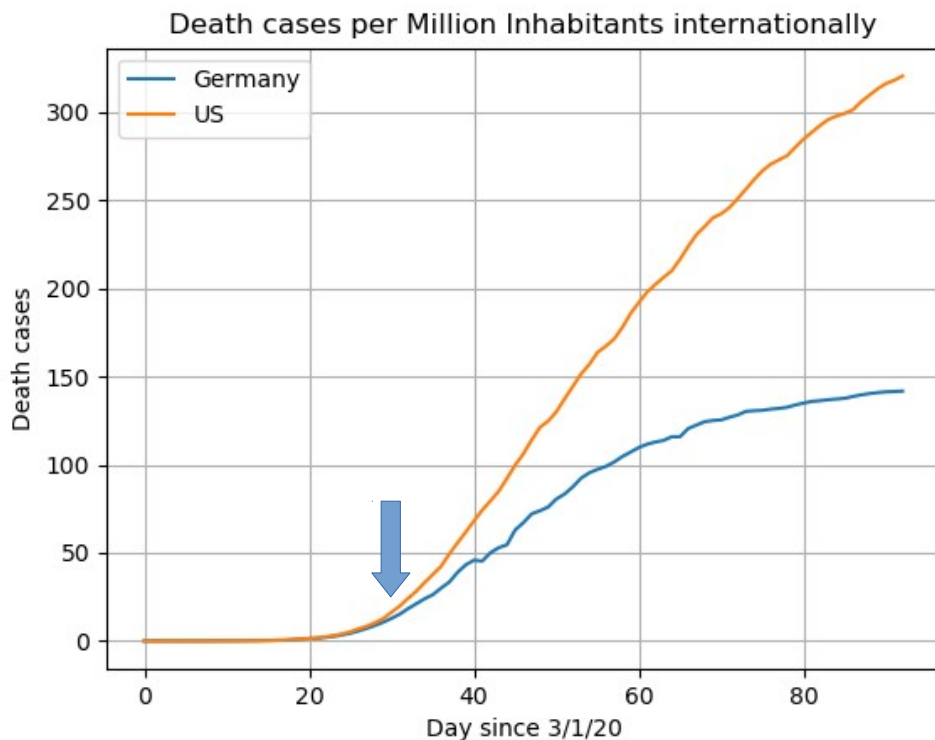
Comparison USA - Germany

Until the beginning of April, Germany had a higher risk of infection than the US



At the beginning of April, Germany's curve falls below that of the USA.

Resulting death cases per million inhabitants



The US has **twice** the death rate as Germany, and continues to rise.

Because of the under detection factor the number of deaths is rather too low, but the ratio should be roughly correct.

Comparison: Traffic deaths: ca. 4 per month per million inhabitants (in both countries).

Comparison USA - Germany

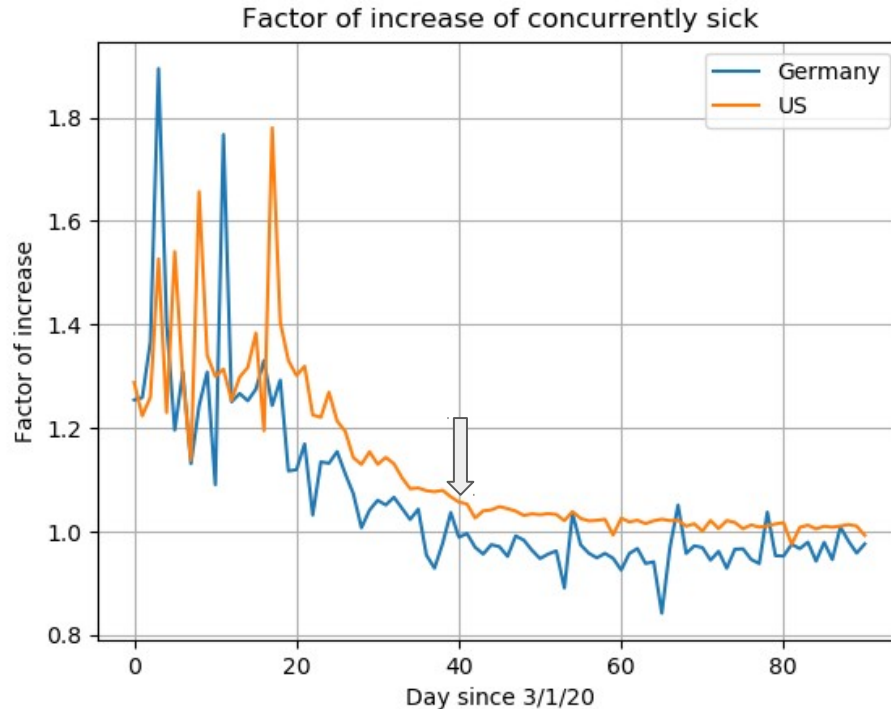
Notice:

- Until the beginning of April, Germany and the US **had a very similar curve**
- The US were only about 1 week behind the curve of Germany.
- Then **Germany managed the turnaround** from growth to a decrease in the number of concurrently sick.
- The US has not yet managed this turnaround.
- Where did that come from?

Increase factor of the concurrently sick

- For analysis, we can calculate the **increase factor of the concurrently sick** as a quotient of the numbers for two consecutive days.
- This quotient is the same for the absolute numbers or for the number of concurrently sick per million inhabitants.
- It is related to the reproductive factor but not the same.
- Values **greater than 1: Increase**,
- **less than 1: decrease**,
- a **constant value above 1: Exponential growth**, similar to a fire that spreads.

Increase factor of the concurrently sick



At the beginning of April, the factor of Germany falls below 1, but not that of the USA, until now.

Increase factor of the concurrently sick

Notice:

- In Germany, the factor fell **slightly below 1** from around mid-April onwards, in the US it remained **slightly above 1**.
- An **apparently small difference** that makes a big difference in growth.
- In other words: Germany's measures work, but they are not sufficient in the US.
- When relaxing measures, it is therefore important to quickly detect **new outbreaks** to avoid their **exponential growth**, through extensive testing, tracking apps to effectively identify any infected contacts.

Summary

- Germany's measures are among the most successful internationally,
- the density of people who are concurrently sick is among the lowest.
- The Corona "fire" in Germany was successfully contained, but is still there.
- The growth factor of the concurrently sick is currently just below 1.
- To prevent it from rising above 1 again when measures are loosened, fast detection and tracking of new outbreaks is needed.