New Emergency Management in a Resilience Era Facing Health, Climate and Energy Challenges

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Paris/online, Session 9 – The citizen science as a potential model for an ethical and multi-disciplinary DRM

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COVID19 – not again?!

- **Where do disasters and emergenies come from?**
- **What is their origin?**
- **Are they manmade, natural, Natech, complex?**
- **Is there a correct definition of the term disaster and the term emergency?**
- **If there is a correct definition, who should write down or formulate such a definition?**
- **Is there one person, one organisation which has or should have a mandate over the definition of a disaster or an emergency?**

COVID19 – again, but where from?

- **There were two leading theories: lab-spillover and the natural origin through an intermediate host (Frutos et al., 2021).**
- **However, Frutos et al. (2021) have recently proposed that there is no direct evidence of an intermediate host, as this was based on a theoretical extrapolation from a stored genetic sequence.**
- **Further evidence has pointed to the lack of positive COVID19 tests in the personnel from the Wuhan Institute of Virology.**
- **SARS-CoV-2 or rather its predecessor have circulated in the environment and between animal and human population.**
- **The virus is "just looking for a receptor" to bind to.**

COVID19 – does the origin matter?

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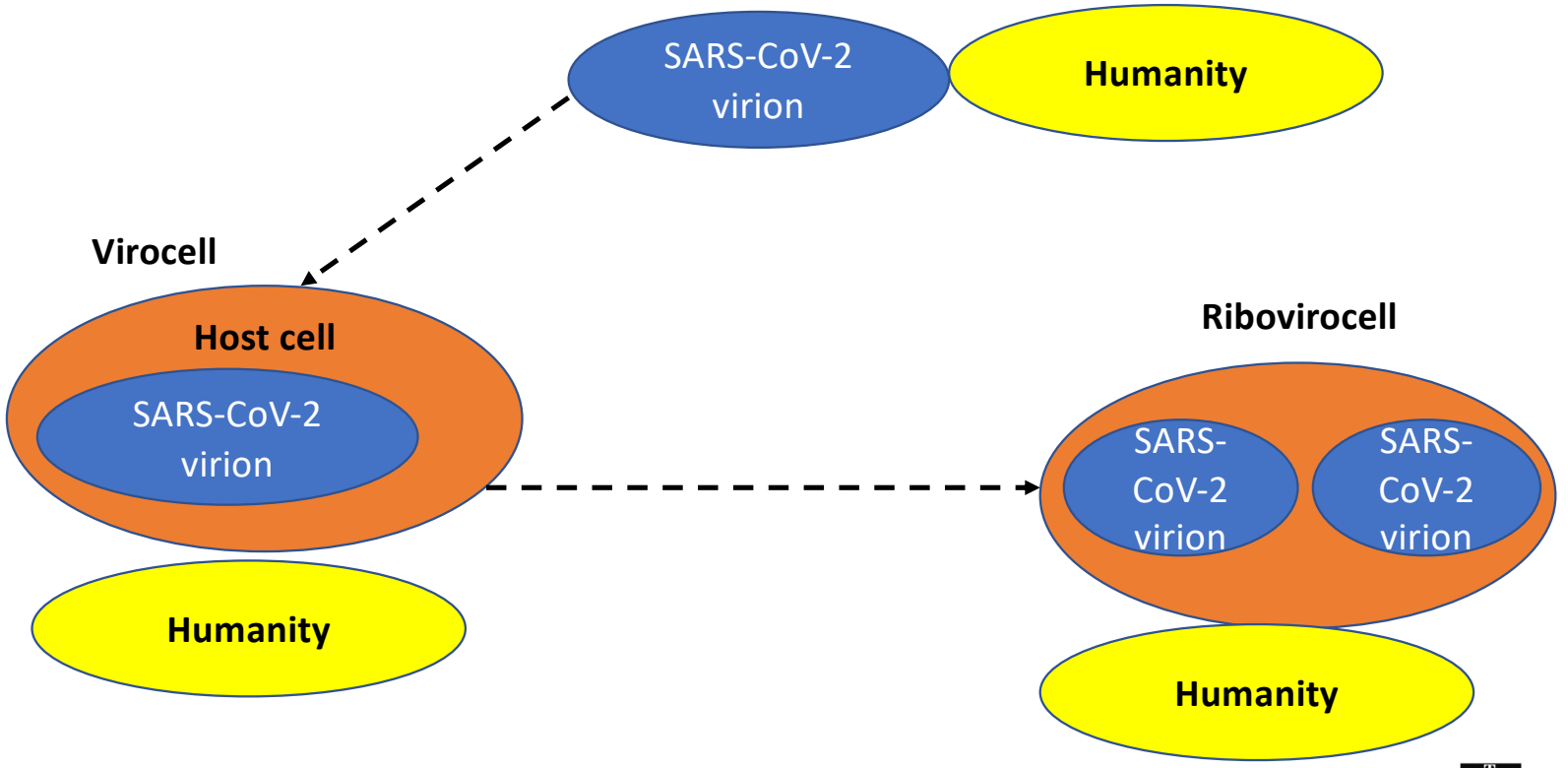
COVID19 – impacts?

- **The total economic loss of the COVID19 pandemic has been estimated at 16 trillion USD (Cutler and Summers, 2020).**
- **In more detail, premature deaths costs have been estimated at 4.375 trillion USD and the long-term impacts on health, or morbidities 2.572 trillion USD (Cutler and Summers, 2020).**
- **Finally, up to 1.581 trillion USD was the estimated costs of the mental health impairment that have resulted from the COVID19 pandemic (Cutler and Summers, 2020).**
- **All of humanity is affected and thus all of humanity has an interest to get over the impacts of the COVID19 pandemic.**
- **Therefore, who holds the knowledge and the epistemic authority to solve these, and other disaster challenges lies with all of humanity.**

COVID19 – human existence and the virus analogy



COVID19 – impacts?

- **Fundamental reality – the viruses exist and do not go away (Iheanetu et al., 2021).**
- **Fundamental reality is set by the laws of nature and generally humanity cannot alter it.**
- **Fundamental reality is the setting in which evolution of SARS-COV-2 and the existence of the virus is a fact of nature and not something that humanity cannot change.**
- **Humanity lives the in scope of this fundamental reality and it also lives through the situational reality of each one's life, i.e. the so-called situational reality (Tandlich et al., 2021).**
- **Situational reality can be seen as the factors impacted everyday life of humanity, i.e. we argue that in a complex disaster or emergency, each human being and their lived experiences provide a data source to gain a full disaster picture.**

Citizen science

- **Simply put, the citizen science is a field that has been around for a long time.**
- **Laypersons are involved and actively participate in the collection of data about a studied scientific phenomena.**
- **Citizen science can be defined as the data collection and the execution of various types of scientific activities which are at least in part, by non-scientists or members of the general public (Heigl et al., 2019).**
- **Examples of the long-term and successful campaigns in citizen science include the Secchi disc annual dip (see https://www.nalms.org/secchidipin/ for details) and disaster risk reduction (Hicks et al., 2019).**
- **Situational reality is mostly described using this approach, but coronavirus has shifted the nature of the fundamental way we live.**

Citizen science continued

- **All of humanity has a vested interest in the survival at the individual levels and for the whole of humanity.**
- **All of us produce data a knowledge about how we survive, and if this angle is adopted in the disaster and emergency management then various advantages can be achieved.**
- **Power relationships can be more balanced and access to resources can be performed in a more equitable manner, or a manner that is more perceived to be more equitable.**
- **Community can be more involved in the preparedness and mitigation measures in a better way.**
- **Epistemic justice in the creation of disaster/emergency management knowledge can be achieved.**

Citizen science and disaster data.

- **Social media posts, as discussed by other speakers.**
- **News paper articles and data created in a slightly different context.**
- **Validity must be scrutinised, but the information content and value generated by citizens cannot be dismissed.**
- **Collaborative partnerships must be forged between emergency managers, academics/researchers and citizens in the nature of data collected, its value and ownership and the management.**
- **Inclusivity and epistemic (knowledge-generating) justice must be attempted, as the coronavirus pandemic has affected all of humanity.**
- **Qualitative data/personal stories are a source to improve resilience.**

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