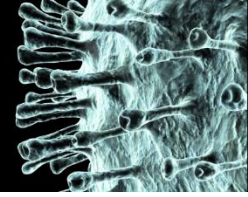




## COVID Conversations on Risk

Featuring: Pia-Johanna Schweizer, Ph.D., IASS Potsdam



### Systemic Risks of Pandemics

What is so special about systemic risks? Risks are systemic when a society's essential systems, such as telecommunications, infrastructure or health systems are threatened. Also, risks are systemic in that their direct manifestations and cascading effects propagate across an interconnected world. This certainly applies to our global realities with COVID-19, where a systemic risk approach is definitely needed.

If you look at systemic risk from an interdisciplinary perspective, one might think of the fable, Seven Blind Men and the Elephant. Each of the men gets ahold of one piece of the elephant and tries to make sense of what they have in front of them. The same goes for systemic risks. Each discipline gets ahold of one aspect of the phenomenon. If we put all the pieces together, we have five attributes to systemic risk – complex interdependencies, transboundary hazards, non-linear developments, tipping points and inadequate policy instruments.

- **Complex interdependencies** - refer to tightly coupled systems and interconnectivity resulting from tight coupling. As a result, we are faced with introducing tendencies and feedback loops within systems, but also between systems.
- **Transboundary hazards** – pose cascading effects and also a transgression of boundaries that refers to geographical regions and system domains that are being transgressed. These transboundaries challenge multi-level governance approaches.
- **Non-linear developments** - refer to the exponential growth of impacts, which we see happening with the coronavirus pandemic. The distribution of occurrences are rapidly shifting, which means that scientists cannot easily extrapolate from past experience or data sets into the future.
- **Tipping points** - become catastrophic once certain thresholds have been breached. The question is, how much stress can our current systems take until those thresholds are breached? Oftentimes, tipping points are difficult to detect before the actual event, and before that point is reached.
- **Inadequate policy instruments** - have two elements. The first is risk perception. It is difficult to communicate uncertainties about occurrences and consequences to the public and to stakeholders. Framing effects might take place here and there is a general lack of trust in institutions, and in science in general, which makes it very difficult to communicate about fairness and equity issues. The second is mainly due to institutional inertia and short-term legislative initiatives.

The way in which these attributes are linked together is outlined in figure 1. There is a three-dimensional space made up of complexity, transboundariness and lack of regulation and perception. There is a crosshair that divides the space into four quadrants, in the top right quadrant you will find systemic risks, where there are tipping points and non-linear developments as well as high levels of complexity, transboundariness and lack of regulation and perception.

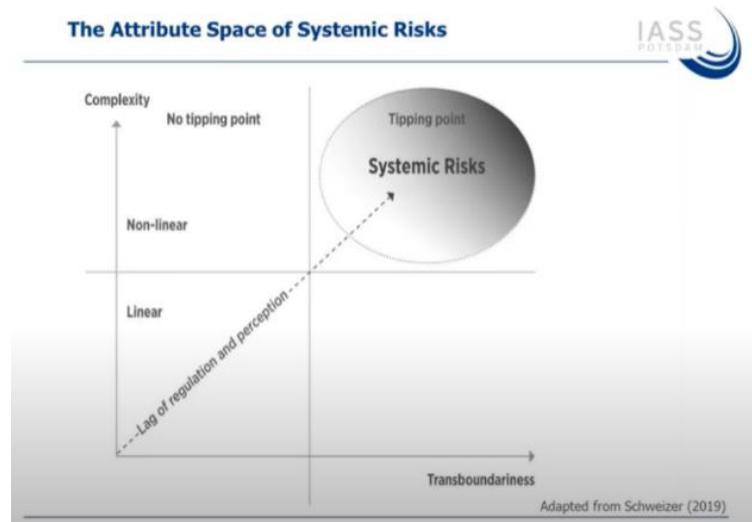


Figure 1

### How do we tackle this phenomenon?

First, we need system thinking approach or assistance perspective, that bears in mind the interconnectedness of systems in contemporary societies. At the core of this heuristic, which will be referred to as system I level, you have the risk emitting systems. They might be biological, financial, technological, or any other emitting system. System II level is the institutional arrangements and regulation in place to tackle risks emanating from system I. Both systems are interconnected, and embracing both systems is system III, where we have societal risk controversies and public discourse. All of these systems are heuristics that would help us analyze the interdependencies of systemic risks.

With regard to how to organize research on systemic risk, we can follow a very generic cycle of risk governance that starts with pre-assessment, then appraisal, characterization and evaluations, and finally, management. This is a never-ending process that, at its core, has participation, communication and reflection. The systems thinking needs to be incorporated into this procedural framework.

To apply systems thinking to the current COVID-19 pandemic, we must take an interdisciplinary approach. This must be a truly integrated and joint effort of various disciplines to successfully govern the situation. It is also important to find ways of including stakeholders and the public in order to balance trade-offs. Initiating a systemic risk approach is quite challenging but must include:

- Transparency and plausibility are a top priority to change;
- An interdisciplinary approach to modeling and characterization of risks, especially with regard to countermeasures that are being deployed successfully by various countries;
- Communicating tipping points to the public while maintaining a balance between what is known now and what is needed to govern future decisions;
- Anticipatory governance, with short-, mid- and long-term perspectives; and,
- A deliberative discourse that maps out the ethical dimension of risk governance before disruptive forces take hold.