



# (Geo)Ethics. Step 1: Preparedness.



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# NATURAL HAZARDS

Complex physical phenomena that expose a natural area to risk of loss of life, environmental degradation and property damages.

## TIME LINE

- BEFORE THE EVENT (LARGE SCALE)
- DURING THE EVENT (SHORT SCALE)
- AFTER THE EVENT (MID TO LONG SCALES)



## RISK ANALYSIS

Risk assessment, risk characterization, risk communication, risk management, and policy relating to risks, in the context of risks at a local, regional, national, or global level.

- Quantitative
- Qualitative
- Probabilistic

## FIRST STOP

### • PREPAREDNESS

"Disaster Preparedness" is defined by the UN as involving "forecasting and taking precautionary measures prior to an imminent threat when advance warnings are possible."

What happens when warning is not possible in advance?



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# COMPLEX SYSTEMS

On the risk analysis, we use to be too Cartesians, taking too much time in arriving to conclusions when a non clear cause-effect chain can be identified.

THE ETHICAL PROBLEM OF DELAYING CONCLUSIONS: THE VICE OF BEING TOO DETERMINISTICS

The search for a specific cause for a given extreme natural event may be futile when dealing with a nonlinear system, with complex and unknown feedbacks mechanisms, because every link in the feedback loop is both cause and effect.

THE PROBABILISTIC APPROACH

IN MOST OF THE CASES, RISK ANALYSIS CAN BE, AT BEST, BASED ON THE ESTIMATION OF TERROR FORECASTS, OFFERING TO SOCIETY THE BEST ESTIMATES IN PROBABILISTIC TERMS, EVEN WHEN OUR ANALYSIS WAS, IN MORE WIDE, DETERMINISTIC (deterministic/probabilistic)

THE PROBABILISTIC FEAR & OUR ETHICAL CHALLENGE

A TOO DETERMINISTIC MIND LIMITS OUR BEST CONTRIBUTION TO PREPAREDNESS AGAINST NATURAL HAZARDS. HOWEVER, OUR FEARS ARE NOT FUTILE, BECAUSE WE DID NOT EDUCATE SOCIETY, PROPERLY, TO DEAL WITH SUCH PROBABILISTIC APPROACHES.

BACK TO SCALES

A Voyage Through Scales

Time and Space Scales are Dimensions

HUMAN DIMENSION IS ANOTHER SCALE





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- **HOWEVER, OUR FEARS ARE NOT FUTILE, BECAUSE WE DID NOT EDUCATE SOCIETY, PROPERLY, TO DEAL WITH SUCH PROBABILISTIC APPROACHS.**



# *BACK TO SCALES*

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