



## **Responsibilities of scientists in a world in transition**

- Pieter J.D. Drenth, Prof. em. VU University Amsterdam, Hon. President All European Academies (ALLEA)
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# Panta rhei

- Societies in motion
- Individual life styles, roles, belief systems change
- Information revolution
- *Fast technology-driven changes : both blessings and drawbacks*



# Panta rhei in science?

- Science substantial complicity in mutations
- Augmented scientific knowledge and insights
- Omnia mutantur: also laws and principia of empirical sciences?
  - my answer is no
  - universality of theories and methods



# Science: benefit or risk?

- Relevance and salutary effects of science
- Why is appreciation and reverence often replaced by scepticism, suspicion, enmity nowadays?
  - religious pressures
  - fear of direct or collateral damage
  - march of unreason
  - interest in pseudo-science
- Some critical questions amendable to reason  
honest concerns



# Questions of responsibility

- Justifiability of choice of research topic
- No-go areas?
- Slow-go areas?
- Sufficient independence from external pressures and influences?
- Sufficient observation or rules of responsible research?
- Application and use of research results



## Dual use of concern

- Potential misuse of biological knowledge
- Ron Fouchier (Erasmus University Rotterdam): modification of Avian Flu H5N1 to an airborne type that is transmissible via aerosols and respiratory droplets; submitted to *Science*
- National Science Advisory Board for Biosecurity (NSABB): no full publication (fear of terroristic abuse); later: change of view
- Arguments pro:
  - Openness and sharing info important for science
  - Benefit for public health (better be prepared)
- Fundamental issue: Right to know versus dangers of knowing



## Final word

- Changing world poses ethical questions to the scientist
- Washing hands in innocence or ignorance no option
- Need for critical and intellectual discourse with other scholars and scientists
- National, regional and world academies of arts and sciences are organisations par excellence to provide a platform for such a dialogue