

# Transition to Open Science

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# Transition to Open Science: why?

## problems of the science system

- Competitive and non-cooperative practices
- Quality and Replication crisis
- Expensive commercial publication markets
- Privatization and problems of knowledge ownership / knowledge access
- Relationship with society



# Transition to Open Science: why?

## Metrics shapes Science

- *Novelty and quantity* are dominant over quality, replication, relevance and impact
- Short-termism and risk aversion because of 4-year funding cycles
- Fields with high societal impact, but low impact in the metrics system suffer (applied vs basic; SSH vs STEM)
- The national and institutional research agenda is thus not properly reflecting societal (clinical) needs and disease burden



# The Scientific Field: Professional Interests, Elites, Stratification, Power Struggle, and Economics

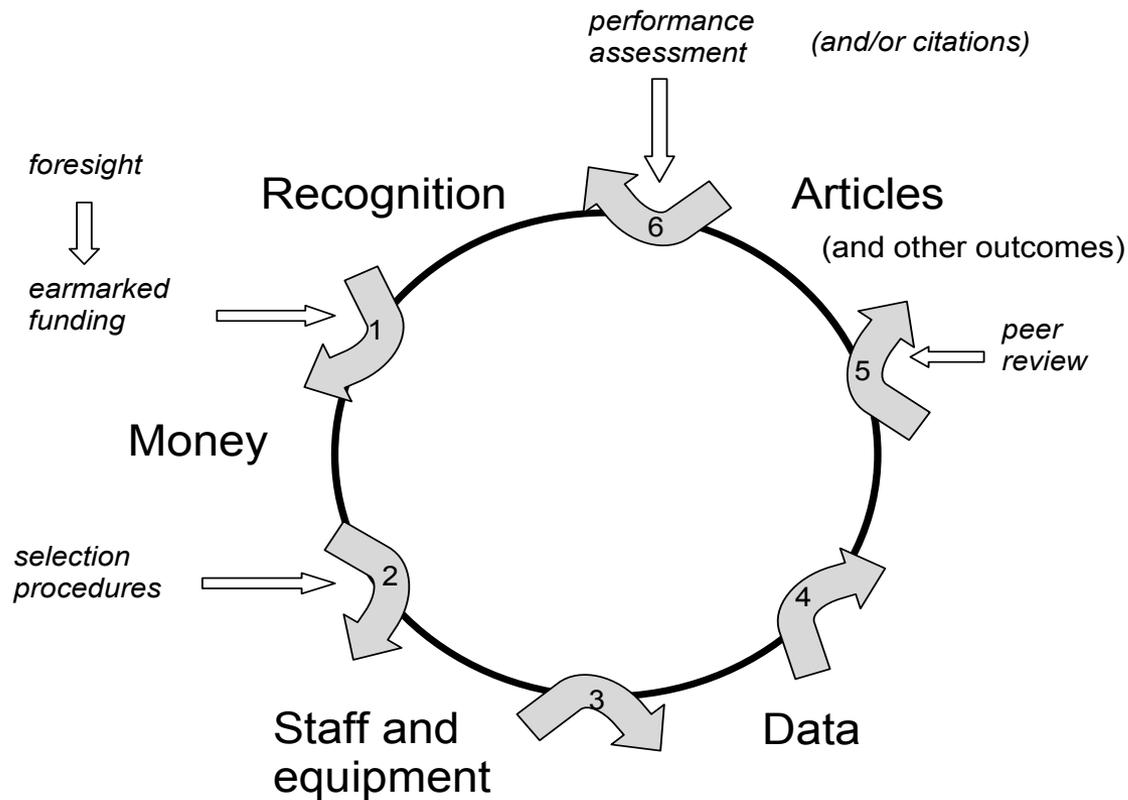


Figure 3. The credibility cycle, adapted from Latour and Woolgar (1986). Points at which organizational devices connect to the cycle are shown



# Problems of the Current Reward System in Science

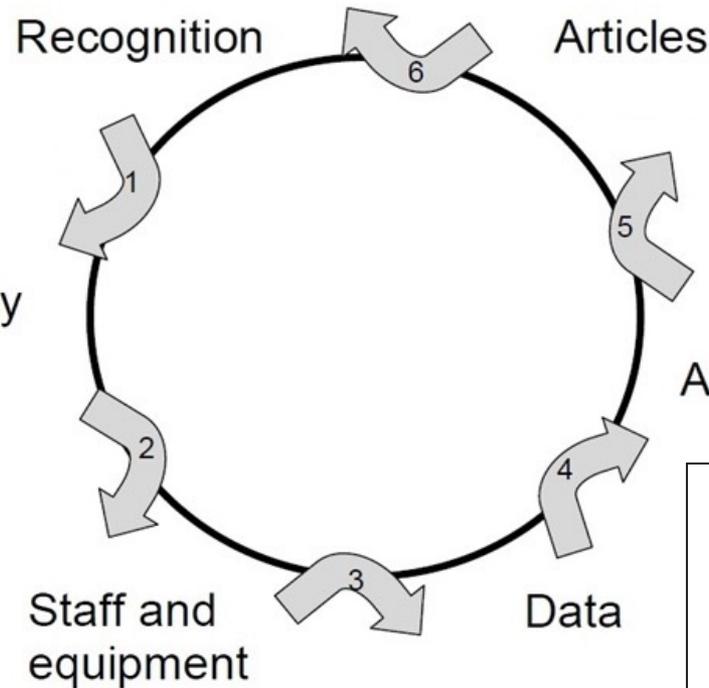
**Society is largely absent from the *credibility cycle***

Quality in Quantitative terms:  
- number of articles, journal impact factor, citations, H-index  
- amount of funding obtained

**Hypercompetition for limited funds**

**Too little room for Team-Science, Multidisciplinarity & Diversity**

Money



Arguments

- **Most papers still behind paywalls**
- **Data not shared**



## Open Science (1)

*The overall aim of Open Science is to increase the quality, progress and scientific & societal impact of research and scholarship.*



## Open Science (2)

To achieve these goals in the practice of Open Science

- Engage -when appropriate- with relevant and representative stakeholders from society to:
- Define problems to be investigated; discuss ongoing research
- Actively promote that the results of any kind provide guidance for implementation and action(s) in the specific contexts.



## Open Science (3)

To achieve these goals in the practice of Open Science

- Share research results, if possible, in several stages of the work and publishing these papers Open Access
- and if possible FAIR Data and Code (Software) Open Access

Last but not least:

- Change research evaluation (Incentive and Rewards) accordingly



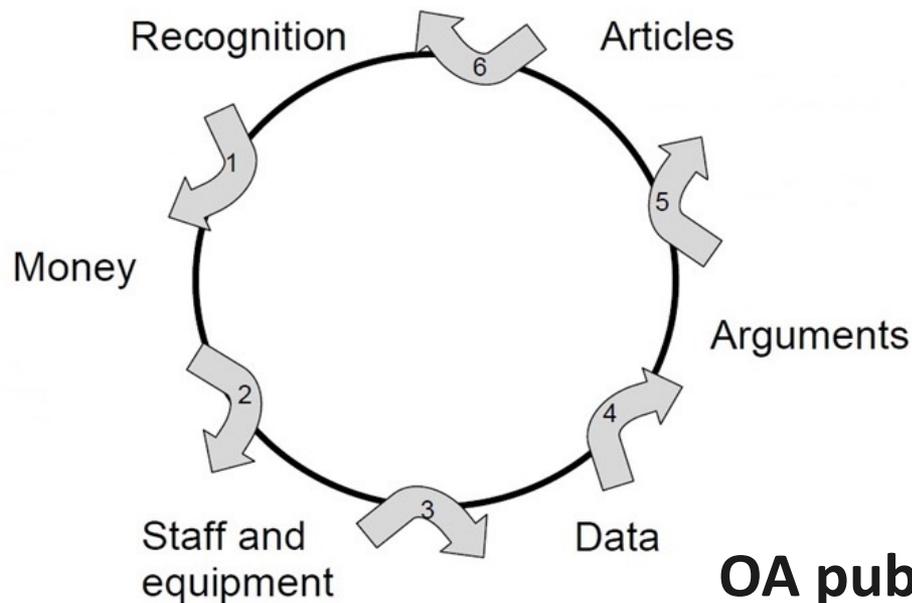
# Systemic Interventions to improve quality, impact and integrity at all levels

**Engagement of societal stakeholders in problem choice research and evaluation**

## Inclusive indicators

**Quality (DORA)  
Societal Impact  
Academic Leadership and Culture  
EDI**

**OPEN PEER REVIEW  
POST PUB PEER REVIEW**



**OA publishing  
FAIR data sharing**



# TOWARDS OPEN SCIENCE

