

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

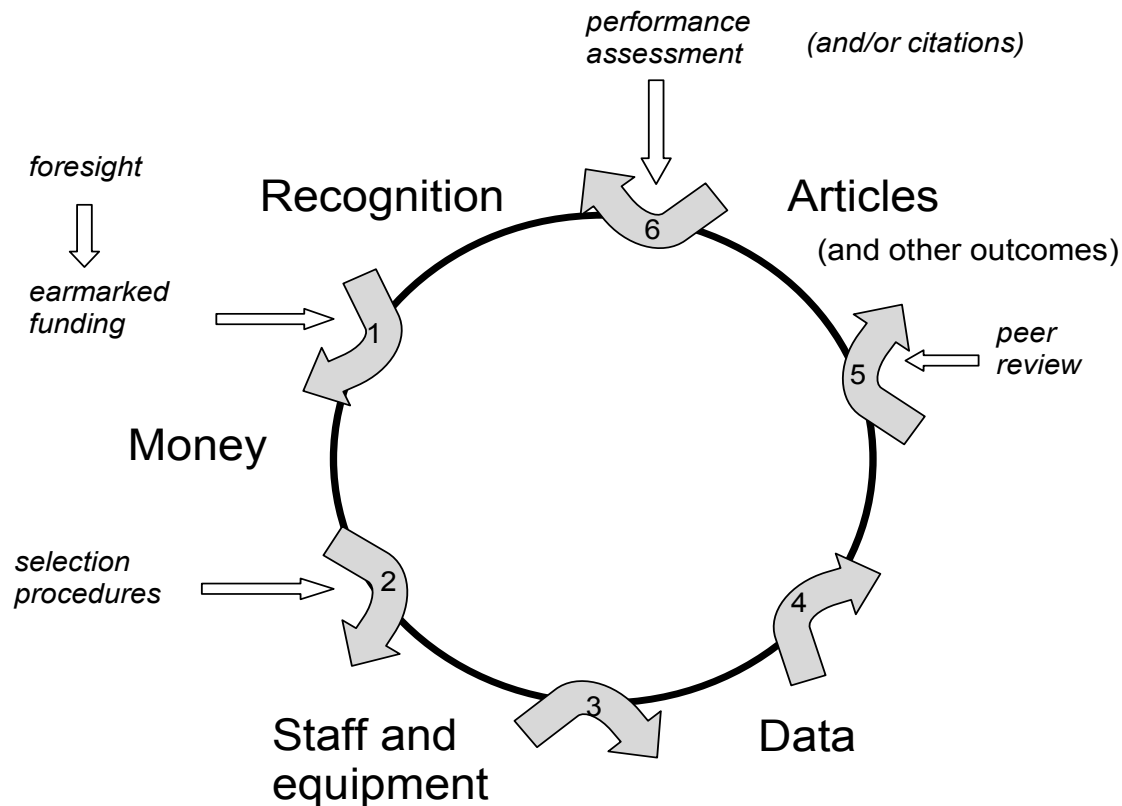


Figure 3. The credibility cycle, adapted from Latour and Woolgar (1986). Points at which organizational devices connect to the cycle are shown



Problems of the Current Reward System in Science

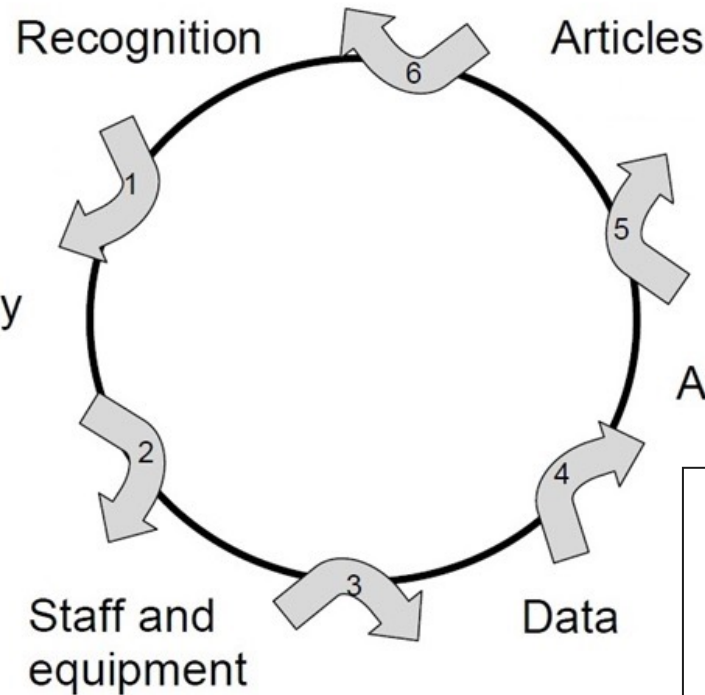
Society is largely absent from the *credibility cycle*

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

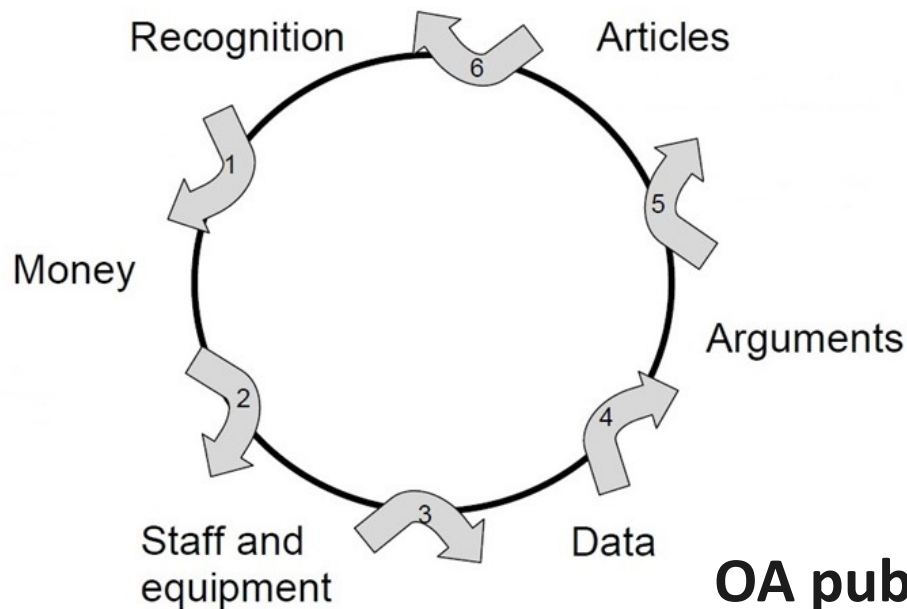
Last but not least:

- 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

