Open Science & Societal Impact

'Incentives for Open Science,

providing the right kind of feedback'

AESIS Seminar

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"Feedback: the property of being able to adjust future conduct by past performance"

Norbert Wiener*

In 'The Human Use of Human Beings', 1950, pp.33

*Initiator of **cybernetics**, a formalization of the notion of feedback

Some suggestions on how to enhance COMMUNICATIONS:

- PURPOSE
 Provide feedback to senders of messages as to how
 & by whom they are received
 - **PROCESS** Let machines take over the tedious aspects so people can focus on what they do best





Benefits of Open Science

Re-use and transparency: outputs more frequently used by researchers and even a broader audience

Innovation: more innovation and collaboration between universities, industry and citizens

Impact on society: fruits from research benefit society directly

Global impact: stronger position of research institutions

> Top talent: universities succeed better at attracting, collaborating with, and retaining top talent

Fair assessment: funding and careers based on a more holistic picture

Less admin: admin burden on researchers decreases



The Seesaw Dilemma:

Open Science benefits vs. Researcher workflow benefits





Case in point: Dutch Open Science services (data & infrastructure) introduced as pilots

NL Open Science Goals & Outcomes Actors & Use Cases Infrastructure Building Blocks



1. Data monitor: find datasets wherever they are

2. Aggregation portal: combine strength of institutions

3. Grant monitor: Funded projects tracked (members & impact)

As part of a special agreement, also comprising reading & OA publishing. More info: epdos.nl 4. Telescope (equipment tracker): impact of research equipment

5. Rare Disease analytics: insights into specialized topics

6. Preprint monitor: find preprints wherever they are



Example: Data Monitor

Museums Science Digital Science Community Citizens Citizen Scientist Volunteers Collection Crowdsourcing Birds Repository Datasets Open Data Data Curation Ecology Biodiversity Periodicals Research Management Semantic Web Sharing Reproducibility Observatories Scholarly Communication Open Science Scientists Data Accuracy Citations Data Data Management Data Repository Metadata Data Science Data Botanical Garden Project Big Data Information Dissemination Data Reuse Open Access Libraries Herbarium Research Digital Libraries Notebook Editorial Research Personnel

Supporting institutions and researchers by finding datasets and assigning them to correct researchers:

Objectives:

- 1. Find available datasets reliably
- 2. Save time entering them into systems (CRIS/ RIM, etc.)
- 3. Increase engagement with & impact of datasets

Results (in Dutch pilot):

- Increased known number of datasets by factor 5-30
- 2. Saved half hour per dataset
- 3. Too early to tell



In summary:

How to create feedback loops in order to increase Incentives for Open Science?

We believe that by close collaboration and application of technology we can provide:

• PURPOSE

Provide feedback to creators of research outputs (researchers, institutions & funders) of how they are received, perceived and used. In other words: Impact

PROCESS

Provide tools that will allow them to share with as many as possible while uploading only once



