

Carrots and Sticks in the Evaluation of (Open) Data Sharing

Special Session at [STI ENID 2025](#), 3-5 September 2025

Inma Aleixos-Borrás¹, Julia Olmos-Peñuela² and Nicolás Robinsón-García³

¹University of Stuttgart, maria.aleixos-borras@eni.uni-stuttgart.de

²University of Valencia, julia.olmos@uv.es

³University of Granada, elrobin@ugr.es

Background

Many funding agencies require that data collected in a research project or study should be openly shared and findable, accessible, interoperable and reusable provided that no ethical or national security issues are at stake (commonly referred to as the FAIR data principles). Despite such requirements, data sharing is still not widely practiced. Previous research points that issues go beyond ethical or technological issues, but relate to a lack of incentives (Borycz et al., 2023; Van den Eynden & Bishop, 2014), hence suggesting to implement policies which reward data sharing (European Commission. Directorate General for Research and Innovation, 2017; Mabile et al., 2024; Morris & Saenen, 2024; National Academies of Sciences, 2020). The underlying assumption is that, by recognizing open science practices, these will be adopted widely.

Others argue that this might not work (Fecher et al., 2017), as data sharing practices work against scientists' 'competitive edge' (Hilgartner & Brandt-Rauf, 1994). Mabile et al. (2024) suggest that researchers might 'engage in strategic sharing to accumulate rewards, effectively 'gaming' the system rather than focusing on the production of new, high-quality knowledge' (p. 34). Furthermore, data sharing requirements may lead to unintended effects. Researchers may adopt restrictive practices, delaying journal submissions to fully exploit the underlying data before sharing it openly (Mueller-Langer & Andreoli-Versbach, 2018). Hilgartner (2017) refers to these practices as 'knowledge control regimes'.

Additionally, research efforts on collecting primary data may reduce in some fields as observed in the case of Hydrology (Allen & Berghuijs, 2018; Blume et al., 2018) as scientists see greater benefit on making use of secondary data rather than generating new one. This can be problematic if the reasons for reusing data are related to career priorities and rationalizing efforts rather than research priorities and challenges. In cases in which data sharing is common, researchers may adopt more 'obscure' practices to impede colleagues on reusing their data due to a lack of documentation or by withholding key variables from the shared datasets (Thelwall et al., 2020).

Still, there are numerous calls for rewarding open science (Holmberg, 2017; Leonelli, 2017; Musker & Smith, 2021) which also extend to research data (Fecher et al., 2015; Puebla & Lowenberg, 2024). Data sharing has specific characteristics that make them distinct from similar initiatives such as open access publishing (Fecher et al., 2015; Puebla & Lowenberg, 2024) due to their own nature and characteristics, e.g., granularity, versioning or peer review. This is reflected for example on the difficulties for implementing and monitoring data citations (Lowenberg, 2022; Puebla & Lowenberg, 2024; Robinson-García et al., 2016).

All these issues open a difficult scenario in which mixed feelings are found on both sides. On the one hand, stakeholders promoting data sharing practices who seek to promote an open and collaborative research environment. On the other hand, the conundrum of a complex evaluative academic culture which threatens with unintended effects which may curtail the ultimate aims of the open science movement, leading to malpractices and misdirection in research agendas. **This special session aims at portraying both sides of this scenario in order to integrate**

perspectives from researchers, funding agencies, scientometricians and research evaluators to progress on the development of a healthy and sustainable scientific ecosystem. Therefore, we invite colleagues to submit quantitative, qualitative or mixed-methods studies that include preliminary or final findings addressing one of these issues:

- (i) the identification of (supra)national governments' and funding institutions' evaluation approaches of (open) data sharing through rewards or penalties,
- (ii) the examination of the type of quantitative and qualitative indicators or control mechanisms that are being used for these evaluations, and what these indicators or control mechanisms are exactly representing. In other words, how FAIR data, data reproducibility and reusability, quality and quantity of data sets, etc. are represented in these indicators or control mechanisms,
- (iii) the analysis of how these rewards and penalties are shaping researchers' data sharing practices, and
- (iv) what type of consequences these evaluation approaches might have for researchers in terms of equity in career assessment within the same research discipline.

Papers will be assigned for discussion to the rest of the presenters in the session, who will give 10-minute feedback to authors after a short presentation during the session. At the end of the session, the organizers will present a summary of the empirical studies submitted to the session and stimulate discussion among attendants and experts in the room. **We seek to foster a debate on whether (open) data sharing should be rewarded and reflect on its consequences.**

All submissions via Oxford Abstracts here:

<https://app.oxfordabstracts.com/stages/77578/submitter>

Deadline: 4th April 2025

References:

- Allen, S. T., & Berghuijs, W. R. (2018). A need for incentivizing field hydrology, especially in an era of open data: Discussion of "The role of experimental work in hydrological sciences – insights from a community survey"*. *Hydrological Sciences Journal*, 63(8), 1262–1265. <https://doi.org/10.1080/02626667.2018.1495837>
- Blume, T., Van Meerveld, I., & Weiler, M. (2018). Incentives for field hydrology and data sharing: Collaboration and compensation: reply to "A need for incentivizing field hydrology, especially in an era of open data"*. *Hydrological Sciences Journal*, 63(8), 1266–1268. <https://doi.org/10.1080/02626667.2018.1495839>
- Borycz, J., Olendorf, R., Specht, A., Grant, B., Crowston, K., Tenopir, C., Allard, S., Rice, N. M., Hu, R., & Sandusky, R. J. (2023). Perceived benefits of open data are improving but scientists still lack resources, skills, and rewards. *Humanities and Social Sciences Communications*, 10(1), 339. <https://doi.org/10.1057/s41599-023-01831-7>
- European Commission. Directorate General for Research and Innovation. (2017). *Evaluation of research careers fully acknowledging Open Science practices: Rewards, incentives and/or recognition for researchers practicing Open Science*. Publications Office. <https://data.europa.eu/doi/10.2777/75255>
- Fecher, B., Friesike, S., & Hebing, M. (2015). What Drives Academic Data Sharing? *PLoS ONE*, 10(2), 1–25.

- Fecher, B., Friesike, S., Hebing, M., & Linek, S. (2017). A reputation economy: How individual reward considerations trump systemic arguments for open access to data. *Palgrave Communications*, 3(1), 17051. <https://doi.org/10.1057/palcomms.2017.51>
- Hilgartner, S. (2017). *Reordering life. Knowledge and control in the genomics revolution*. The MIT Press.
- Hilgartner, S., & Brandt-Rauf, S. I. (1994). Data access, ownership, and control. Toward empirical studies of access practices. *Knowledge: Creation, Diffusion, Utilization*, 15(4), 355–372.
- Holmberg, K. (2017). *MLE on Open Science: Altmetrics and Rewards – How to use altmetrics in the context of Open Science*.
- Leonelli, S. (2017). *MLE on Open Science: Altmetrics and Rewards – Incentives and Rewards to Engage in Open Science Activities*.
- Lowenberg, D. (2022). Recognizing Our Collective Responsibility in the Prioritization of Open Data Metrics. *Harvard Data Science Review*. <https://doi.org/10.1162/99608f92.c71c3479>
- Mabile, L., Shmagun, H., Erdmann, C., Cambon-Thomsen, A., Thomsen, M., & Grattarola, F. (2024). *Recommendations on Open Science Rewards and Incentives. Guidance for multiple stakeholders in research*.
- Morris, J., & Saenen, B. (2024). *Strategic Approaches to, and Research Assessment of, Open Science*. Zenodo. <https://doi.org/10.5281/ZENODO.13961123>
- Mueller-Langer, F., & Andreoli-Versbach, P. (2018). Open access to research data: Strategic delay and the ambiguous welfare effects of mandatory data disclosure. *Information Economics and Policy*, 42, 20–34. <https://doi.org/10.1016/j.infoecopol.2017.05.004>
- Musker R., & Smith F. (2021). *Incentive Systems for research data sharing in funded projects*.
- National Academies of Sciences, E., and Medicine. (2020). *Advancing Open Science Practices: Stakeholder Perspectives on Incentives and Disincentives: Proceedings of a Workshop–in Brief*. The National Academies Press. <https://doi.org/10.17226/25725>
- Puebla, I., & Lowenberg, D. (2024). Building Trust: Data Metrics as a Focal Point for Responsible Data Stewardship. *Harvard Data Science Review, Special Issue 4*. <https://doi.org/10.1162/99608f92.e1f349c2>
- Robinson-García, N., Jiménez-Contreras, E., & Torres-Salinas, D. (2016). Analyzing data citation practices using the data citation index. *Journal of the Association for Information Science and Technology*, 67(12), 2964–2975. <https://doi.org/10.1002/asi.23529>
- Thelwall, M., Munafò, M., Mas-Bleda, A., Stuart, E., Makita, M., Weigert, V., Keene, C., Khan, N., Drax, K., & Kousha, K. (2020). Is useful research data usually shared? An investigation of genome-wide association study summary statistics. *PLOS ONE*, 15(2), e0229578. <https://doi.org/10.1371/journal.pone.0229578>
- Van den Eynden V., & Bishop L. (2014). *Incentives and Motivations for Sharing Research Data, a Researcher's Perspective*.