Research Information Systems and Ethics relating to Open Science

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The evaluation of research performance is one major challenge of research management. Research information management systems are designed to assess this performance and to contribute to the steady improvement of research. These systems, also called current research information systems (CRIS), have been described as software for “the aggregation, curation, and utilization of metadata about research activities” (Bryant et al., 2017), in order to produce useful and reliable knowledge about research and to support research institutions in the provision of funding information and reporting (de Castro, 2018). They aggregate and process information about projects, results, organizations, persons, infrastructures, equipment, facilities, etc., and they produce indicators and assessment for research management.

As part of their open science policies, authorities, institutions and funders highlight the importance of openness, transparency and integrity of research activities. Transparency, especially in the field of health research, and the necessary transformation of research assessment are two priorities of the Paris Open Science European Conference organized by the French EU Presidency in February 2022. Research should be as open, transparent and reproducible as possible, in order to avoid biased methods and results, data falsification and other, often individual misconduct. On top of this, an increasing number of research projects require an ethical review to guarantee the protection of human subjects and animals. Our literature overview and our survey with experts reveal that research information systems, via their data model and format, are able to represent at least partially these ethical aspects (Schöpfel et al., 2020); yet, so far, institutions most often seem not to make use of their research information system for the assessment of ethics as part of research performance (Schöpfel & Azeroual, 2021, 2022).

At first glance, CRIS ethics can be interpreted as a series of technical problems but such an approach has its limits because of the risk and potential harmfulness of information about, for instance, individual misconduct, retractions or negative reviews from ethics committees. Also, the crucial issue of data quality (Azeroual et al., 2019 and 2020) is exacerbated by the risks associated with certain 'ethical data', due to their consequences. In practical terms, this means that not only do we need to strengthen quality and integrity controls of such data at all levels (starting with the selection of sources), but it is also necessary to protect and control their security and accessibility.

Among the potential indicators, some measure the ethical performance within an institution, such as the existence of an ethics committee, the number of its members or the number of training courses in ethics. From an ethical but also a legal point of view, these indicators pose little or no problem, unlike other indicators that concern unethical behavior of a research team (project) or an individual researcher, such as retraction of an article, plagiarism or falsification of a graph. If you start recording information about misconduct, it potentially means preventing people from getting funding and affecting their careers. In the opinion of the experts in the survey, a distinction should be made between these two levels of ethical performance, separating institutional indicators from individual indicators, and

favoring the former without excluding the individual aspect. But when it comes to measuring ethical performance at the individual level, according to the responses, there are at least five points of attention:
- A careful and consensual (acceptable) choice of indicators.
- The selection of a reliable source of information (such as the Web of Science or Scopus databases for retractions).
- Compliance with the legal framework (GDPR), with secure and, if possible, anonymized processing.
- Strict control of access to this data.
- Strictly controlled use.

CRISs are generally capable of managing the constraints linked to personal data; however, in this specific case and because of what Burgess and Knox (2019) describes as the risk of a harmful use of information, this is not enough: other means must be found to make such a scenario not only acceptable but above all legal and ethical.

The survey revealed a concern related to data transparency and access rights. There are two groups of problem areas. One concerns sensitive data, data loss, including intellectual property and personal data issues. And then there is the implementation side, which is much fuzzier - you can hurt people by implementing software incorrectly. Some respondents mentioned other issues, such as political surveillance (cooperation with China) or biased terminology (potentially harmful or offensive descriptors, prejudices, etc.).

The survey revealed also that ethics committees and experts are rarely associated with projects related to research information management. However, their opinion on ethical indicators and the implementation and use of a CRIS is undoubtedly essential for the future of these systems.

Our proposal for the CRIS 2022 conference is to discuss these issues in a round table with CRIS and ethics experts. Our preparation of this round table would include three aspects:

- Between February and April 2022, we will conduct a survey on issues related to research information management with a small panel of representatives from ethics committees in Germany, Switzerland, Germany and the UK.
- We will prepare a synthesis of all these results for the introduction of the round table.
- We will identify and invite a small number of experts from both communities for the round table.

As a result of the round table, we propose a paper with the main survey results and with the major issues and proposals from the round table.

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