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Research Data in Current Research Information Systems

Joachim Schöpfel^{a*}, H  l  ne Prost^a, Violane Rebouillat^b

^aGERiiCO laboratory, University of Lille, France

^bDICEN-IDF laboratory, Paris, France

Abstract

The paper provides an overview of recent research and publications on the integration of research data in Current Research Information Systems (CRIS) and addresses three related issues, i.e. the object of evaluation, identifier schemes and conservation. Our focus is on social sciences and humanities. As research data gradually become a crucial topic of scientific communication and evaluation, current research information systems must be able to consider and manage the great variety and granularity levels of data as sources and results of scientific research. More empirical and moreover conceptual work is needed to increase our understanding of the reality of research data and the way they can and should be used for the needs and objectives of research evaluation. The paper contributes to the debate on the evaluation of research data, especially in the environment of open science and open data, and will be helpful in implementing CRIS and research data policies.

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1. Introduction

In principio erat data, at the beginning was the data, with software systems to manage the research data. Back in the 1970s those systems were antecedents of the current research information systems (CRIS) designed to store and manage data about research conducted at an institution or organization and to extract useful knowledge for research management (Jeffery 2004). But, as Keith G. Jeffery stated, “the end-user should be able to obtain not only information on projects, persons and organizations and their patents, products and publications (...) but also the

* Corresponding author. *E-mail address:* joachim.schopfel@univ-lille3.fr

actual publications online with references to the data upon which the work is based and any associated software, instrumentation, methods and techniques” (p.83).

So far, research performance has mainly been measured in terms of publications, patents and funding. Open Science changes the game by introducing research data in the assessment process. In the era of e-Science and Big Data, research data are to be considered, in the words of the Vice-President of the European Commission responsible for the Digital Agenda, Neelie Kroes[†], as “fuel” for economy and science. How do CRIS capitalize on this fuel? How should they, and why? The following paper presents an update and offers some responses and perspectives to the question/issue of the rapport between research data and CRIS. In particular, it addresses three topics:

- What does “research data” mean? In other words, what exactly is (or should be) the object of evaluation?
- How are research data identified? Or how should research data be identified?
- What is the link between evaluation and long-term preservation?

The discussion is followed by some recommendations for further development of CRIS. Its approach is “value agnostic” – it does not ask whether evaluating research data is good or bad. It rather assesses the way in which the evaluation is performed, the conditions under which it is performed, and the way in which it could be improved.

2. Methodology

The study is part of ongoing research and development on research data in social sciences and humanities at the University of Lille (GERiiCO research laboratory and academic library) and at the National Conservatory of Arts and Crafts in Paris (DICEN-IDF research laboratory). Our paper is based on a triple methodology:

1. Literature review: we identified about 30 recent papers on the link between research data and current research information systems, with Google Scholar, the Scopus database and the euroCRIS DSpace CRIS digital repository[‡]. The state of the art covers issues such as metadata, funders’ requirements and granularity.
2. Survey on data repositories: we analysed the social sciences and humanities data repositories in the re3data directory[§], regarding their compliance with the requirements of research evaluation.
3. Studies on data management: we re-analysed our own former and ongoing surveys on research data management (Schöpfel & Prost 2016, Rebouillat 2015), in particular regarding the typology of data resources and results, in order to gain complementary empirical evidence for the discussion on the object of evaluation.

We define CRIS together with the recent EUNIS study rather pragmatically as “informational system(s), built in-house or purchased from a vendor, dedicated to collecting, analysing, reporting, providing access and disseminating research and development (R&D) information”, in contrast to institutional repositories, i.e. “digital collection(s) of research outputs (mainly publications and datasets) aiming to collect, preserve and disseminate the intellectual production of a higher education or research institution” (Ribeiro et al. 2015, slide 8).

3. Findings

3.1. The topic “research data” in CRIS studies

All papers and meetings in current research information systems talk about data. However, only a small number focus on research data especially since 2010, probably due to their growing importance in the context of cyberinfrastructure and open science. Some papers confuse data on research with research data and produce misunderstanding and ambiguity between information about persons, units and projects, and research data defined as “factual records (numerical scores, textual records, images and sounds) used as primary sources for scientific

[†] http://europa.eu/rapid/press-release_SPEECH-14-229_en.htm

[‡] <http://dspacecris.eurocris.org/>

[§] <http://www.re3data.org/>

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