Incentives for sharing research data: evidence from five European case studies

Veerle Van den Eynden and Libby Bishop
UK Data Archive
University of Essex

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Why study incentives for data sharing?

- Know a lot about barriers already
- Wide variation in data sharing policies
  - where policies are weak or not present, must rely on norms and incentives
- While overall benefits of data sharing are clear, benefits for individual researcher can be weak or mixed
- Incentives a better basis for data / research collaboration
Study of incentives, March-June 2014

- 5 case studies – active data sharing
- 5 countries: FI, DK, GE, UK, NL
- 5 disciplines: ethnography, media studies, biology, biosemantics, chemistry
- 22 researchers interviewed
- Q: research, data, sharing practices, motivations, optimal times, barriers, future incentives,….

http://www.data-archive.ac.uk/about/projects/incentive
Case studies

- Denmark: LARM Audio Research Archive (4)
- Germany: Evolutionary Plant Solutions to Ecological Challenges (6)
- Netherlands: Netherlands Bioinformatics Centre (1)
- Finland: MSc project Retired Men Gathering in Cities (1)
- UK: Chemistry Department, University of Southampton (10)
Diverse modes of data sharing

- Private management: sharing within research group
- Collaborative sharing within consortium
- Peer exchange: sharing in informal networks
- Transparent governance: sharing with external parties for accountability, research assessment, scrutiny, inspection
- Community sharing with research community members
- Public sharing with any member of the public

Data sharing practices in case studies

• Data sharing = part of scientific process
  • Collaborative research
  • Peer exchange
  • Supplementary data to publications
• Sharing early in research (raw)
• Sharing at time of publication (processed)
• Well established data sharing practices in some disciplines: crystallography, genetics
• Development of community / topical databases: BrassiBase, LARM archive
• Some sharing via public repositories: chemistry, ethnography, biology
Incentives – direct benefits

- For research itself: more robust; collaborative analysis, methods learning, evidence for publications
- For research career: visibility, reciprocity, reassurance (invite to share)
- For discipline: get wiser
- For science: better science
Incentives – norms

- Sharing = default in research domain, research group, institution
- Hierarchical sharing throughout research career
- Challenge conservative non-sharing culture
- Openness benefits research, but individual researchers reluctant to take lead
Incentives – external drivers

- Funders directly fund data sharing projects
- Data support services
- Publisher and funder policies and expectations
  - may not push data sharing as much as could do, e.g. supplementary data in journal poor quality; mandated repository deposits minimal, exclude valuable data
  - slowly change general attitudes, practices, norms
Future incentives for researchers

- Level playing field for sharing
- Direct funding for RDM support
- Student training in data sharing
- Infrastructure and standards
- Sharing failed experiments
- Micro-publishing/micro-citation
- Broaden norms
Recommendations

- Leadership from funders, institutions, learned societies, publishers
- “Mixed economy” of incentives that consider:
  - phase in research data life cycle
  - career stage of researcher
- Changing norms
- Encourage direct benefits
- European level:
  - invest in ‘rich’ data resources: data + context
Recommendations for funders

• All research funders data sharing policy - expectations for data accessibility; budget share for RDM
• Funding support services, cf. funding publication costs
• Invest in data infrastructure with rich context
• Fund data sharing training for students and doctoral researchers
• Target funding at reuse of existing data resources
Recommendations for learned societies

- Research recognition for data sharing and data publishing
- Data sharing expectations for the disciplines, e.g. code of conduct.
- Data sharing resources and standards for the research discipline.
Recommendations for research institutions

• Data impact in PhD career assessment, e.g. impact portfolio, data CV
• Integrated RDM support services (one-stop-shop)
• Recognise and value data in research assessment and career advancement.
• Data sharing training part of standard student research training
Recommendations for publishers

- Boost direct career benefits of data sharing:
  - data citation
  - data sharing metrics
  - micro-citation
  - tools: DOIs, ORCID, digital watermarking
- Publication of negative findings, failed experiments
- Full datasets as supplementary material
- All supplementary data openly available
- (Open) standards for file formats and supplemental documentation
Thanks

- Knowledge Exchange
- Interview partners:
  - Anders Conrad (DK)
  - Damien Lecarpentier & Irina Kupiainen (FL)
  - Jens Nieschulze & Juliane Steckel (GE)
  - Joeri Nortier (NL)
- Interviewees

- Study report: [www.knowledge-exchange.info](http://www.knowledge-exchange.info) (soon)
Questions

Contact details

sharing@ukdataservice.ac.uk
http://ukdataservice.ac.uk/manage-data.aspx