LERU Roadmap for Research Data

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Contents

- The importance of Research Data
- LERU Research Data Roadmap
- Next Steps for LERU

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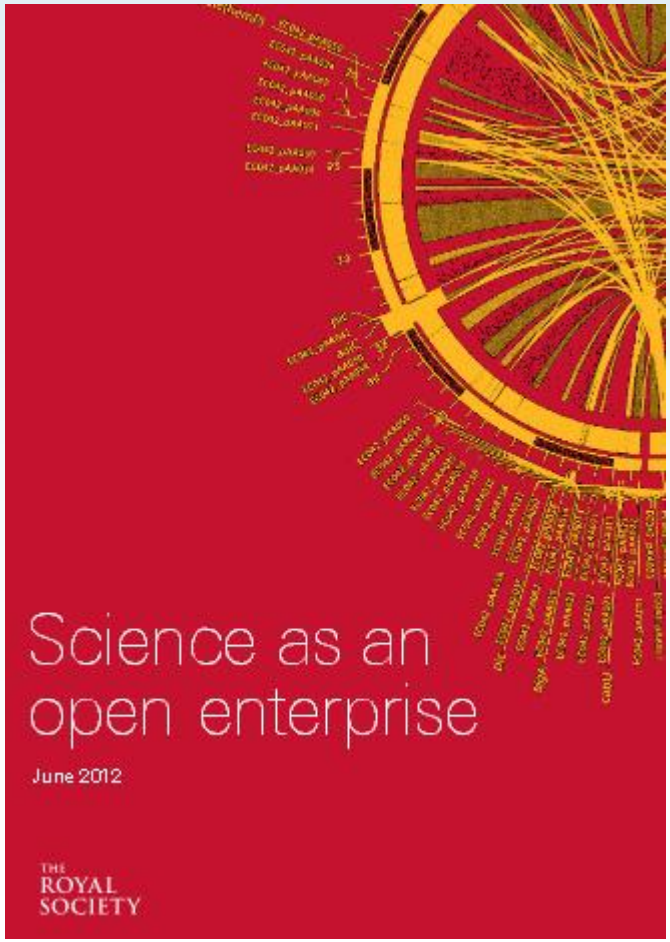
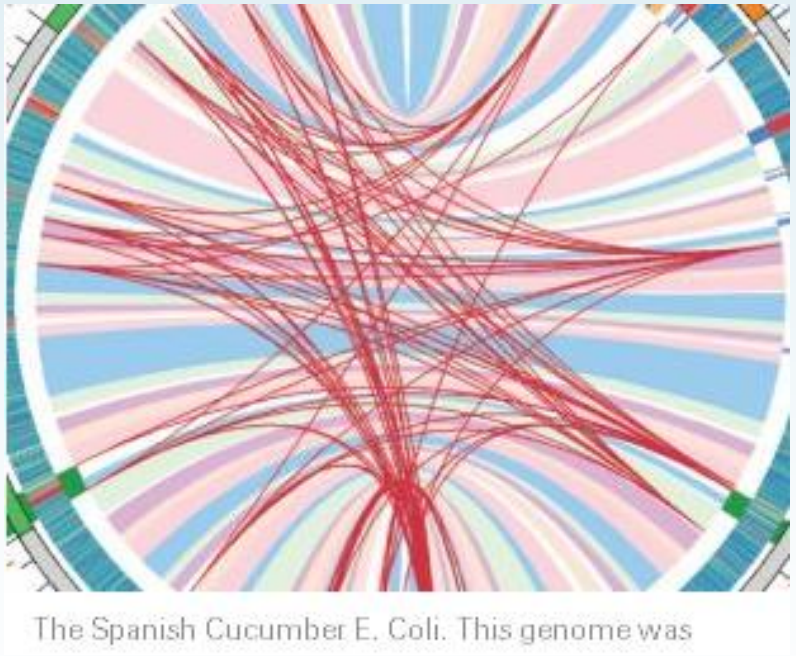
THE ROYAL SOCIETY



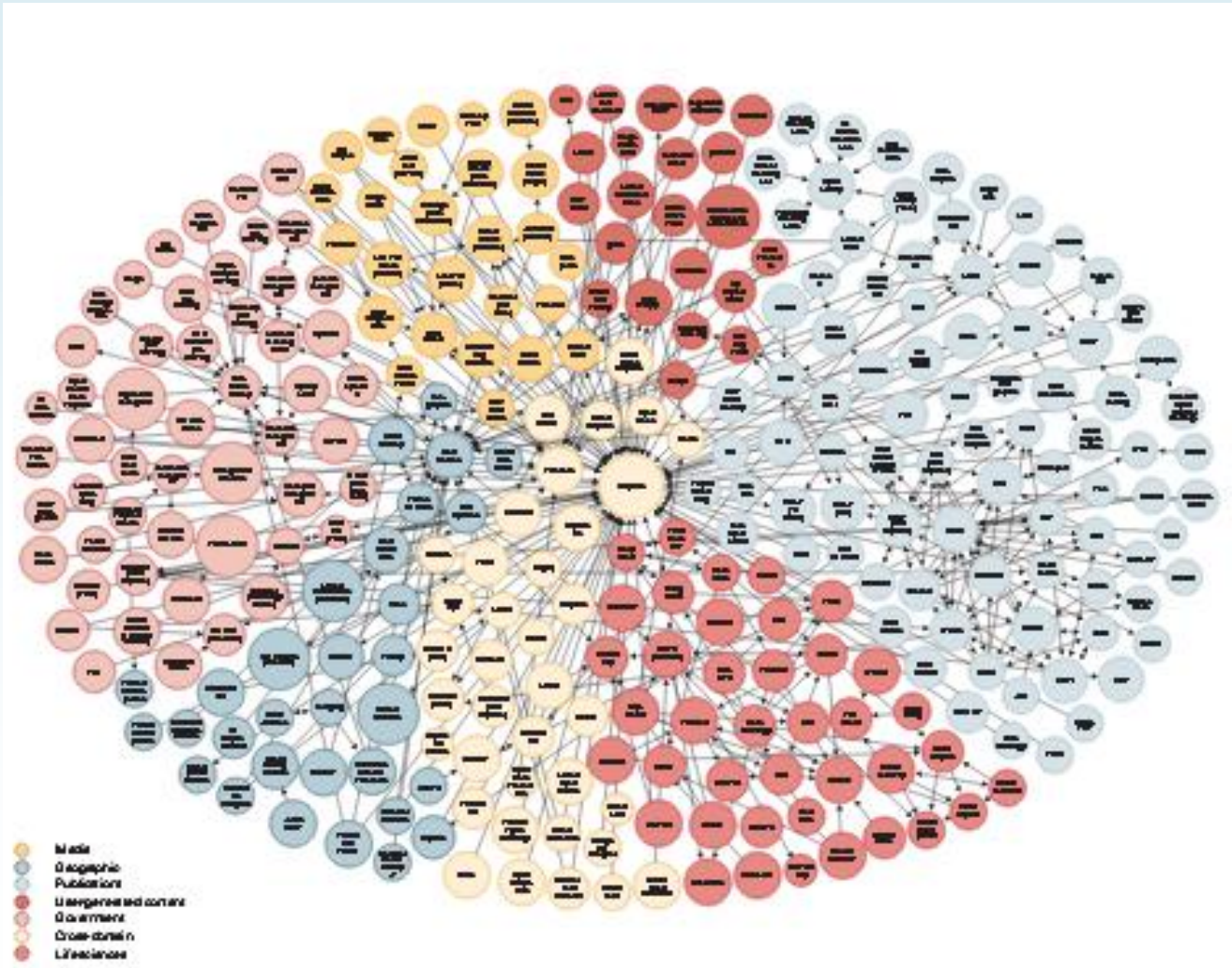


See Science as an open enterprise http://royalsociety.org/policy/projects/science-public-enterprise/report/

Technological change

- Modern computers permit massive datasets to be assembled and explored in ways that reveal inherent but unsuspected relationships. This data-led science is a promising new source of knowledge (p. 7)
- The emergence of linked data technologies creates new information through deeper integration of data across different datasets with the potential to greatly enhance automated approaches to data analysis (p. 7)

Map of Interlinked Data



W3C (2012). Available at: http://www.w3.org/wiki/SweoIG/TaskForces/CommunityProjects/LinkingOpenData

Open Data

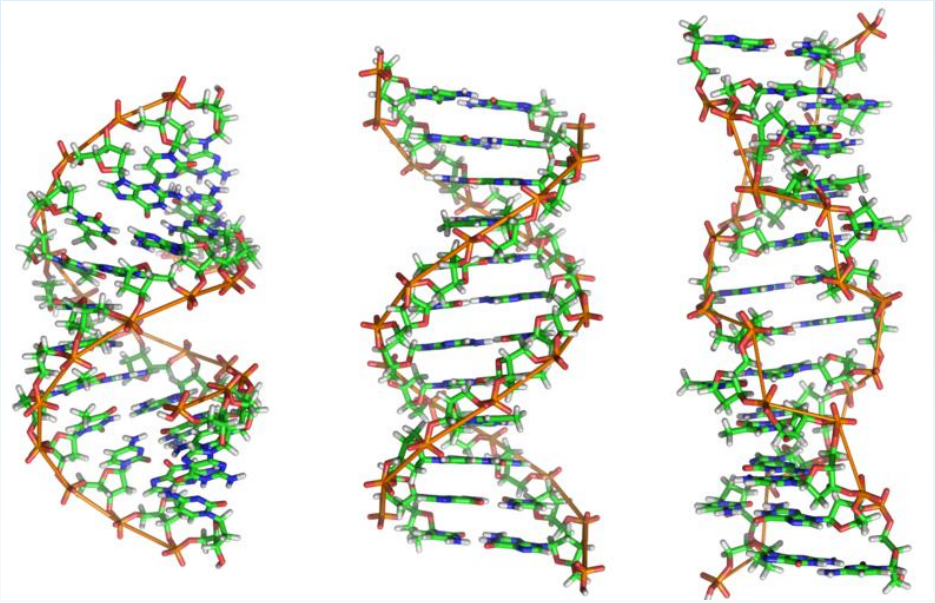
- Open data is the idea that certain data should be freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or other mechanisms of control

Auer, S. R.; Bizer, C.; Kobilarov, G.; Lehmann, J.; Cyganiak, R.; Ives, Z. (2007). "DBpedia: A Nucleus for a Web of Open Data". The Semantic Web. Lecture Notes in Computer Science 4825. p. 722. doi:10.1007/978-3-540-76298-0_52. ISBN 978-3-540-76297-3.

http://en.wikipedia.org/wiki/File:DNA_orbit_animated.gif

Human Genome Project

- Aim: To determine the sequence of chemical base pairs which make up human DNA, and to identify and map the total genes of the human genome



See http://en.wikipedia.org/wiki/DNA

- Benefits – felt from molecular medicine to human evolution
  - ✓ Better understanding of disease
  - ✓ Design of medication and prediction of their effects
  - ✓ Commercial development of genomics research

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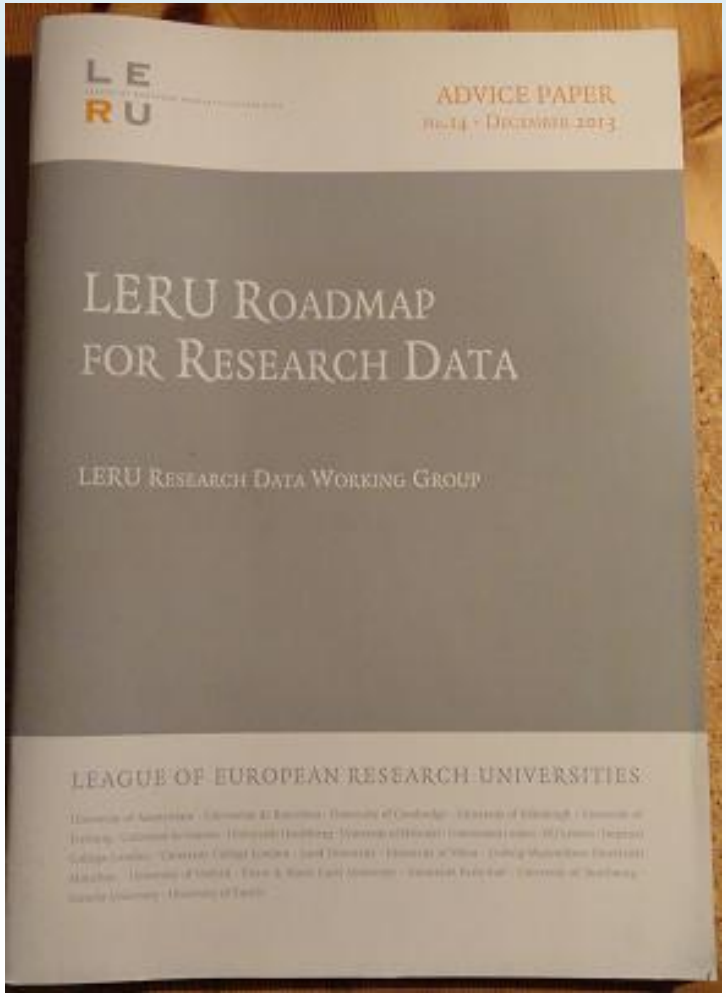
LERU Roadmap for Research Data

- Overseen by Research Data Working Group

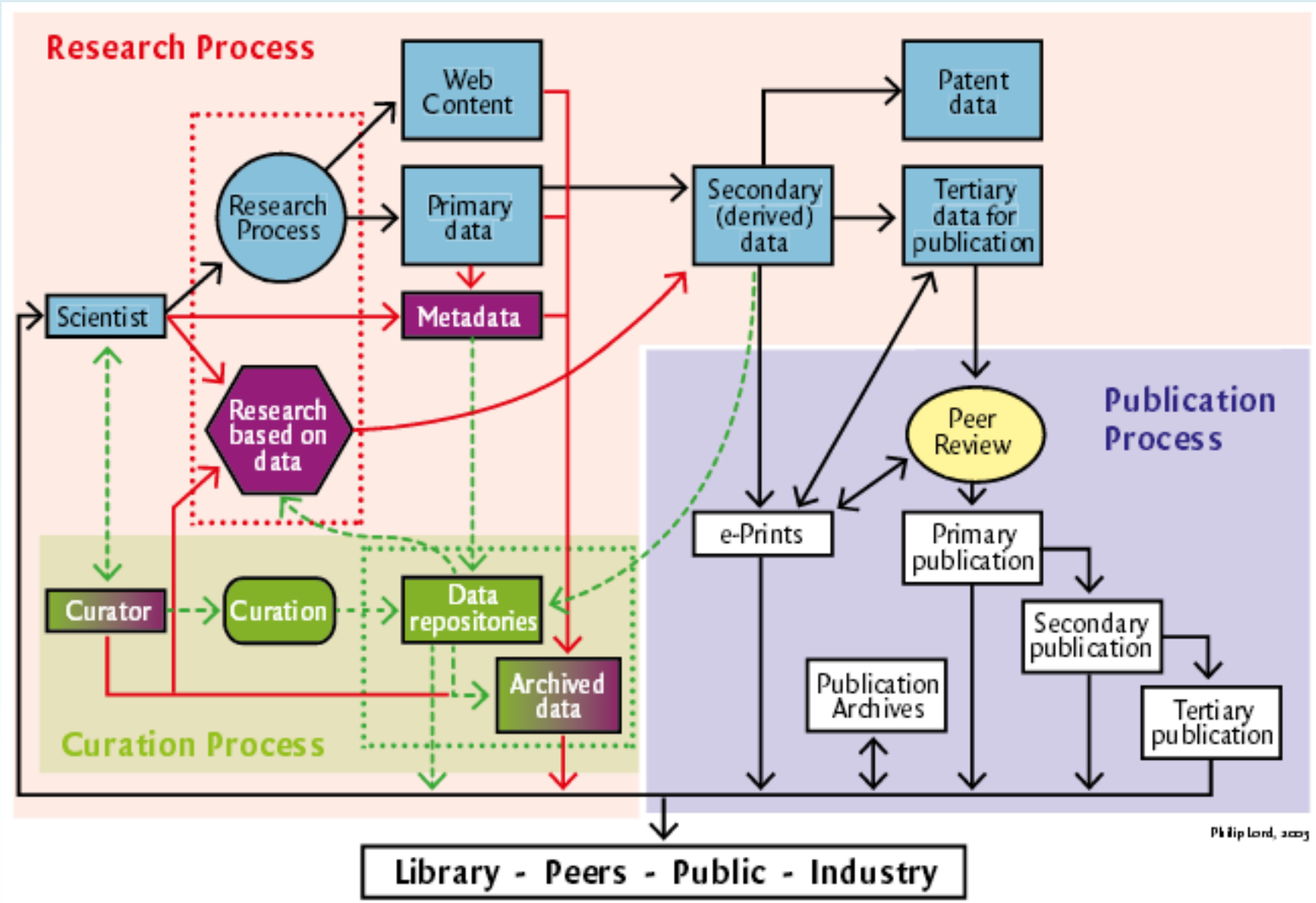
Pablo Achard (University of Geneva)
Paul Ayris (UCL, University College London)
Serge Fdida (UPMC, Paris)
Stefan Gradmann (University of Leuven)
Wolfram Horstmann (University of Oxford)
Ignasi Labastida (University of Barcelona)
Liz Lyon (University of Bath)
Katrien Maes (LERU)
Susan Reilly (LIBER)
Anja Smit (University of Utrecht)



LERU Roadmap for Research Data

1. Policy and Leadership
2. Advocacy
3. Selection and Collection, Curation, Description, Citation, Legal Issues
4. Research Data Infrastructure
5. Costs
6. Roles, Responsibilities and Skills
7. Recommendations to different stakeholder groups

Cern, Geneva



See http://www.ukoln.ac.uk/ukoln/staff/e.j.lyon/150.pdf

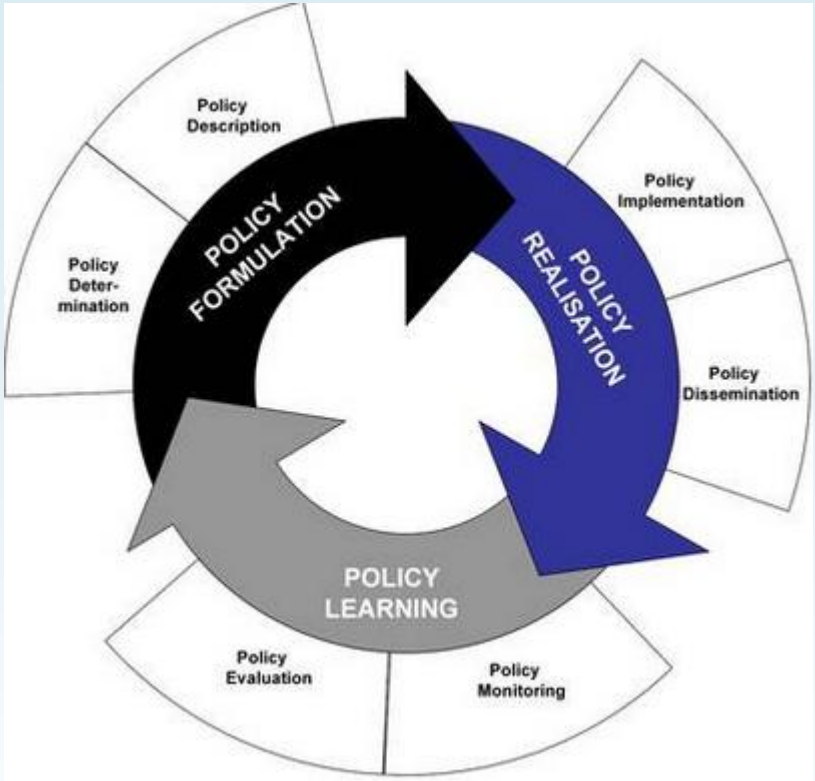
Key Messages

- Each LERU university needs a Research Data Management Strategy
- Researchers should have Research Data Management Plans
- LERU universities need to bring stakeholders together
- Benefits of ‘open data’ for sharing and re-use should be advocated and explored
- New role of Data Scientist is emerging

King’s Cross, London

Policy Development

- Case Study on Policy development from UCL
- Drivers
  - External funders
  - Need to inform researchers
  - Raise awareness of issues facing UCL researchers
- Identifies roles and responsibilities
- Data to be made open in the most open manner appropriate



See www.lanecrothers.net/politicalprof/the-policy-cycle-and-our-frozen-politics/

- Researchers should have Data Management Plans
- LERU slams lack of data policies – *Research Europe*

Open Data

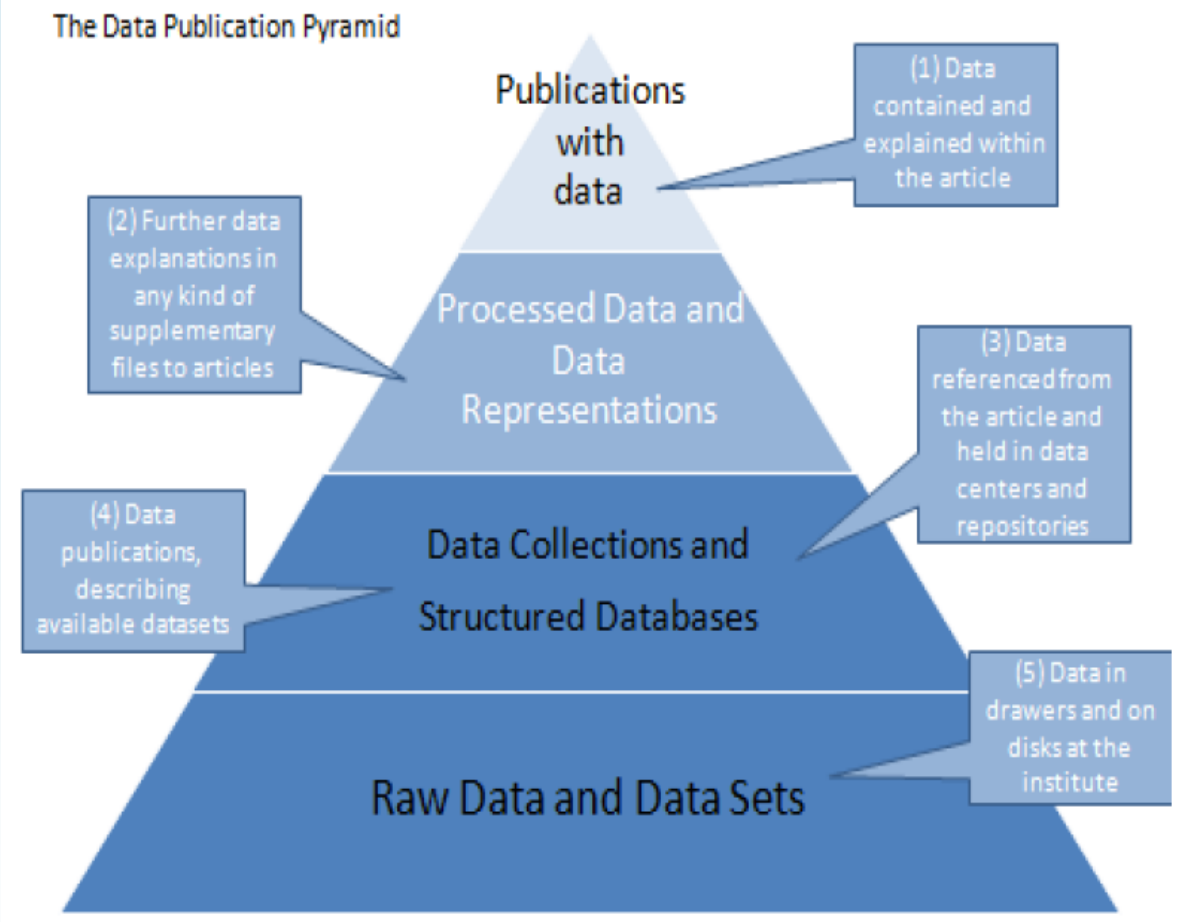
- Open Data allows research data to be shared and re-used
  - Avoids costly duplication of research activity
  - Provides greater transparency in research activity
  - Potential to speed discovery of solutions to societal Grand Challenges, such as health care & environmental science

- Can all research data be open?
- Certain categories probably cannot
  - National security
  - Data protection
  - Commercial Funder requirements

http://en.wikipedia.org/wiki/File:Open_Data_stickers.jpg

Data management

- Which of these layers of research data need to be
  - curated for a fixed term?
  - preserved for the long term?
  - thrown away?
- LERU Roadmap identifies this as an area for future study



The ODE Data Publication Pyramid at http://www.alliancepermanentaccess.org/wp-content/uploads/downloads/2011/11/ODE-ReportOnIntegrationOfDataAndPublications-1_1.pdf

Collaboration a way forward

- LERU Rectors see this as an area for study
- Collaboration between Dutch institutions
- Focus is on research data which lies behind publications
- Each university and faculty has its own Dataverse installation
- Support services offered by libraries in Dutch universities

Case Study 5 – Dataverse Netherlands

See http://www.syndromic.org/communities

Utrecht, Tilburg, Erasmus University Rotterdam, Maastrict, Groningen, 3TU Datacentrum and Netherlands Institute of Ecology

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Next Steps

- Changes advocated by Roadmap are far-reaching
- Communicate findings of the Roadmap
- LERU to retain Research Data Working Group to oversee implementation
- LERU Rectors have suggested Data Pilot(s), with Horizon 2020 funding
  - Working Group to consider options

Old State House, Boston, USA

Finally

- If you have been
- Thanks for listening
- Happy to hear questions