

The Past, Present and Future of Data

Dr Andrew Treloar

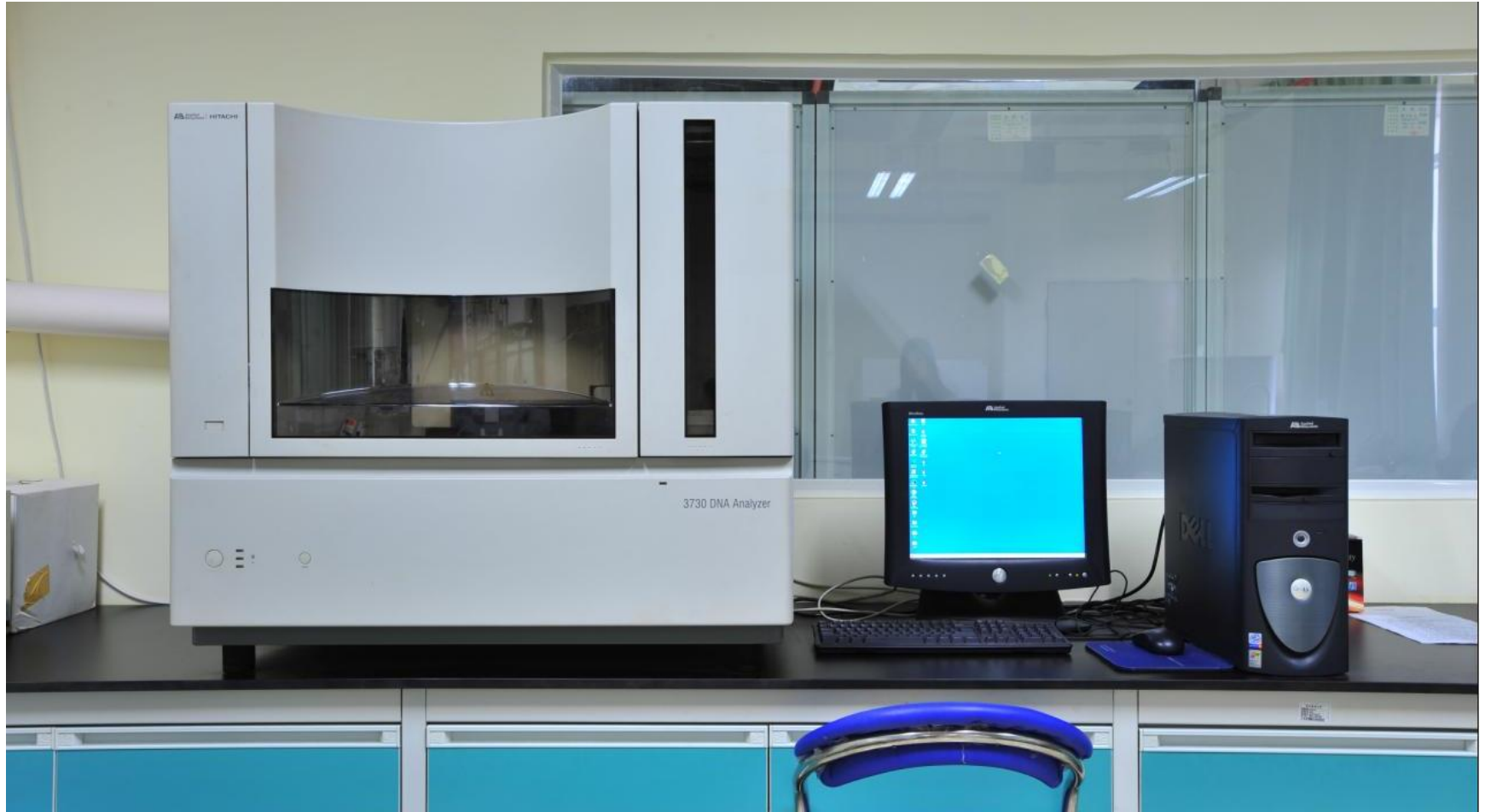
Director of Technology

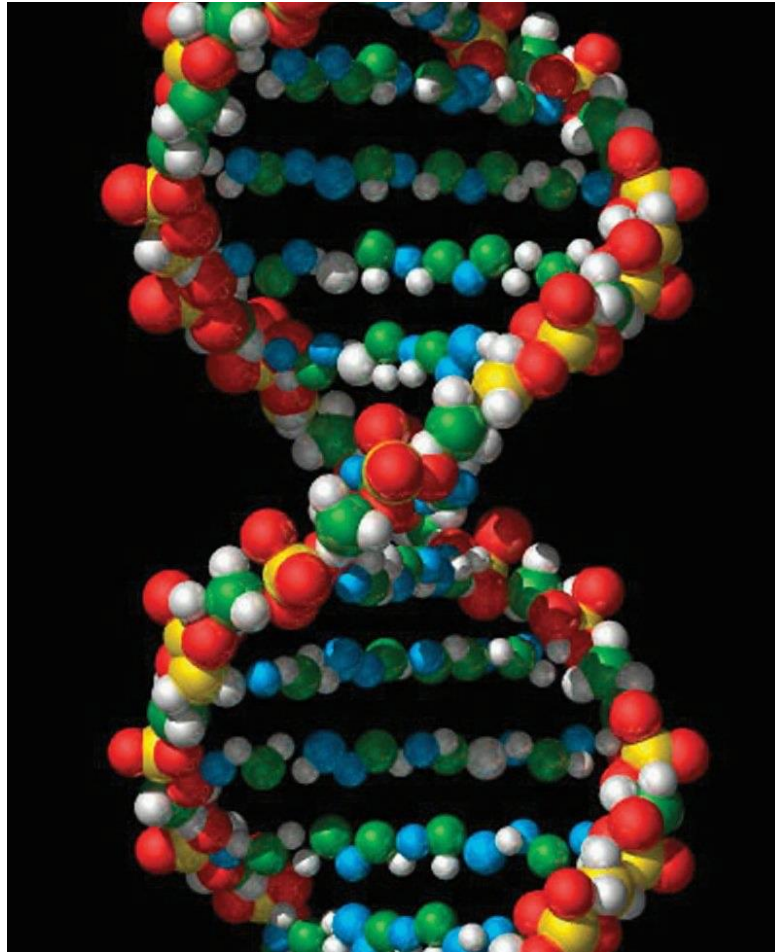
Australian National Data Service

THE PAST









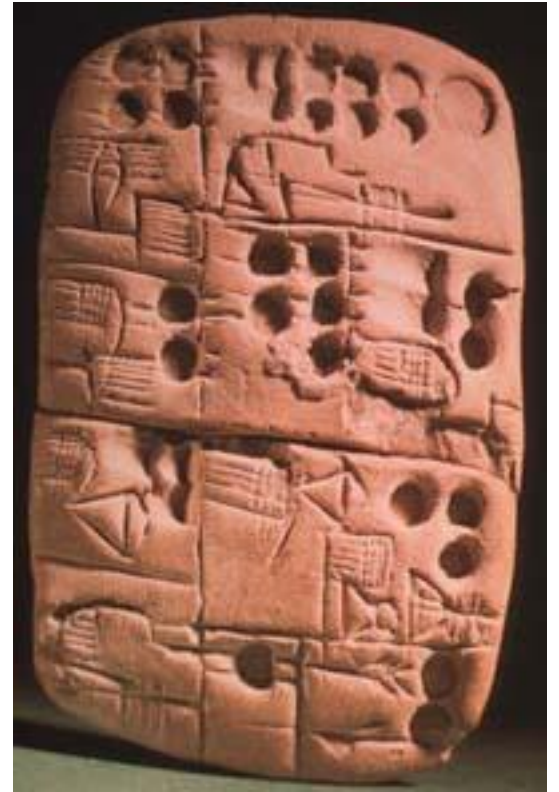
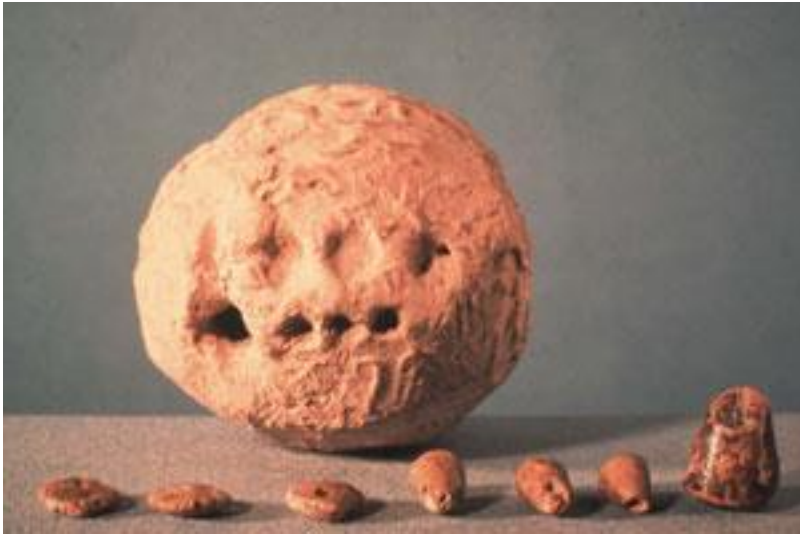














THE PRESENT

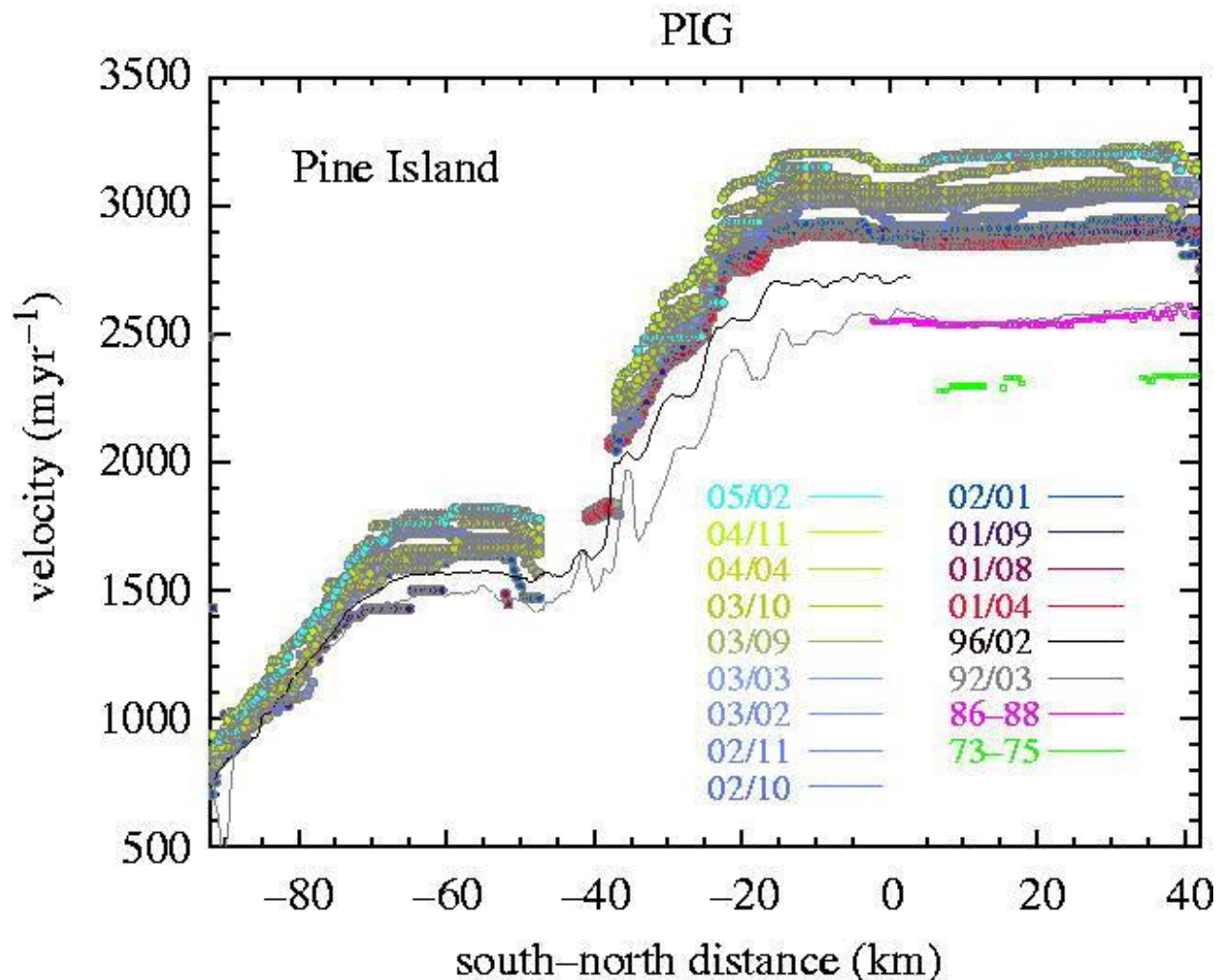
Inconvenient data

age (years)	number dead
<6	6
7-12	2
13-19	0
20-29	1
30-39	3
40-49	1
50-59	2
60-69	23
70-89	20
total	58

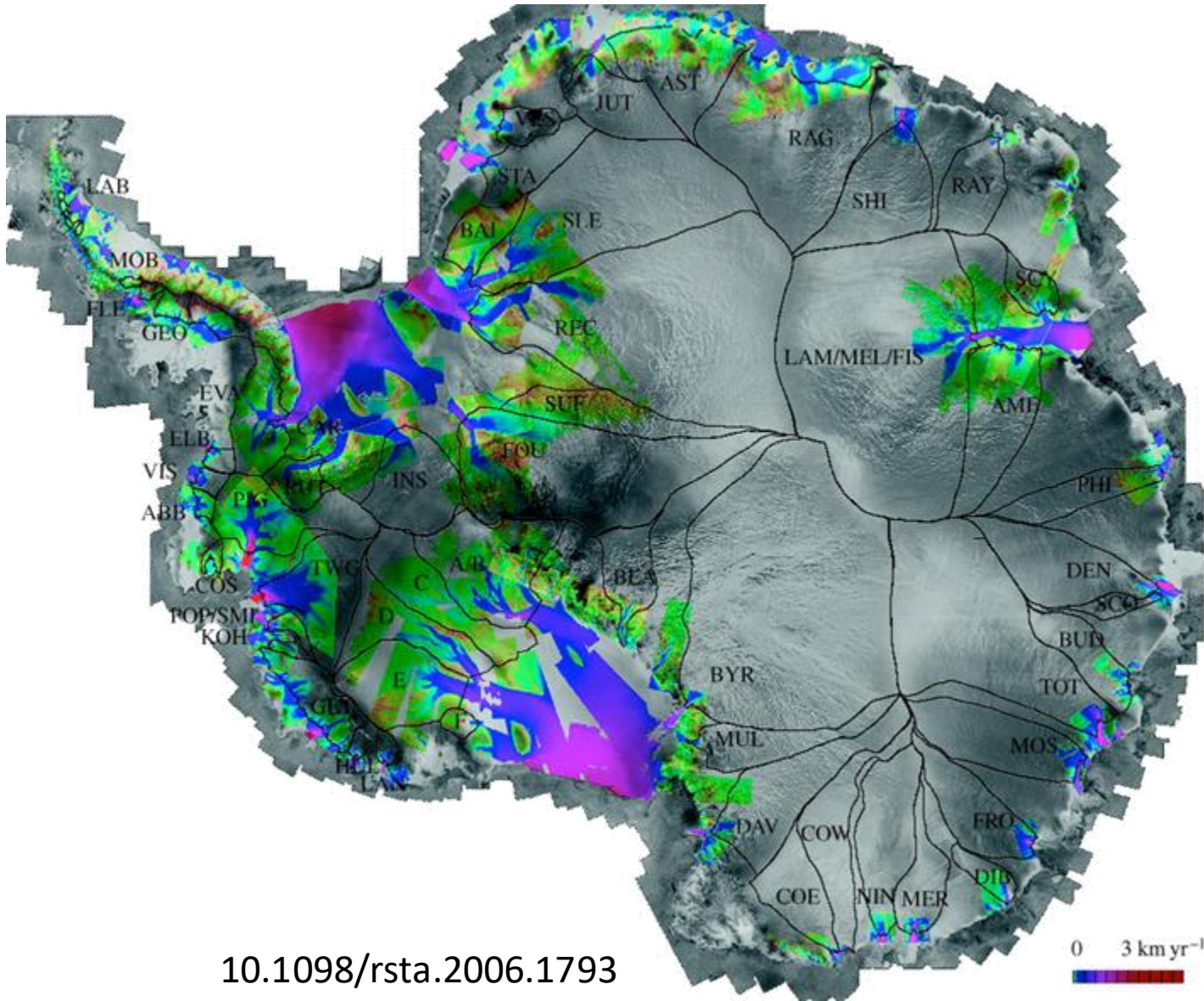
Table 2

Flood mortality in Canvey Island (Of approximately 12000 residents, there were 58 deaths and 41 underwent autopsy. Autopsies showed that 34% died from non-drowning causes (exposure, strokes, heart failure, accidents). All six children below age 6 died from exposure; [Grieve 1959.](#))

Imprisoned data



Invisible data



10.1098/rsta.2006.1793

Inaccessible data

Changes in ice dynamics and mass balance of the Antarctic ice sheet

1652

E. Rignot

Jet Propulsion Laboratory

The concept
challenged by
Antarctic Per
flow and rapi
shelves to cli
West Antarc

New data on flow velocity, grounding line ice thickness, basal conditions and mean accumulation are needed to allow modellers to assimilate them into modern numerical schemes capable of interpreting present-day changes and forecasting the future evolution of Antarctica more realistically.

This work was performed at the Jet Propulsion Laboratory, California Institute of Technology, and at the University of Colorado in Boulder under a contract with the National Aeronautics and Space Administration's Cryospheric Science Program. Radar data were provided by the European Space Agency and the Canadian Space Agency and distributed by the Alaska Satellite Facility, Fairbanks, AK. I thank Andrew Shepherd, one anonymous reviewer, and the Editor for helpful reviews and comments.

Ignored negative data



JOURNAL OF NEGATIVE
RESULTS IN BIOMEDICINE

UNOFFICIAL
IMPACT
FACTOR
1.38

Welcome Monash University (Log on / register)

BioMed Central home | Journals A-Z | Feedback | Support | My details

Home | Browse articles | Search | Weblinks | Submit article | My JNRBM | About JNRBM

About the journal

- [Open access](#) to all articles
- View the [Editorial Board](#)
- Tracked/Indexed by [PubMed](#), [PubMed Central](#), [Medline](#), [Embase](#), [Scopus](#) and [Google Scholar](#)
- [Instructions for authors](#) submitting a manuscript
- [Contact us](#)
- View the [most accessed](#) articles
- [RSS](#) feed of the latest articles
- [Promote the journal](#) Posters, leaflets, T-Shirts and more.
- View answers to some [Frequently Asked Questions](#)
- Read about authors who have published in *Journal of Negative Results in Biomedicine*

Editor-in-Chief: Bjorn R Olsen, Harvard Medical School

Journal of Negative Results in BioMedicine is ready to receive manuscripts on all aspects of unexpected, controversial, provocative and/or negative results/conclusions in the context of current tenets, providing scientists and physicians with responsible and balanced information to support informed experimental and clinical decisions.

[Submit your manuscript](#) online.

Latest articles



Research [Open Access](#)

Lack of association between right-to-left shunt and cerebral ischemia after adjustment for gender and age

Holger Poppert MD, Melanie Morschhaeuser MD, Angelina Bockelbrink MD, Jens Schwarze MD, Regina Feurer MD, Lorena Esposito MD, Peter Heider MD, Dirk Sander MD, Bernhard Hemmer MD

Journal of Negative Results in BioMedicine 2008, **7**:7 (13 October 2008)

[\[Abstract\]](#) [\[Provisional PDF\]](#)



Research [Open Access](#)

Ocular accommodation and cognitive demand: An additional indicator besides pupil size and cardiovascular measures?

Stephanie Jainta, Joerg Hoormann, Wolfgang Jaschinski

Journal of Negative Results in BioMedicine 2008, **7**:6 (23 August 2008)

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#) [\[PubMed\]](#) [\[Related articles\]](#)

REGISTER NOW

[CLICK HERE TO REGISTER](#)

Search



[Go!](#)

- ☒ *Journal of Negative Results in Biomedicine*
- ☐ BioMed Central
- ☐ PubMed
- ☐ PubMed Central

**SUBMIT A
MANUSCRIPT**

[CLICK HERE TO SUBMIT](#)

**Sign up for
article alerts!**

Ads by Google

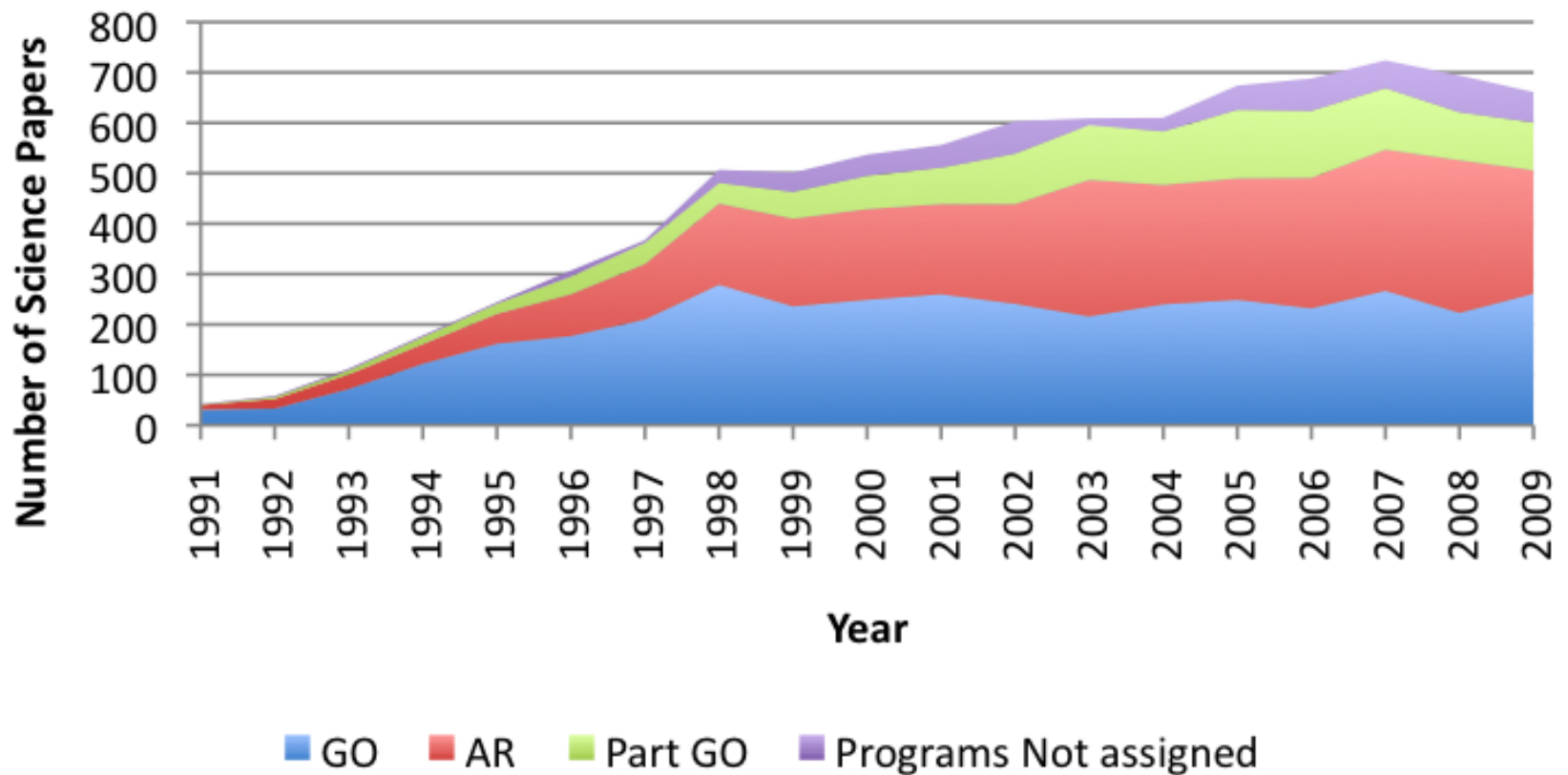
[Specialist Professions](#)

Why re-use data?

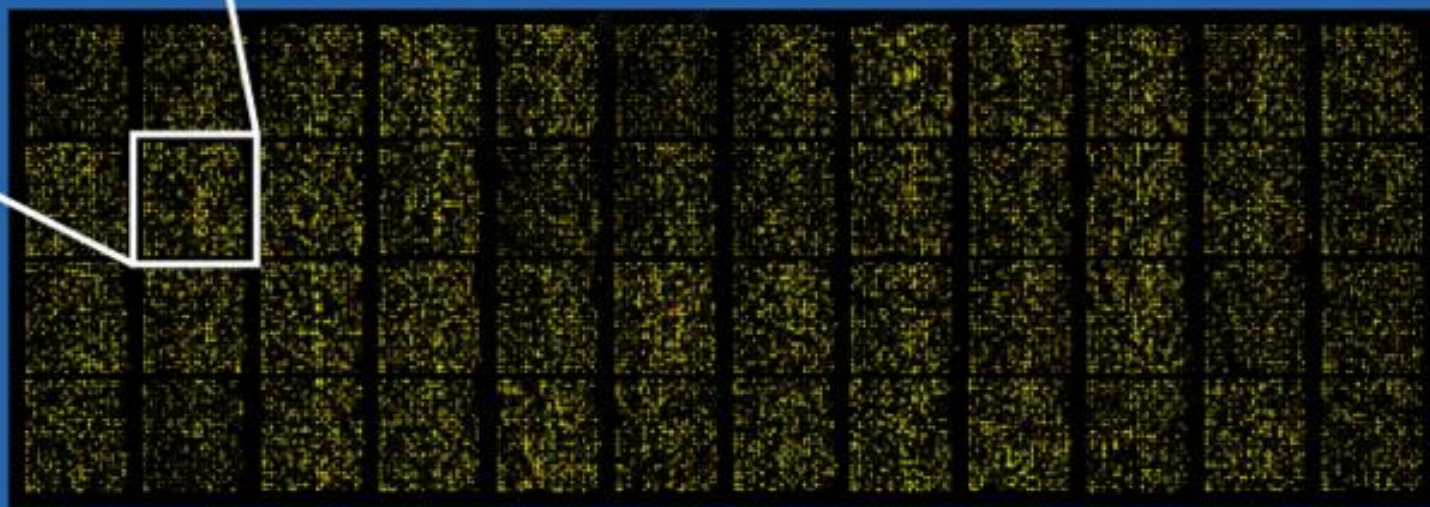
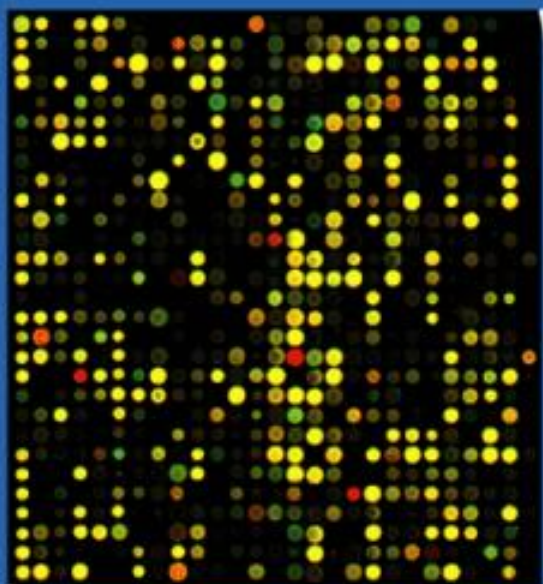
- Efficiency
- Validation
- Integrity
- Value for money
- Self-interest

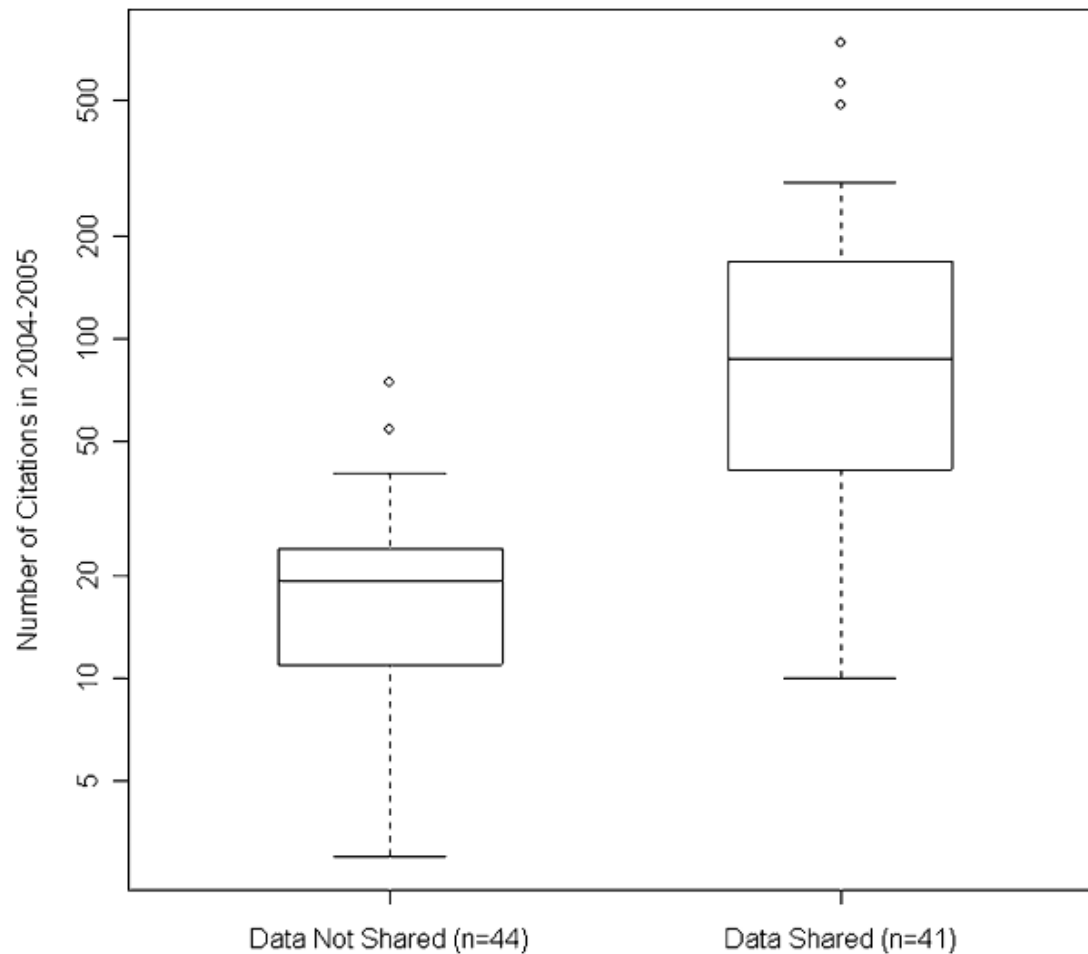


HST Publication Statistics



Cancer Micro-array trials





Piwowar, et. al., “Sharing Detailed Research Data Is Associated with Increased Citation Rate”

<http://www.plosone.org/article/info:doi/10.1371/journal.pone.0000308>

Climate Archæology

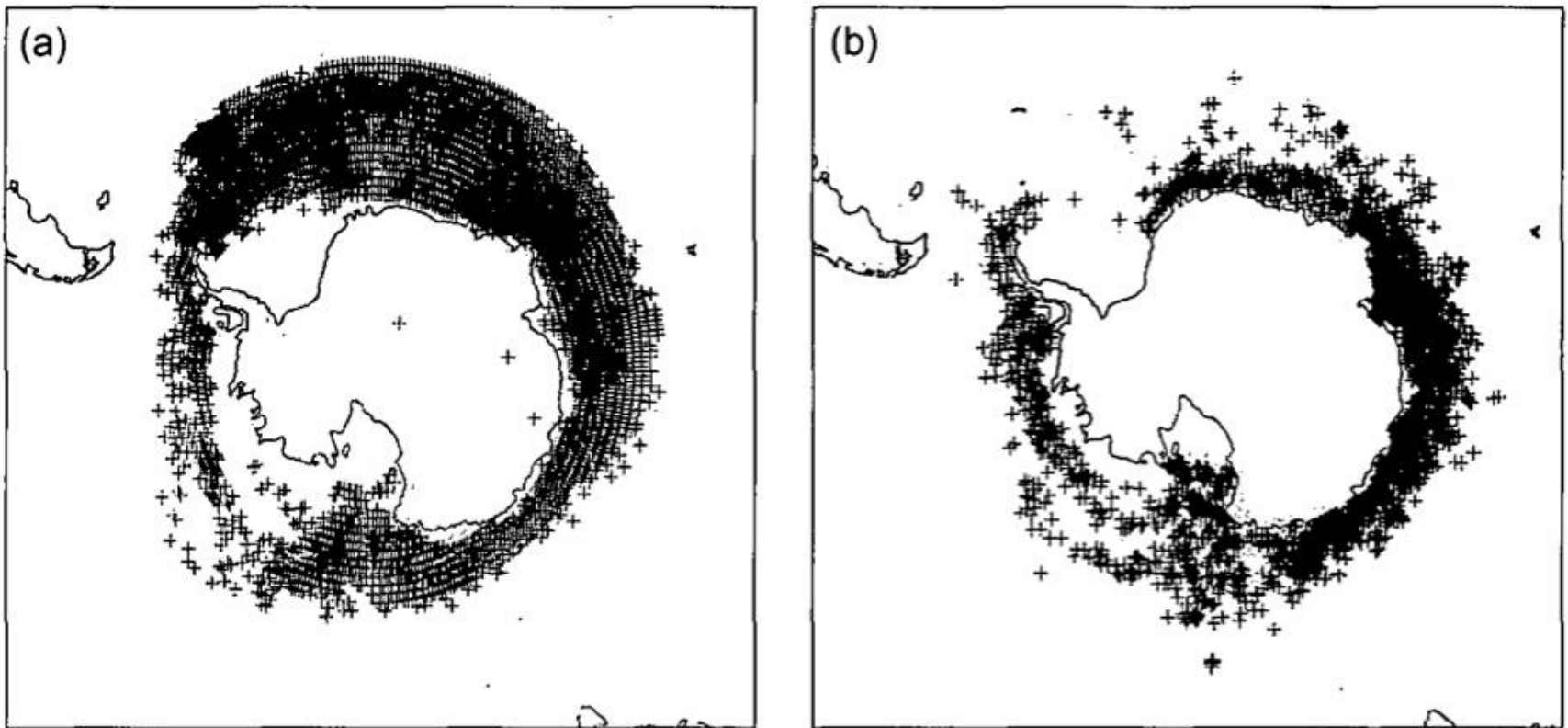


Fig. 5. Whale catch positions used in ice edge analyses from (a) pre-1970s and (b) post-1970s.

de la Mare, William K., 1997, "Abrupt mid-twentieth-century decline in Antarctic sea-ice extent from whaling records", *Nature*, vol.389, pp 87-90, 4 Sept 97

ANDS



West Island



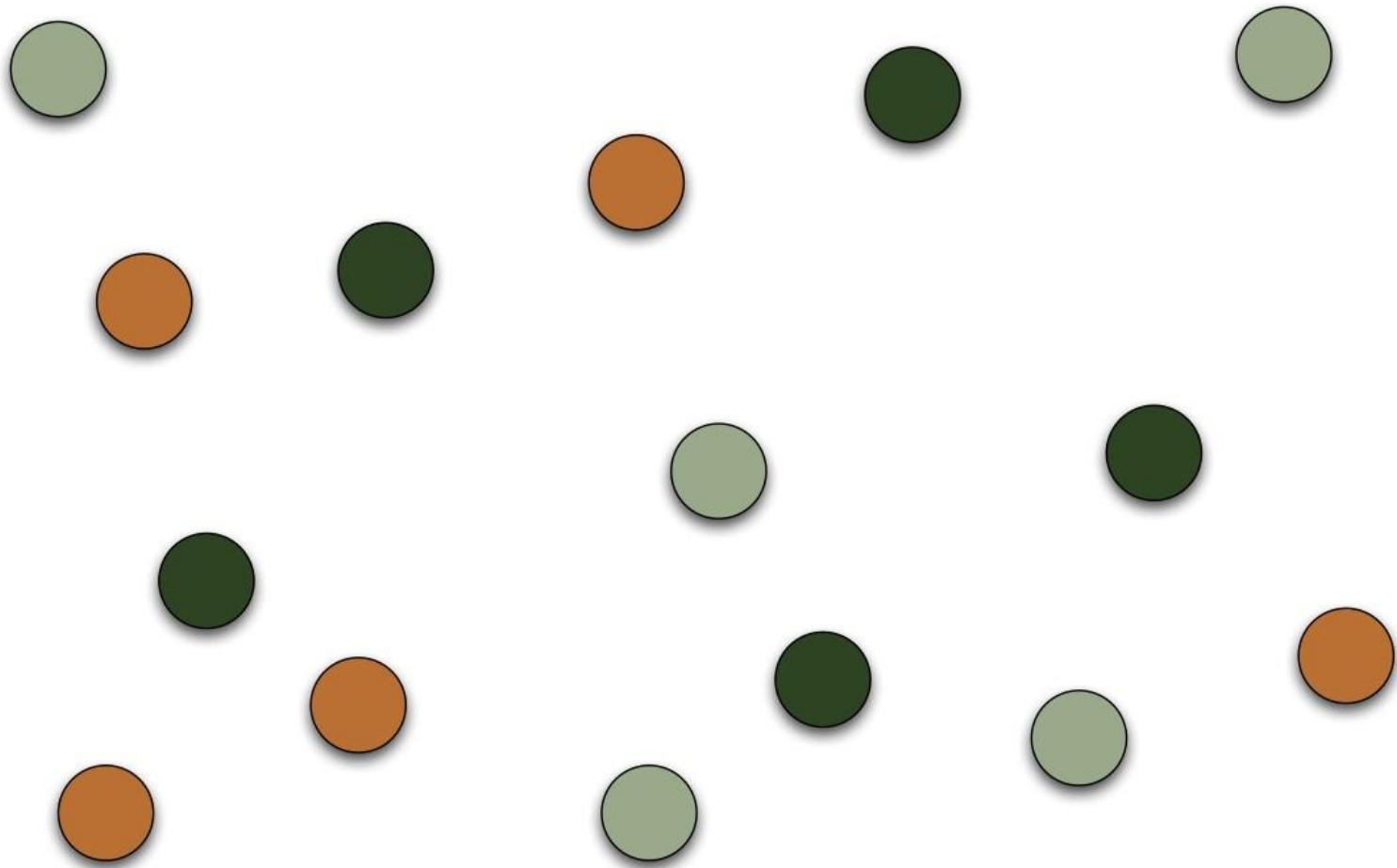
North Island

South Island

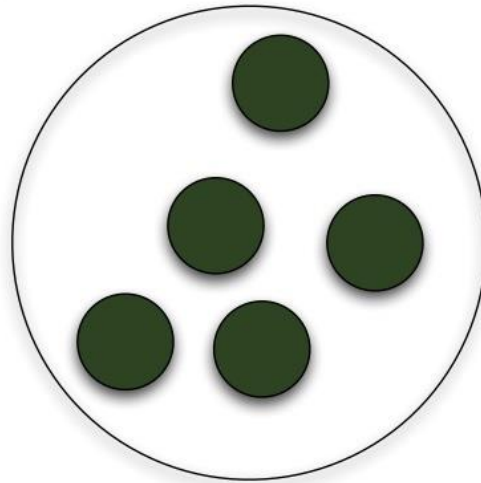
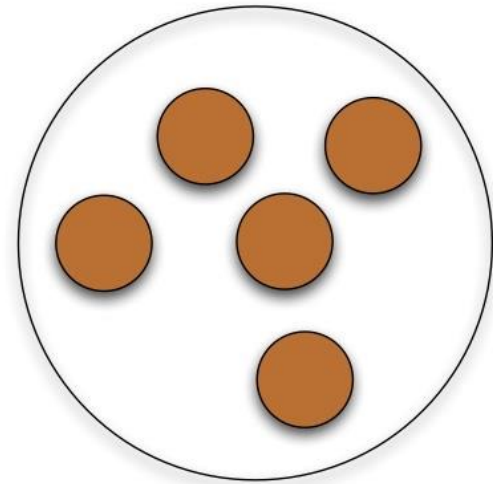
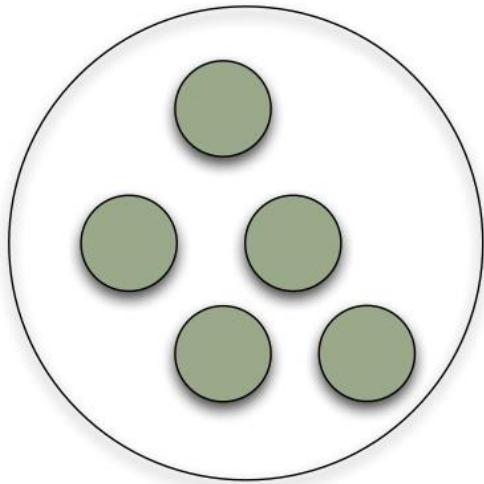
Australian National Data Service (ANDS)

- An initiative of the Australian Government being conducted as part of the National Collaborative Research Infrastructure Strategy (\$A24M) and the Super Science Initiative (\$A48M)
- A collaboration between **Monash University**, the Australian National University and CSIRO
- **Nearly 50** staff, funded to mid 2013
- *More researchers re-using more data more often*
- *Data as a first-class object*

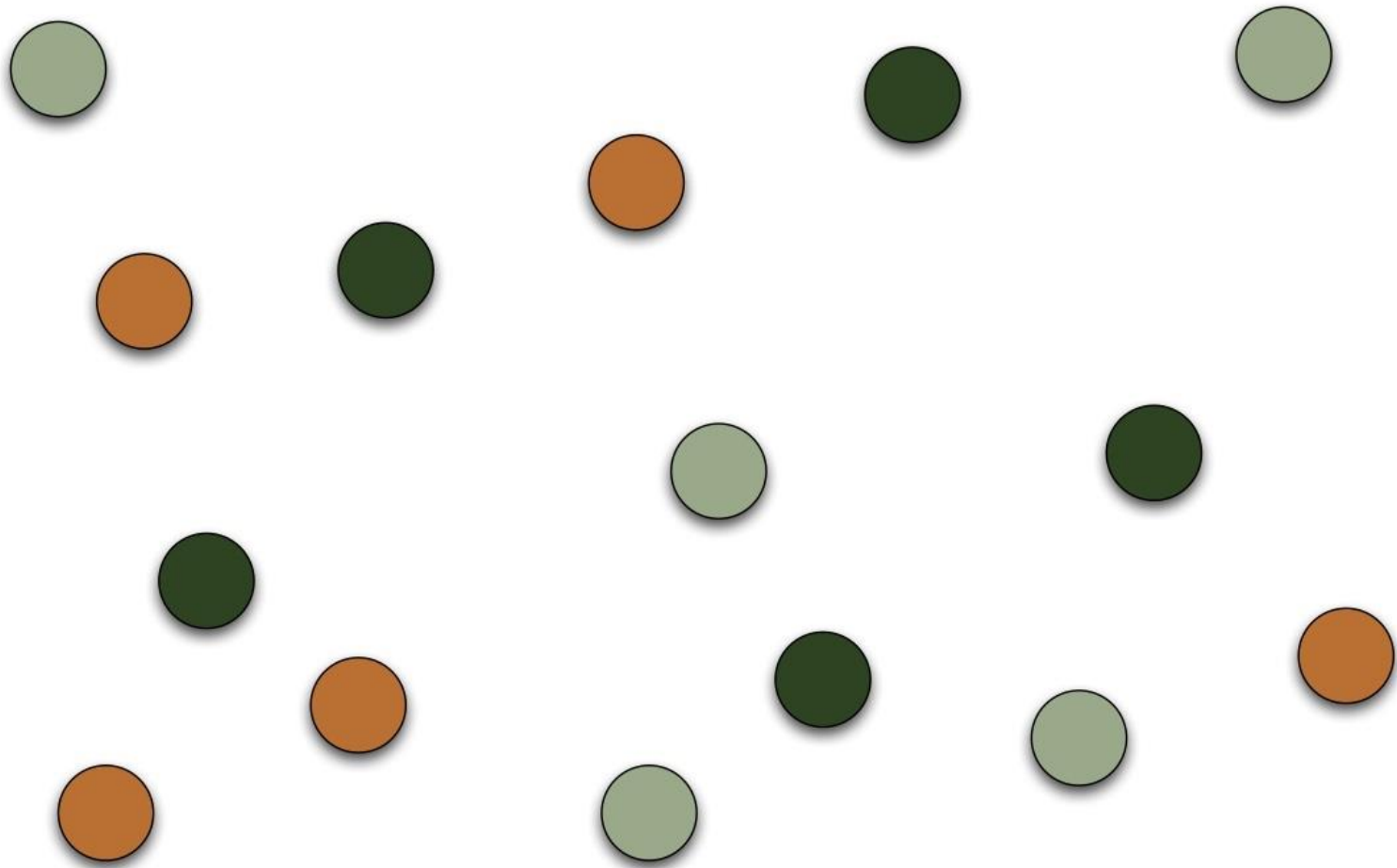
Unmanaged



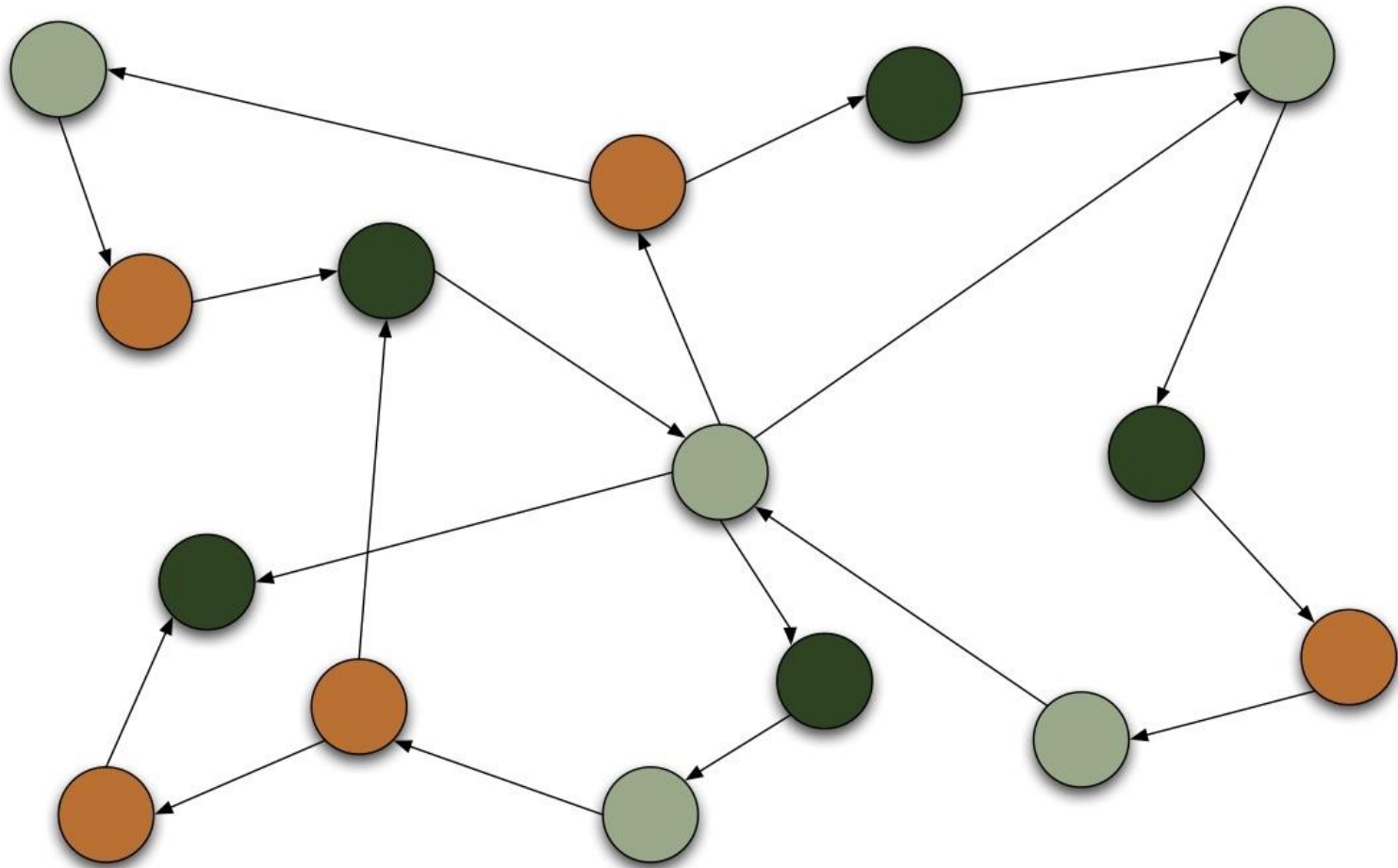
Managed



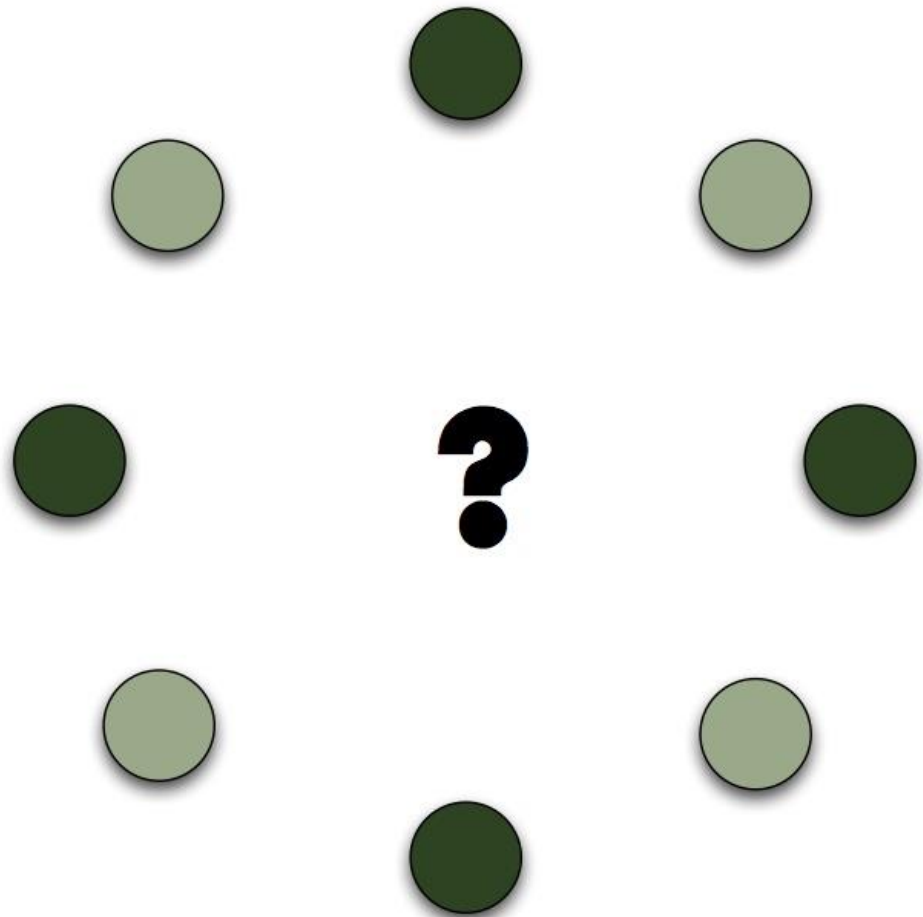
Disconnected



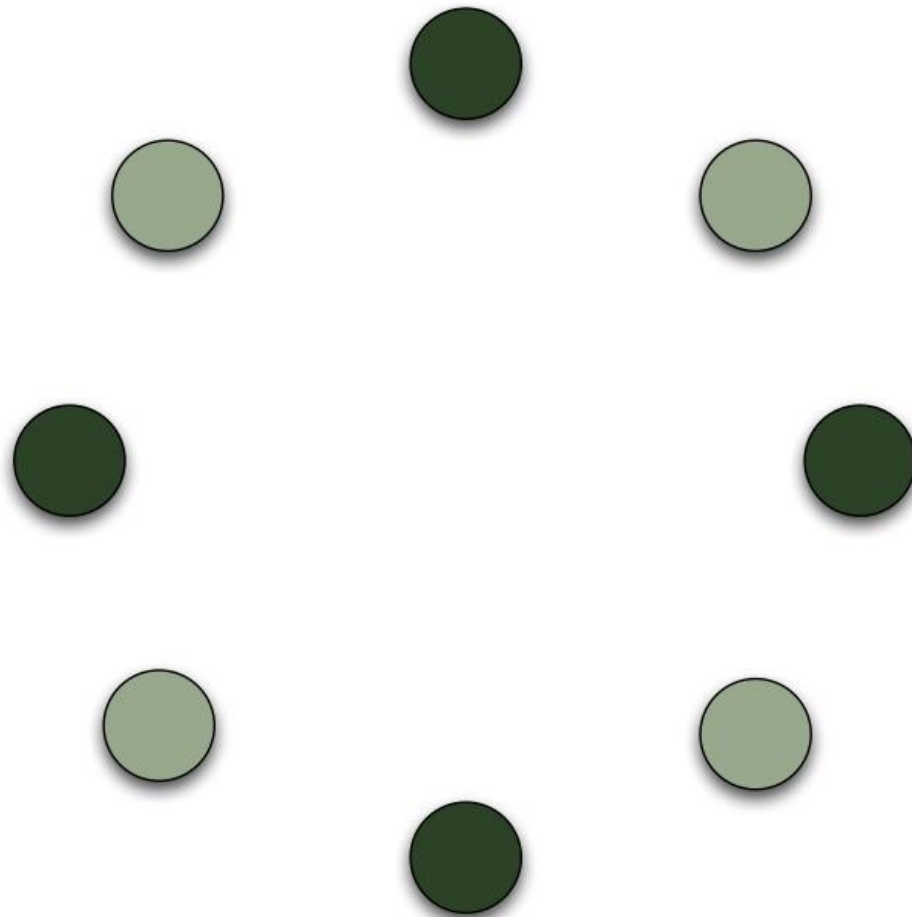
Connected



Invisible



Findable

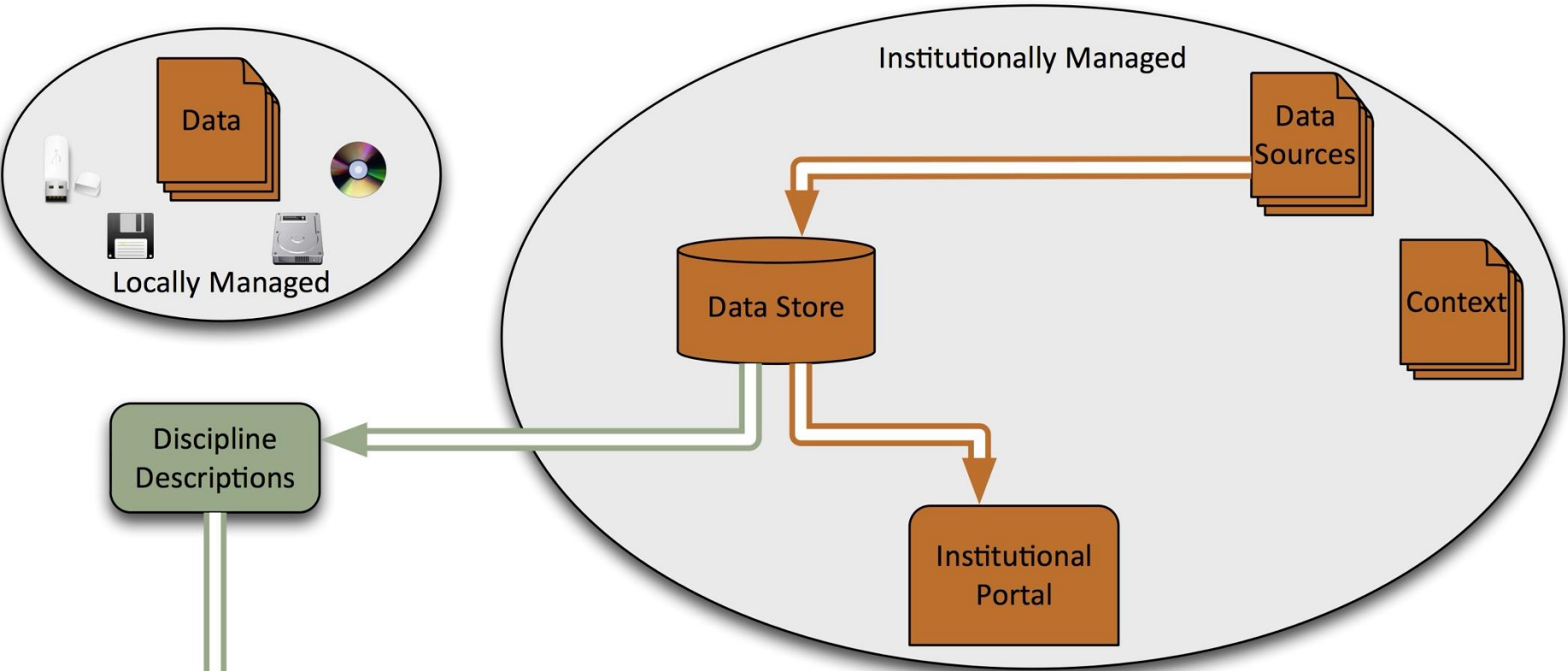


Single use



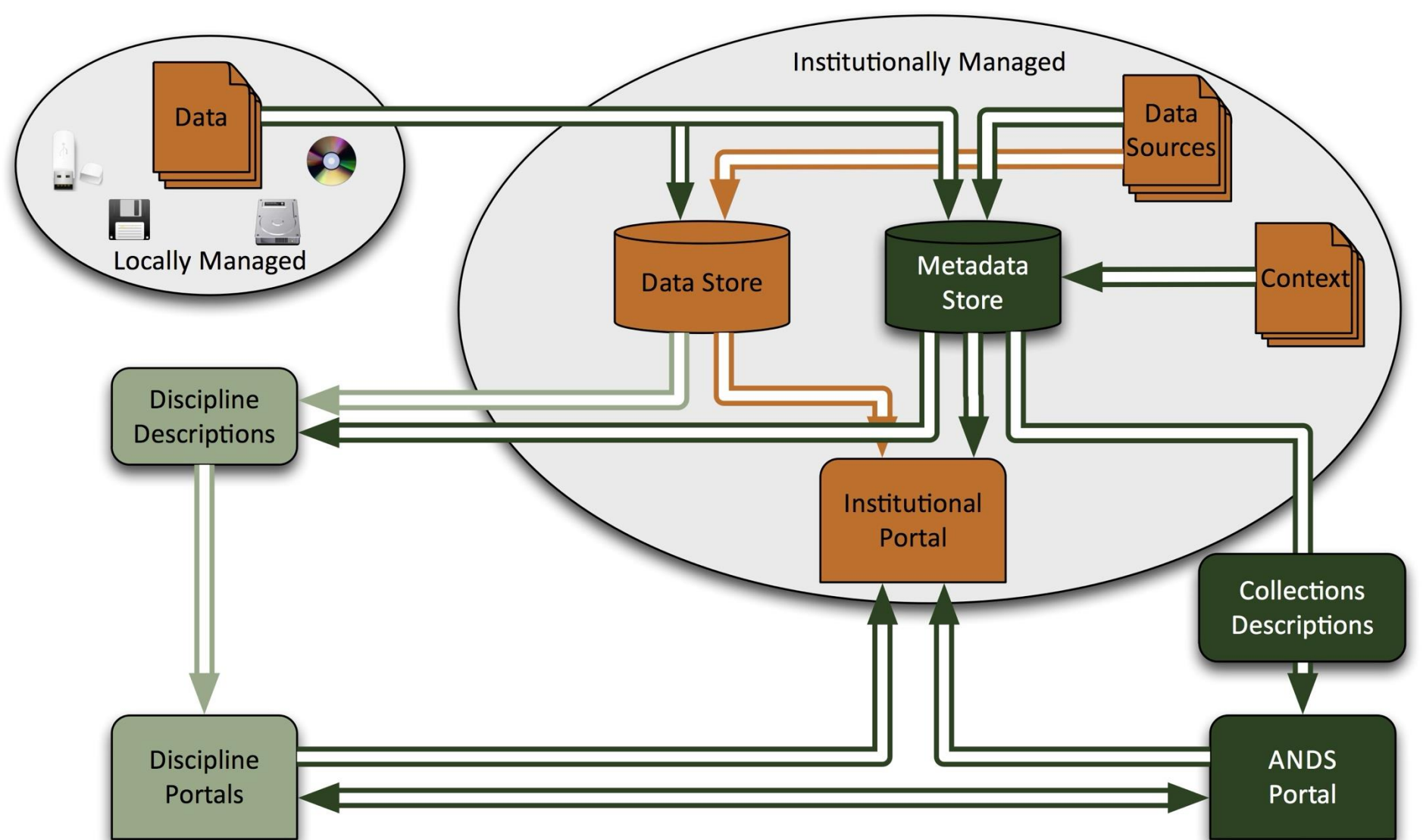
Reusable





Australian Research Data





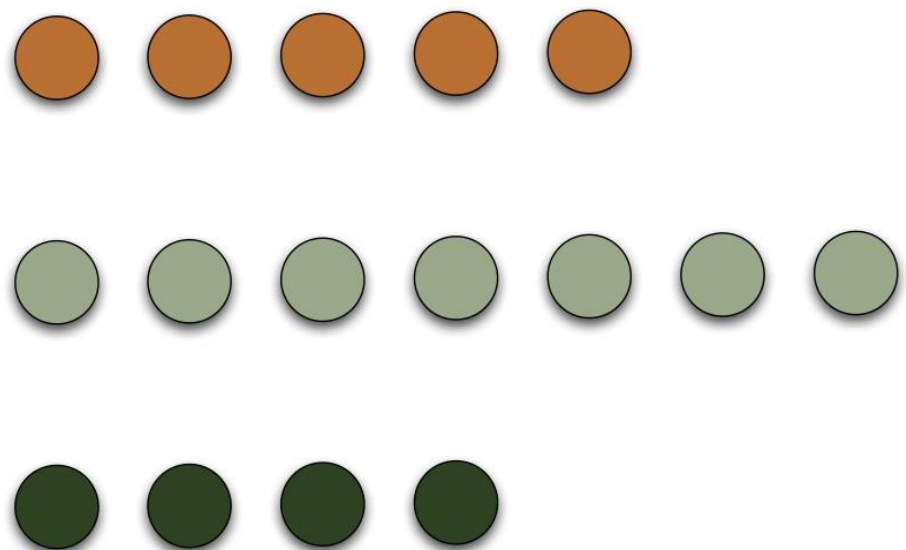
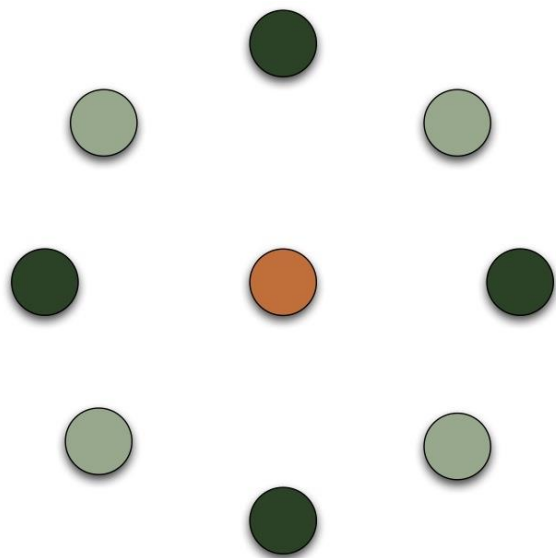
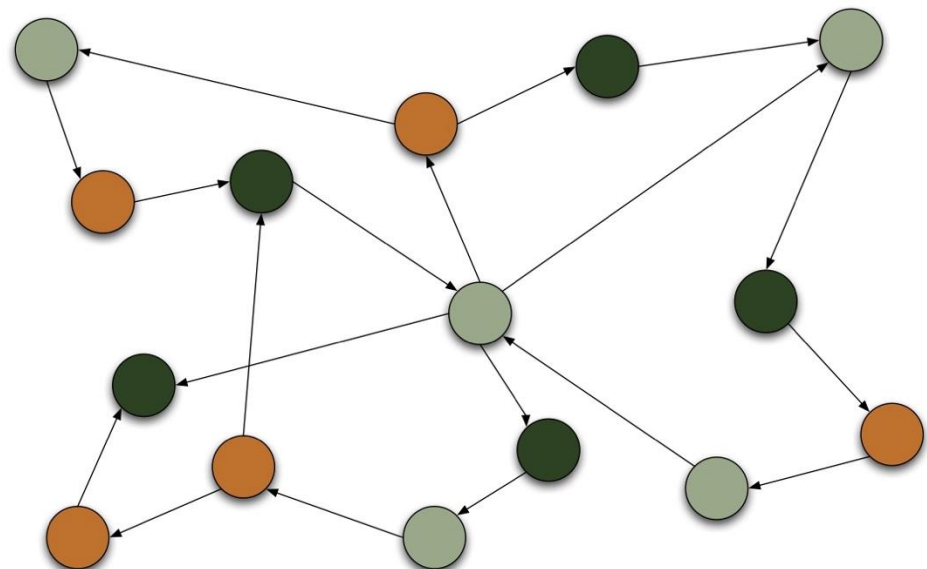
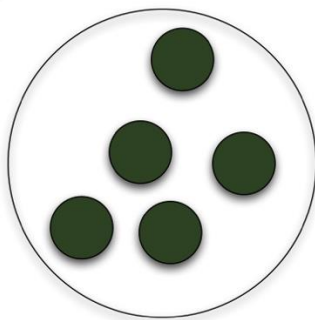
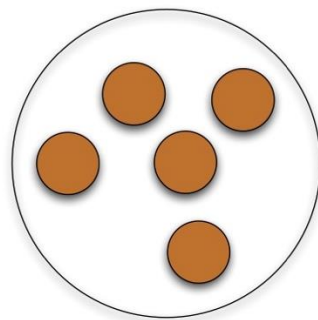
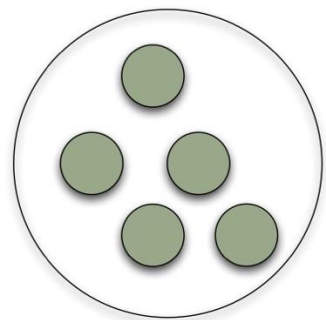
Australian Research Data Commons



THE FUTURE

“The future is already here – it’s just not very evenly distributed”

William Gibson



Plan

Create

Store

Describe

Identify

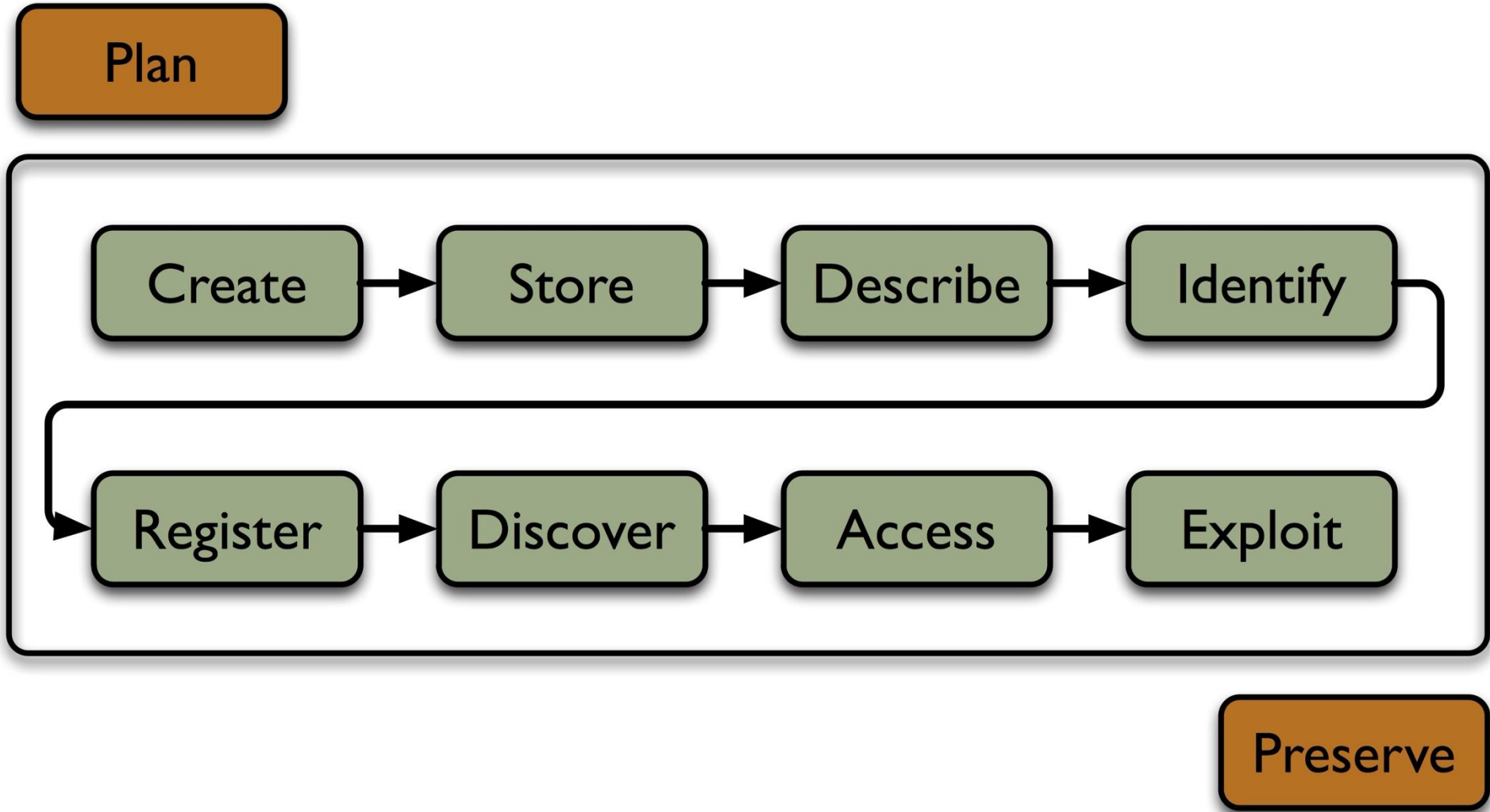
Register

Discover

Access

Exploit

Preserve



Create: Open Notebook Science

- <http://usefulchem.wikispaces.com/malaria>
- http://www.ourexperiment.org/racemic_pzq
- <http://www.infotoday.com/it/sep10/Poynder.shtml>

Describe, Store: PIC Cloud Demo

- <http://www.polarcommons.org/>
- <http://piccloud.arcs.org.au/piccloud/>

Discover, Access: RDA Demo

- <http://www.google.com/>
- <http://services.ands.org.au/pages/>

Identify: Journal Demo

- <http://dx.doi.org/10.1016/j.yqres.2010.04.004>
- **“Elsevier and PANGAEA (Publishing Network for Geoscientific & Environmental Data) announced their next step in interconnecting the diverse elements of scientific research. Elsevier articles at [ScienceDirect](#) are now enriched with graphical information linking to associated research data sets that are deposited at PANGAEA. *This enrichment functionality offers a blueprint of how Elsevier would like to work with data set repositories all over the world* [emphasis added].”**
<http://newsbreaks.infotoday.com/Digest/Elsevier-Enriches-Articles-With-Research-Data-Sets-69148.asp>

CONCLUSION



Acknowledgements

- <http://www.flickr.com/photos/shashwat/1215492062>
- <http://www.flickr.com/photos/carbonnyc/3160378286>
- <http://jpkc.fimmu.com/sfzx/new/Upload/20091024163545503.JPG>
- NASA/courtesy of nasaimages.org
- http://www.pri.kyoto-u.ac.jp/press/20090716/bossou_chimpanzee_stone-tool_use.jpg
- <http://www.flickr.com/photos/13238706@N00/136830103/>
- <http://www.flickr.com/photos/mplemmon/215790292/>
- <http://www.utexas.edu/features/archive/2003/vase.html>
- <http://www.flickr.com/photos/steveharris/84026155/>
- Clip of 2001 shown in accordance with section 47(2) of Copyright Act 1994 No 143 (as at 07 July 2010)
 - <http://legislation.govt.nz/act/public/1994/0143/latest/DLM345972.html#DLM345972>

Questions/Links

- ands.org.au
- services.ands.org.au
- andrew.treloar@ands.org.au
- andrew.treloar.net