Course for Doctoral Students

RESEARCH DATA MANAGEMENT AND OPEN DATA

23th July 2015, Social Science Data Arhives, Faculty of Social Sciences, University of Ljubljana

ECPR Summer School 2015
RESEARCH DATA MANAGEMENT PLANNING

Laurence Horton, Library, London School of Economics and Political Science

This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit http://creativecommons.org/licenses/by/4.0/
1. What kinds or archives/repositories are there?
2. What to look for in a reputable archive/repository
   - Re3data
   - Data Seal of Approval
   - DOIs
3. What do archives/repositories want from researchers?
4. Licenses: Defining how your data can be used
5. Depositing data in an archive
   - UK Data Service ReShare
   - ORCiD
Types

Multidisciplinary
- Zenodo
- Figshare

Disciplinary
- European Social Survey
- UK Data Archive Slovenian Social Science Data (ADP)

Institutional
- LSE Research Online
Selecting a data repository

- Global registry of repositories across all disciplines
Selecting a data repository: subject

re3data.org

REgistry of REsearch DATA REpositories
Selecting a data repository: content type
Selecting a data repository: country/region
Selecting a data repository

Top 5 countries for number of research data repositories

5 4 3 2 1

[Flags of France, Canada, United Kingdom, Germany, United States]
Selecting a data repository

Almost all have some form of Open Access

Small percentage have a certification (Data Seal of Approval)

Not many offer Permanent Identifiers
Selecting a data repository

- 88 (7%) of 1260 repositories in re3data have:
  - one of
  - 50 come from Humanities and Social Sciences
Data Seal of Approval

- Recognition of being a:
  - trustworthy source of data
  - Long-term preservation
- Self-assessment based on:
  - Criteria: 1 2 3 4 5
  - Guidelines: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Data Seal of Approval criteria

Data can be found on the Internet
Data Seal of Approval criteria

The data are accessible (clear rights and licences)
Data Seal of Approval criteria

The data are in a usable format
Data Seal of Approval criteria

The data are reliable
Data Seal of Approval criteria

The data are identified in a unique and persistent way so they can be cited
A type of identifier based on a fixed and unique reference to an object.

- Allows data to be cited.
- Not a symbol of data quality.
- Obtained from publisher/archive.

DOI: Digital Object Identifier

Permanent identifiers:
- doi
- urn
- ark
- hdl
- urn
- pi

DOI®

FOSTER
Criteria for depositing research data

Everything or Nothing
Criteria for deposit: Does the data underpin published research findings?
Criteria for deposit: Are people waiting for the data?
Criteria for deposit: Uniqueness
Criteria for deposit: Can data be re-used by others?
Criteria for deposit: Context

Understand context
Licensing data for re-use

Think about how you want others to use it.
License: Clarify Intellectual Property ownership

- You can only archive data you own (or if you have permission)
- If you create it, check you own it
License: Clarify funder expectations

Funder expectations: data to be as open as possible
License: Do you want to allow adaptation and modification?

- Is format and design intrinsic to the work?
- Does the work need to be used in its entirety?
License: Do you want to allow commercial re-use

- Is there a contractual reason for preventing commercial use?
- Will you or your work benefit from or be harmed by commercial usage
Choosing a Creative Commons Licence

<table>
<thead>
<tr>
<th>CC Licence</th>
<th>Require attribution</th>
<th>Allow sharing</th>
<th>Commercial use</th>
<th>Authorise modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC Zero</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Public domain</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Attribution</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Attribution-Share Alike</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Attribution-No Derivatives</td>
<td>Yes</td>
<td>Sometimes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Attribution-Non Commercial</td>
<td>Yes</td>
<td>Sometimes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Attribution-Non Commercial-Share Alike</td>
<td>Yes</td>
<td>Sometimes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Attribution-Non Commercial-No Derivatives</td>
<td>Yes</td>
<td>Sometimes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
## Criteria for deposit: further reading

DCC (2014) ‘Five steps to decide what data to keep: a checklist for appraising research data v.1
Edinburgh: Digital Curation Centre

UK Data Service (2014) Collections Development Selection and Appraisal Criteria

---

### Five steps to decide what data to keep

**DCC Checklist for Appraising Research Data**

<table>
<thead>
<tr>
<th>Criteria relating to potential usability and accessibility:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Able to provide access to the data in ways that make it useful/usable</td>
</tr>
<tr>
<td>Data that have been prepared for access with definable conditions within the access spectrum</td>
</tr>
<tr>
<td>Legal and ethical agreements and protocols used do not prohibit sharing and/or re-use, e.g. consent to share/reuse data, IPR, copyright, DPA</td>
</tr>
<tr>
<td>Data has adequate supporting documentation/ contextual information</td>
</tr>
<tr>
<td>Data are produced in a suitable format for reuse (e.g. no specialised software needed or such software made available) or can be converted to a UK Data Service delivery platform</td>
</tr>
<tr>
<td>The cost of conversion to a UK Data Service delivery platform is not prohibitive, or costs can be recouped</td>
</tr>
<tr>
<td>Data are more openly accessible or where a national licensing model will offer considerable savings</td>
</tr>
<tr>
<td>Third party host: is reliable and reputable</td>
</tr>
<tr>
<td>Third party host: is the data likely to change/be updated over time?</td>
</tr>
<tr>
<td>Third party host: suitable preservation processes are used to manage and curate data</td>
</tr>
<tr>
<td>Third party host: a persistent identifier can be made available (robust access)</td>
</tr>
</tbody>
</table>

http://ukdataservice.ac.uk/media/455175/cd234-collections-appraisal.pdf
http://www.dcc.ac.uk/resources/how-guides/five-steps-decide-what-data-keep
Where can you put data?

- UK Data Service ReShare
- GESIS - Leibniz Institute for the Social Sciences datorium
- ADP
- Zenodo
- Figshare
- The Dataverse Project
Before you start to deposit a new data collection, check these guidelines on how to prepare your data files and documentation:

- Group your data files where relevant in zip bundles according to their content or file format, to make upload and download easier, e.g. a zip bundle of interview transcripts, a zip bundle of audio files.
- For large collections, keep a folder structure for the file.
- Check our recommended file formats.
- Give files meaningful names that reflect the file content, avoiding spaces and special characters.
- Check that data files contain no disclosive information, to anonymise:
  - Remove names or use pseudonyms.
  - Remove addresses and detailed location, change postcode to postal district.
  - Change date of birth to year.
  - Remove names and disclosive info from ‘file properties’, e.g. using MS Word Document Inspector.
  - Beware of hidden tracked changes in text or table files.
- Provide essential documentation for the data:
  - Clear variable and value labels.
  - Questionnaire form or data dictionary for surveys.
  - Consent form and information sheet.
  - Methods description.
  - Data list of interviews.
  - PDF of website materials.

Create a new data collection

My ReShare data collections
Depositing data: UK Data Service ReShare

Edit collection: Data Collection #851566

To deposit a data collection, you must accept the ReShare Terms and Conditions.

- I confirm that I am the owner of the copyright and associated intellectual property rights in the whole Data Collection or am otherwise lawfully entitled to grant this licence on behalf of each and every owner;
- I grant a non-exclusive, royalty-free licence to the UK Data Archive (a department of the University of Essex and not a separate legal entity) of Wivenhoe Park, Colchester, CO4 3SQ (the “University”) to hold, make copies of, and disseminate copies of the Data collection, in accordance with the access conditions I will specify when uploading data files: open data accessible to users without registration; or safeguarded data accessible to users registered with the data services provided by the UK Data Archive.

I agree to the ReShare data deposit terms and conditions

[Checkbox]

Save for later  Cancel  Next >
Depositing data: UK Data Service ReShare

Edit collection: Data Collection #851566

- Terms and conditions
- Award details
- People
- Data collection
- Upload
- Deposit

Please note:
The pink asterisk symbol * indicates a mandatory field.
Your progress will be automatically saved when you click 'Next' or 'Save'. 'Cancel' will result in the loss of any changes since last save.

Grant reference:
Submit your RCUK grant number (e.g. ES/K002000/1) to retrieve project information from the RCUK Gateway to Research. If grant number is unknown, you can find it by searching the Gateway to Research.

Project title:
Pre-filled if project information is retrieved from the RCUK Gateway to Research.

Project description:
The project description or abstract explains the general aims, purpose and background to the research project. This field will be pre-filled if project information is retrieved from the RCUK Gateway to Research.

Research funders:
The funding source for the research project; pre-filled if project information is retrieved from the RCUK Gateway to Research. Type NA if not applicable.

1. Economic and Social Research Council
2. 
3. 
4. 

FOSTER
**Depositing data: UK Data Service ReShare**

---

**Edit collection: Data Collection #851566**

### Creators

<table>
<thead>
<tr>
<th>Family name</th>
<th>Given name / Initials</th>
<th>Email</th>
<th>Affiliation</th>
<th>ORCID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horton</td>
<td>Laurence</td>
<td><a href="mailto:l.horton@lse.ac.uk">l.horton@lse.ac.uk</a></td>
<td>London School of E</td>
<td>0000-0000-2742-6C</td>
</tr>
</tbody>
</table>

Add row

### Copyright holders

<table>
<thead>
<tr>
<th>Family name</th>
<th>Given name / Initials</th>
<th>Email</th>
<th>Affiliation</th>
<th>ORCID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Add row

### Contact

<table>
<thead>
<tr>
<th>Family name</th>
<th>Given name / Initials</th>
<th>Email</th>
<th>Affiliation</th>
<th>ORCID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Add row

### Contributors

<table>
<thead>
<tr>
<th>Family name</th>
<th>Given name / Initials</th>
<th>Email</th>
<th>Affiliation</th>
<th>ORCID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Add row
ORCiD

• A unique identifier for individuals (ORCiD iD)
• You can obtain one yourself or maybe through your institution
• Open API code that allows its information to be exported
• Open source, not-for-profit organization
• Increasingly adopted by funders and organizations for capturing publication information
Laurence Horton

ORCID ID
orcid.org/0000-0003-2742-6434

Biography
Data Librarian at The London School of Economics and Political Science.

Education (1)

University of Essex: Colchester, Essex, United Kingdom
1998-10 to 1999-09 | Master of Arts (Government)

Source: Laurence Horton Created: 2014-01-21

Employment (4)

London School of Economics and Political Science: London, London, United Kingdom
2014-03 to present | (Library)

Source: Laurence Horton Created: 2014-01-21

GESIS Leibniz Institut für Sozialwissenschaften Köln: Köln, Nordrhein-
Depositing data: UK Data Service ReShare

Edit collection: Data Collection #851566

Data collection title


Alternative title

Data collection description

A written description or abstract of the data collection. This is different from the project description. In the catalogue record, both descriptions will be shown.

This dataset compares existing research data policies at UK higher education institutions. It consists of 91 cases. Policies were compared on a range of variables. Variables included policy length in words, whether the policy offers definitions, defines institutional support, requires data management plans, states scope of staff and student coverage, specifies ownership of research outputs, details where external funder rights take precedent, guides on what data and documentation is required to be retained, how long it needs to be retained, reinforces where research ethics prevent open data.

Key words

UK

Higher Education

educational costs

educational courses

educational background

educational catering

educational certificates
Depositing data: UK Data Service ReShare
Depositing data: UK Data Service ReShare

### Temporal coverage

Provide a start and end date of either the actual data collection period, or else the time period that is covered by the data collection.

**Collection period:** Start and end date for the data collection period.

<table>
<thead>
<tr>
<th>Date from</th>
<th>Date to</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>2014</td>
</tr>
</tbody>
</table>

**Temporal coverage:** The time period (start and end date) for this data collection, if it is different from the data collection period, e.g. for data representing a historical period.

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2014</td>
</tr>
</tbody>
</table>

### Geographical coverage

Provide information about the geographical area where your data were collected.

**Geographical area:** The name(s) of the location(s) or area(s) where your data were collected.

- United Kingdom

**Bounding area:** Define the geographical area covered by your data collection by four latitude/longitude coordinates in decimal degrees, as the smallest rectangular shape that totally encloses all of the data.

Example: 60.85, 2.69, 49.84, -9.23 (bounding area for UK)

<table>
<thead>
<tr>
<th>North latitude</th>
<th>East longitude</th>
<th>South latitude</th>
<th>West longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Country:** The country or countries where the data were collected. When you start typing, a controlled list of countries to select from will appear.

- United Kingdom
Depositing data: UK Data Service ReShare

Spatial unit
Select all spatial units or geographical identifiers that reference the data collection to a particular location, e.g., the location identifiers for studied individuals. Categories will expand to show individual options to select.

- Remove Countries
- Remove Countries (Scotland)
- Remove Countries (Wales)
- Remove Council Areas
- Remove Counties
- Remove Counties (Metropolitan)
- Remove Countries (Metropolitan)
- Remove District Council Areas
- Remove Districts (Metropolitan)
- Remove Districts (Non-Metropolitan)
- Remove Greater London
- Remove Local Authority Districts
- Remove London Boroughs
- Remove Parish Areas (Civil)

Add No Spatial Unit
Depositing data: UK Data Service ReShare

<table>
<thead>
<tr>
<th>Methodology</th>
</tr>
</thead>
</table>
| **Data collection method:** Describe the methodology used to create this data collection (e.g., interviews, measurements, surveys, mapping, modeling, focus groups etc.). Describe sampling procedure and selected population.

Data collection was based on a list of UK Higher Education institutions with data policies. This list was provided by the Digital Curation Centre. I also conducted a google search for UK university data policy to discover additional institutions that had adopted Research Data Management requirements.

The data does not include published draft institutional policies or roadmaps. |

<table>
<thead>
<tr>
<th>Observation unit:</th>
</tr>
</thead>
</table>
| Select the appropriate observation unit(s) from the list.

- Events and processes
- Families and households
- Geographic units
- Groups
- Housing units
- Individuals
- Objects
- Organisations
- Other
- Text units
- Time units |

<table>
<thead>
<tr>
<th>Kind of data:</th>
</tr>
</thead>
</table>
| Select the kind of data in the collection from the list.

- Alpha-numeric
- Audio
- GIS
- Image
- Numeric
- Other
- Tabular
- Video |

<table>
<thead>
<tr>
<th>Data sourcing, processing and preparation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information about the source of the data collection, e.g., if derived from existing data resources. List any available data resources under related resources. Any quality assessment, improvement processes or changes (e.g. anonymisation) that were applied to the data should be summarised here.</td>
</tr>
</tbody>
</table>

- Research Data Management Policy (PDF) Edinburgh Digital Curation Centre
  http://www.oclc.org/content/dam/research/publications/library/research/enssy2013.pdf |
Depositing data: UK Data Service ReShare

### Type of data
Select the appropriate data types for this collection from the list.
- Business microdata
- Census data
- Cohort and longitudinal studies
- Cross-national survey data
- Experimental data
- Geographic data
- Historical data
- International microdata
- Other surveys
- Qualitative and mixed methods data
- Teaching data
- Time series
- UK survey data

### Resource language
Language of textual information of the data collection.

<table>
<thead>
<tr>
<th>Language</th>
<th>English</th>
</tr>
</thead>
</table>

### Related resources
Provide any external resources that relate to this data collection, such as a project website, publications, software or other data collections. If your data collection is already held in an external repository or location, provide the URL or DOI here.

<table>
<thead>
<tr>
<th>URL</th>
<th>Name</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Publication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unspecified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unspecified</td>
</tr>
</tbody>
</table>

### Notes on access
Describe any access, ethical, legal or other issues which may influence the re-use of the data by other researchers, e.g. any informed consent or confidentiality agreements that may influence data re-use, sensitive information in the data collection, or data quality aspects. This information will be considered by the ReShare administrator considered during the review process. If applicable, an example consent form should be uploaded as documentation.

None.
Depositing data: UK Data Service ReShare


Terms and conditions → Award details → People → Data collection → Upload → Deposit

Add a new file or zip bundle

Upload data files and documentation for your data collection. Click the Choose File button below to select a file; and the Upload button to upload it to the repository. Large files (>2GB) make take a long time to upload, depending on your browser speed. When uploading many files (>10), please upload them in logically grouped zip bundles instead, e.g. grouping by content (data, documentation), by file format (text, images, databases) or by folder structure.

Make sure data files contain no disclosive personal information.

Include documentation on data collection methods and context to inform future reuse of the data.

Make sure file names contain no spaces.

<table>
<thead>
<tr>
<th>File</th>
<th>From URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose File</td>
<td>No file chosen</td>
</tr>
</tbody>
</table>

< Previous  Save for later  Cancel  Next >
Depositing data: UK Data Service ReShare
Depositing data: UK Data Service ReShare

Deposit item: **UK Higher Education Institution Research Data Management Policies, 2009-2014**

By submitting this data collection I confirm that:

- I understand and agree to the conditions under which data users will have access to my data collection (link to legal info)
- data files have been anonymised where needed and contain no disclosive or personal information
- sufficient documentation is uploaded to make this data collection usable for further research
- I understand that a submitted Data Collection will not be visible on the live repository until the UK Data Service will have reviewed it for disclosure risk, copyright breaches, validity of file formats and documentation (all numerical data files and at least a 10% random sample of textual data files will be reviewed), communicated any concerns to me, and approved it for publication.

After depositing this data collection you can no longer edit it or upload more data files.

[Deposit collection now]  [Save for later]
Depositing data: UK Data Service ReShare
Depositing data: UK Data Service ReShare

### Data Collection

**Data collection title:** UK Higher Education Institution Research Data Management Policies, 2005-2014

**Data collection description:**

This dataset compiles existing research data policies at UK higher education institutions. It consists of 31 cases. Policies were compared on a range of variables. Variables included policy length in words, whether the policy offers definitions, whether institutional support, requires data management plans, states scope of staff and student ownership, specifies ownership of research outputs, details where external funder rights take precedent, guides on what data and documentation is required to be retained, how long it needs to be retained, references where research ethics prevent open data, platforms where data can be accessed, speaks about open data requirements, includes a statement on funding the costs of Research Data Management, and specifies a study period for the policy.

Hypothetical policies are also included. Institutions and policies are coded in line with ISO 3166-12 to enable regional comparison and allow for future international comparisons to take place. Data also includes the institution’s year of foundation and a categorisation variable grouping institutions by year of foundation allowing comparison across cohort groups of universities. A further two variables allow for classification of research based on study period.

**Keywords:** Higher Education, Research Data Management, policy

**Subjects:** Education

**Type of data:** Qualitative and mixed methods data

**Collection period:**

<table>
<thead>
<tr>
<th>Date from</th>
<th>Date to</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 March 2014</td>
<td>31 October 2014</td>
</tr>
</tbody>
</table>
Depositing data: UK Data Service ReShare


- Item has been deposited.

- Your item will not appear on the public website until it has been checked by an editor.

This data collection is in review. It will not be published until it has been checked by the UK Data Service for disclosure risk, copyright breaches, etc. We will contact you with any concerns.

### Actions

- New version
- Use as template
- Return to work area
- Request deletion

### Details

Use this to submit a new version of this data collection. It will create an exact copy which you can then make changes to. This data collection and the new version will be linked.

Create a new data collection using this collection as a template. There will be no connection between the two collections.

Return to user work area, allowing the user to make changes to it and re-deposit it.

Request that this data collection is removed from the repository.

### Export

- ASCII Citation
- Export
Depositing data: UK Data Service ReShare
# Depositing data: UK Data Service ReShare

**UK Higher Education Institution Research Data Management Policies, 2009-2014**

<table>
<thead>
<tr>
<th>SN:</th>
<th>851566</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>UK Higher Education Institution Research Data Management Policies, 2009-2014</td>
</tr>
<tr>
<td>Persistent identifier:</td>
<td><a href="10.5255/UKDA-SN-851566">10.5255/UKDA-SN-851566</a></td>
</tr>
<tr>
<td>Depositor:</td>
<td>Laurence Horton, London School of Economics and Political Science</td>
</tr>
<tr>
<td>Principal investigator(s):</td>
<td>Laurence Horton, London School of Economics and Political Science</td>
</tr>
<tr>
<td>Sponsor(s):</td>
<td>Economic and Social Research Council</td>
</tr>
<tr>
<td>Grant number:</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

## Subject Categories

- Education
- Reference and instructional resources
Lessons

• There are different types of archives and repositories
• Re3data can help you find a reputable, suitable one
• Data Seal of Approval is an example of a trustworthy archive
• Archives want data with reuse potential: good quality data with meaningful contextual information
• Pick a licence that’s appropriate to the data
• Self-archiving platforms exist that allow you to archive your data
• Get an ORCiD
Images


6: By Austinmurphy at en.wikipedia [Public domain], from Wikimedia Commons [https://commons.wikimedia.org/wiki/File%3AAssorted_video_tapes.JPG](https://commons.wikimedia.org/wiki/File%3AAssorted_video_tapes.JPG)

7: By National_archives_2007_02_03.JPG:Nick Cooper at en.wikipedia derivative work: Harumphny (National_archives_2007_02_03.JPG) [CC BY-SA 2.5 (http://creativecommons.org/licenses/by-sa/2.5)], from Wikimedia Commons [https://commons.wikimedia.org/wiki/File%3ANational_Archives_2007_02_03.JPG](https://commons.wikimedia.org/wiki/File%3ANational_Archives_2007_02_03.JPG)


16: "Individuality" by VaughnSaball - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons - [https://commons.wikimedia.org/wiki/File:Individuality.jpg#/media/File:Individuality.jpg](https://commons.wikimedia.org/wiki/File:Individuality.jpg#/media/File:Individuality.jpg)
Images

17: "Box.agr". Licensed under CC BY-SA 3.0 via Wikimedia Commons - https://commons.wikimedia.org/wiki/File:Box.agr.jpg#/media/File:Box.agr.jpg

17: Quinn Dombrowski “Attendee lists” licenced under CC BY-SA 2.0 https://www.flickr.com/photos/quinnanya/3183174451

18: BoneDaddy.P7 “There are 2 things missing in this photo” licenced under CC BY-SA 2.0 https://flic.kr/p/5iuQeU


20: "Snow Flakes" by Dakota Lynch - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons - https://commons.wikimedia.org/wiki/File:Snow_Flakes.jpg#/media/File:Snow_Flakes.jpg


22: Paul Downey “Understand context” licensed under CC BY 2.0 https://www.flickr.com/photos/psd/9116635297

Images


25: Aisletwentytwo “Alec - Mr. Money Bags” CC-BY 2.0 https://flic.kr/p/eZmHq7