Using Institutional Repositories
as part of the Open Science Ecosystem

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Nanyang Assistant Professor
Psychology, School of Social Sciences, NTU, Singapore

Ways you can use institutional archives for your open science objectives. 15 Aug 2019, NTU

Slides archived on DR NTU (Data):
https://doi.org/10.21979/N9/Z3W4CP
We want to do our best work...

- Good Science
  - Enhancing Human Knowledge
    - Scientific Recognition
But actually...

What we think we care about....

Good Science

Enhancing Human Knowledge

Scientific Recognition

What the system cares about....

Papers

Citations

Promotion

Job Security
How do we measure this?

What we think we care about....

Good Science

Scientific Recognition

What the system cares about....

Papers

Citations

Impact

Promotion

Job Security
In order to do good science we need to do all of this...

What we think we care about....

What the system cares about....

Good Science

- Ideas
- Hypotheses
- Methods & Materials
- Data
- Graphs
- Analysis Code
- “Results”
- Impact

Scientific Recognition

Papers

Citations

Promotion

Job Security
And also all of this…

What we think we care about….

What the system cares about….
Most of our work is invisible, and dies with us...

What we think we care about....

What the system cares about....
What if it all counted... How can we achieve this?
We just need additional outlets for our work.

- Good Science
- Pre-Print
- Pre-registration
- Manuscript
- Peer Review
- Revision Cycle
- Post-Pub Peer Review
- Papers
- Citations
- Impact
- Promotion
- Job Security
- Open Ed Resources (OERs)

- Archives/Repositories
- Data
- Data Viz
- Methods & Materials
- Hypotheses
- Analysis Code
- Graphs

- Open Science
- Good Science
- Job Security
- Impact
Then our entire workflow can contribute to our impact
To achieve this, all we actually need is...
Storage in the Open Science Eco-system includes*...

<table>
<thead>
<tr>
<th>Storage ‘Publication’ Providers</th>
<th>Brokers</th>
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<td>![Figshare]</td>
</tr>
<tr>
<td>![PsyArXiv]</td>
<td>![Open Science Framework]</td>
</tr>
</tbody>
</table>

* Not an exhaustive list

Lots of storage providers exist, some are more ‘browsable’ than others, allowing external users to explore.
Storage in the Open Science Eco-system includes*...

* Not an exhaustive list

Storage providers with ‘versioning’ are more transparent, as you can see if any post-pub changes have been made
Storage in the Open Science Eco-system includes*…

<table>
<thead>
<tr>
<th>Storage 'Publication'</th>
<th>Persistent Record (Versioning)</th>
<th>DOI Granting</th>
<th>Not for Profit</th>
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<td>Dataverse Project</td>
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</table>

* Not an exhaustive list!

FOR PROFIT storage providers could change their Terms and Conditions at any time making you pay for their service, or making others pay to access your materials.
**Storage in the Open Science Eco-system includes***...

<table>
<thead>
<tr>
<th>Storage ‘Publication’ Providers</th>
<th>Persistent Brokers</th>
<th>Record (Versioning)</th>
<th>DOI Granting</th>
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</tbody>
</table>

* Not an exhaustive list!

Different storage systems specialize in different doc types. Some are super flexible.
Storage in the Open Science Eco-system includes*…

* Not an exhaustive list

You might want to use different storage providers for different projects depending on your collaboration team. Luckily, some providers ‘hold hands’ allowing plugins.
Examples...

Good Science

Pre-Print

Pre-registration

Open Peer Review

Post-Pub Peer Review

Papers

Citations

Archives/Repositories

Methods & Materials

Data

Data Viz

Scientific Recognition

Impact

Open Ed Resources (OERs)

Public Interest
What is a preregistration?

Pre-registration is a tool that allows you to avoid weak research practices by locking down your hypotheses before you begin.

How you will catch your hypothefish?

Specify your hypothesis WITH ENOUGH DETAIL THAT YOU CANNOT P-hack

Have you told someone?

REGISTER your hypothesis by depositing it in an independent archive with a timestamp

Further Reading:
https://www.amazon.com/Seven-Deadly-Sins-Psychology-Scientific/dp/0691158908

Excerpt from Preregistration Workshop: https://doi.org/10.21979/N9/KEMDEG
Current Standard...

- Collect Data
- Inspect data & Plan analysis
  - Analyse data
  - Reanalyse data?
- Collect more data?
- Write Full Article
  - Submit manuscript
  - Revisions, suggestions
    - Reanalyse? HARK?
    - Collect more data?
    - Resubmit
  - Accept? 🙋‍♀️ Reject? 🙋‍♂️

Pre-registration

- Hypothesis
- Analysis Plan
- Collect Data
- Analyse using Prereg
- Write Full Article
  - Submit manuscript & Timestamped Prereg to Journal
  - Revisions, suggestions
    - Resubmit
    - Accept? 🙋‍♀️
Current Standard...

- Collect data
- Inspect data & Plan analysis
- Analyse data
- Reanalyse data?
- Collect more data?
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- Submit manuscript
- Revisions, suggestions
- Reanalyse? HARK?
- Collect more data?
- Resubmit

Pre-registration

- Hypothesis
- Analysis Plan
- Archive the Prereg
- Collect data
- Analyse using Prereg
- Write full article
- Submit manuscript & Timestamped Prereg to Journal
- Revisions, suggestions
- Accept? ✌️ 🌟 Reject? 🤦‍♀️
TIP: Preregistration templates prompt you to include critical details...

1) Data collection. Have any data been collected for this study already?

2) Hypothesis. What's the main question being asked or hypothesis being tested in this study?

3) Dependent variable. Describe the key dependent variable(s) specifying how they will be measured.

4) Conditions. How many and which conditions will participants be assigned to?

5) Analyses. Specify exactly which analyses you will conduct to examine the main question/hypothesis.

6) Outliers and Exclusions. Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

7) Sample Size. How many observations will be collected or what will determine sample size?

8) Other. Anything else you would like to pre-register?

AsPredicted is one of the ‘lightest’ templates, so it’s a great way to get a taste of preregistration.

What if things don't go "as predicted"

You can just say so in the paper:
- "Contrary to expectations, we found that..."
- "Unexpectedly, we also found that..."
- "In addition to the analyses we pre-registered we also ran..."
- "We encountered an unexpected situation, and followed our Standard Operating Procedure"
<table>
<thead>
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<th>Digital repository</th>
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<td>Many file-types possible</td>
<td>Many file-types possible</td>
</tr>
<tr>
<td>Short list of Qs</td>
<td>No template, can create own</td>
<td>Multiple templates</td>
</tr>
<tr>
<td>&gt;&gt; best suited to experiments</td>
<td>&gt;&gt; extremely flexible</td>
<td>&gt;&gt; best suited to experiments</td>
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</tbody>
</table>

<table>
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<th>Authors have OSF profiles</th>
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<tr>
<td>All authors agree by email</td>
<td>Registers on behalf of group</td>
<td>All agree to finalize</td>
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<tr>
<th>Private until authors chose</th>
<th>Private until authors chose</th>
<th>Embargo period</th>
</tr>
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</table>

| Not-for-profit (FREE) | Institutional (ask your library) | Not-for-profit (FREE) |
Suzy J Styles (Nanyang Technological University)
Director of the Brain, Language and Intersensory Perception Lab (BLIP Lab) at NTU

Appointment: Nanyang Assistant Professor
Director of the Brain, Language and Intersensory Perception Lab (BLIP Lab), Psychology, NTU

Suzy J Styles is a developmental psycholinguist specializing in the interaction between language and the development of sensory systems. She trained in Linguistics and Japanese at the Australian National University and Tohoku University, and in Psycholinguistics at the University of Oxford, where she held a Career Development Fellowship at the Department of Experimental Psychology and St Hugh's College. She is a Nanyang Assistant Professor and Director of the Brain, Language and Inter-sensory Processing Lab (BLIP Lab) at Nanyang Technological University, Singapore.

Original Courses and Training Materials
• Language in Perception and Thought
• An Ape's Guide to Human Language
• Crash Course in Sensory Psycholinguistics
• Ethics in Practice

Dataverse Navigation

Open Educational Resources (OER)
• Language - Sensation - Cognition
• Evolution of the Human Primate
• Research Ethics

Datasets (coming soon)

Project Descriptions and Reports (coming soon)

For more information, visit faculty webpage or BLIP Lab website

https://researchdata.ntu.edu.sg/dataverse/suzyjstyles
Example Preregistration on NTU’s Dataverse

Daddy Mummy Talk To Me (Nanyang Technological University)

DR-NTU (Data) > School of Social Sciences (SSS) > Suzy J Styles > Science of Child Language > Daddy Mummy Talk To Me > Preregistration Documents

Ong, Wen Hwe; Teo, Almanda WL; Toh, Christa HY; Styles, Suzy J, 2018, "Preregistration Documents", https://doi.org/10.21978/N9/SKWU2Y, DR-NTU (Data), V1, UNF:6:coA0Blcw1ntwDX2no0/d8A== [fileUNF]


Description


Subject

Social Sciences

Keyword

Child Language, Parentese, Systematic Review, Word Gap

Files

Search this dataset... Find

1 to 4 of 4 Files

AsPredicted_Preregistration.pdf
Adobe PDF - 37.1 KB - Mar 28, 2018 - 0 Downloads
MD5: 96a0f0a20d0b20e02f6b64c7e746b
Ong, Teo, Toh & Styles (2018) PreregistrationForSystematicReview

DataExtractionSheet_Preregistration.xlsx
MS Excel (XLSX) - 320.0 KB - Mar 28, 2018 - 0 Downloads
MD5: 428c5dcd917c7350f5d59a7a7129
Ong, Teo, Toh & Styles (2018) DataExtractionSheet_Preqegistration

InterpretationBiasChecklist_Preregistration.tab
Tabular Data - 9 B - Mar 28, 2018 - 0 Downloads
9 Variables, 1 Observations - UNF:6:coA0Blcw1ntwDX2no0/d8A== [fileUNF]
Ong, Teo, Toh & Styles (2018) InterpretationBiasChecklist.xlsx

PRISMAChecklist_Preregistration.pdf
Adobe PDF - 158.6 KB - Mar 28, 2018 - 0 Downloads
MD5: 5913bde20b093a8ad2f2952b08d0129
Ong, Teo, Toh & Styles (2018) PRISMAChecklistForSystematicReview
Example Preregistration on Data
TIP: Preregistration protects junior researchers!
Examples...

- Good Science
- Pre-Print
- Pre-registration
- Methods & Materials
- Open Peer Review
- Data
- Post-Pub Peer Review
- Papers
- Data Viz
- Citations
- Archives/Repositories
- Scientific Recognition
- Open Ed Resources (OERs)
- Impact
- Public Interest
Pitch-cued spoken vowels

Contributors: Suzy J Styles

Date created: 2017-07-11 04:40 PM | Last Updated: 2018-04-16 11:13 AM

Category: Methods and Measures

Description: Vowels /i/, /a/, /u/ and /y/, spoken at 3 target pitches within 1 standard deviation above and below the natural range of the speaker. Raw (pitch-cued) recordings and recordings with pitch adjustment are included.

Files

Name ▲ ▼ Modified

Pitch-cued spoken vowels

OSF Storage (United States)

Auditory_Tokens

Adjusted

Raw

Methods


Vowel_Judgments

Table 1. Center Vowels

<table>
<thead>
<tr>
<th>Pitch</th>
<th>Vowel</th>
<th>Seconded</th>
<th>Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>/i/</td>
<td>156.1 Hz</td>
<td>154.9 Hz</td>
<td>1.2 Hz</td>
</tr>
<tr>
<td>/a/</td>
<td>179.8 Hz</td>
<td>176.3 Hz</td>
<td>3.5 Hz</td>
</tr>
<tr>
<td>/u/</td>
<td>231.8 Hz</td>
<td>237.3 Hz</td>
<td>5.5 Hz</td>
</tr>
<tr>
<td>/y/</td>
<td>212.8 Hz</td>
<td>212.8 Hz</td>
<td>0.0 Hz</td>
</tr>
</tbody>
</table>

208 Hz

100 Hz

Tokens were trimmed at the tail to 400 ms, with a linear filter used across the final 100 ms of the token. Finally, volume was matched across all tokens using the Match function in Cool Edit.

The resulting tokens monitored minor variations in the pitch of the target across the articulation, as is normal in natural speech, as can be seen in Figure 1.

Figure 1. Pitch tracks of pitch-cued vowels. 100 Hz token in dark blue, 208 Hz token in light blue.

A typical check was also conducted on the recorded tokens of /y/, as it does not occur in the recorders language. The Singaporean Mandarin Chinese speakers confirmed that the tokens were typical of the vowel /y/. The raw recordings of the best-match tokens are available in the repository along with the pitch-adjusted tokens.

Discussion

The use of an online time беремяев playing through the headset inside the recording space). Over the performance limitations of an untrained speaker using to hold a stable in free pala and allowing the speaker to select their own articulation.

CC BY-Style J [2018]. Open Science Framework. https://osf.io/w2zv7
Examples...
TIP: Other materials are also archivable, including outreach and teaching materials.
TIP: Other materials are also archivable, including translations.

Authorship for a young neuroscientist

Free for reuse with attribution (non-commercial)
http://dx.doi.org/10.21978/N9/0IEPV
TIP: Lab training manuals can be archived too!
New CV Sections:

**Data Sets (Open Access, CC-BY)**

**Pre-Registrations**

**Open Educational Resources (OER)**
Styles SJ (2018) Crash Course in Sensory Psycholinguistics DR-NTU (Data)
  Compiled (Edition2.2) http://doi.org/10.21979/N9/KTRKZF
  Session 1 (Edition 2.2) http://doi.org/21979/N9/LVAFHB
  Session 2 (Edition 2.2) http://doi.org/21979/N9/0UDXLR
  Session 3 (Edition 2.2) http://doi.org/21979/N9/5LTCWM
  Session 4 (Edition 2.2) http://doi.org/21979/N9/5BGPSK
  Session 5 (Edition 2.2) http://doi.org/21979/N9/IWGGXL
  Session 6 (Edition 2.2) http://doi.org/21979/N9/O4TOC4

**Infographics (Science Communication Data-Visualization)**

**Methods Reports / Training Materials (Open Access, CC-BY)**
TIP! More and more hiring committees are looking for a portfolio like this...

Look at examples

DR NTU (Data)
https://researchdata.ntu.edu.sg/dataverse/suzystyles

BLIP Lab
https://blogs.ntu.edu.sg/blip/

OSF
https://osf.io/y5qm4/