Continuous Transparency and Reproducibility in Academic Publications

Lars Vilhuber

Cornell University

2023-04-27

The opinions expressed in this talk are solely the authors, and do not represent the views of the U.S. Census Bureau, the American Economic Association, or any of the funding agencies.

Transparency and reproducibility of scientific publications does not stop at publication

Context

AMERICAN ECONOMIC ASSOCIATION

American Economic Review

The *American Economic Review* is a general-interest economics journal. Established in 1911, the *AER* is among the nation's oldest and most respected scholarly journals in economics.

American Economic Review: Insights

AER: Insights is designed to be a top-tier, general-interest economics journal publishing papers of the same quality and importance as those in the *AER*, but devoted to publishing papers with important insights that can be conveyed succinctly.

Journal of Economic Literature

The *Journal of Economic Literature (JEL)*, first published in 1969, is designed to help economists keep abreast of and synthesize the vast flow of literature.

Journal of Economic Perspectives

The *Journal of Economic Perspectives (JEP)* fills the gap between the general interest press and academic economics journals.

American Economic Journal: Applied Economics

American Economic Journal: Applied Economics publishes papers covering a range of topics in applied economics, with a focus on empirical microeconomic issues.

American Economic Journal: Economic Policy

American Economic Journal: Economic Policy publishes papers covering a range of topics, the common theme being the role of economic policy in economic outcomes.

American Economic Journal: Macroeconomics

American Economic Journal: Macroeconomics focuses on studies of aggregate fluctuations and growth, and the role of policy in that context.

American Economic Journal: Microeconomics

American Economic Journal: Microeconomics publishes papers focusing on microeconomic theory; industrial organization; and the microeconomic aspects of international trade, political economy, and finance.

AEA Data & Code Availability Policy (2019)

- It is the policy of the American Economic Association to publish papers only if the data used in the analysis are **clearly and precisely** documented and **access to the data and code is clearly and precisely documented and is non-exclusive to the authors.**
- Authors of accepted papers that contain empirical work, simulations, or experimental work must **provide**, **prior to acceptance**, the data, programs, and other details of the computations **sufficient to permit replication**, as well as **information about access to data and programs.**

Reproducibility is assessed

Since July 16, 2019, the AEA Data Editor team has conducted reproducibility assessments

- for 1663 **manuscripts** (1369 full papers, 293 P&P) as of this morning

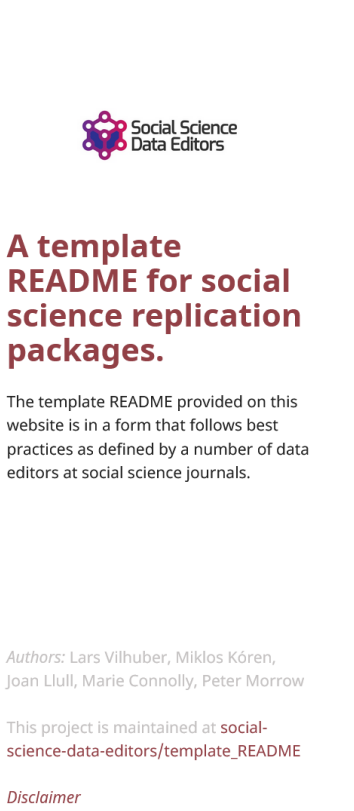
Defining “reproducible research”

“Reproducibility” refers to the ability of a researcher to duplicate the results of a prior study using the **same materials** and **procedures** as were used by the original investigator.

Bollen et al. 2015. “Social, Behavioral, and Economic Sciences Perspectives on Robust and Reliable Science.” National Science Foundation.https://www.nsf.gov/sbe/AC_Materials/SBE_Robust_and_Reliable_Research_Report.pdf.

What do we check?

- How can somebody access the data?
- How can somebody assemble the computational resources?
- How can somebody obtain the figures and tables in the paper?
- *How long will that take?*



Social Science Data Editors

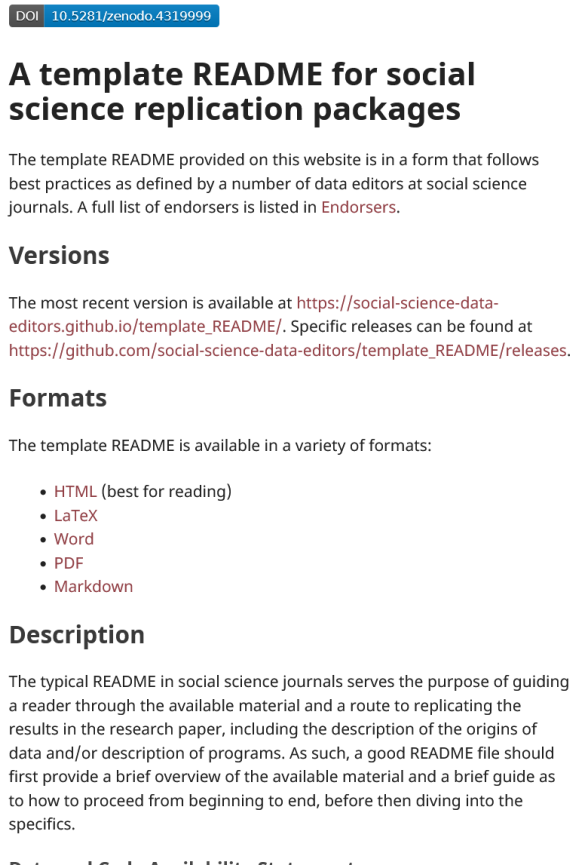
A template README for social science replication packages.

The template README provided on this website is in a form that follows best practices as defined by a number of data editors at social science journals.

Authors: Lars Vilhuber, Miklos Kóren, Joan Llull, Marie Connolly, Peter Morrow

This project is maintained at social-science-data-editors/template_README

Disclaimer



DOI 10.5281/zenodo.4319999

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Versions

The most recent version is available at https://social-science-data-editors.github.io/template_README/. Specific releases can be found at https://github.com/social-science-data-editors/template_README/releases.

Formats

The template README is available in a variety of formats:

- HTML (best for reading)
- LaTeX
- Word
- PDF
- Markdown

Description

The typical README in social science journals serves the purpose of guiding a reader through the available material and a route to replicating the results in the research paper, including the description of the origins of data and/or description of programs. As such, a good README file should first provide a brief overview of the available material and a brief guide as to how to proceed from beginning to end, before then diving into the specifics.

Guidelines? Template README

https://doi.org/10.5281/zenodo.431

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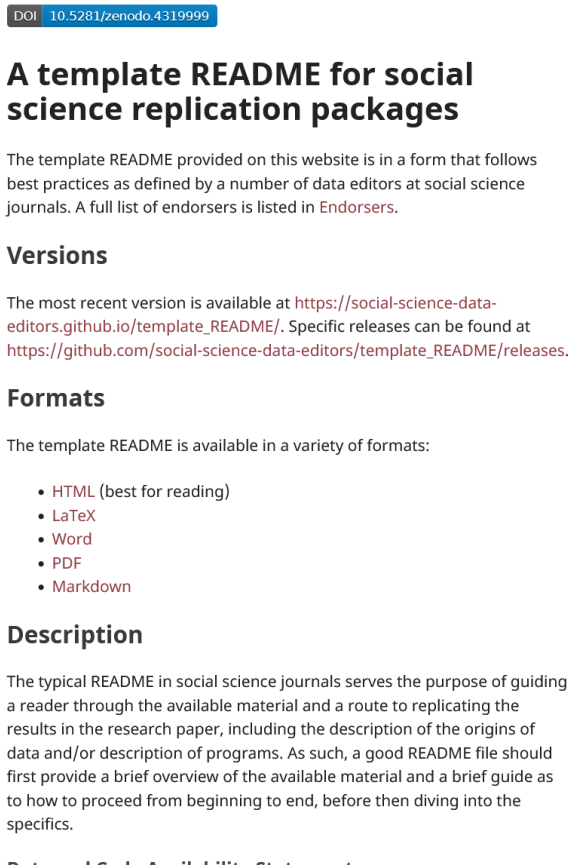

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Computational empathy

Computational empathy

- *Focal reader:* your next RA in 4 years
- *Interaction*: you hand them your README, but don't have time to go through all the details…
- *Budget constraint*: It shouldn't take too many RA hours
- *Time constraint*: It shouldn't take more than 1 week to "get it"

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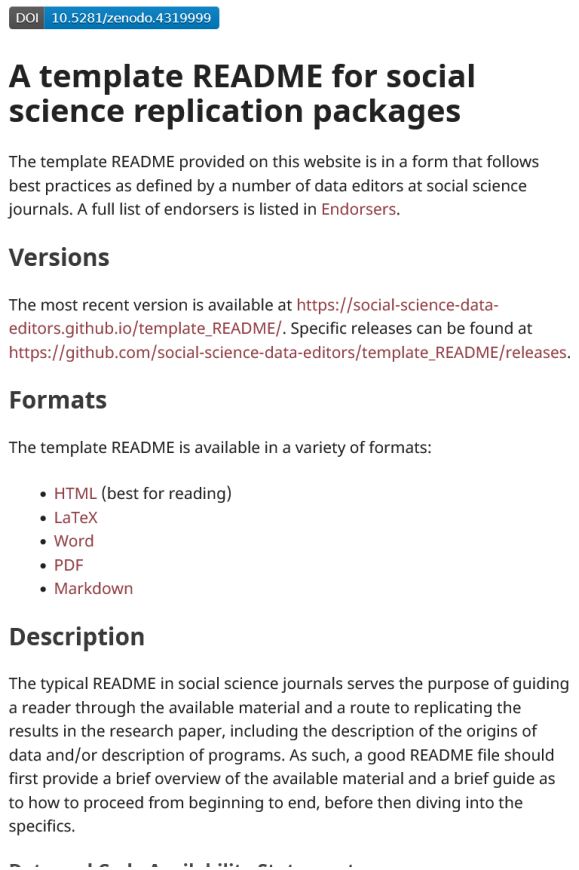

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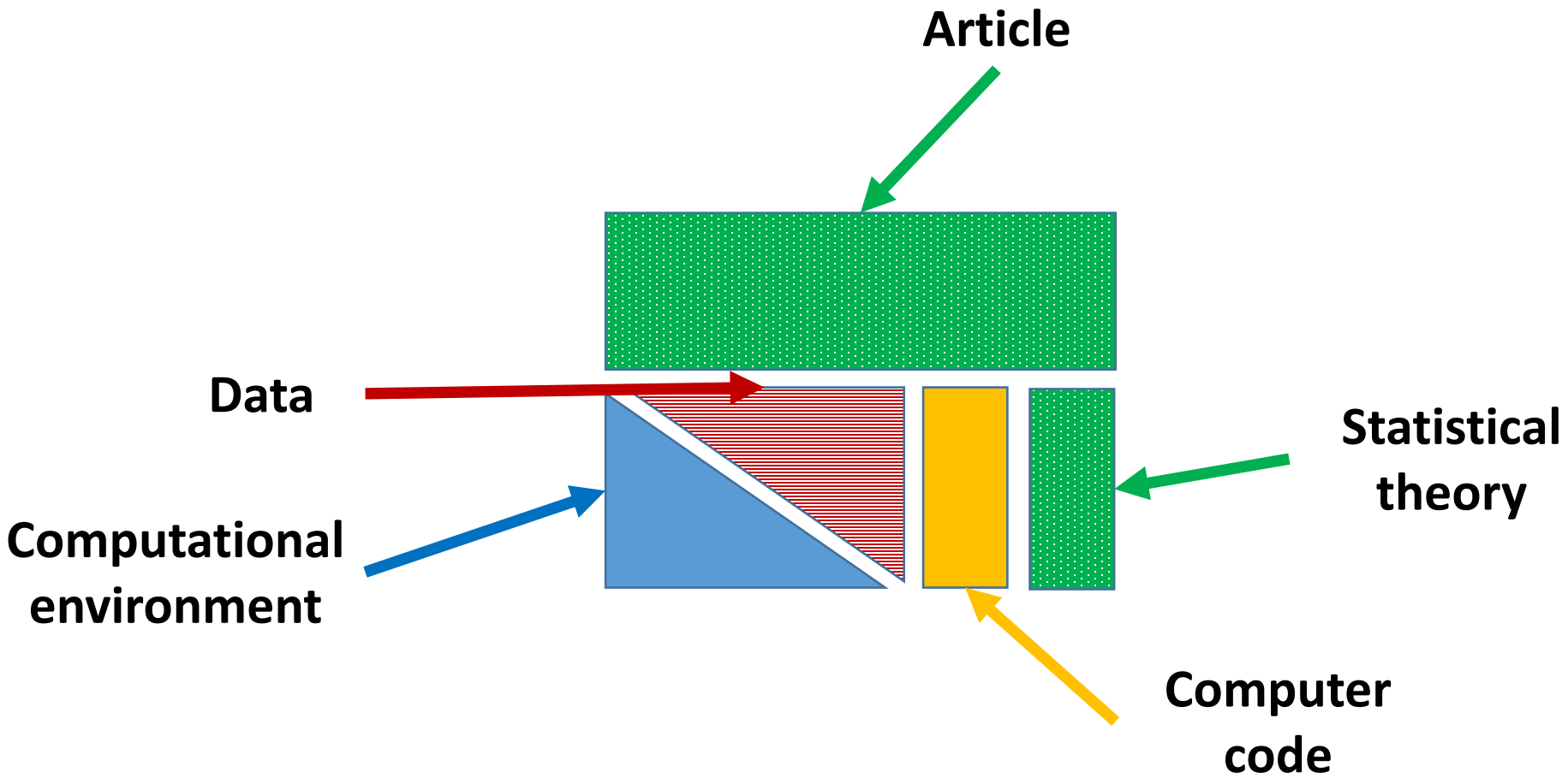
Research compendium

Research compendium

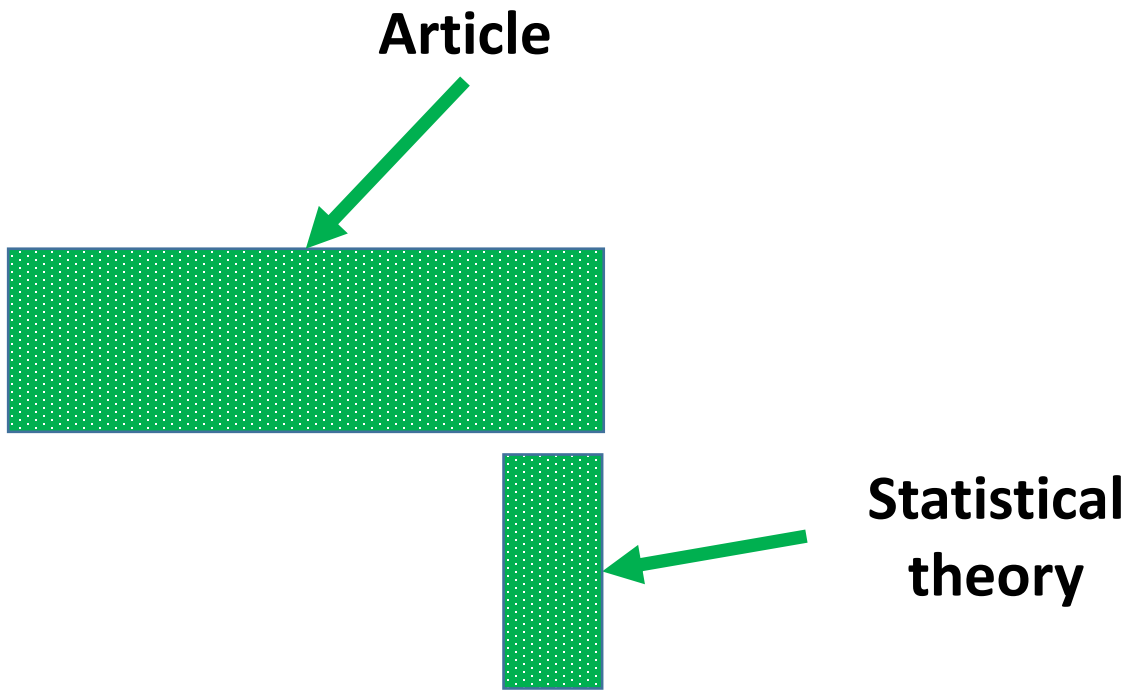
In the words of the slogan popularized by Buckheit and Donoho (1995),

> ***"a scientific publication is [...] merely advertising of the scholarship: [...] the complete software development environment and the complete set of instructions which generated the figures."***

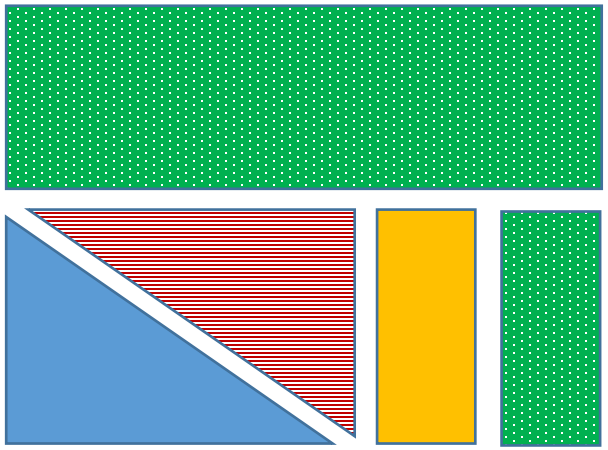
Research compendium



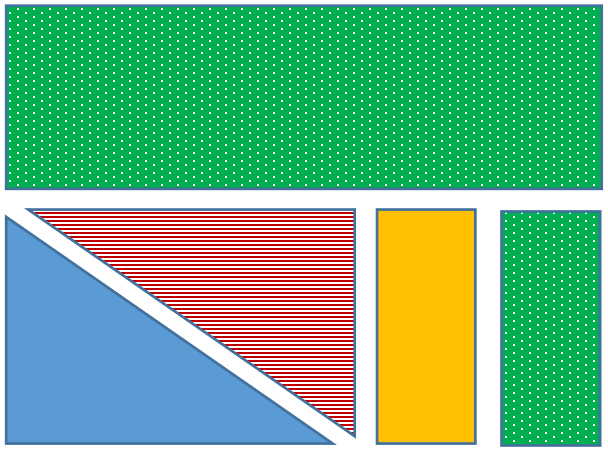
Partial research compendium is not robust



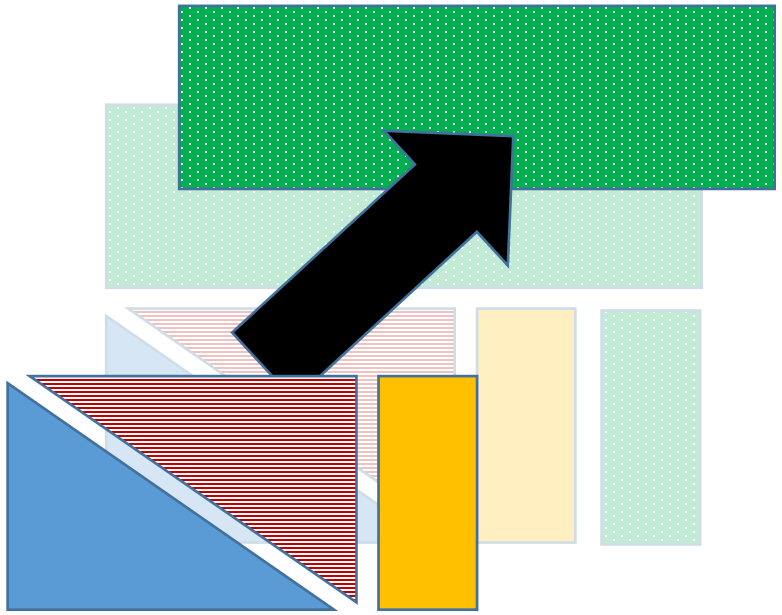
Research compendium



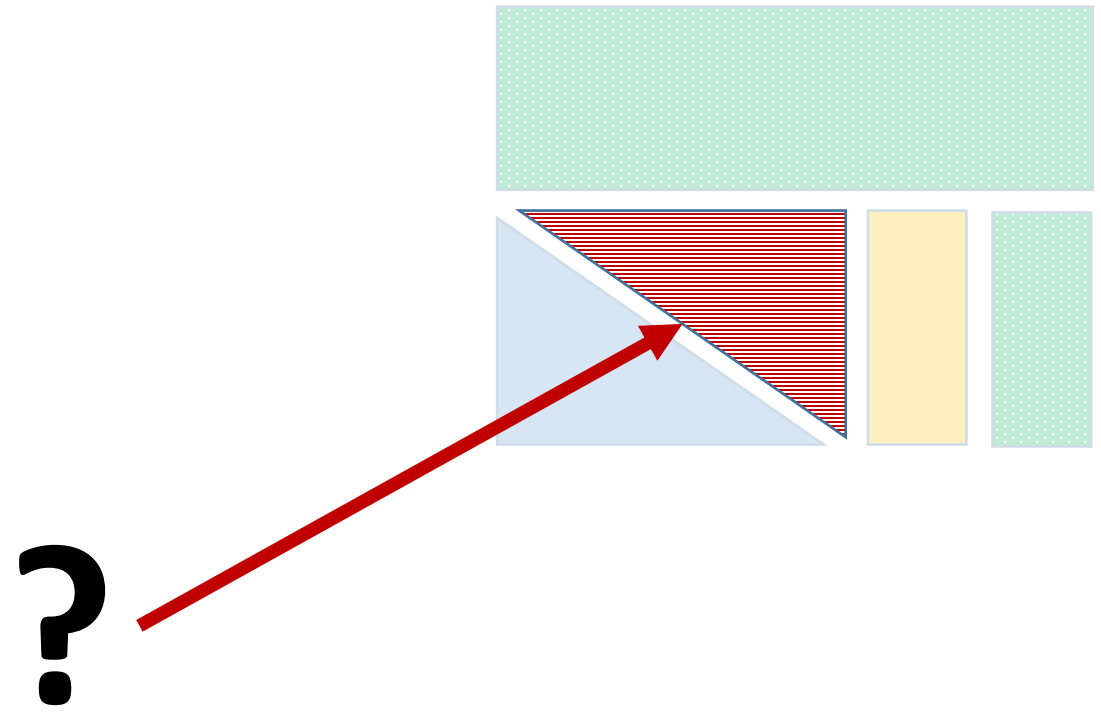
Do we have all the pieces?



Does code + data + compute create output?



Data provenance is important



Data access is important

Data access

- Public-use and shared confidential data

ICPSR
Sharing data to advance science

IPUMS USA
U.S. Census and American Community Survey microdata from 1850 to the present.
VISIT SITE

CASD

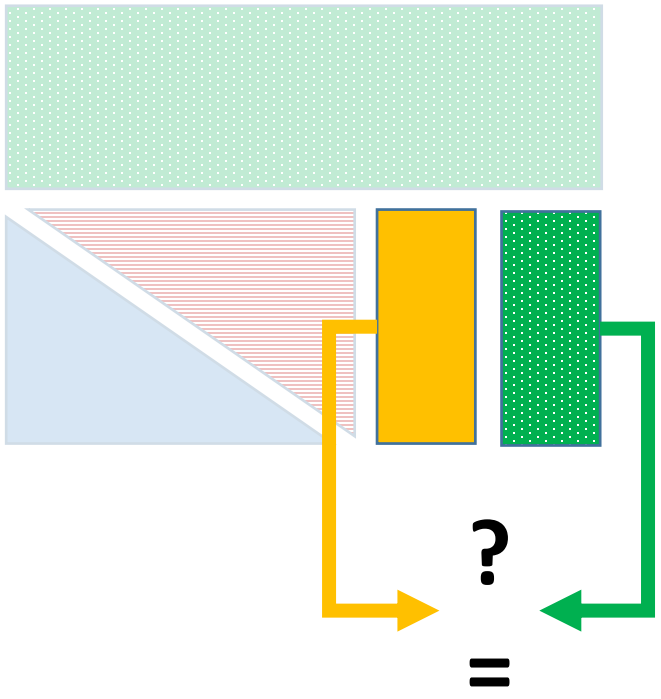
CRDCN Canadian Research Data Centre Network

FSRDC

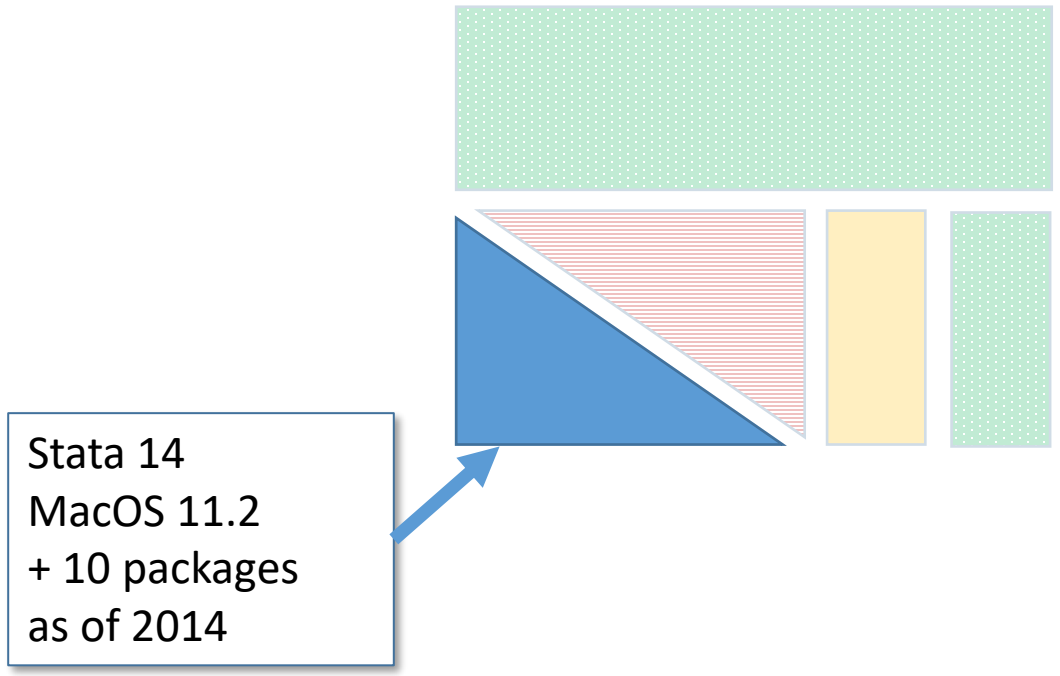
IAB INSTITUT FÜR ARBEITSMARKT- UND BERUFSFORSCHUNG
Die Forschungseinrichtung der Bundesagentur für Arbeit

CIQSS | QICSS
CENTRE INTERUNIVERSITAIRE QUÉBÉCOIS DE STATISTIQUES SOCIALES
QUEBEC INTER-UNIVERSITY CENTER FOR SOCIAL STATISTICS

Correctness of code is important



Is the computational environment completely defined?



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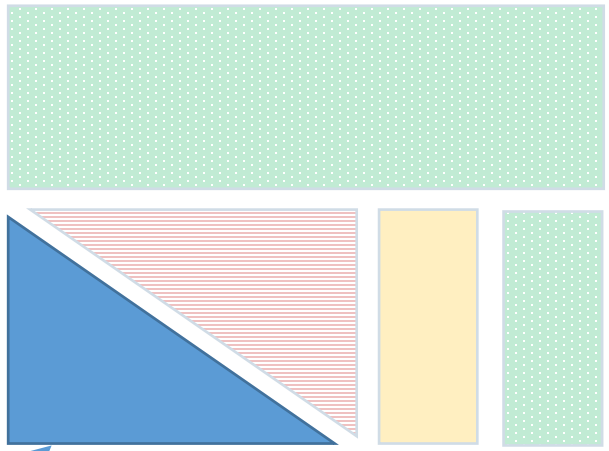
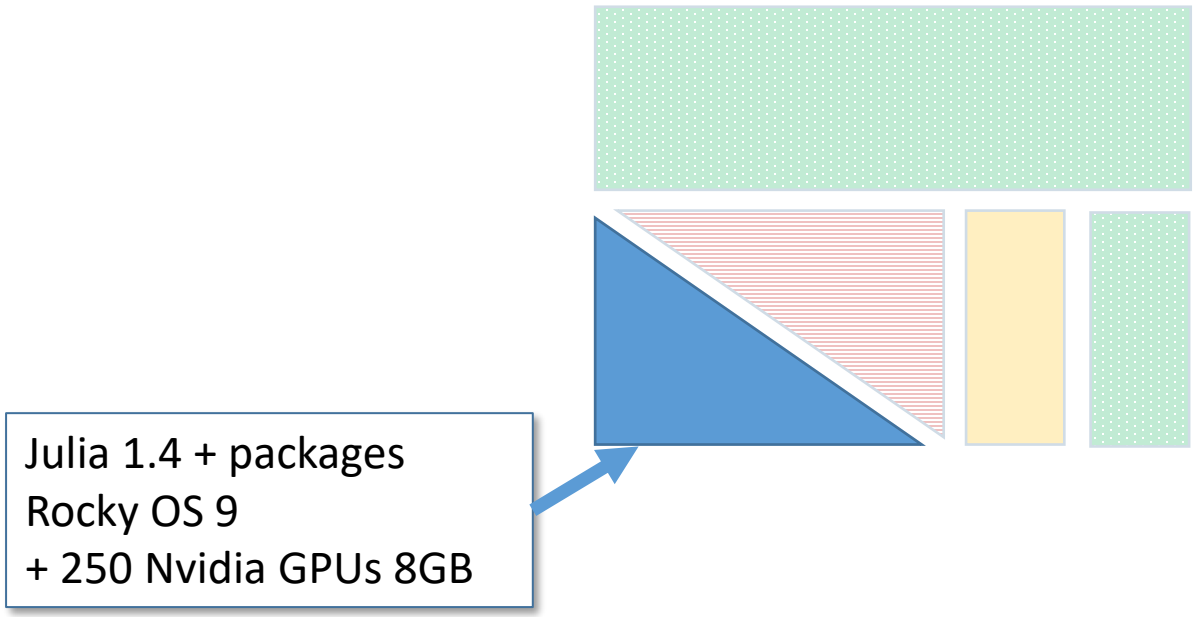


R 3.6.2
Ubuntu 14.4
+ gazillion libraries
as of 2014

Is the computational environment completely defined?



Computational empathy = “pity the poor replicator”

Experience of irreproducibility as a risk factor for poor mental health in biomedical science doctoral students: A survey and interview-based study

AUTHORS
Nasser Lubega, Abigail Anderson, Nicole Nelson

Computational empathy = transparency

Monitoring transparency

Journals check different things

- **AEA**: after acceptance, is code complete, is data cited, does code run (if data accessible)
- **AJPS**: after acceptance, is data documented, is code complete, does code run (if data accessible)?
- **CJE**: after acceptance, is package plausibly complete?
- **Astrophysics**: are data properly cited, are interactive graphics also accessible, is data standardized?

Monitoring transparency

Journals are not the end…

- Reproducibility and replicability is checked in graduate class work (even in undergraduate!)
- Replication Games!
- Articles build on the foundations laid by others
  - Rely on previous findings
  - Question and recompute previous findings

Painful when it fails

THE REVIEW OF ECONOMIC STUDIES

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Volume 90, Issue 2
March 2023

< Previous

JOURNAL ARTICLE

Retraction of: Growing up in a Recession

The Review of Economic Studies, Volume 90, Issue 2, March 2023, Page 1009, https://doi.org/10.1093/restud/rdac085

Published: 11 January 2023

This is a retraction to: *The Review of Economic Studies*, Volume 81, Issue 2, April 2014, Pages 787–817, https://doi.org/10.1093/restud/rdt040

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Issue Section: Retraction

This is a retraction of: Paola Giuliano, Antonio Spilimbergo, Growing up in a Recession, *The Review of Economic Studies*, Volume 81, Issue 2, April 2014, Pages

The Journal of FINANCE
The Journal of THE AMERICAN FINANCE ASSOCIATION

RETRACTION | Free Access

Retracted: Risk Management in Financial Institutions

This article retracts the following:

First published: 05 July 2021 | https://doi.org/10.1111/jofi.13064

PDF | TOOLS

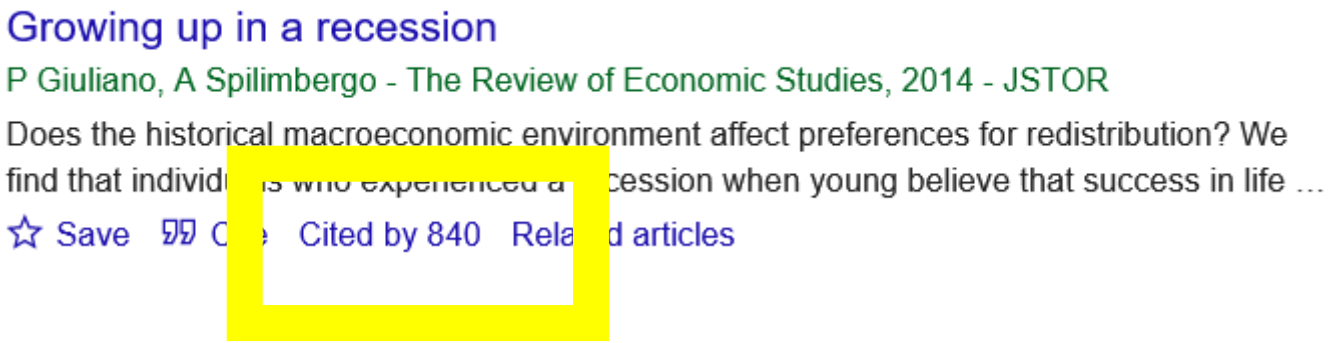
This article retracts the following:

Adriano A. Rampini, S. Viswanathan, Guillaume Vuillemey

https://doi.org/10.1111/jofi.12868

First published: 12 December 2019

Correction of the academic record



Powerful when it works

Pretest with Caution: Event-Study Estimates after Testing for Parallel Trends

Jonathan Roth

AMERICAN ECONOMIC REVIEW: INSIGHTS
VOL. 4, NO. 3, SEPTEMBER 2022
(pp. 305-22)

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Article Information

Abstract

This paper discusses two important limitations of the common practice of testing for preexisting differences in trends ("pre-trends") when using difference-in-differences and related methods. First, conventional pre-trends tests may have low power. Second, conditioning the analysis on the result of a pretest can distort estimation and inference, potentially exacerbating the bias of point estimates and under-coverage of confidence intervals. I analyze these issues both in theory and in simulations calibrated to a survey of recent papers in leading economics journals, which suggest that these limitations are important in practice. I conclude with practical recommendations for mitigating these issues.

Availability key

I searched on Google Scholar for occurrences of the phrase "event study" in papers published in the *American Economic Review*, *American Economic Journal: Applied Economics*, and *American Economic Journal: Economic Policy* between 2014 and June 2018.[1] I chose the phrase "event study" since researchers often evaluate pre-trends in an event-study plot.

The search returned 70 total papers that include a figure that the authors describe as an event-study plot. I exclude 43 papers for which data to replicate the main event-study plot were unavailable.[2] I further exclude 9 papers that do not report standard errors[3] and 3 that do not normalize their estimates relative to a pretreatment period.[4] Finally, I exclude 3 papers that do not attribute a causal interpretation to their estimates so that I can benchmark the magnitude of biases from differential trends relative to the estimated causal effects. This yields a final sample of 12 papers. For papers that present multiple event-study plots, I focus on the first plot meeting the criteria above, which I view as a reasonable proxy for the main specification.

Roth (2022) re-computes papers

- Takes 12 papers with accessible papers
- Re-runs the analysis for each of them, adding his special twist (in this case, looking at the power of pre-trend tests)
- Not possible as meta-analysis: requires access to code and data

Similarly: de Chaisemartin + Ramirez-Cuellar (forthcoming, AEJ:Applied)

At What Level Should One Cluster Standard Errors in Paired and Small-Strata Experiments?

Clément de Chaisemartin

Jaime Ramirez-Cuellar

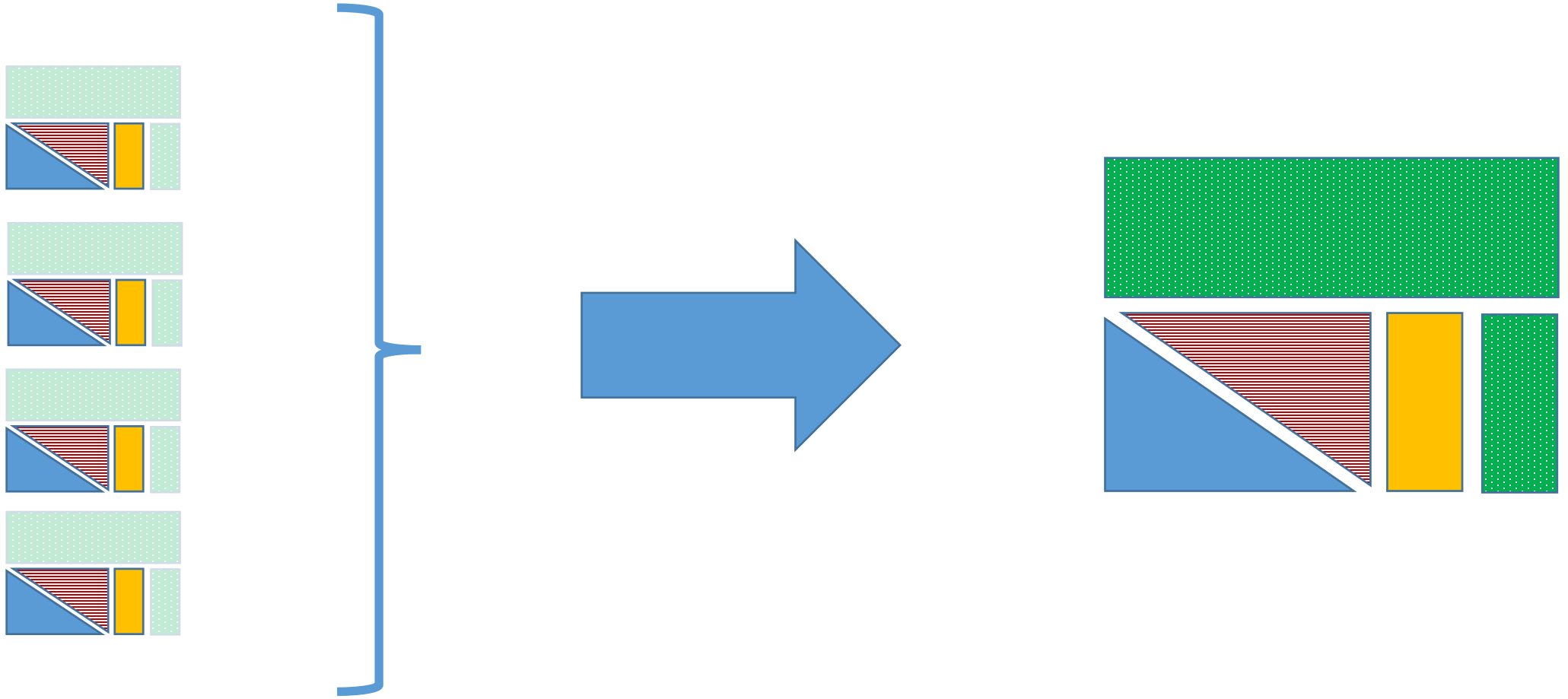
AMERICAN ECONOMIC JOURNAL: APPLIED ECONOMICS (FORTHCOMING)

Article Information

Abstract

In matched-pairs experiments in which one cluster per pair of clusters is assigned to treatment, to estimate treatment effects, researchers often regress their outcome on a treatment indicator and pair fixed effects, clustering standard errors at the unit-ofrandomization level. We show that even if the treatment has no effect, a 5%-level t-test based on this regression will wrongly conclude that the treatment has an effect up to 16.5% of the time. To fix this problem, researchers should instead cluster standard errors at the pair level. Using simulations, we show that similar results apply to clustered experiments with small strata.

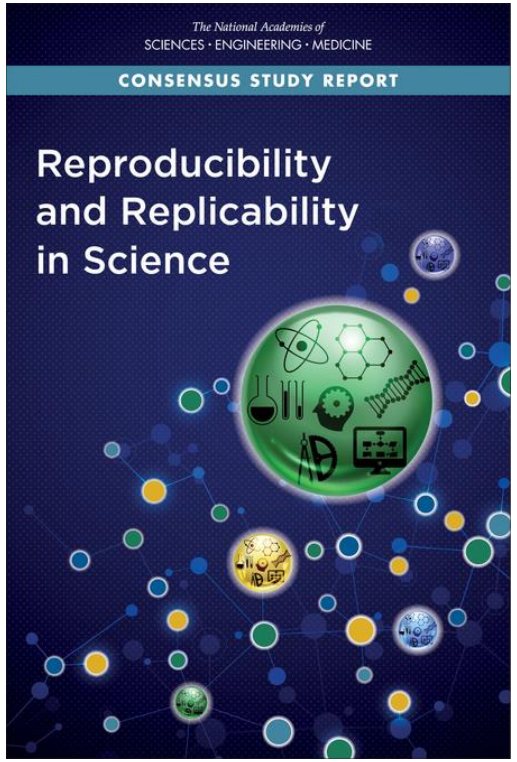
Do we have all the pieces?



Why

Replication continuum

https://doi.org/10.17226/25303



Reproducibility

- Narrow Replication (Pesaran 2003)
- Pure Replication (Hamermesh 2007)
- Verification (Clemens 2015)

Replication continuum

Same data	Same code	Same methods	Same context

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Replication continuum

Reproducibility

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Replicability

- Wide Replication (Pesaran 2003)
- Statistical Replication (Hamermesh 2007)
- Reproduction/Reanalysis (Clemens 2015)

Replication continuum

Same data	**Different code or software**	Same methods	Same context

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Replicability

- Wide Replication (Pesaran 2003)
- Statistical Replication (Hamermesh 2007)
- Reproduction/Reanalysis (Clemens 2015)

Replication continuum

New data	Same code	Same methods	Same context
collection			

Reproducibility

- Narrow Replication (Pesaran 2003)
- Pure Replication (Hamermesh 2007)
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Replicability

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Replication continuum

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Generalizability

- Wider Replication (Pesaran 2003)
- Scientific Replication (Hamermesh 2007)
- Reanalysis/Robustness (Clemens 2015)

Replication continuum

Different data	Different code	**Different**	**Different**
	or software	**methods**	**context or**
			country

Reproducibility

- Narrow Replication (Pesaran 2003)
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Tools

Continuous updating of replication packages

AEA policy allows for revisions of packages after publication

- The initial package remains the “version of record”
- Additional versions are linked

Continuous updating of replication packages

AEA policy allows for revisions of packages after publication

- The initial package remains the "version of record"
- Additional versions are linked

Continuous updating of replication packages

- Data Editor monitors and responds to inquiries
- About 3% of yearly activity are revisions

OPENICPSR

Find Data / Data and Code for: Industrial Espionage and Productivity

A newer version of this project is available. See below for other available versions.

Data and Code for: Industrial Espionage and Productivity

Principal Investigator(s): Albrecht Glitz, Universitat Pompeu Fabra, IPEG and Barcelona GSE; Erik Meyersson, Handelsbanken Capital Markets

Version: V1

Published Versions

V2 [2022-10-06]

V1 [2020-03-23]

Industrial Espionage and Productivity

Albrecht Glitz

Erik Meyersson

AMERICAN ECONOMIC REVIEW
VOL. 110, NO. 4, APRIL 2020
(pp. 1055-1103)

Download Full Text PDF

Article Information

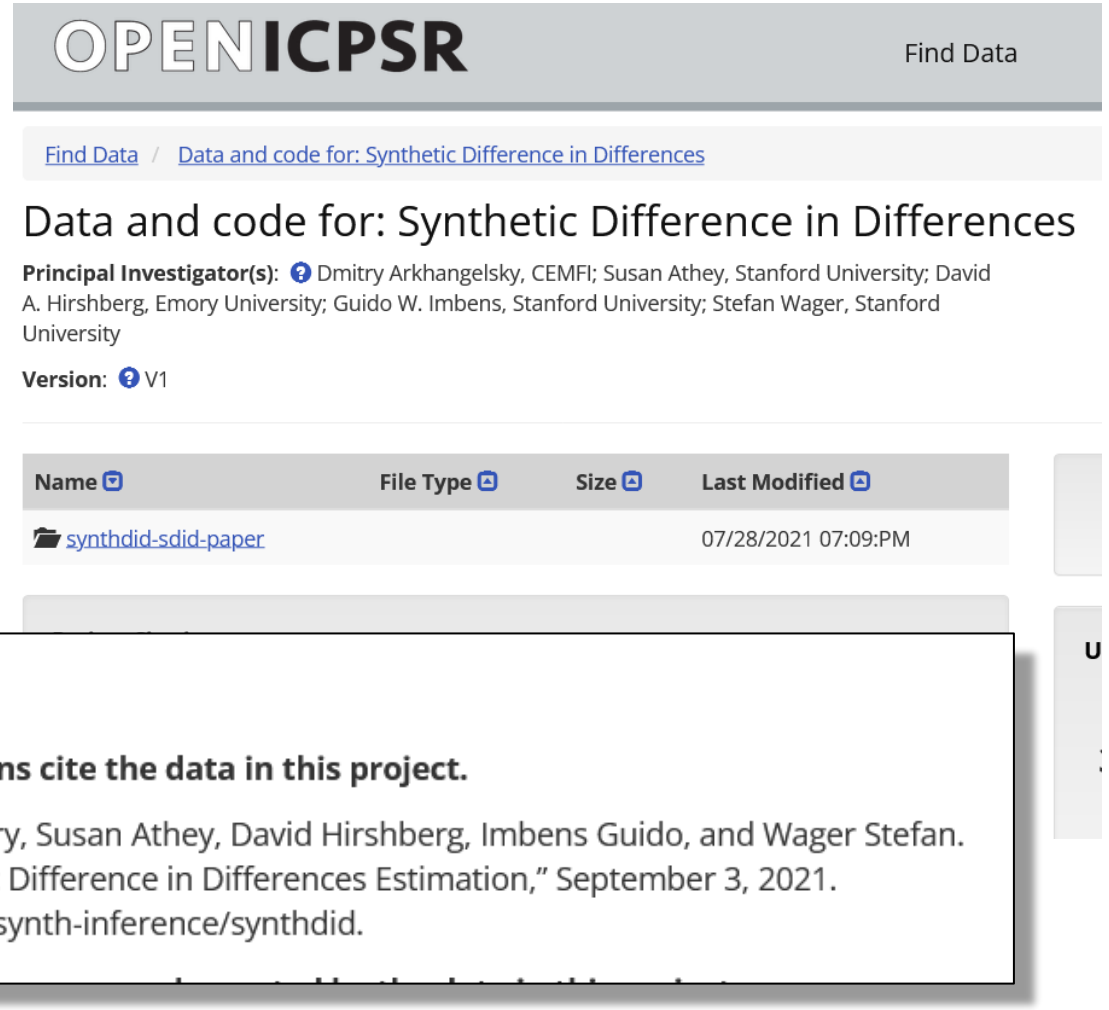
Abstract

In this paper, we investigate the economic returns to industrial espionage. We show that the flow of information provided by East German informants in the West over the period 1970–1989 led to a significant narrowing of sectoral TFP gaps between West and East Germany. These economic returns were primarily driven by relatively few high-quality pieces of information and particularly large in sectors closer to the West German technological

Linking to private sharing sites

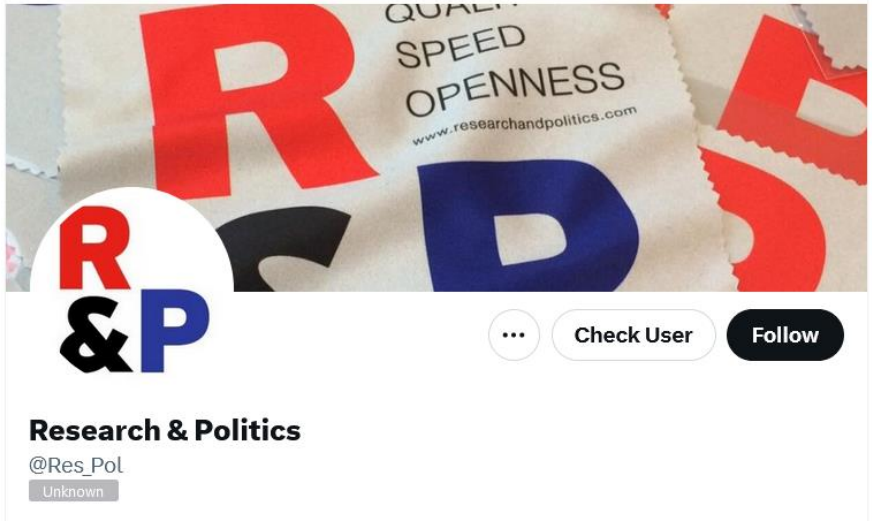
- Links to Github repositories
  - NOTE: Github.com is **NOT** an archive!
- Links to source websites

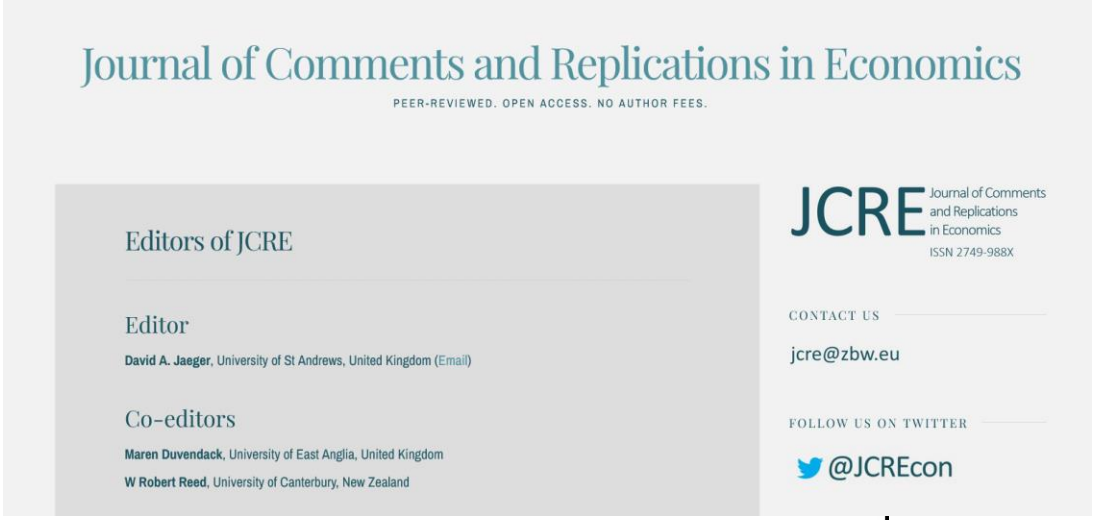
Added as part of a “related publication” taxonomy



Special journals

- Journal of Comments and Replications in Economics (JCRE)
- Journal of Applied Econometrics
- Research & Politics





New types of journals?

Check for updates

BRIEF REPORT

REVISED **Studying the prominence effect amid the COVID-19 crisis: implications for public health policy decision-making. [version 2; peer review: 2 approved]**

Yossi Maaravi [1], Ben Heller [2]

Author details

ALL METRICS

1522 VIEWS

101 DOWNLOADS

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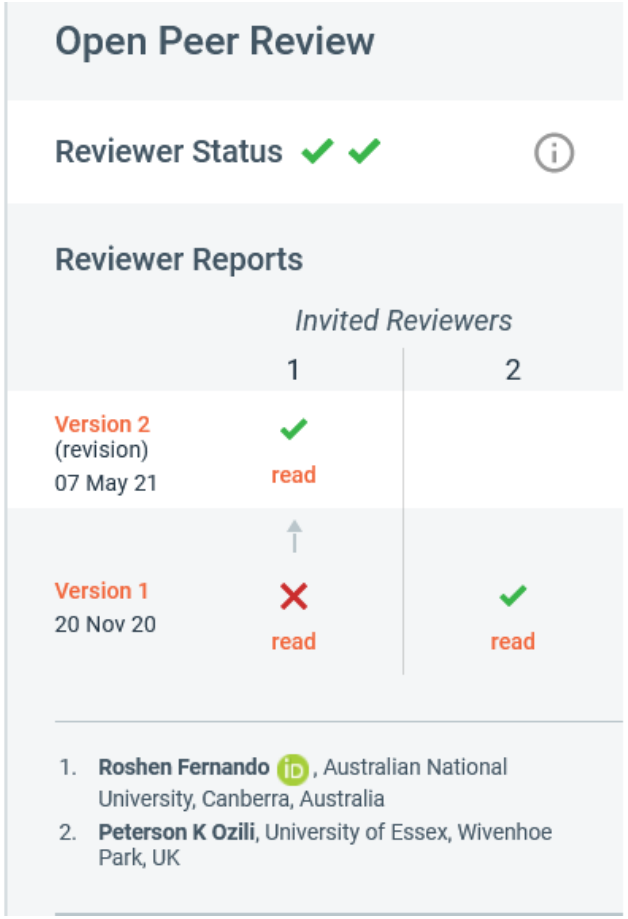
This article is included in the Emerging Diseases and Outbreaks gateway.

This article is included in the Coronavirus collection.

Abstract

The novel coronavirus disease 2019 (COVID-19) has brought with it crucial policy- and decision-making situations, especially when making judgments between financial and health concerns. One particularly relevant decision-making phenomenon is the prominence effect, where decision-makers base their decisions on the most prominent attribute of the object at hand (e.g., health concerns) rather than weigh all the attributes together. This bias diminishes when the decision-making mode inhibits heuristic processes. In this study, we tested the prominence of health vs. financial concerns across two decision-making modes - choice (prone to heuristics) and matching (mitigates heuristics) - during the peak of the COVID-19 in the UK using Tversky *et al.*'s classic experimental paradigm. We added to the classic experimental design a priming condition. Participants were presented with two casualty-minimization programs, differing in lives saved and costs: program X would save 100 lives at the cost of 55-million-pound sterling



Open Peer Review

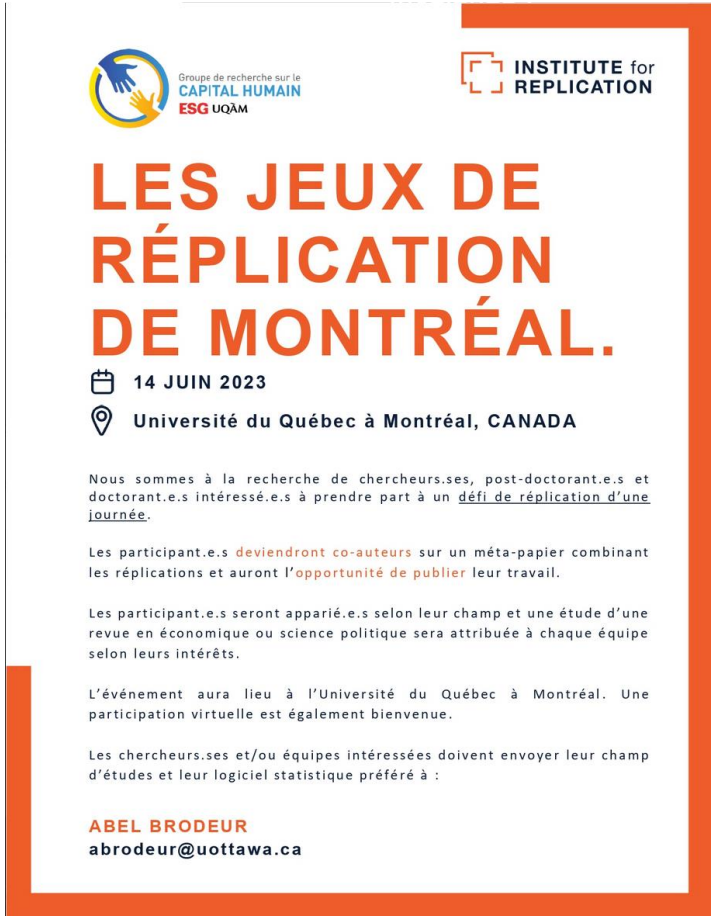
Reviewer Status ✓ ✓

Reviewer Reports

	Invited Reviewers	
	1	**2**
Version 2 (revision) 07 May 21	✓ read	
Version 1 20 Nov 20	✗ read	✓ read

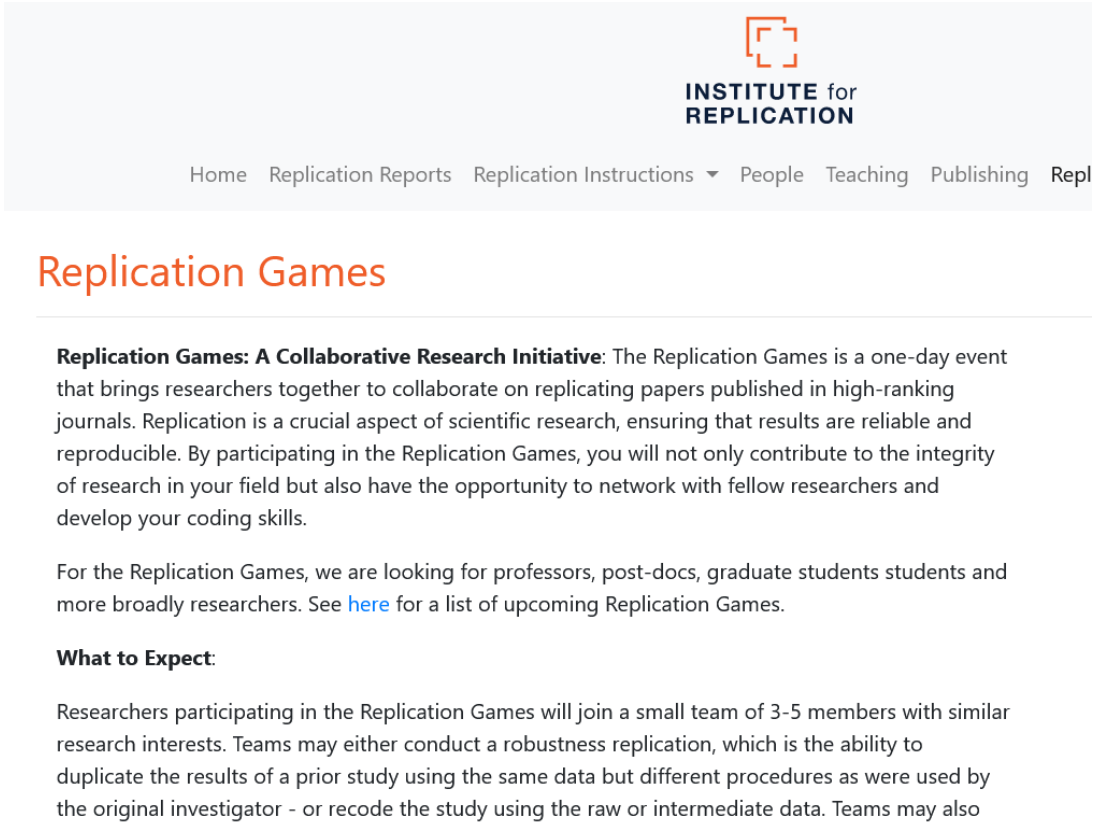
1. **Roshen Fernando**, Australian National University, Canberra, Australia
2. **Peterson K Ozili**, University of Essex, Wivenhoe Park, UK

Generating findings

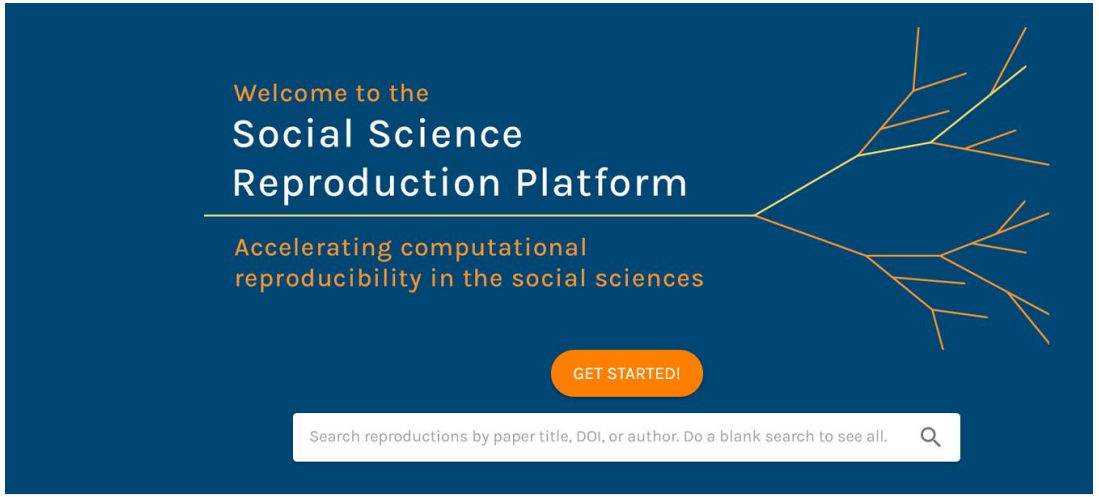


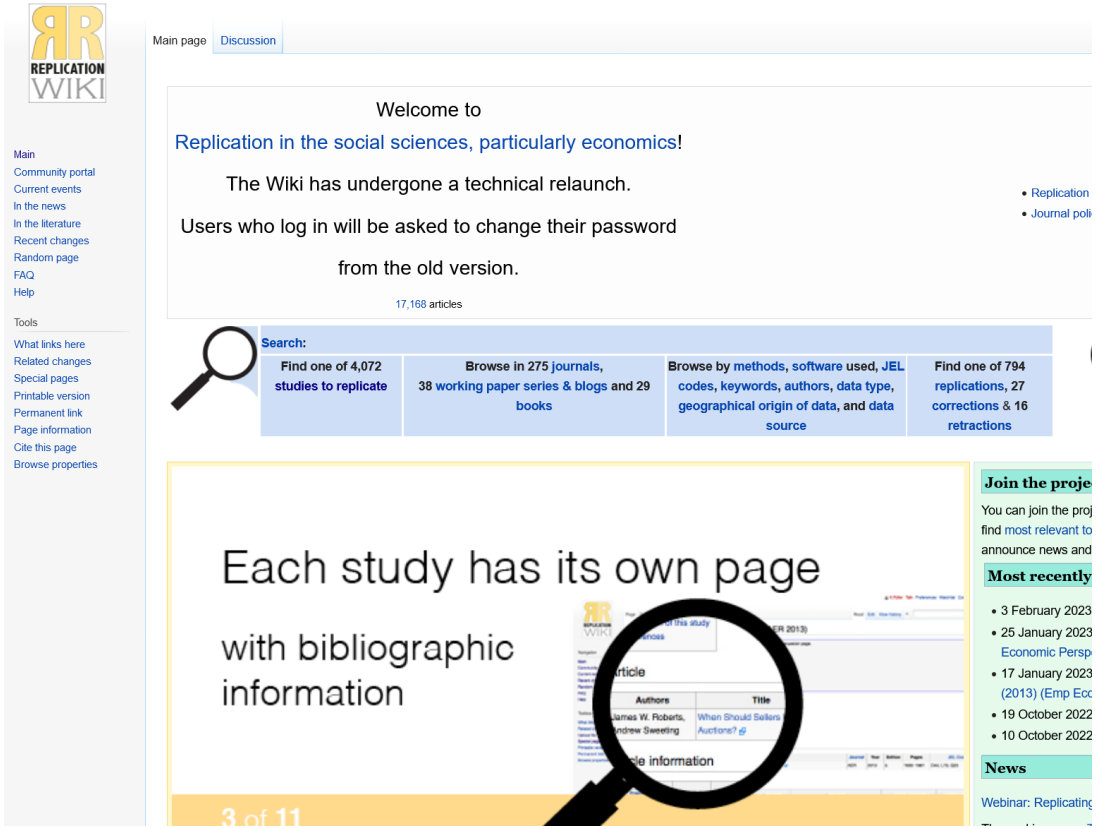
Replication games, challenges, etc.

- https://i4replication.org/description.html
- “Hackathon” for data
- 70+ people in multiple teams, not just econ

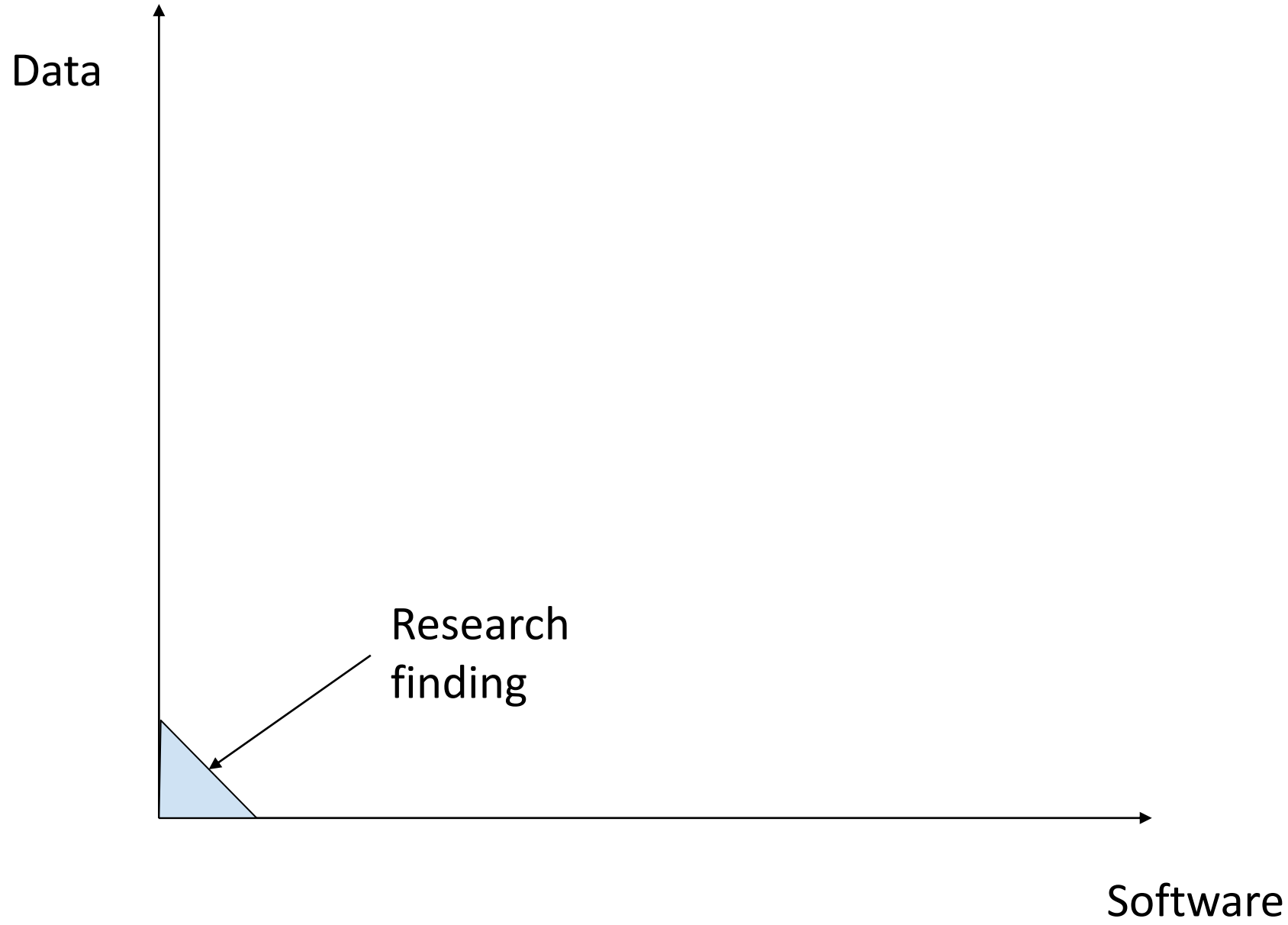


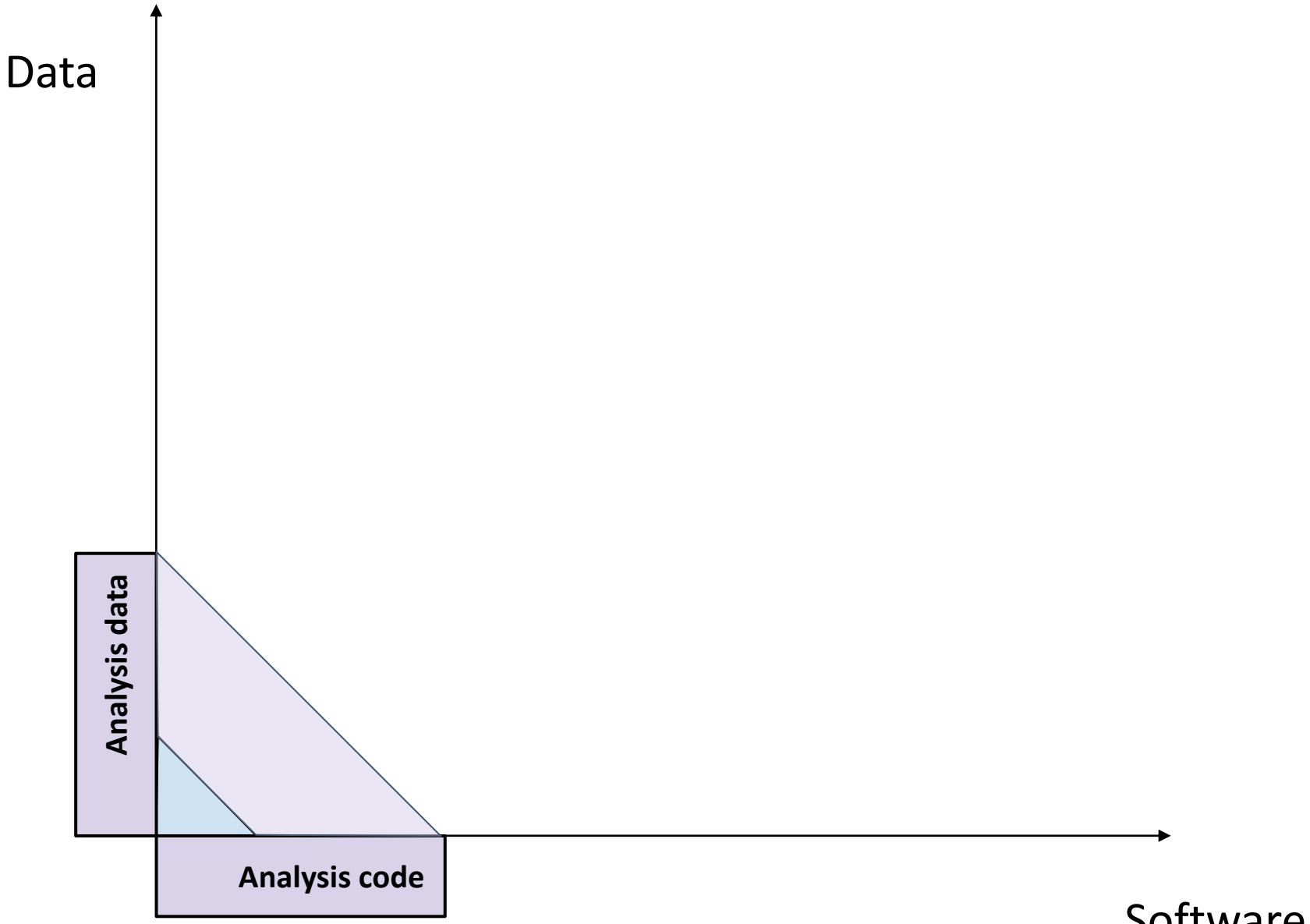
Classwork, but where to go?





Pushing the boundaries


Data
Research
finding
Software


Data
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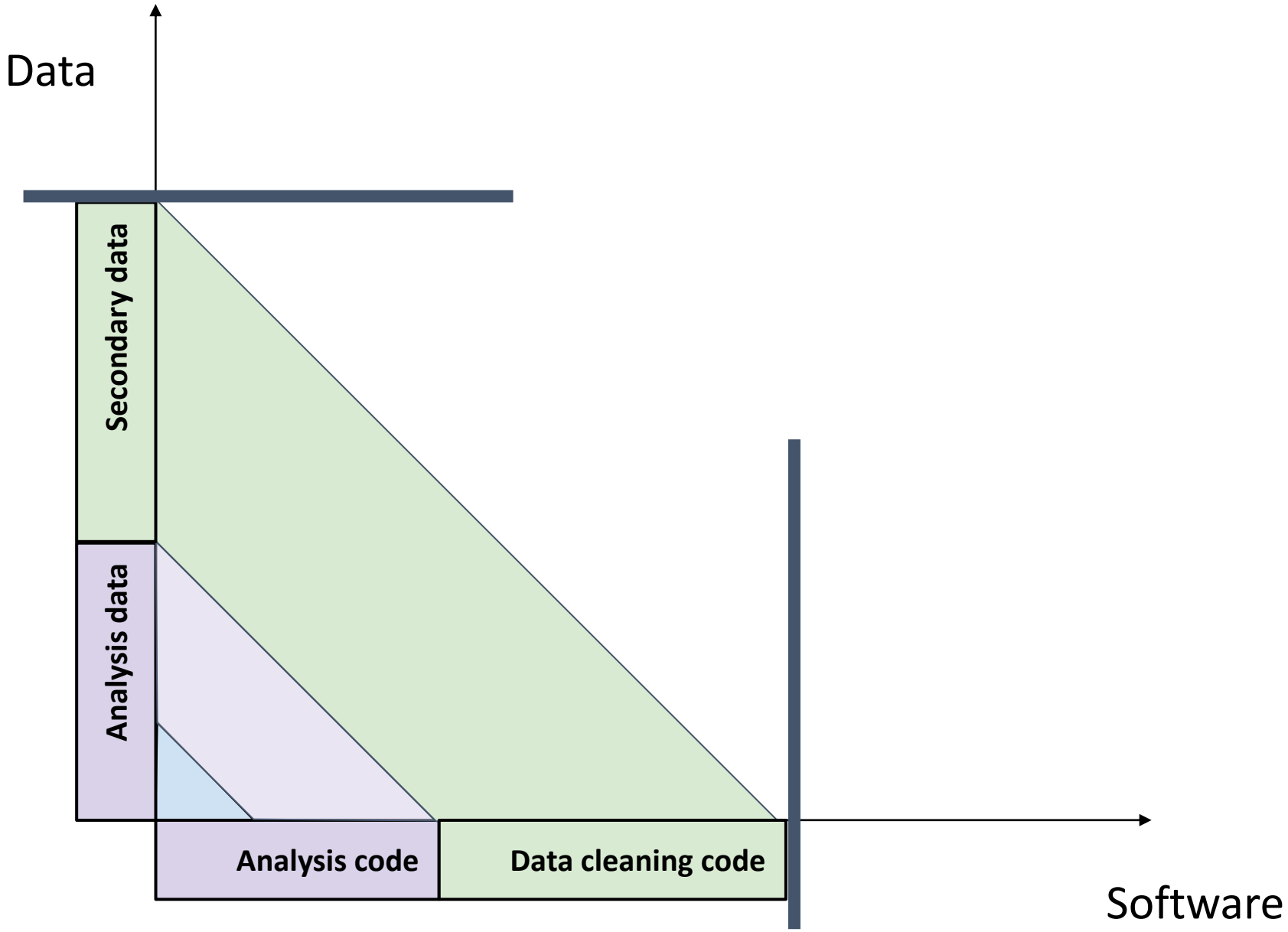
Analysis code
Software


Data
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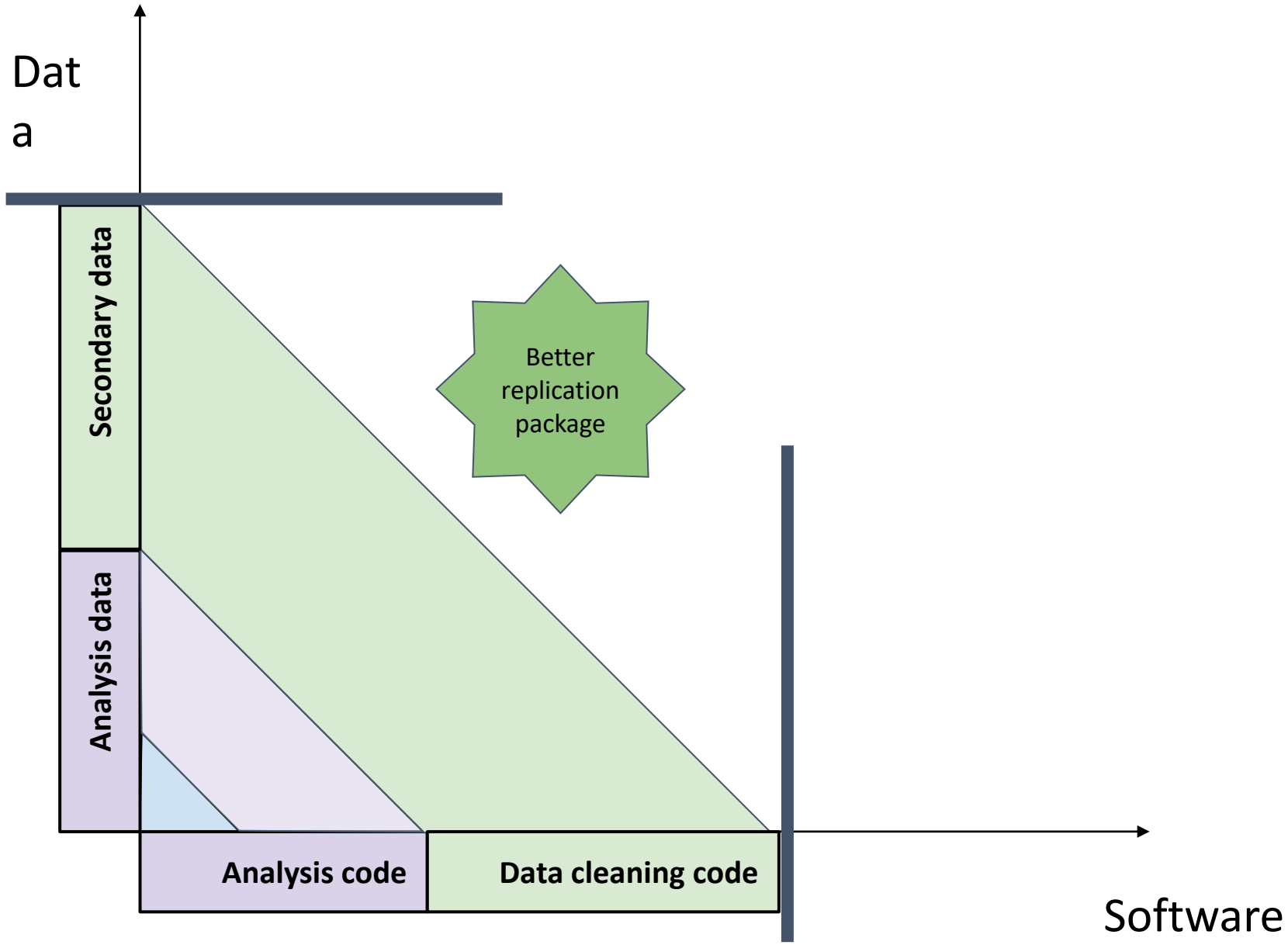
Analysis data
Analysis code
Data cleaning code
Software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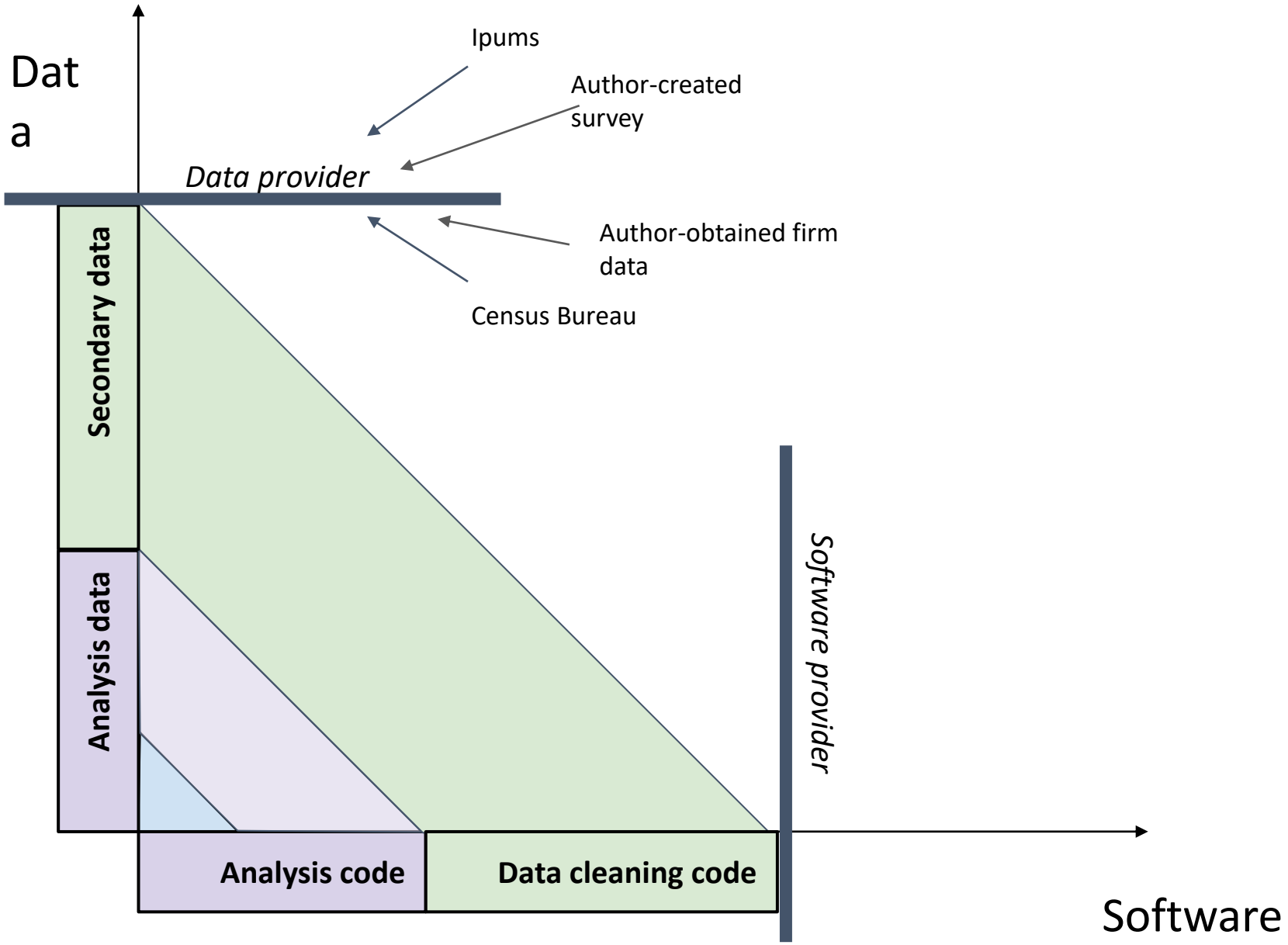
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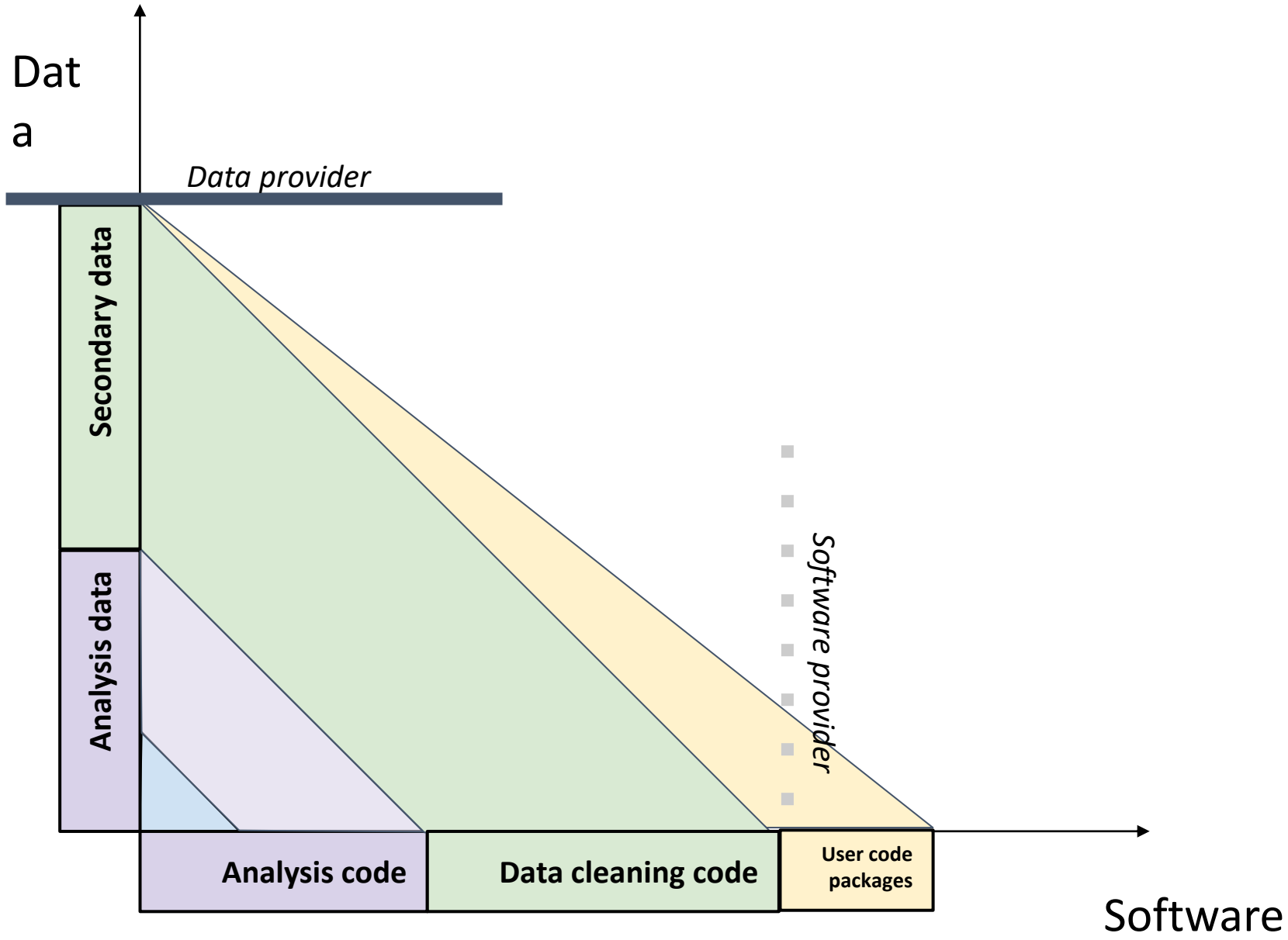
Software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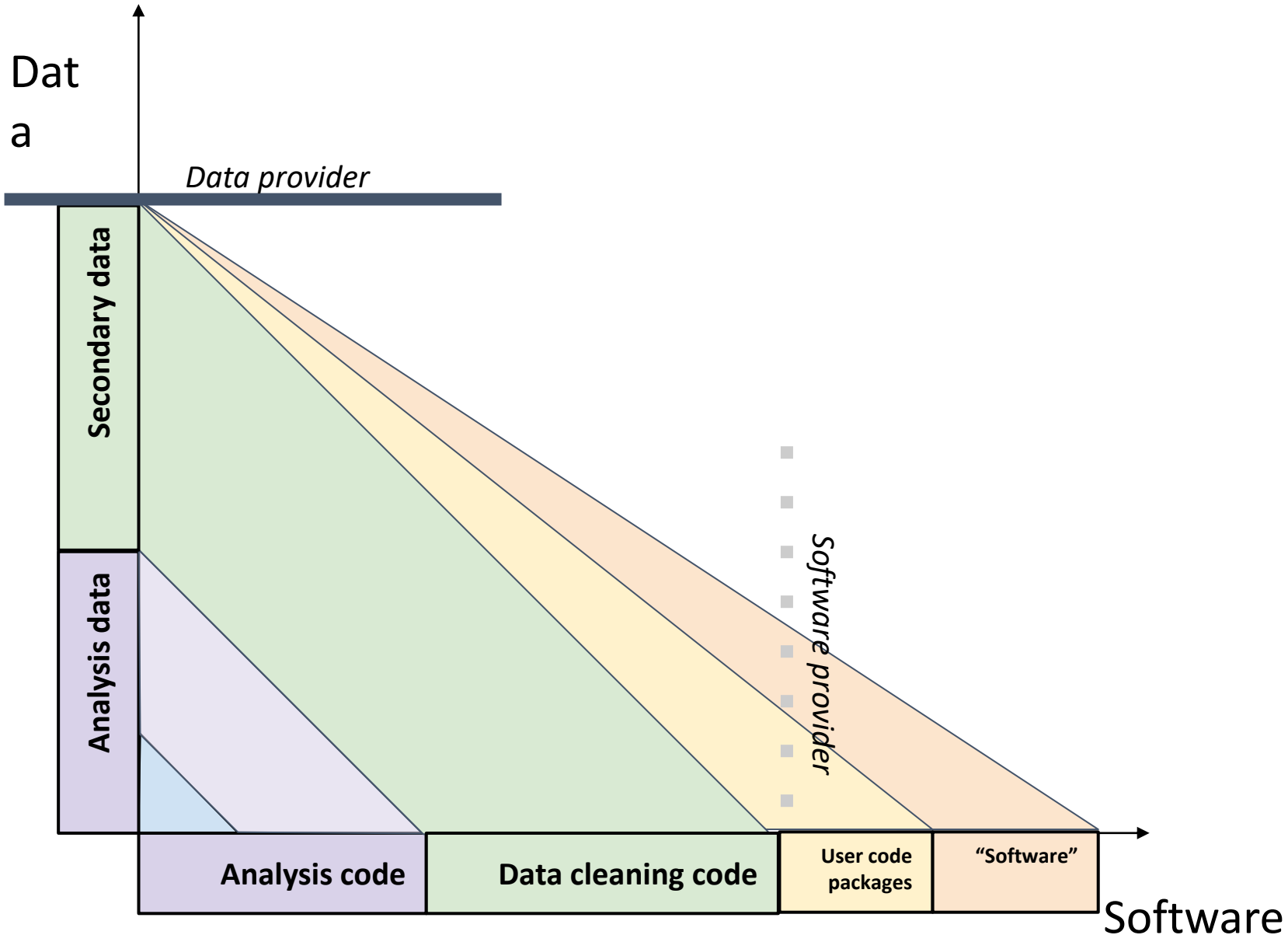
Software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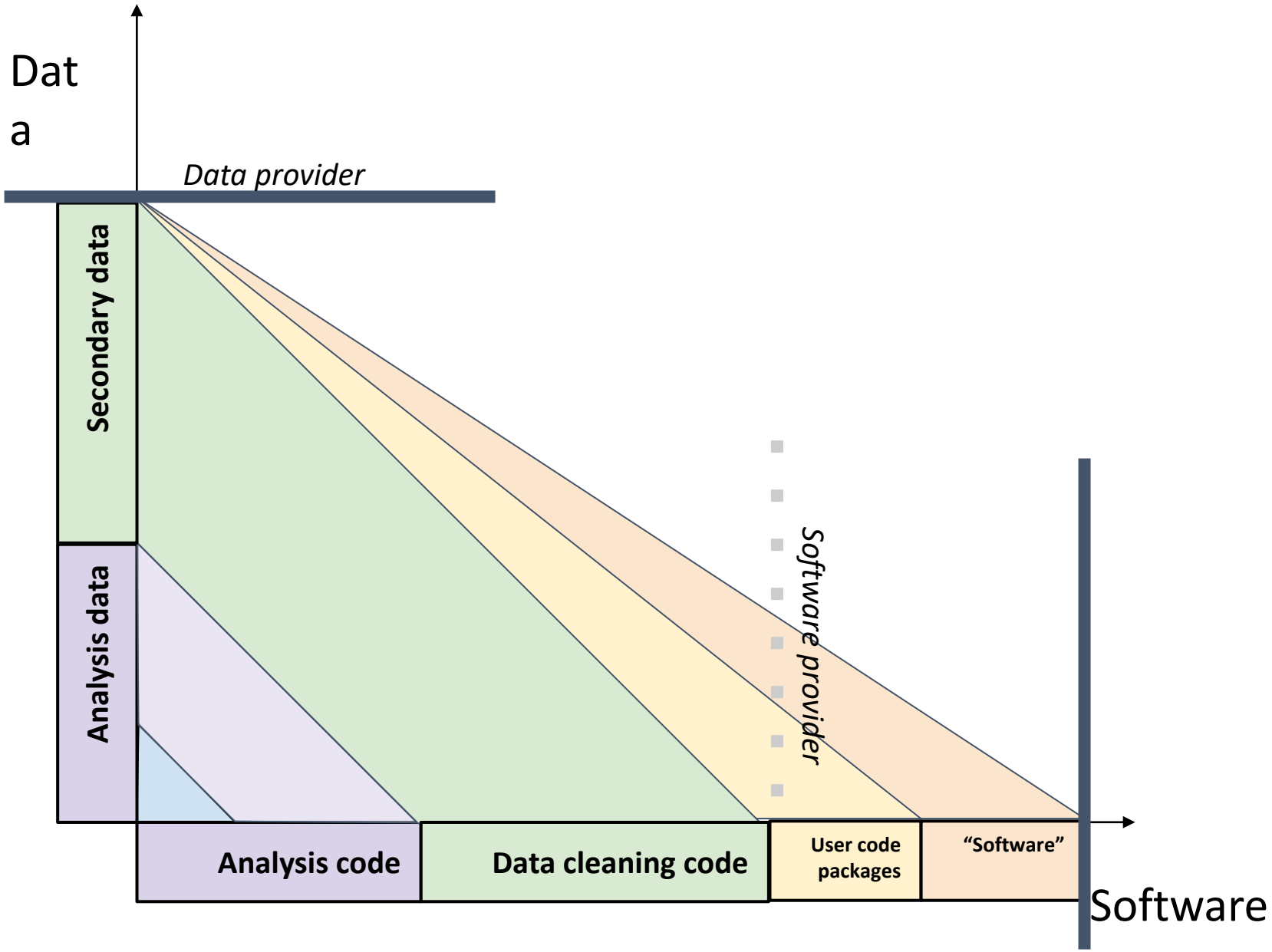
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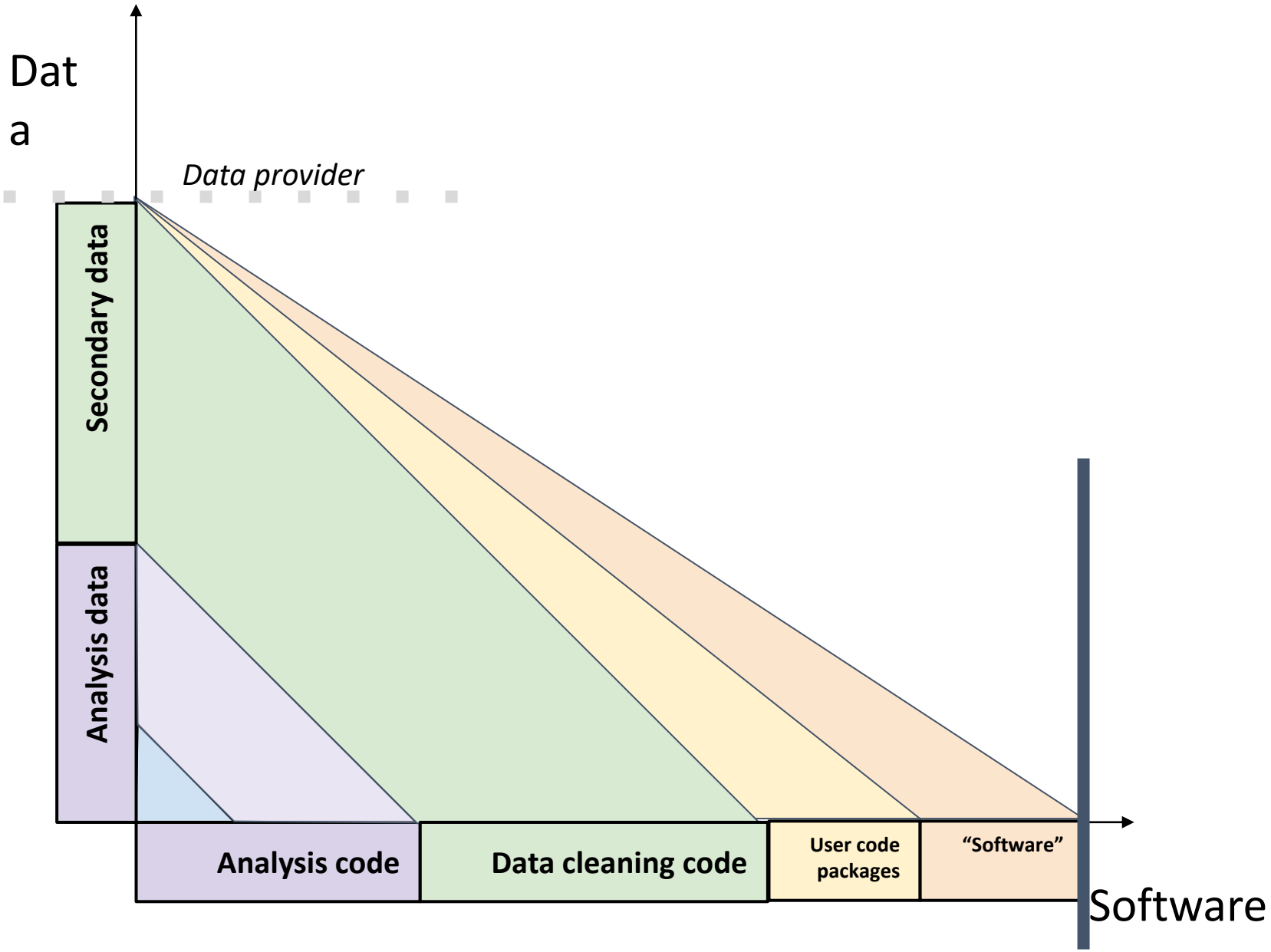
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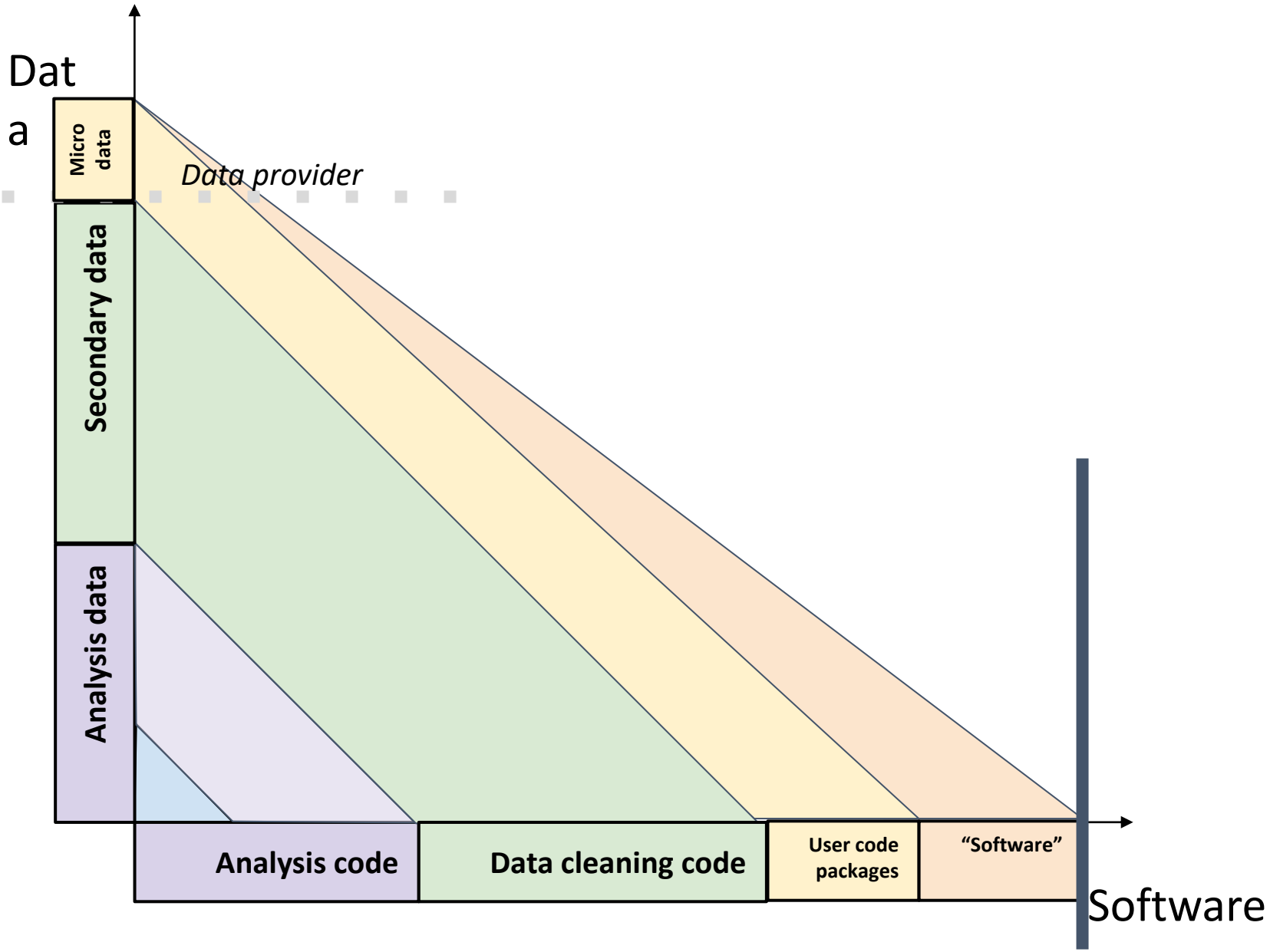
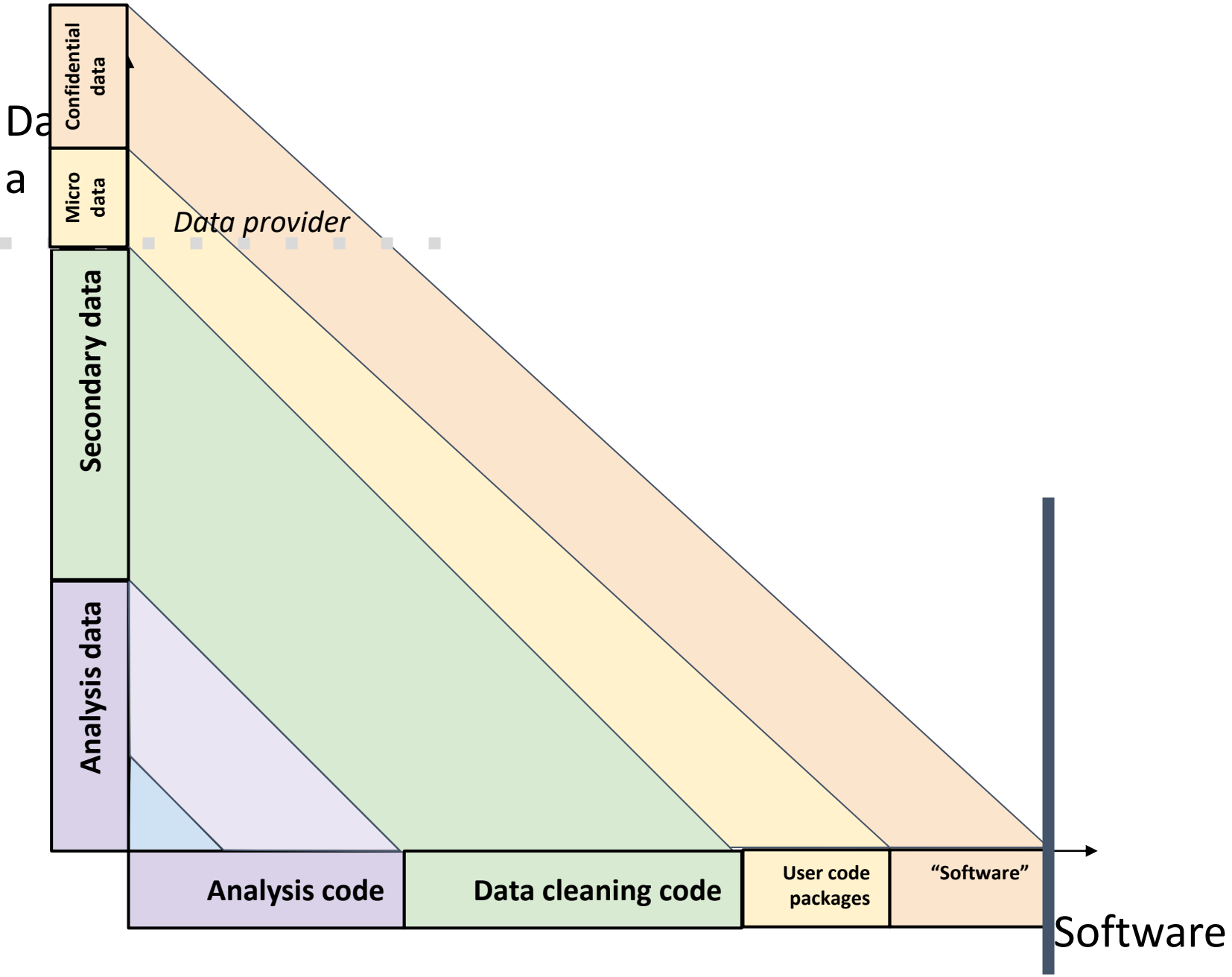

Data
Micro data
Data provider
Secondary data
Analysis data
Analysis code
Data cleaning code
User code packages
“Software”
Software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Micro data
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Secondary data
Analysis data
Analysis code
Data cleaning code
User code packages
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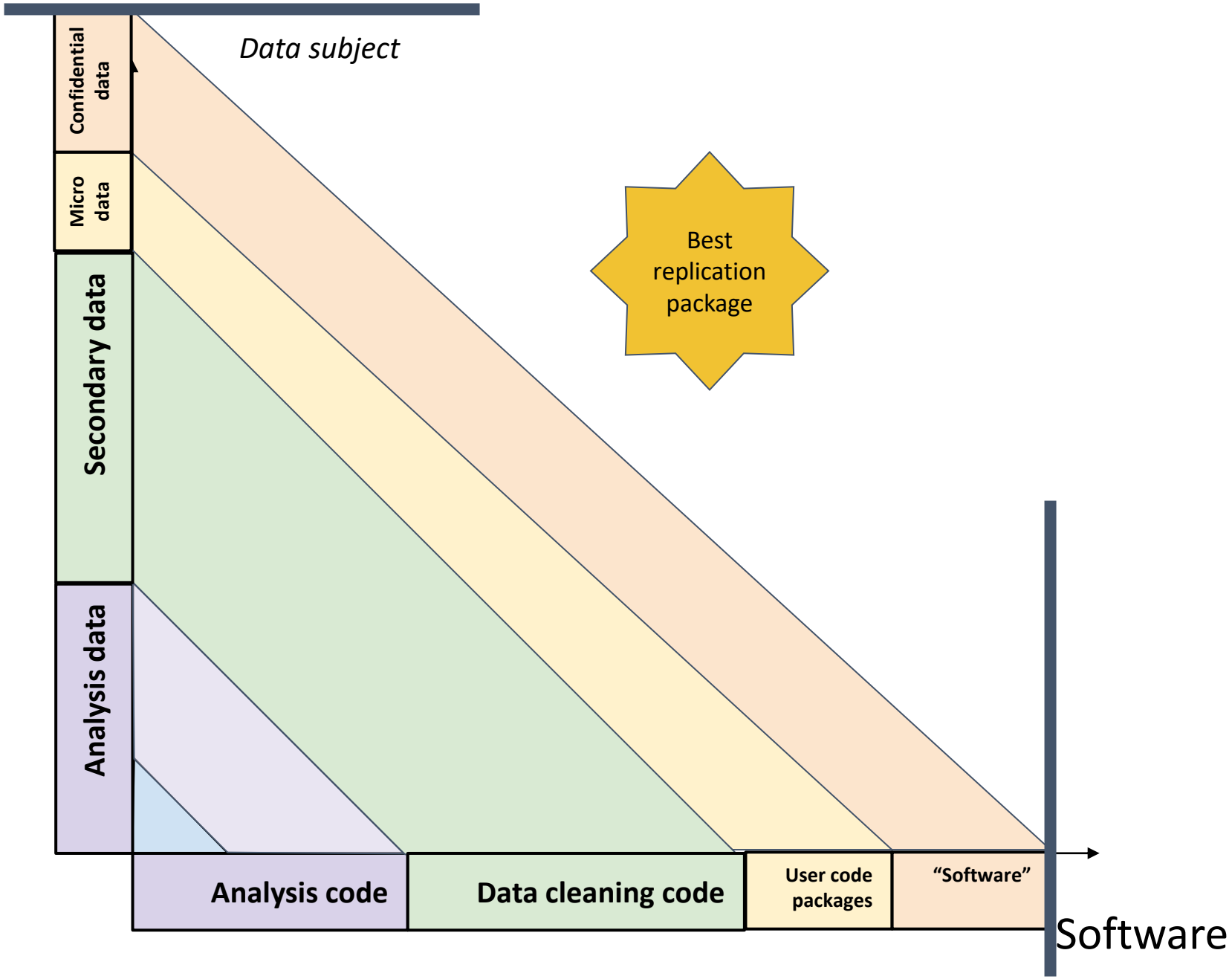
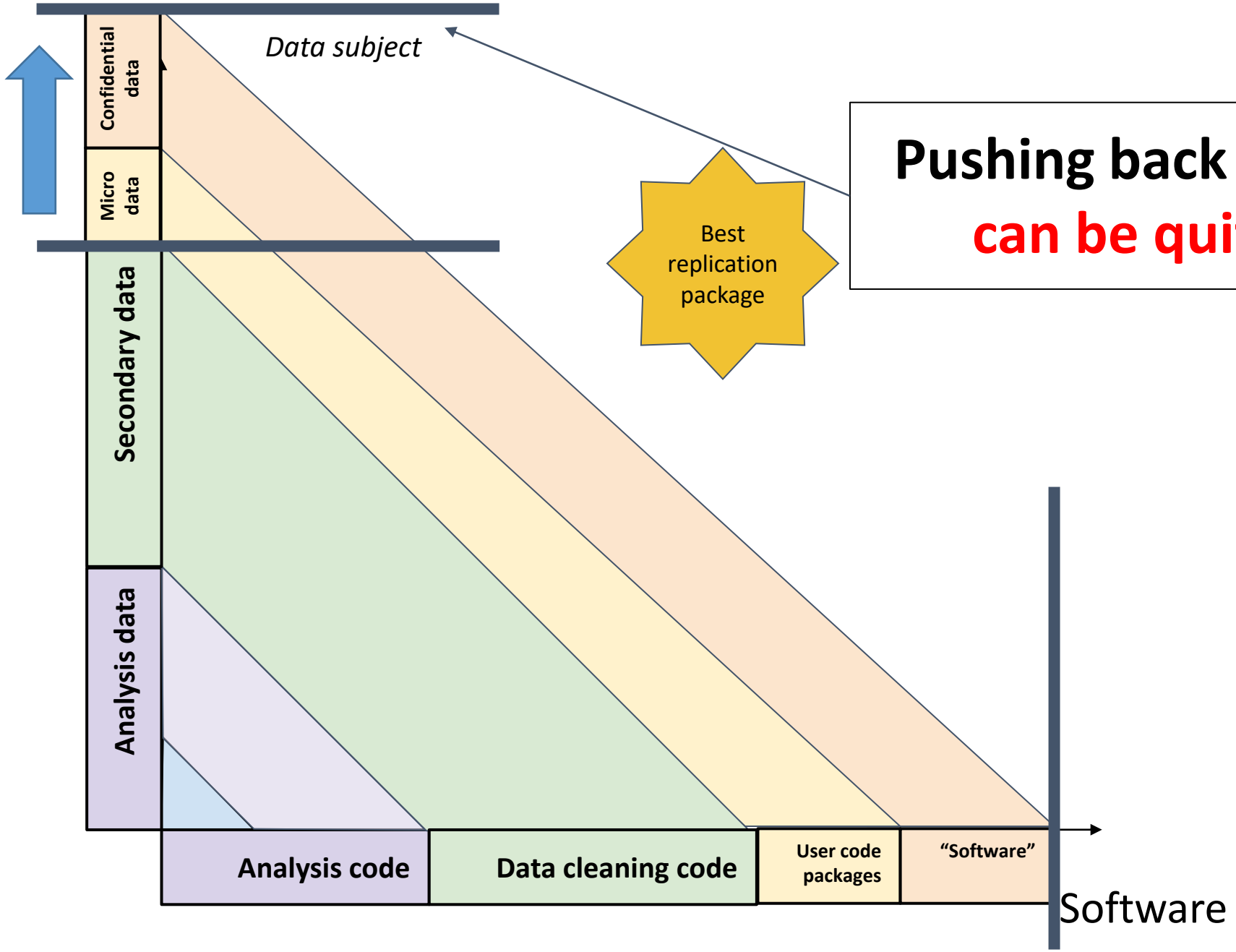
Software


Data subject
Confidential data
Micro data
Secondary data
Analysis data
Best replication package
Analysis code
Data cleaning code
User code packages
“Software”
Software



Pushing back this boundary
can be quite difficult!

Conclusion

Transparency and reproducibility…

- … are critical foundations for future research
- … do not end with the article publication
- … need testing
- … need dissemination platforms that allow for multiple versions

Goal: Transportability

Any standards, tools, methods: must be transportable across journals (no custom solutions)

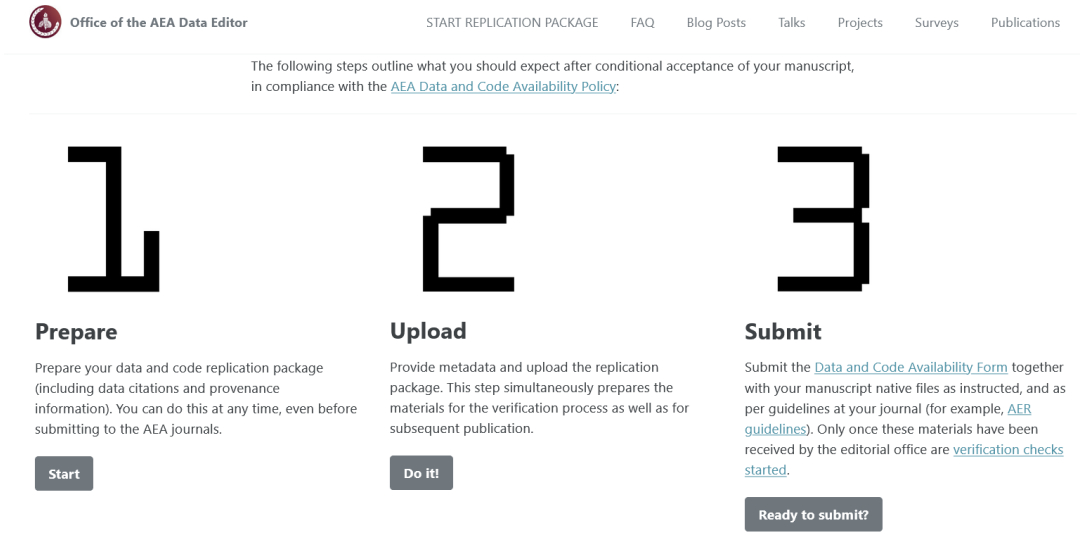
Social science “guild”

Social Science Data Editors

https://social-science-data-editors.github.io/guidance/

Some resources

- https://social-science-data-editors.github.io/guidance/
  - **template README**
  - discussion of licensing
  - data citation guidance
- https://aeadataeditor.github.io/



Thank you!

Extra slides

Example of data provenance

“It’s a file called stockmarket.xlsx”

2101.49
2057.64
2063.11
2077.42
2076.78
0
2068.76
2081.34
2046.68
2051.31
2076.62
2099.60
2108.95
2107.40
2124.29
2126.64
2128.28
2119.21
2114.15
2102.15
2079.65
2067.64
2093.25
2108.57
2108.63
2103.84

“It’s a file called SP500.xlsx”

SP500	S&P 500, Index, Daily, Not Seasonally Adjusted

Frequency: Daily, Close

observation_date	SP500
2015-06-26	2101.49
2015-06-29	2057.64
2015-06-30	2063.11
2015-07-01	2077.42
2015-07-02	2076.78
2015-07-03	0
2015-07-06	2068.76
2015-07-07	2081.34
2015-07-08	2046.68
2015-07-09	2051.31
2015-07-10	2076.62
2015-07-13	2099.60
2015-07-14	2108.95
2015-07-15	2107.40
2015-07-16	2124.29
2015-07-17	2126.64
2015-07-20	2128.28

“It’s a file called SP500.xlsx, downloaded from FRED.”

SP500	S&P 500, Index, Daily, Not Seasonally Adjusted

Frequency: Daily, Close

observation_date	SP500
2015-06-26	2101.49
2015-06-29	2057.64
2015-06-30	2063.11
2015-07-01	2077.42
2015-07-02	2076.78
2015-07-03	0
2015-07-06	2068.76
2015-07-07	2081.34
2015-07-08	2046.68
2015-07-09	2051.31
2015-07-10	2076.62
2015-07-13	2099.60
2015-07-14	2108.95
2015-07-15	2107.40
2015-07-16	2124.29
2015-07-17	2126.64
2015-07-20	2128.28

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2015-07-07	2081.34
2015-07-08	2046.68
2015-07-09	2051.31
2015-07-10	2076.62
2015-07-13	2099.60
2015-07-14	2108.95
2015-07-15	2107.40
2015-07-16	2124.29
2015-07-17	2126.64
2015-07-20	2128.28

S&P Dow Jones Indices LLC. 2020. “*S&P 500 [SP500] [dataset]*”, retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/SP500, June 26, 2020.

“SP500.xlsx, from S&P (2020). Not provided as part of replication package because © S&P. ”

SP500	S&P 500, Index, Daily, Not Seasonally Adjusted

Frequency: Daily, Close

observation_date	SP500
2015-06-26	2101.49
2015-06-29	2057.64
2015-06-30	2063.11
2015-07-01	2077.42
2015-07-02	2076.78
2015-07-03	0
2015-07-06	2068.76
2015-07-07	2081.34
2015-07-08	2046.68
2015-07-09	2051.31
2015-07-10	2076.62
2015-07-13	2099.60
2015-07-14	2108.95
2015-07-15	2107.40
2015-07-16	2124.29
2015-07-17	2126.64
2015-07-20	2128.28

S&P Dow Jones Indices LLC. 2020. “*S&P 500 [SP500] [dataset]*”, retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/SP500, June 26, 2020.

Data Availability Statements

"SP500.xlsx, from S&P (2020). Not provided as part of replication package because © S&P. "

Describes data file, where to get it, how to get it, and any conditions of obtaining it

S&P 500, Index, Daily,
Not Seasonally Adjusted

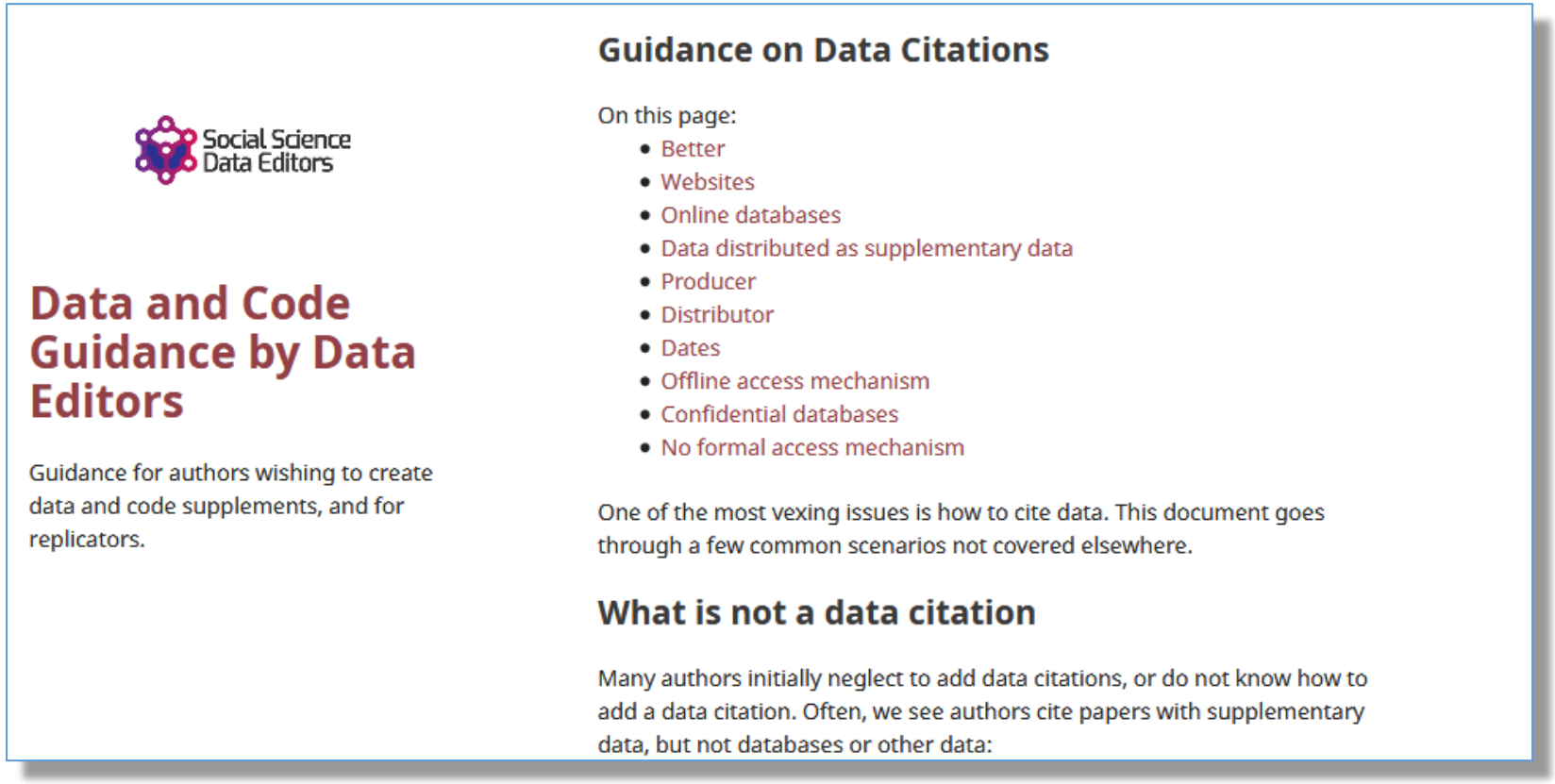
2015-07-15	2107.40
2015-07-16	2124.29
2015-07-17	2126.64
2015-07-20	2128.28

S&P Dow Jones Indices LLC. 2020. "*S&P 500 [SP500] [dataset]*", retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/SP500, June 26, 2020.

Data Citations

Data citations

- Creating specific guidance in the absence of strong discipline-specific guidance



https://social-science-data-editors.github.io/guidance/addtl-data-citation-guidance.html

Example 4: German Restricted-access

RESEARCH DATA CENTRE (FDZ)
of the German Federal Employment Agency (BA)
at the Institute for Employment Research (IAB)

Home | Newsletter | Jobs | Contact | Data Privacy | Imprint

Data Version	DOI (Link to Description of Data Version)	Availability (yyyy-mm-dd)
BHP 7518 v1 (current)	10.5164/IAB.BHP7518.de.en.v1	2020-01-13
BHP 7517 v1	10.5164/IAB.BHP7517.de.en.v1	2018-12-12
BHP 7516 v1	10.5164/IAB.BHP7516.de.en.v1	2018-04-11

- External data
- Data Archive
- Data Access
- Campus Files
- Publications
- Events
- Projects of FDZ users
- FDZ Projects
- Complaint point of the RatSWD
- Figures of the FDZ

employees, both in total and broken down by gender, age, occupational status, qualification and nationality. Means and medians of wages for full-time employees are given, too. Additional datasets providing information about (gross) worker flows and about foundations and closures of establishments are available on request.

Data Versions

Old versions are only available for replication studies and only in justified exceptional cases for new Projects.

Data Version	DOI (Link to Description of Data Version)	Availability (yyyy-mm-dd)
BHP 7518 v1 (current)	10.5164/IAB.BHP7518.de.en.v1	2020-01-13

Data Citation

"SP500.xlsx, from S&P (2020). Not provided as part of replication package because © S&P. "

Attributes the file to the proper source

SP500	S&P 500, Index, Daily, Not Seasonally Adjusted
	2101.49
	2057.64
	2063.11
	[illegible]
	2076.78
	0
	2068.76
	2081.34
2015-07-08	2046.68
2015-07-09	2051.31
2015-07-10	2076.62
2015-07-13	2099.60
2015-07-14	2108.95
2015-07-15	2107.40
2015-07-16	2124.29
2015-07-17	2126.64
2015-07-20	2128.28

S&P Dow Jones Indices LLC. 2020. "*S&P 500 [SP500] [dataset]*", retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/SP500, June 26, 2020.

Element of a (data) citation

ICPSR notes that a citation should include the following items:

- Author
- Title
- Distributor
- Date
- Version
- Persistent identifier

Suggested Citation:

S&P Dow Jones Indices LLC, *S&P 500 [SP500]*, retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/SP500, June 26, 2020.

Element of a (data) citation

ICPSR notes that a citation should include the following items:

- Author
- Title
- Distributor
- Date
- Version
- Persistent identifier

Constructed Citation:

Institute for Employment Research (IAB), Establishment History Panel 1975-2018. Accessed via the Research Data Centre (FDZ) of the German Federal Employment Agency DOI: 10.5164/IAB.BHP7518.de.en.v1 June 26, 2020.

Element of a (data) citation

ICPSR notes that a citation should include the following items:

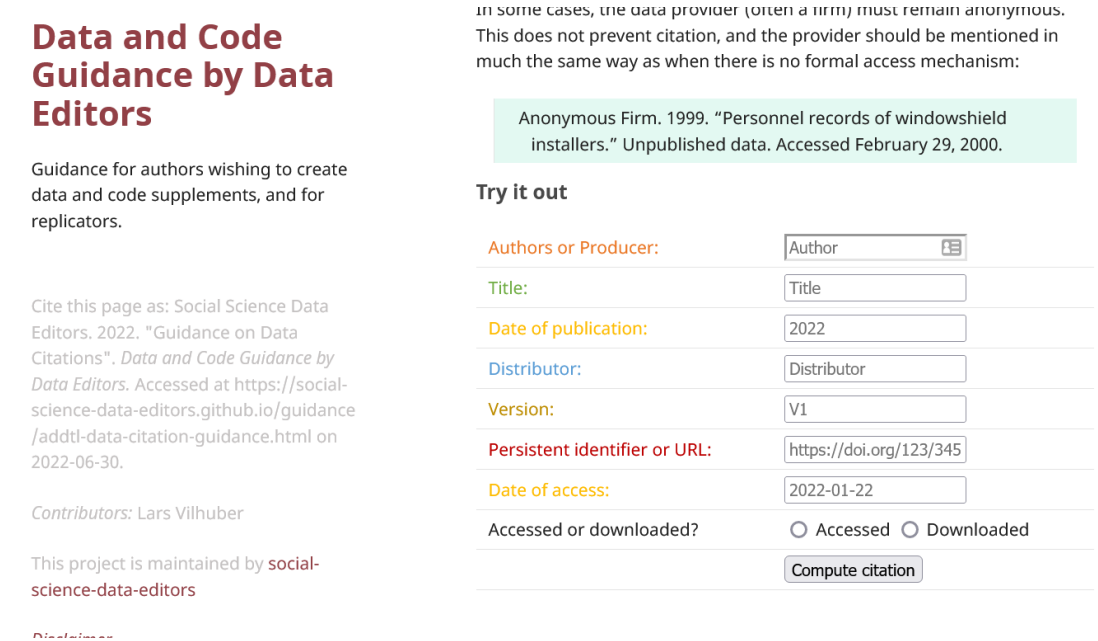
- Author
- Title
- Distributor
- Date
- Version
- Persistent identifier

Constructed Citation:

US Census Bureau, Longitudinal Business Database (LBD) 1975-2018. Last accessed via the Federal Statistical Research Data Centre (FSRDC) June 26, 2020.

Try it out yourself

- Construct an (approximate) data citation
- https://social-science-data-editors.github.io/guidance/addtl-data-citation-guidance.html#try-it-out



Data and Code Guidance by Data Editors

Guidance for authors wishing to create data and code supplements, and for replicators.

Cite this page as: Social Science Data Editors. 2022. "Guidance on Data Citations". *Data and Code Guidance by Data Editors*. Accessed at https://social-science-data-editors.github.io/guidance/addtl-data-citation-guidance.html on 2022-06-30.

Contributors: Lars Vilhuber

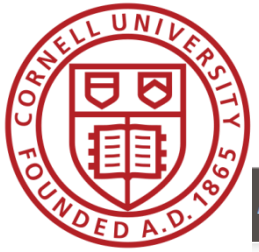
This project is maintained by social-science-data-editors

In some cases, the data provider (often a firm) must remain anonymous. This does not prevent citation, and the provider should be mentioned in much the same way as when there is no formal access mechanism:

> Anonymous Firm. 1999. "Personnel records of windowshield installers." Unpublished data. Accessed February 29, 2000.

Try it out

Authors or Producer:	Author
Title:	Title
Date of publication:	2022
Distributor:	Distributor
Version:	V1
Persistent identifier or URL:	https://doi.org/123/345
Date of access:	2022-01-22
Accessed or downloaded?	○ Accessed ○ Downloaded
	Compute citation



FORCE11

The Future of Research Communications and e-Scholarship

Search

English

ABOUT | COMMUNITY | CODE OF CONDUCT | GROUPS | RESOURCES | NEWS + BLOGS | EVENTS | PUBLIC

perceived criteria of importance.

1. Importance

Data should be considered legitimate, citable products of research. Data should be accorded the same importance in the scholarly record as citat research objects, such as publications[1].

2. Credit and Attribution

DC1

Data Citation Principles

1 **Bureau of Labor Statistics.** 2000–2010. "Current Employment Statistics: Colorado, Total Nonfarm, Seasonally adjusted - SMS08000000000000001." United States Department of Labor. http://data.bls.gov/cgi- bin/surveymost?sm+08 (accessed February 9, 2011).

corresponding data should be cited[3].

4. Unique Identification

A data citation should include a persistent method for identification that i actionable, globally unique, and widely used by a community[4].

5. Access

Data citations should facilitate access to the data themselves and to such

Data Citation Synthesis Group: Joint Declaration of Data Citation Principles. Martone M. (ed.) San Diego CA: FORCE11; 2014 [https://www.force11.org/group/joint-declaration-data-citation-principles-final].

Rights to **use** data

- You browsed a website
- You purchased the data
- You signed a data use agreement
- You created the data (lab experiment)
- You had survey respondents consent to use (IRB approval!)

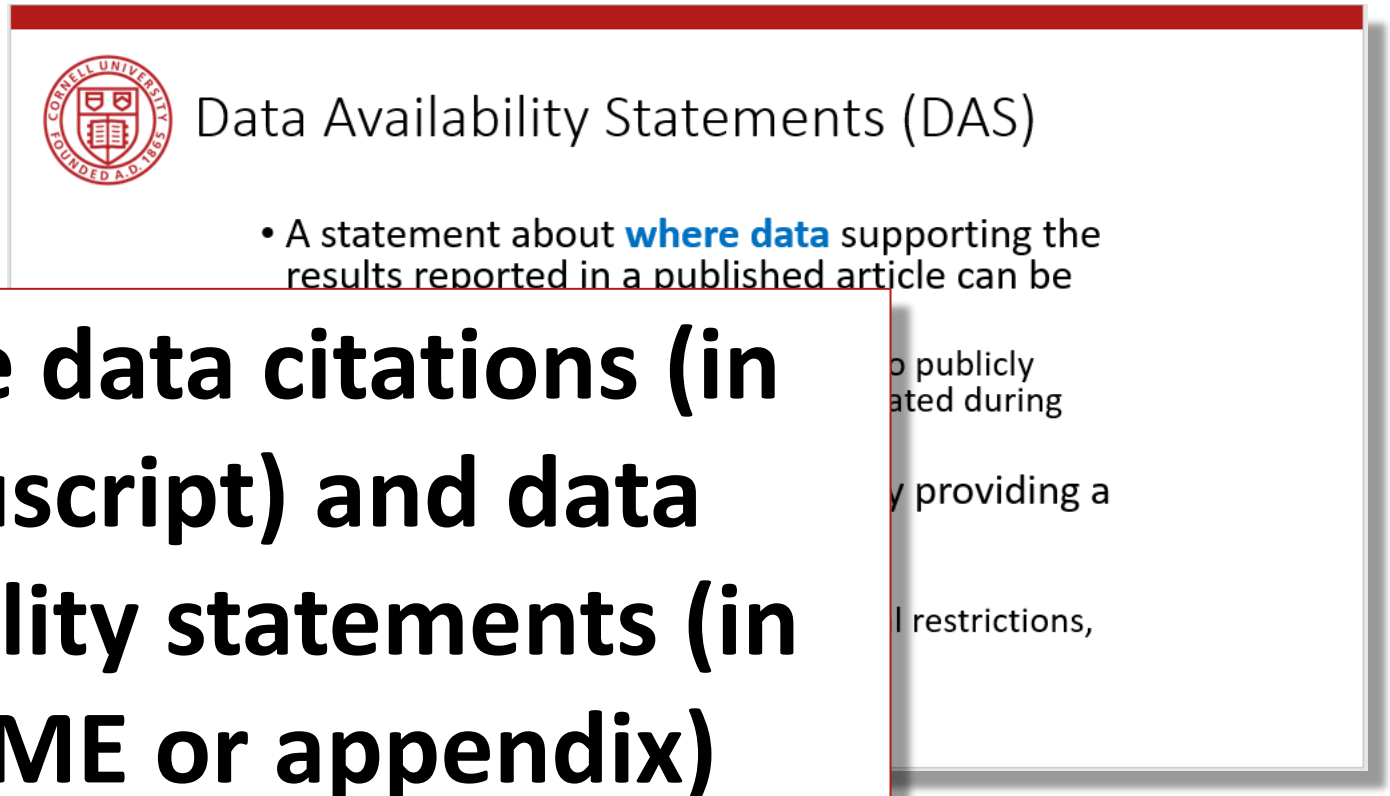
Rights to **distribute** the data

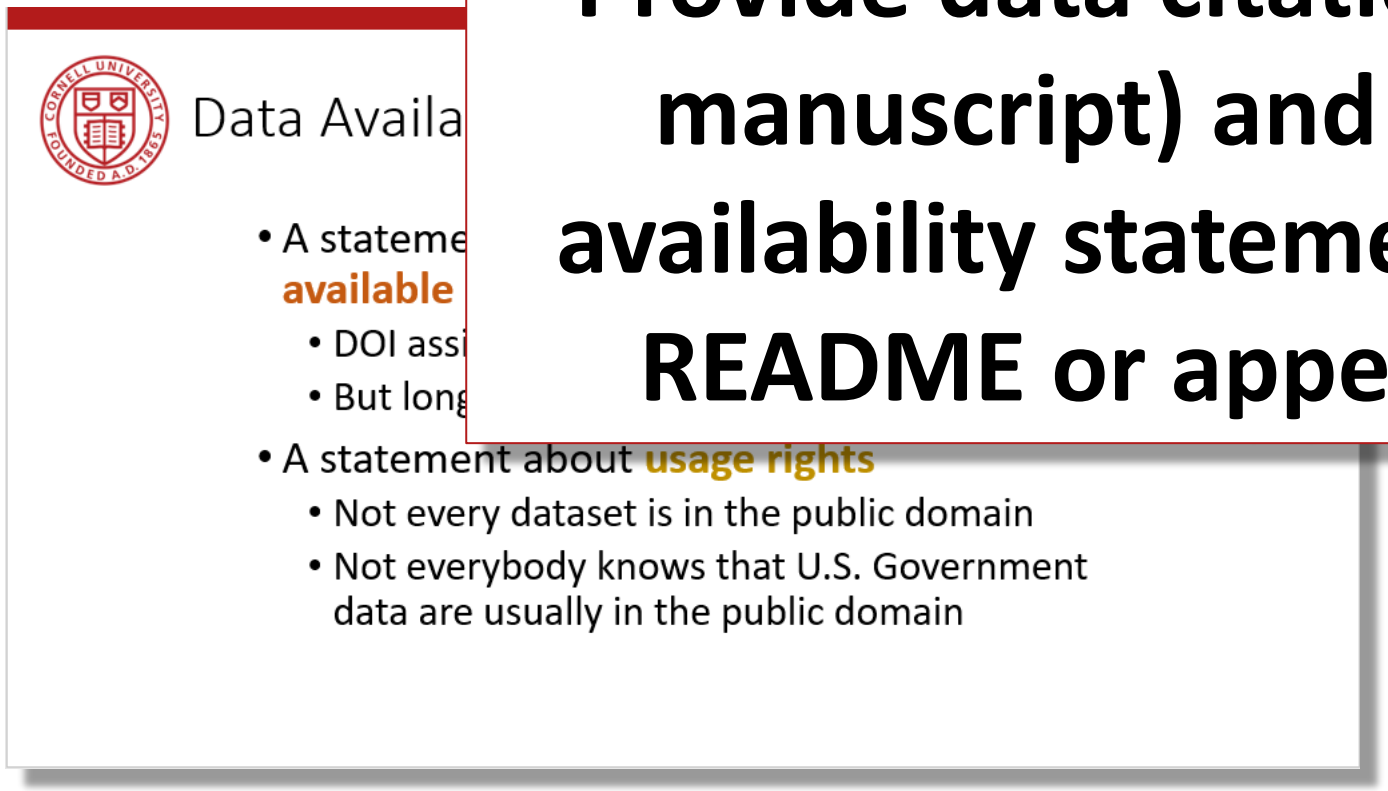
- If you created the data, you decide.
- If you got it from somewhere else:

READ THE TERMS OF USE / DATA USE AGREEMENT / CLICK-THROUGH / ETC.

Data: Citations, Access, Rights

- Any data can be cited – even if you can't download it
- Any data that you accessed … can have that access be described
  - But caution: It should be such that others can also repeat the access!
- Just because you "have" the data does not mean you can give it to others
  - Also: distinguish between "sharing" and "publishing"
  - Know your terms of use!





Provide data citations (in manuscript) and data availability statements (in README or appendix)

Solution 3: Data Citations

Cite every data source

(not only the paper that describes the source!)

(also: add them to the
Social Science Data Editors' template README)