Advancing Computational Reproducibility in the Social Sciences

Creating and using digital reproduction records as pedagogical tools

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Katie Hoeberling

Berkeley Initiative for Transparency in the Social Sciences (BITSS)

khoeberling@berkeley.edu

The **Berkeley Initiative for Transparency in the Social Sciences** (BITSS) promotes ethical, transparent and reproducible research practices to improve the integrity of science and inspire better public policy.

Generate **evidence**
Increase access to open science **education**
Strengthen the scientific **ecosystem**

Failures to reproduce or replicate

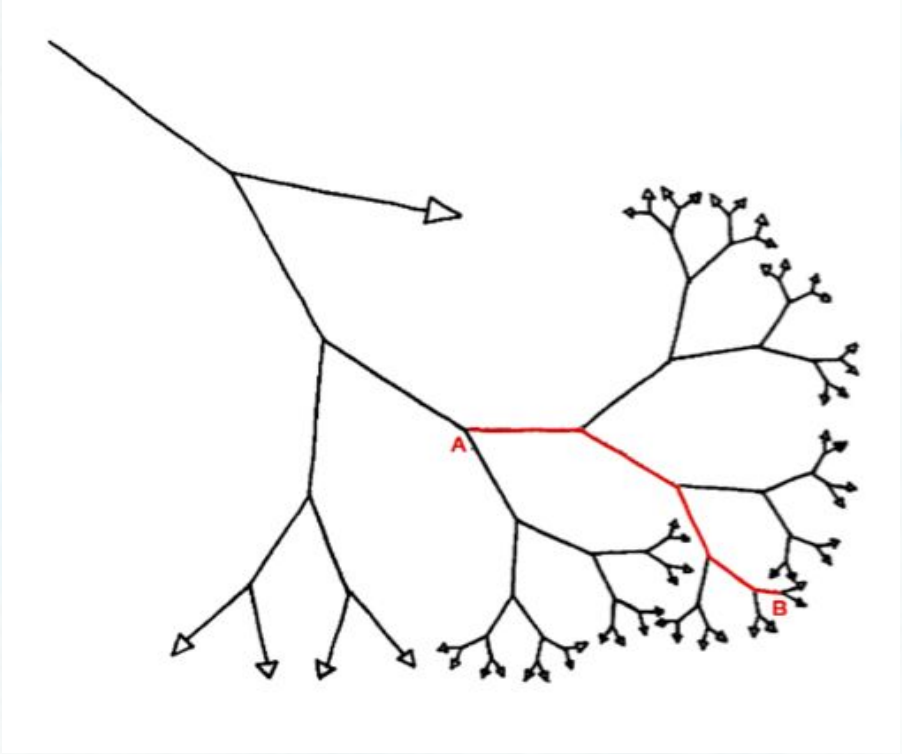
Replication in Social Sciences (same method, different sample)	Reproduction in Economics (same data and methods)
OSC (2015): 30%-60%	Chang & Li (2015): 43%
Camerer et. al. (2016): ~60%	Gertler et. al. (2017): 14%
Nosek & Camerer et. al. (2018): ~60%	Kingi et. al. (2018): 43%
Klein et. al. (2018): 50%	Wood et. al. (2018): 25%

What is “Scholarship?”

“An article about computational results is advertising, not scholarship. The actual scholarship is the full software environment, code and data, that produced the result.”

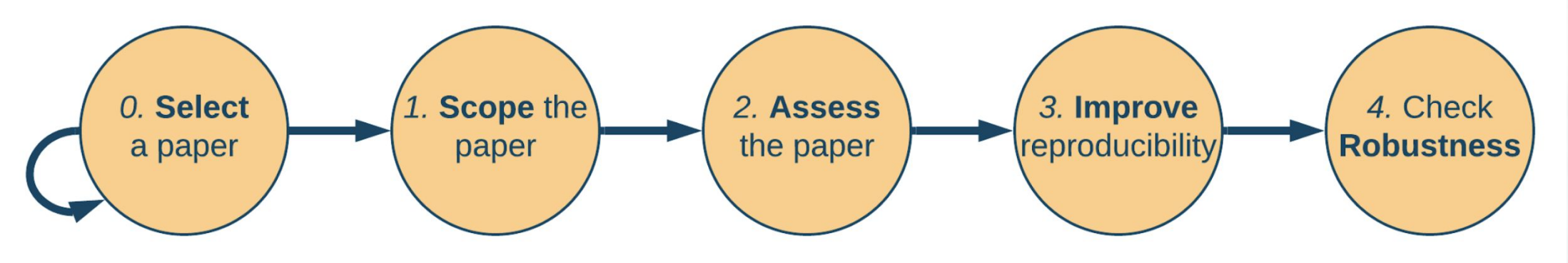
– Buckheit and Donoho (1995) paraphrasing Claerbout and Karrenbach (1992)

- Accelerating understanding
- Supporting learning
- Improving inclusion and participation



^^ From Jorge Luis Borges’s “El jardín de senderos que se bifurcan”

Accelerating Computational Reproducibility in the Social Sciences (The ACRe Project)



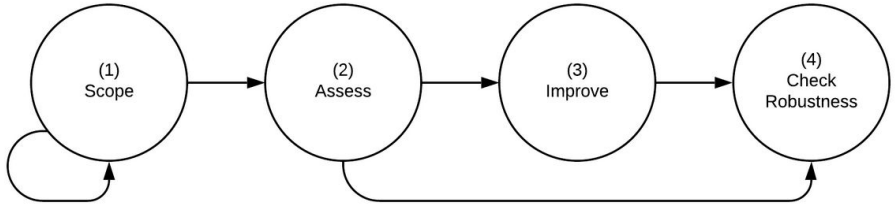
- Curriculum development
- Training for students and instructors
- The Social Science Reproduction Platform: Crowdsourced reproductions, improvements, and community discussion
- Assessments of reproducibility across journals, fields

The ACRE Guide

Step by step instructions for conducting and recording a reproduction, including chapters on:

- Choosing a paper
- Assessing reproducibility
- Making improvements
- Robustness checks
- Constructive conversations w/ authors

https://bitss.github.io/ACRE/



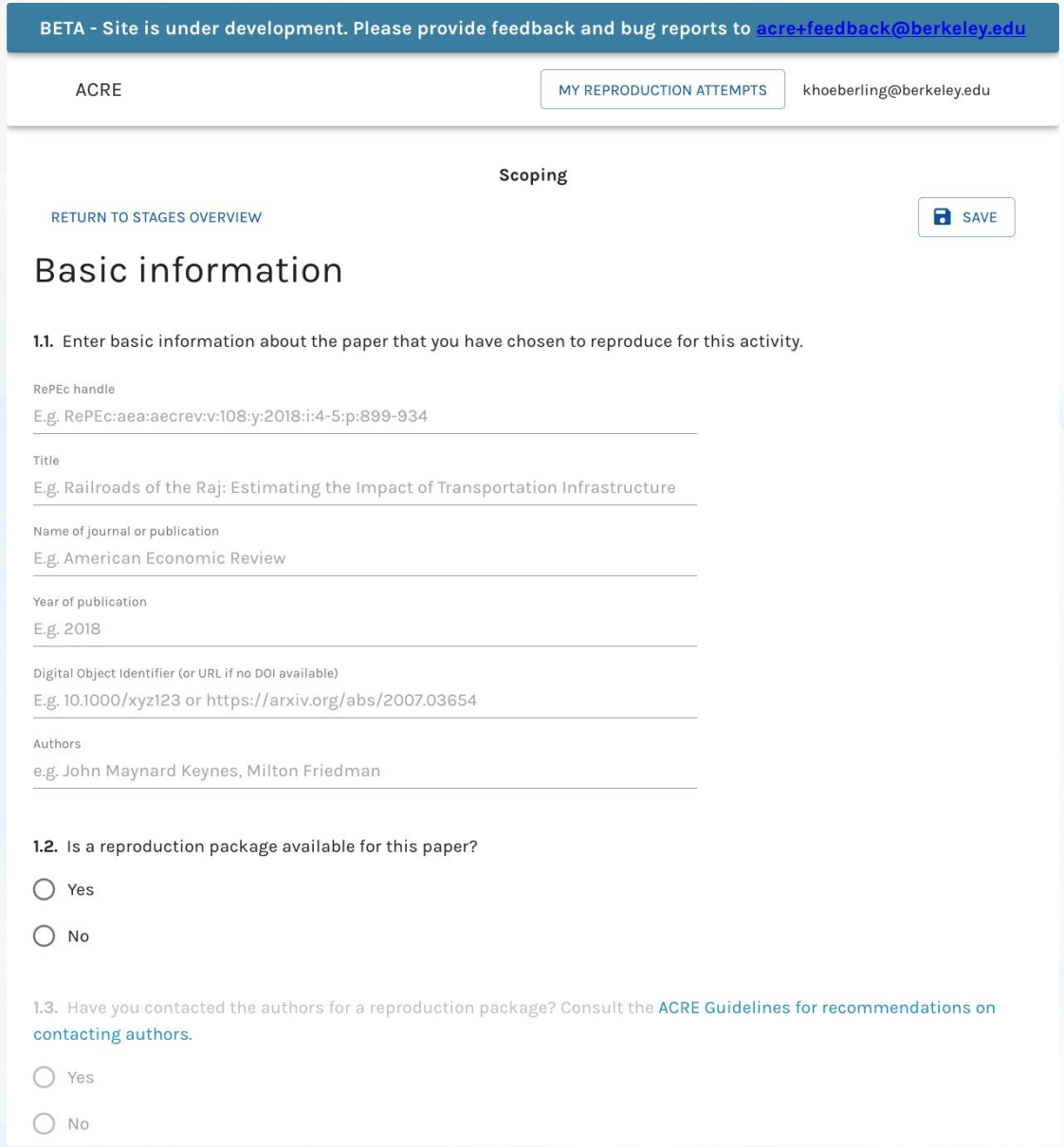
(1) Scoping	(2) Assessment	(3) Improvement		(4) Robustness
		Display-item-level	Paper-level	
☐ Select paper	☐ Describe inputs	☐ + Raw data	☐ + Version control	☐ Analytical choices
☐ Check ACRE	☐ Reproduction diagrams	☐ + Analysis data	☐ + Documentation	☐ Type of choice
☐ Declare paper	☐ Reproduction score	☐ + Analysis code	☐ + Dynamic document	☐ Choice value
☐ Read paper		☐ + Cleaning code	☐ + File structure	☐ Justify and test alternatives
☐ Declare estimates		☐ Debug analysis code		
		☐ Debug cleaning code		
Record results in Survey 1	Record results in Survey 2			Record results in Survey 3

Social Science Reproduction Platform

An open source online platform for crowdsourcing reproductions

- Record citable reproductions and improvements (assigned DOIs w/ Crossref)
- Review and provide feedback on others' reproductions (Discourse forum)
- Aggregated results on a Metrics Dashboard

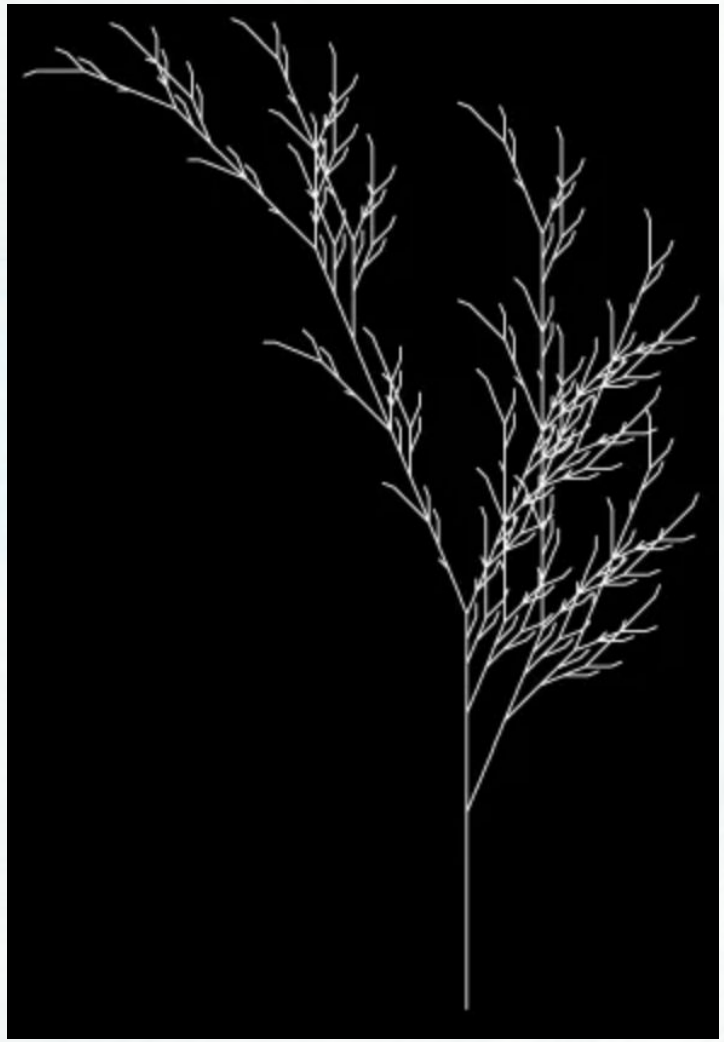
https://www.socialsciencereproduction.org/



Open questions, next steps

- Improving SSRP's pedagogical features
- How to allow **anonymous reproductions**
  - Balancing risks to reputations w/ risks of creating space for trolls
  - De-identifying reproductions is not foolproof
  - Temporary embargo periods
- Assessing **quality**
- Getting **buy-in** from social scientists

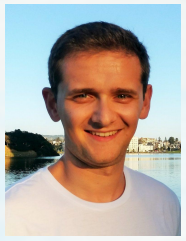
We welcome feedback and community contribution to the Guide and platform!

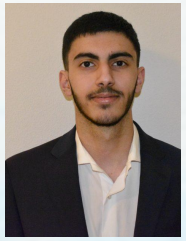


^^ From Antonio Sánchez Chinchón via Fronkinstin

Acknowledgements





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