Frame Search and Re-search: How Sociological Articles Change During Peer Review
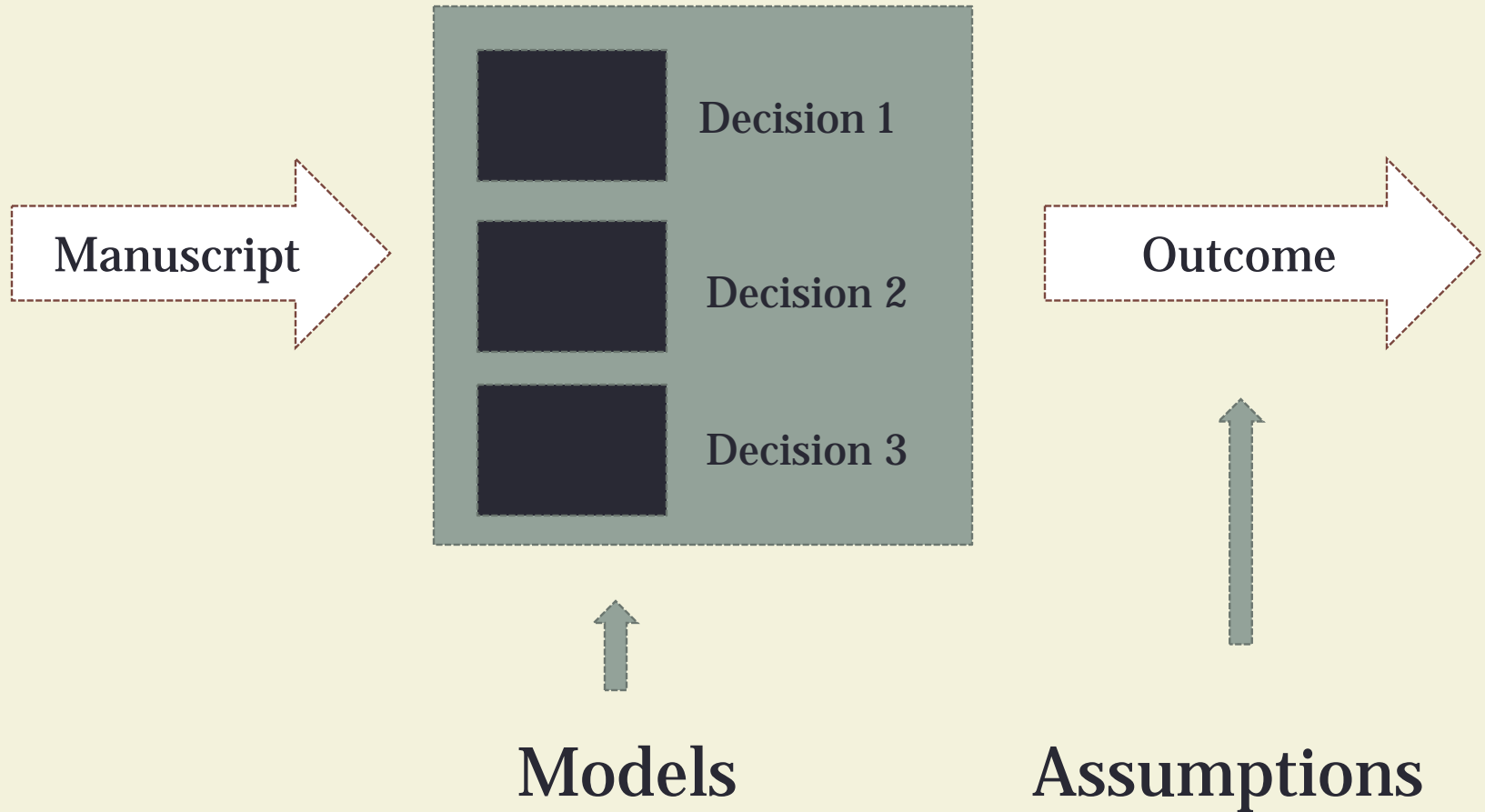
Do Peer Reviews Predict Impact?: Evidence from the *American Sociological Review*, 1978-1982

(with Von Bakanic, College of Charleston)

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The gray box of peer review

Manuscript →

- Decision 1
- Decision 2
- Decision 3

Outcome →

↑ Models

↑ Assumptions

Research on Peer Review

- **Is peer review fair?**

- **Is peer review reliable?**

- **Is peer review valid?**

- **Often data = grants**

A Different Angle – Constructive Angle

- **What about revise and resubmit?**
- First round of reviews at *ASR* :

	ASR[a] Referees			*ASR*[a] Editor
Both recommend acceptance	10%		Immediate acceptance	11%
Split	33		Revise and resubmit	24
Both recommend rejection	57		Immediate rejection	65
	100%			100%
N	(342)			(342)

From Lowell Hargens 1988, p. 145.

- **How "quality" is *created***
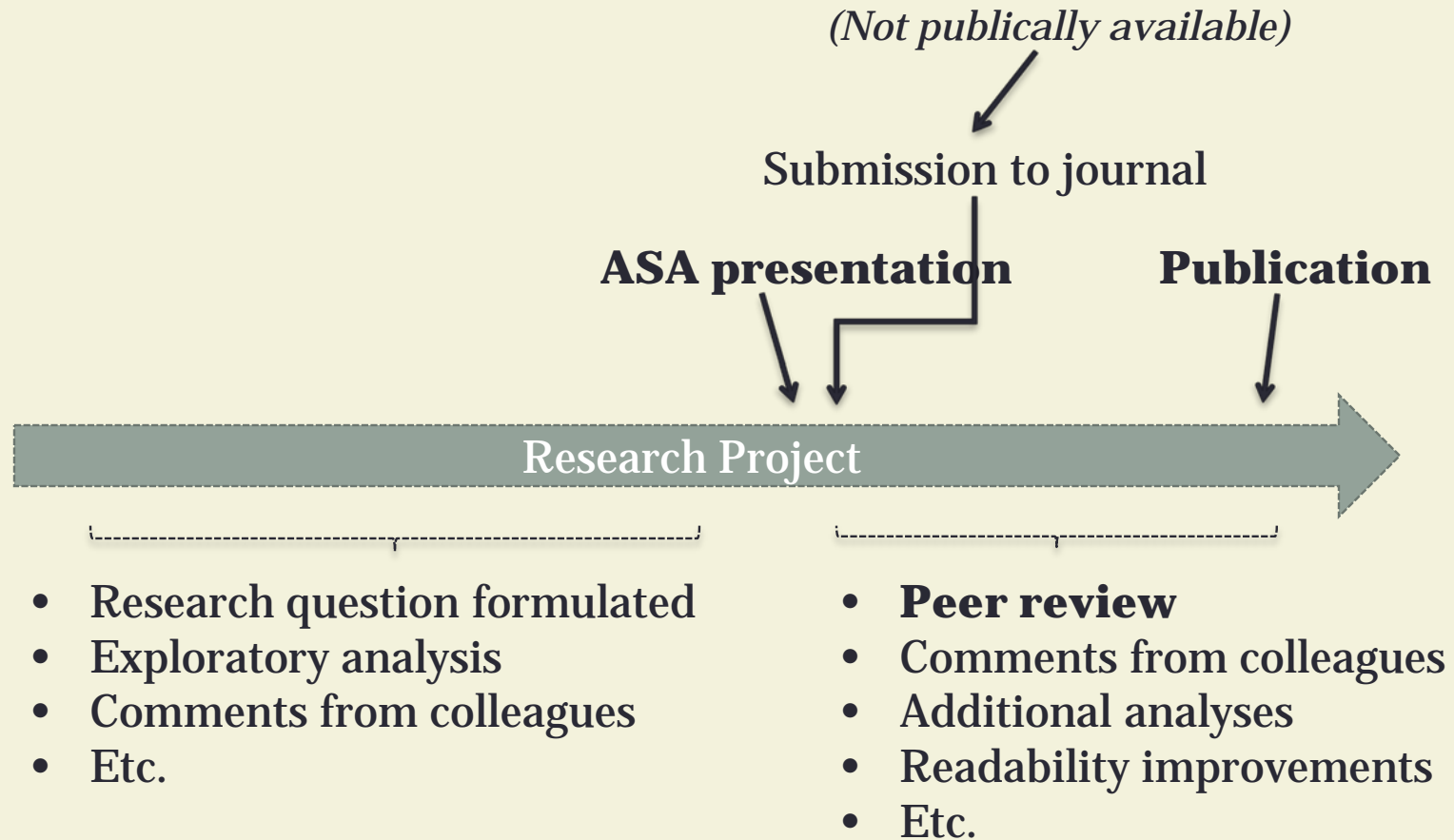
Research Question, Significance

- **Question:** When reviewers find that the fit between theoretical framing and data analysis is inappropriate, what does the author change?

  Different changes = different modes of peer review
  - "Question-centered mode"
    - Research question is central.
  - "Data-driven mode"
    - Data analysis is central.

- **Significance:**
  - **Self-understanding**
  - Is R/R useful
  - What should we instruct reviewers to do? ← little work on this

Empirical Approach: Typical Trajectory

(Not publically available)

Submission to journal

ASA presentation **Publication**

Research Project

- Research question formulated
- Exploratory analysis
- Comments from colleagues
- Etc.

- **Peer review**
- Comments from colleagues
- Additional analyses
- Readability improvements
- Etc.

Empirical Approach: Approximation

(Often publically available!)

(Always available)

ASA presentation paper = Submission to journal

Published paper

Research Project

Peer review
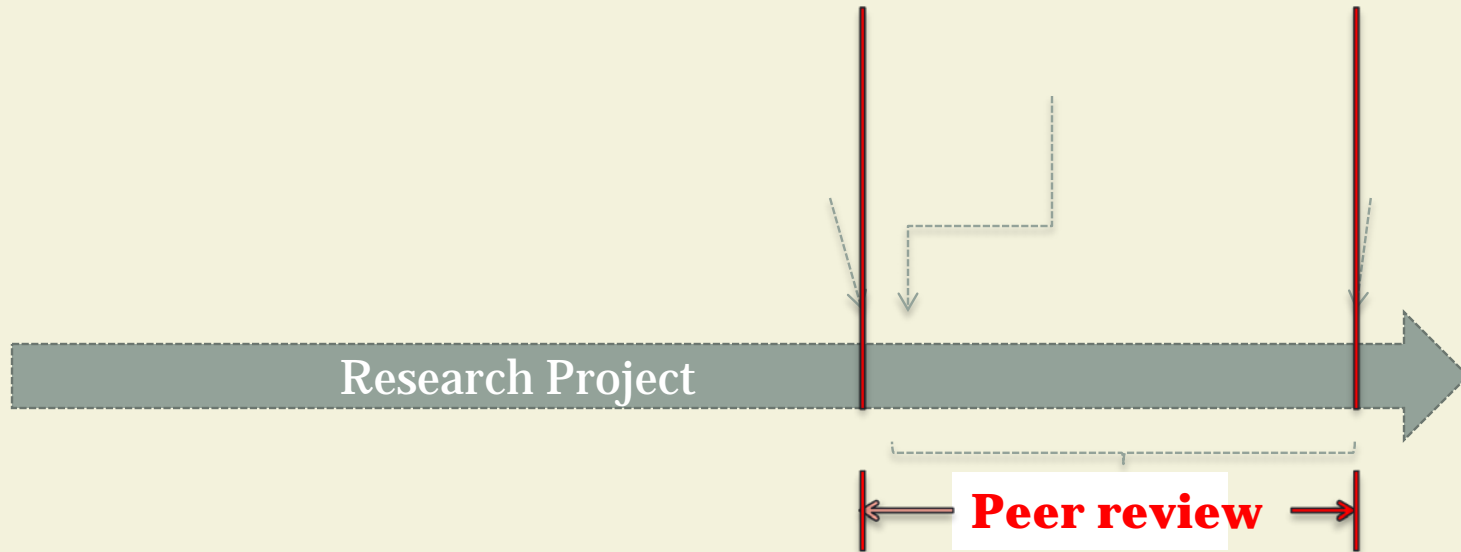
Data: Articles from *ASR* and *SF*

1. Find articles that mention "american sociological association annual meeting"
   - 15 articles from *American Sociological Review*
   - 15 articles from *Social Forces*
2. Match to previous versions in ASA online database
- Did not use all search results.
   - Article not quantitative
   - Article not uploaded to ASA database
- 40% of *ASR,* 65% of *Social Forces* search results suitable

Methods: Measuring Change

- ## Qualitative
  - Read a sample of article pairs line-by-line and noted all changes
- ## Quantitative
  - Text similarity between ASA and published, section-by-section
    - Calculated computationally
  - Changes in theoretical framing
    - Changes in *references* used in lit review/theory sections
  - Data analysis
    - Changes in *variables* used in data analysis

Results: Qualitative

Data sources: Rarely change

Article pair 1

- **Theoretical framing expanded, data analysis similar**
  - ASA paper
    - Is diversity good for business?
    - Theoretical framing: diversity, racial diversity
  - Published paper
    - Is diversity good for business?
    - Theoretical framing: diversity, racial diversity, gender diversity
    - Data analysis: gender variable added

Article pair 2

- Theoretical framing different, data analysis similar
  - ASA paper
    - What determines how much people volunteer?
    - Hypothesis: "**female leaders will volunteer fewer hours** per week than their male counterparts"

  - Published paper
    - What determines how much people volunteer?
    - Hypothesis: *The gender of the leader will have a direct impact on weekly leadership effort such **that female presidents will devote more time** each week to the organization than male presidents"*

Results: Qualitative, cont'd

Article pair 3

- **Theoretical framing different, data analysis expanded**
  - ASA paper
    - Cultural vs political factors → amount of pollution
    - "Races" 3 theories: modernization, political economy, institutional theory
  - Published paper
    - Cultural vs political factors → amount of pollution
    - "Races" 2 theories: political economy, institutional
    - Data analysis: adds an important interaction effect

Results: Text Similarity

y-axis: similarity of text between ASA and published version
        (higher number, better average sentence match)
x-axis: section
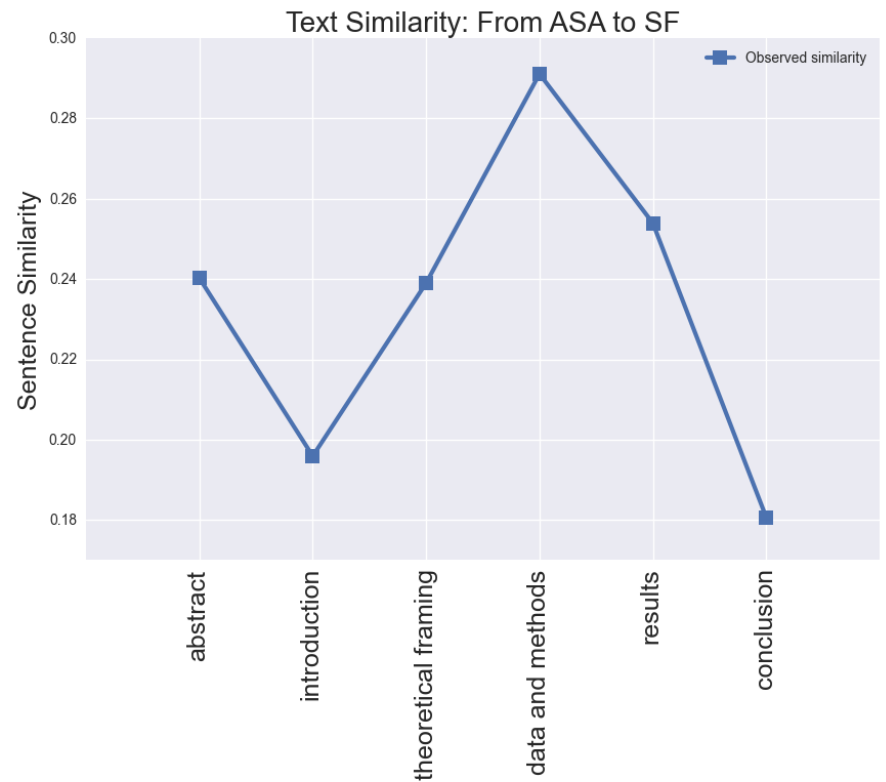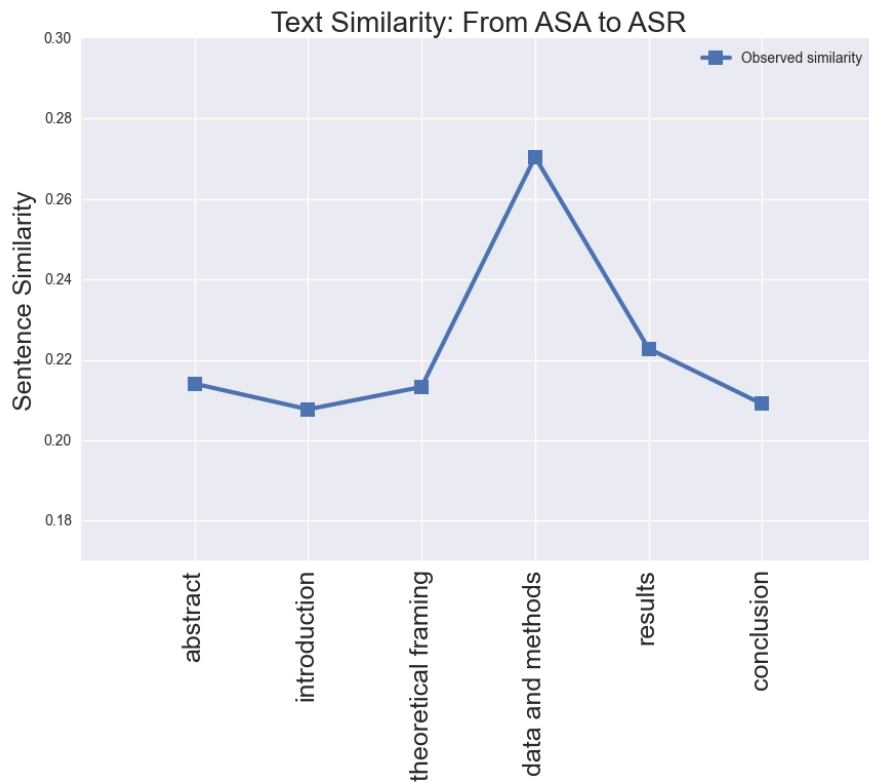
Results: Similarity of Theoretical Framing

References in lit. review and theory sections:

	ASA version	Published version
Mean	34.4	40.5
Min	0	20
Max	73	85
Std	21.9	18.0

The percent of "old" references used in the "new" version of a paper is **31%** (sd = 0.21)

Results: Similarity of Data Analysis

Variables used in data analysis:

	ASA version	Published version
Mean	23.3	25.5
Min	0	12
Max	77	88
Std	15.7	16.2

The percent of "old" variables used in the "new" version of a paper is: **58.9%** (sd = 0.25).

Conclusion: Which Mode of Peer Review?

- *"**Question:** When reviewers find that the fit between theoretical framing and data analysis is inappropriate, what does the author change?"*

- **Answer:** Theoretical framing

Implications: *is R/R useful?*

- Now: second project.
- (Note to self: take a breath.)

Do Peer Reviews Predict Impact?: Evidence from the *American Sociological Review*, 1978-1982

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Research question: Do peer reviews predict short- and/or long-term citations?

Motivation

- What can reviewers realistically evaluate/predict?
  - Impact?
  - Truth?
  - Originality?
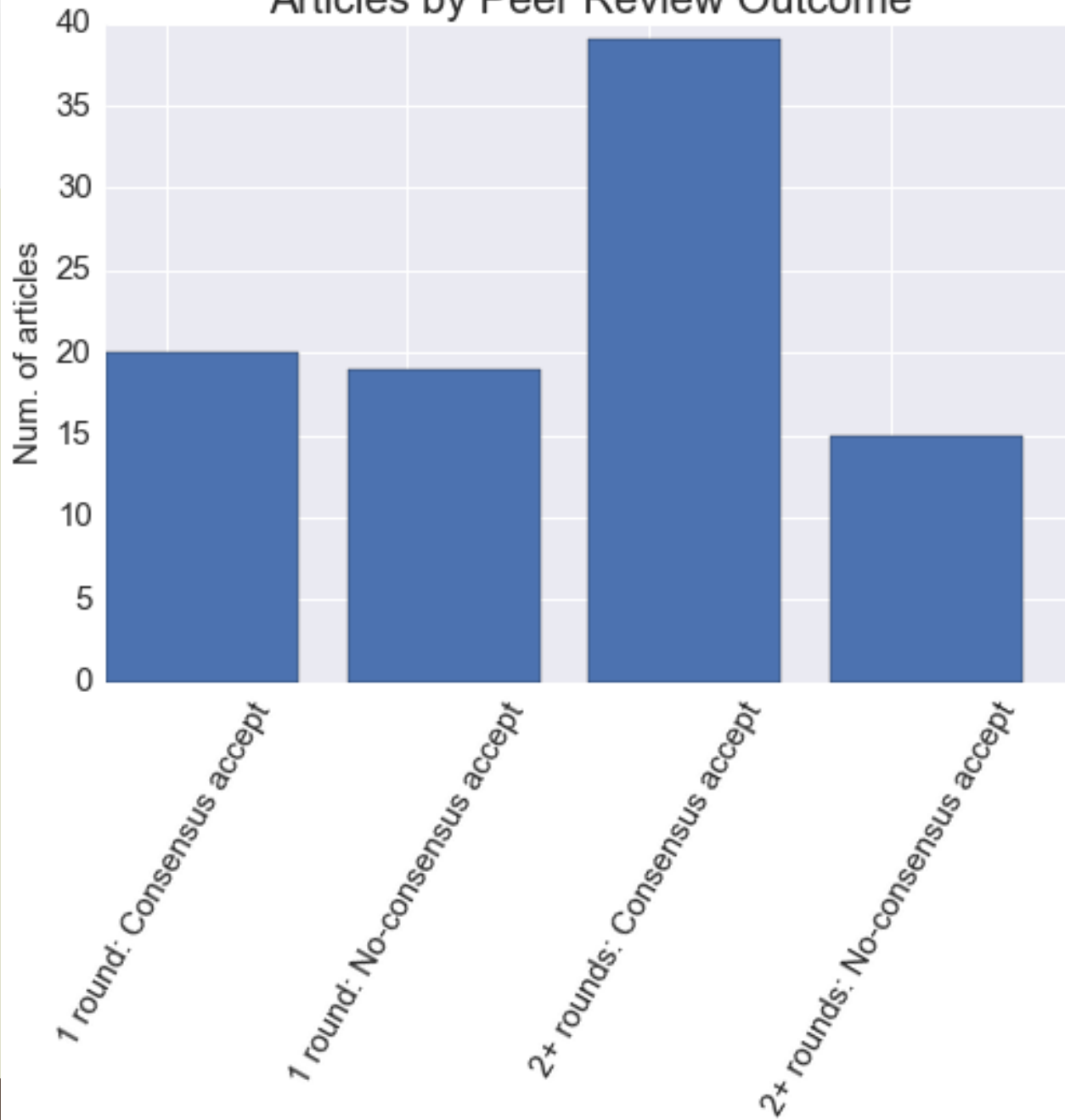 - Conflict of interests?

Quality vs. recognition of quality

1. Plausible: Quality = a little bit old + a little bit new
2. Recognition of quality: innovation is disruptive?
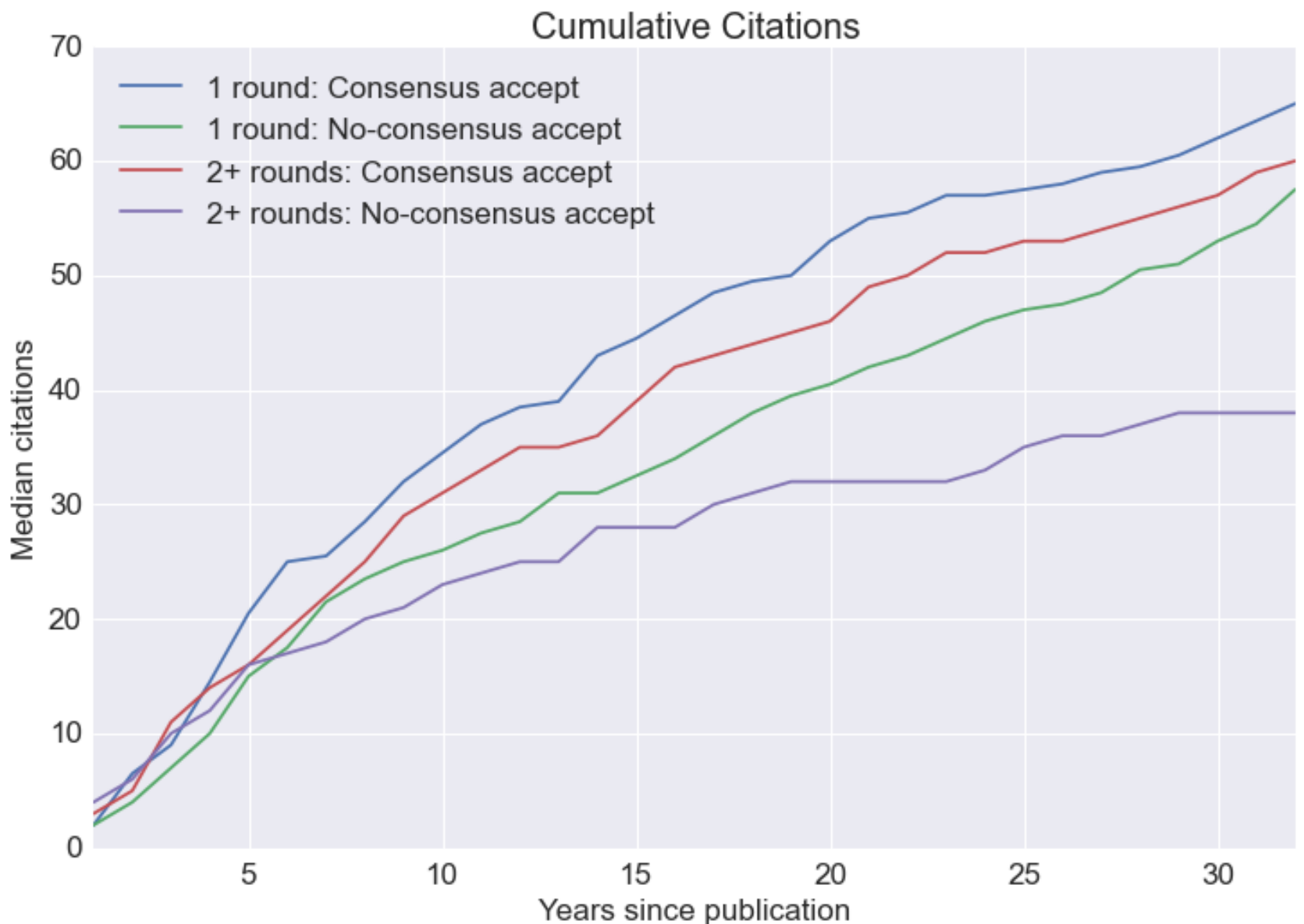   1. E.g. Strength of Weak Ties

The data

- *ASR* 1978-1982

- Dataset #1
  - 755 manuscripts
  - 234 published (130 so far)
  - Includes reviewers' *decisions*

- Subset
  - 323 manuscripts
  - 52 published
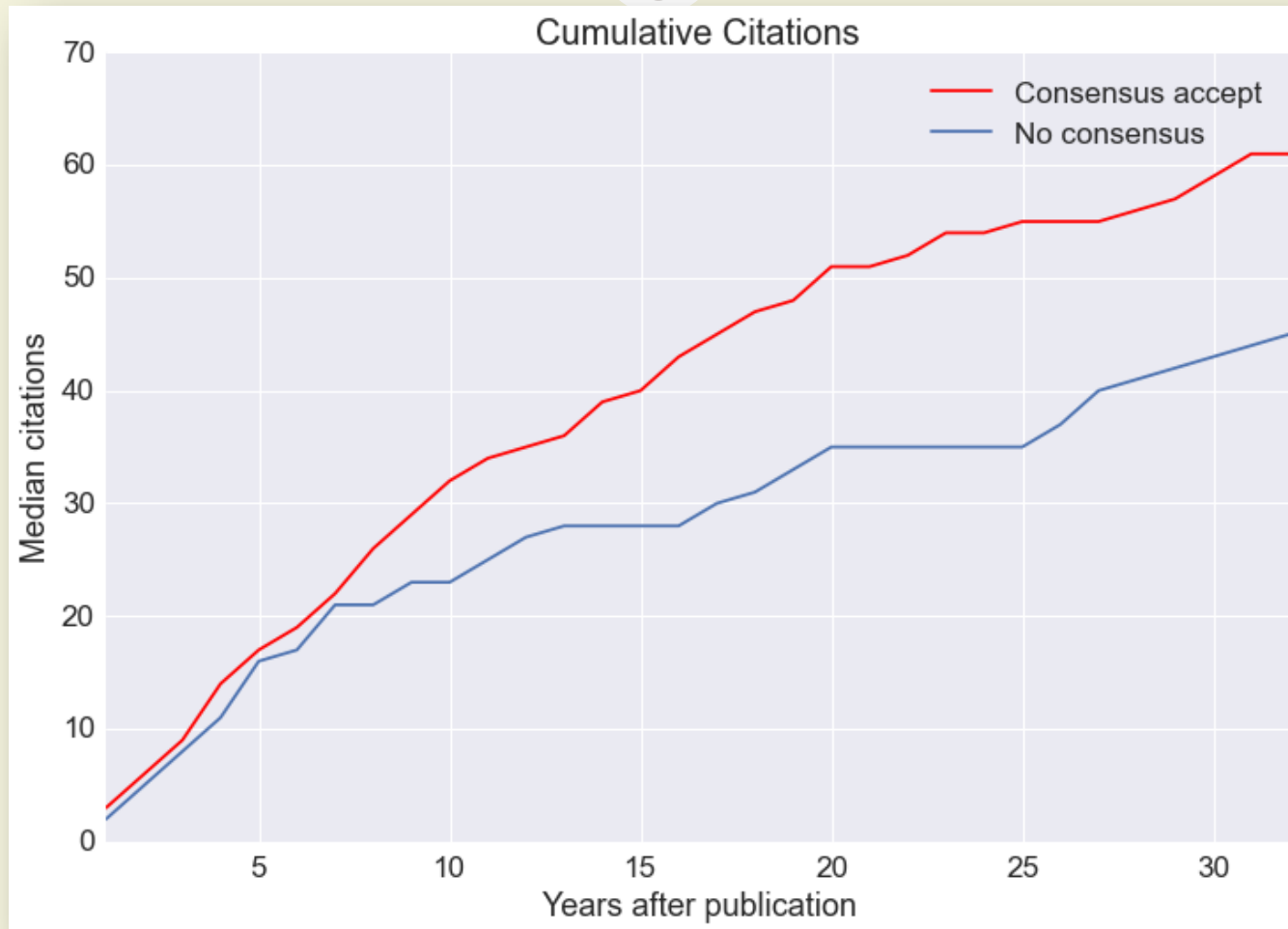 - Includes reviewers' decisions and *review texts*

Articles by Peer Review Outcome

Citations (*median*) by Peer Review Outcome

Cumulative Citations

Legend:
- 1 round: Consensus accept
- 1 round: No-consensus accept
- 2+ rounds: Consensus accept
- 2+ rounds: No-consensus accept

Y-axis: Median citations (0 to 70)
X-axis: Years since publication (5 to 30)

Consensus vs No-consensus

Cumulative Citations

What kind of model of individual choices is most likely?

- ## Model 1: Idiosyncratic preferences
  - Each reviewer judges on a different dimension
- ## Model 2: "Representative"
  - Each reviewer judges "as the community"

Intuition:

If model 1, some no-consensus articles should be high impact

0 = 1rd., consensus   1 = 1rd., no consensus
2 = 2+rds, consensus   3 = 2+ rounds, no consensus

totalcites	title	group_type
1560	SOCIAL-CHANGE AND CRIME RATE TRENDS - ROUTINE ...	0
523	Social Learning and Deviant Behavior: A Specif...	2
495	POWER, EQUITY AND COMMITMENT IN EXCHANGE NETWORKS	0
428	RECONCILING RACE AND CLASS-DIFFERENCES IN SELF...	0
404	Social Resources and Strength of Ties: Structu...	0
287	Issues in the Comparative Measurement of Polit...	3
254	The Collectivist Organization: An Alternative ...	2
253	Change and Stability in Educational Stratifica...	2
238	Social Class and Psychological Distress	2
212	The Influence of "Family Background" on Intell...	2

What Does Journal Peer Review Accomplish in Quantitative Sociology? An Empirical Study

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