March 7th https://standupforscience2025.org/

Sacramento, CA

State Capitol — 12 PM-4 PM

San Francisco, CA

Civic Center Plaza — 1 PM-3 PM

Reimagining Scholarly Communication

Brian Nosek
Center for Open Science
&
University of Virginia

These slides: https://osf.io/tfnh5

Past publishing on paper is partly responsible for current dysfunction in the research culture.

Part 1. How we got here

Scholarly communication from 1960s to 1990s (abridged)

Conduct research

Write a paper

Mail four copies of the paper to journal

Journal mails reviewers, reviewers mail journal, journal mails author

Revisions, copyediting, and proofing by mail

Journal gathers papers into issues, prints, mails to subscribers

Non-subscribers visit library for access

Consequences of paper based review and communication

Only conduct peer review for publication when the research is done

Only review the paper, not other research output (data, materials, code)

Only reviewed by a few people, selected ad hoc

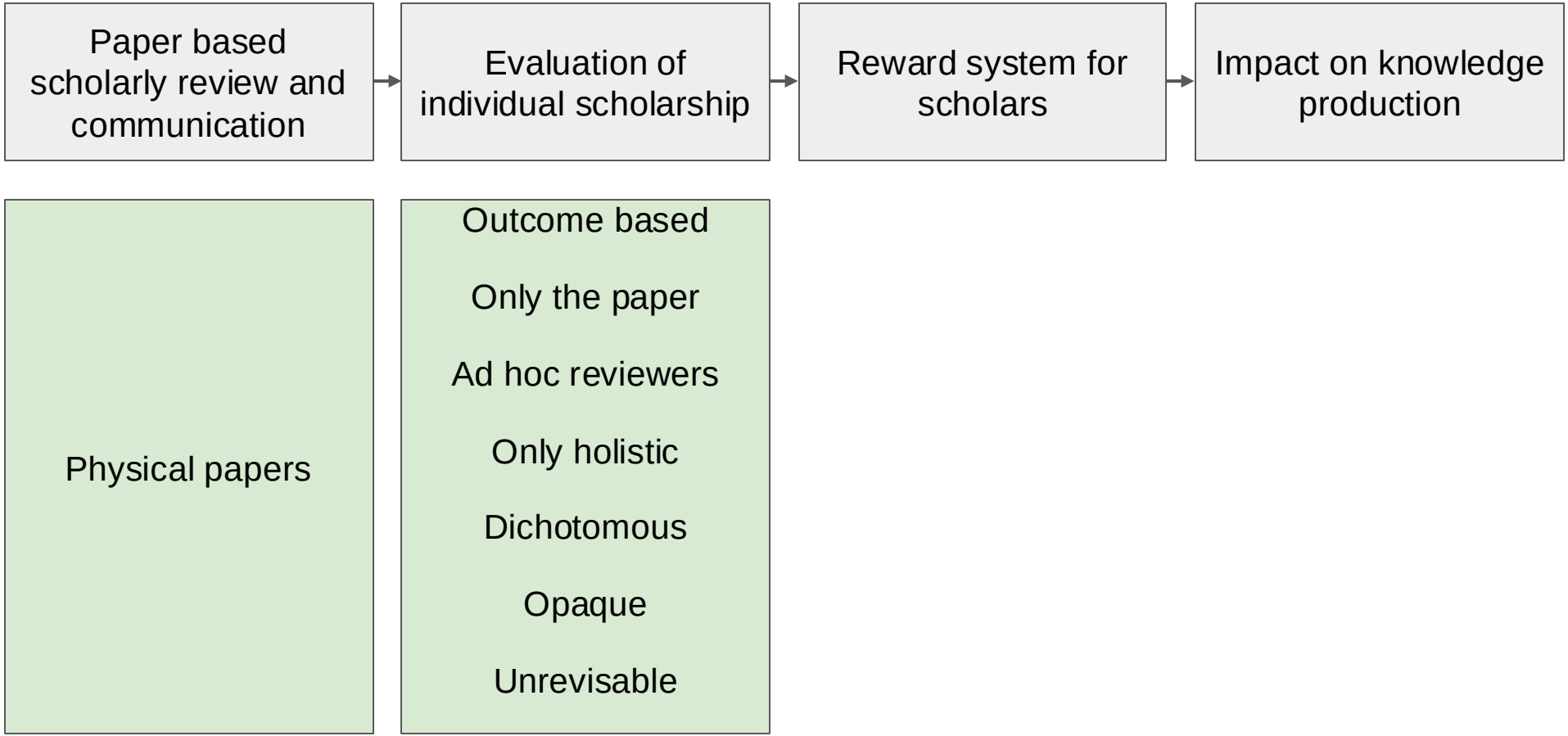
Only reviewed in one way -- holistically

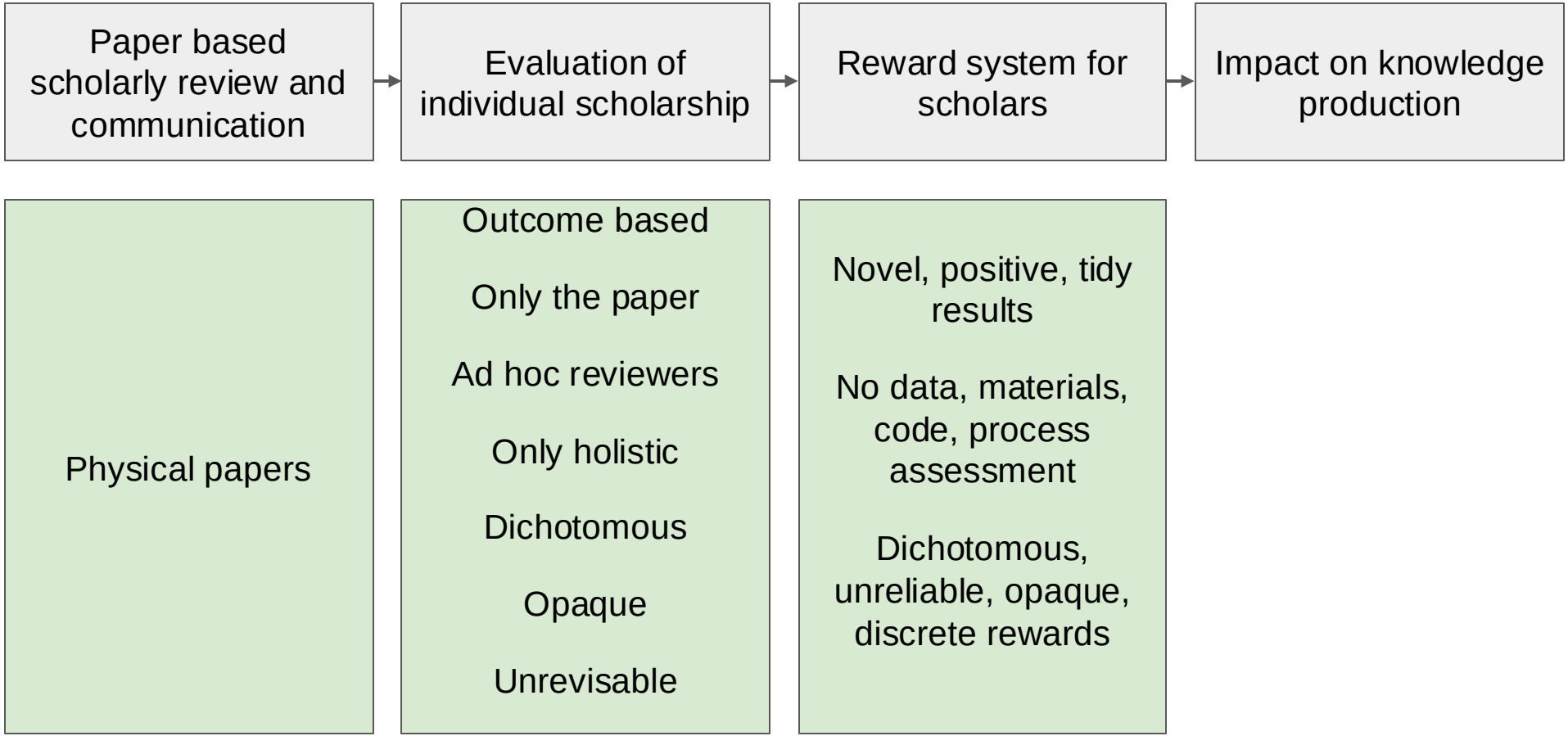
Dichotomous decision -- accepted or rejected

Opaque process and decision for readers

Permanent and unrevisable

Part 2. Why it is bad


Paper based scholarly review and communication
Evaluation of individual scholarship
Reward system for scholars
Impact on knowledge production
Physical papers
Outcome based
Only the paper
Ad hoc reviewers
Only holistic
Dichotomous
Opaque
Unrevisable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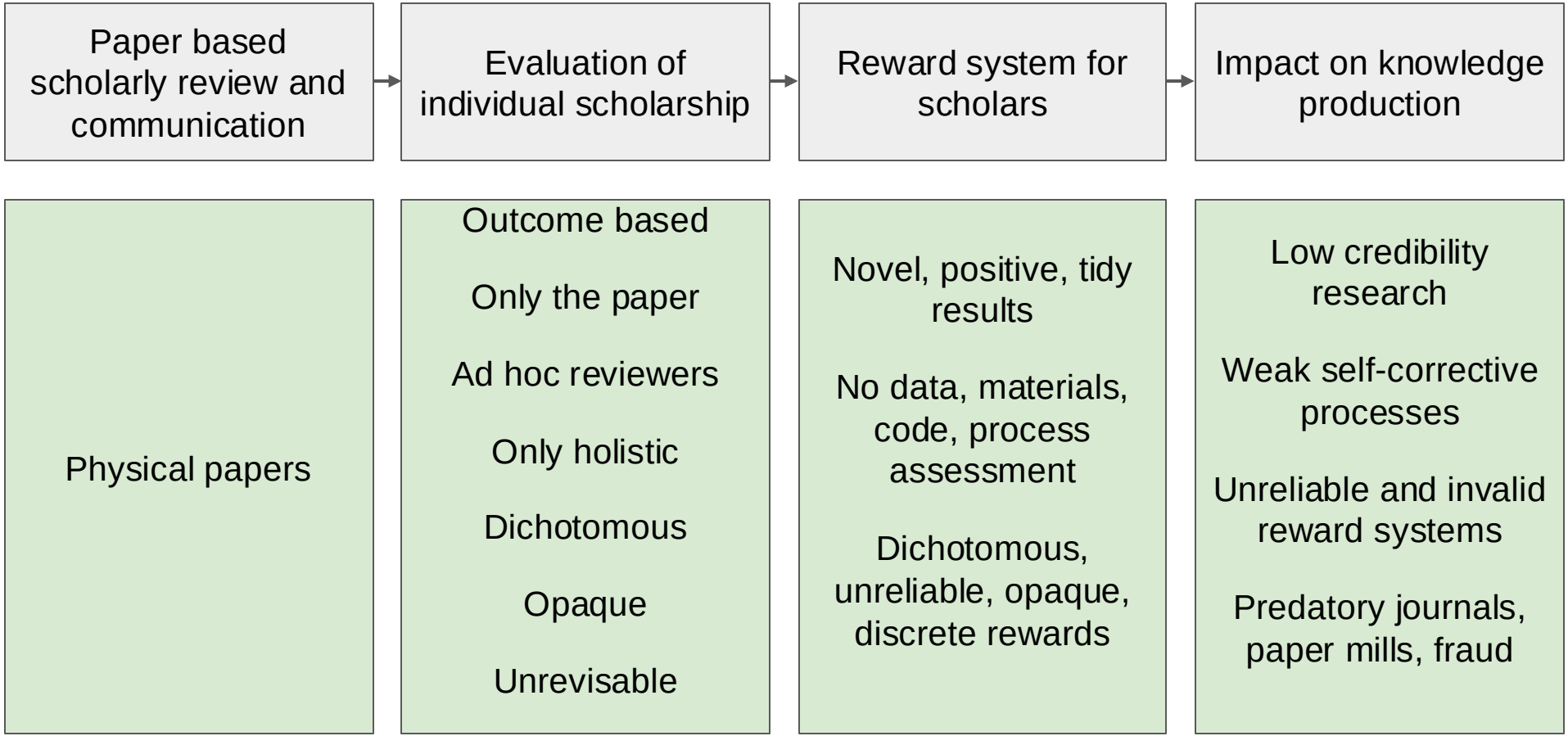
No data, materials, code, process assessment
Dichotomous, unreliable, opaque, discrete rewards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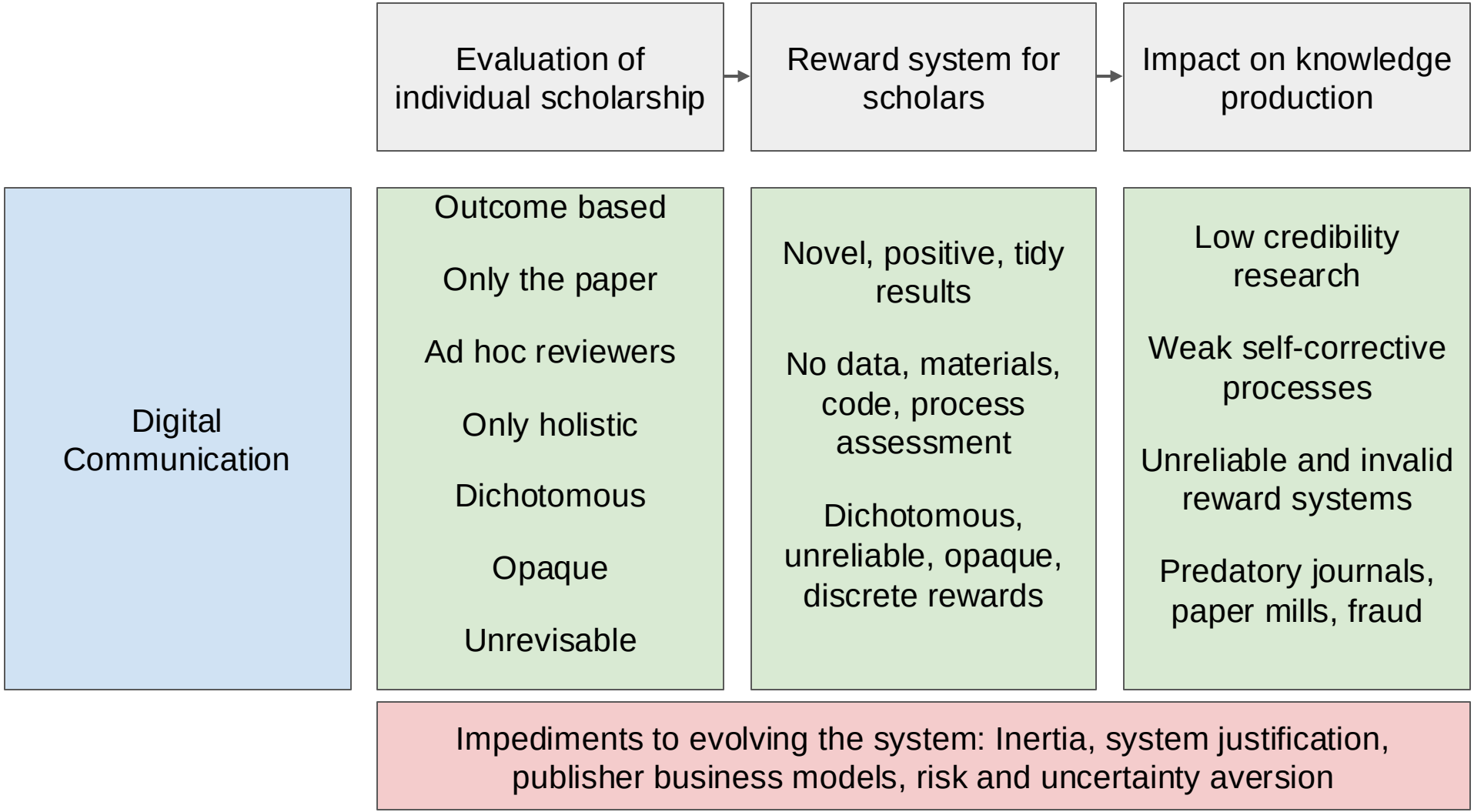
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Impediments to evolving the system: Inertia, system justification, publisher business models, risk and uncertainty aversion

Doing credible research is hard.

Publication signals credible research.

Paths to achieve publication with less effort:

- Lack of transparency
- Questionable research practices
- Selective reporting

- Predatory journals (no peer review)
- Fraud (no research)
- Paper mills (no work at all)

Researchers doing credible research could benefit from a system change

Part 3. Reimagining Scholarly Communiction

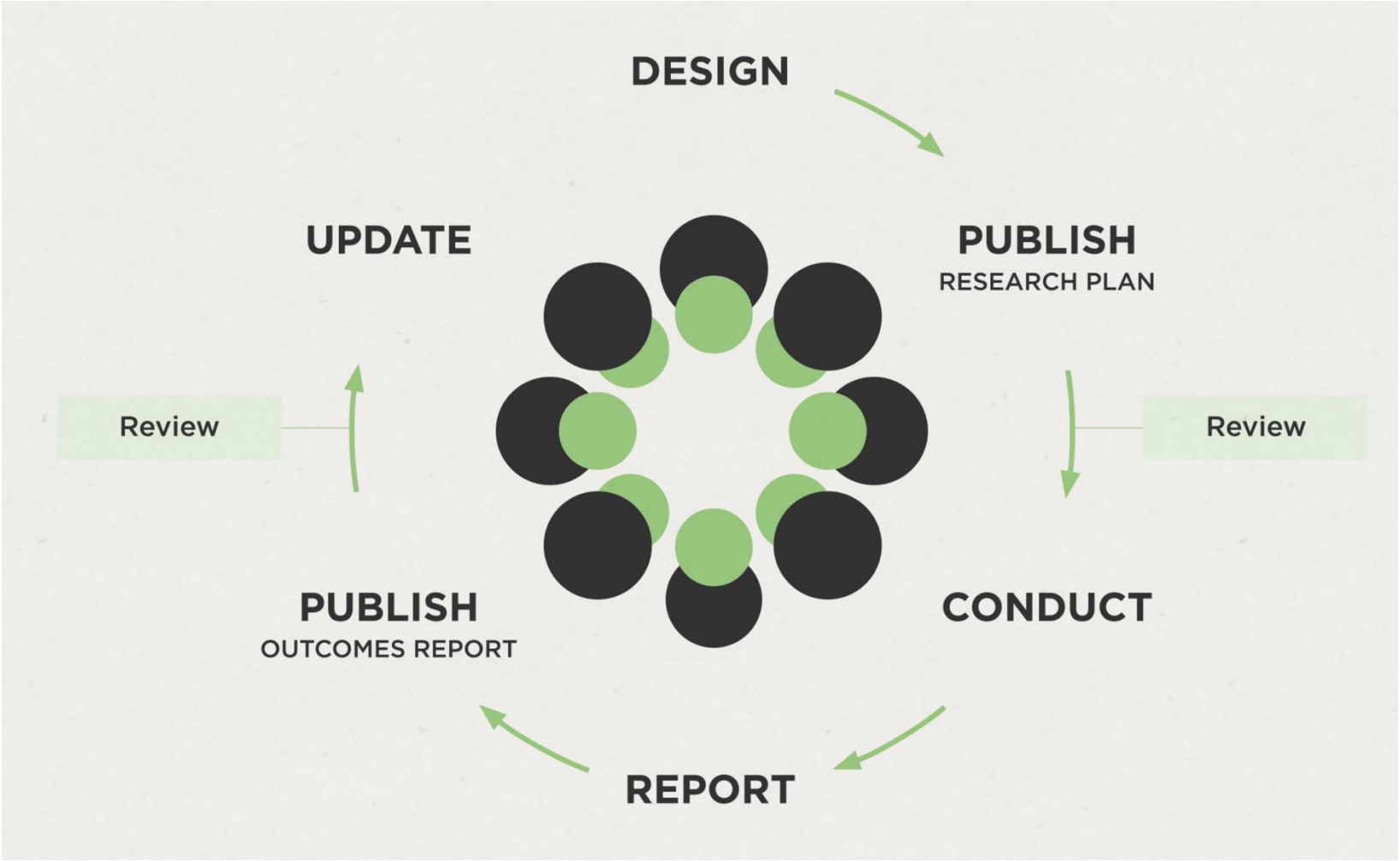
https://cos.io/lifecyclejournal/

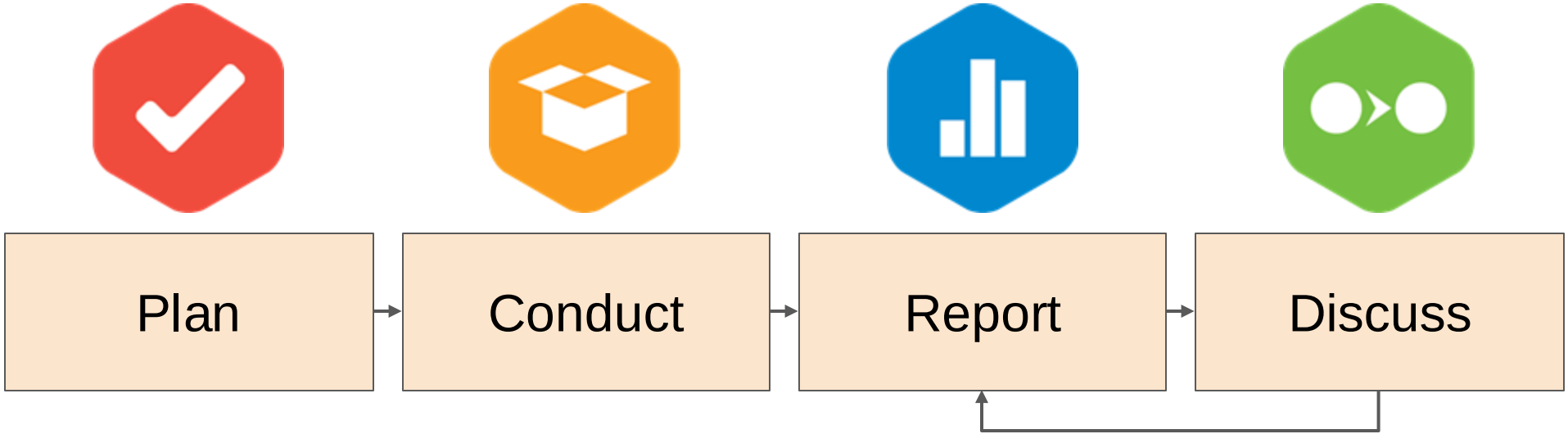
R&D project; Free to publish and read

— LIFECYCLE —
JOURNAL

ADDING TRUSTWORTHINESS, FROM CONCEPTION THROUGH COMPLETION

SUBMIT LEARN MORE


DESIGN
PUBLISH
RESEARCH PLAN
Review
CONDUCT
REPORT
PUBLISH
OUTCOMES REPORT
Review
UPDATE


Plan
Conduct
Report
Discuss

Plan → Conduct → Report → Discuss

PCI RR

SOCIAL SCIENCE Prediction Platform

DataSeer

INSTITUTE for REPLICATION

Plan → Conduct → Report → Discuss

PCI RR

Valid Measures?

SOCIAL SCIENCE Prediction Platform

LLM Forecasting

DataSeer

FAIRsharing.org standards, databases, policies

repliCATS

INSTITUTE for REPLICATION

ERROR

RegCheck

Causal and Associational Language in Observational Health Research: A Systematic Evaluation

Noah A. Haber, Sarah E. Wieten, Julia M. Rohrer, Onyebuchi A. Arah, Peter W. G. Tennant, Elizabeth A. Stuart, Eleanor J. Murray, Sophie Pilleron, Sze Tung Lam, Emily Riederer, Sarah Jane Howcutt, Alison E. Simmons, Clémence Leyrat, Philipp Schoenegger, Anna Booman, Mi-Suk Kang Dufour, Ashley L. O'Donoghue, Rebekah Baglini, Stefanie Do, Mari De La Rosa Takashima, Thomas Rhys Evans, Daloha Rodriguez-Molina, Taym M. Alsalti, Daniel J. Dunleavy, Gideon Meyerowitz-Katz, Alberto Antonietti, Jose A. Calvache, Mark J. Kelson, Meg G. Salvia, Camila Olarte Parra, Saman Khalatbari-Soltani, Taylor McLinden, Arthur Chatton, Jessie Seiler, Andreea Steriu, Talal S. Alshihayb, Sarah E. Twardowski, Julia Dabravolskaj, Eric Au, Rachel A. Hoopsick, Shashank Suresh, Nicholas Judd, Sebastián Peña, Cathrine Axfors, Palwasha Khan, Ariadne E. Rivera Aguirre, Nnaemeka U. Odo, Ian Schmid, and Matthew P. Fox

Peer reviewed. Version 1: 4 Aug 2022. Version 4: 7 Nov 2024
American Journal of Epidemiology Vol. 191, No. 12. DOI: 10.1093/aje/kwac137.v4

Abstract
Evaluations 3
Registration
Materials

ABSTRACT

We estimated the degree to which language used in th ublic health/epidemiology literature implied causality using language linking exposures to outcomes and action recommendations; examined disconnects between language and

Code

Paper

Author Contributions

from 18 highprofile journals (65 per journal) published from 2010–2019. Based on written framing and systematic guidance, 3 reviewers rated the degree of causality implied in abstracts and full text for exposure/outcome linking language and action recommendations. Reviewers rated the causal implication of exposure/outcome linking language as none (no causal implication) in 13.8%, weak in 34.2%, moderate in 33.2%, and strong in 18.7% of abstracts. The implied causality of action recommendations was higher than the implied causality of linking sentences for 44.5% or commensurate for 40.3% of articles. The most common linking word in abstracts was “associate” (45.7%). Reviewers’ ratings of linking word roots were highly heterogeneous; over half of reviewers rated “association” as having at least some causal implication. This research undercuts the assumption that avoiding “causal” words leads to clarity of interpretation in medical research.

EVALUATIONS

SERVICE	SUMMARY	VERSION	DATE	EVALUATED
DataSeer	Found 3 of 4 datasets shared	1	4 May 2023	
Review Commons	Recommended by 3 reviewers	4	1 Aug 2024	
Review Commons	Recommended by 1 reviewer	2	15 Jun 2022	

When is it done?

Author assigns a Version of Record (VOR), or not

Is it more burdensome?

Unknown.

Hypothesis: When rewards are achieved with rigor, production will decrease more than evaluation burdens increase.

Will it count?

Meet Current Reward System

Smith, J. A., Smyth, K. B., & Smythe, L. C. (2024). Shared evolutionary origins of nectarines, sauerkraut and Mr. Bean. *Lifecycle Journal*. DOI: lj0001232.v4

Will it count?

Meet Current Reward System **and Offer More**

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Recommended by *Peer Community In: Registered Reports*

Reproduced by *Institute for Replication*

Rated FAIR and open by *FAIRsharing*

Scholarly communication inhibits research progress because it…	**Scholarly communication could accelerate research progress if it…**
is slow, incomplete, opaque, and static.	opened the full research lifecycle and evolved with the research as it is conducted and evaluated.

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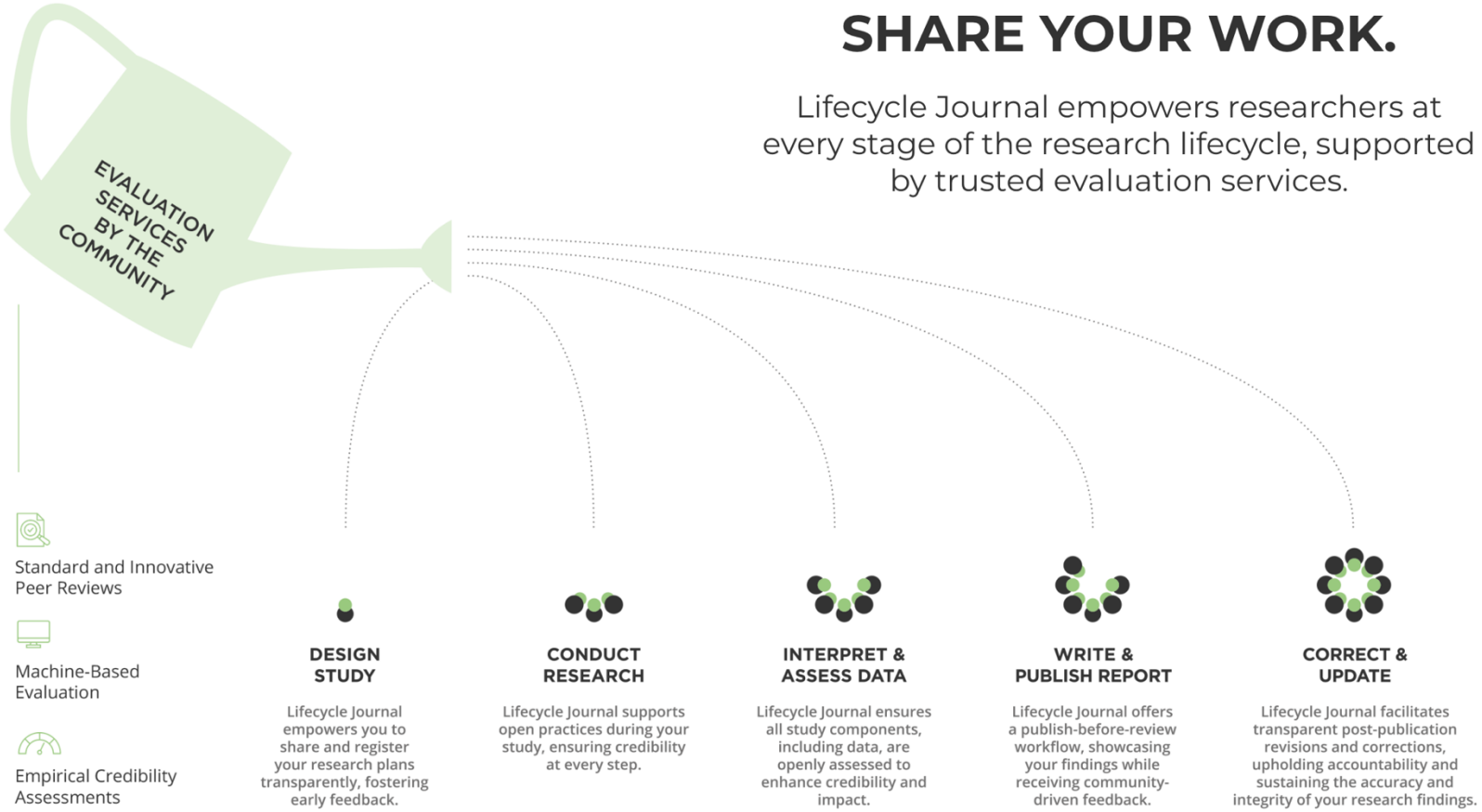
is calcified in legacy, commercial, paper-based business models, processes, and infrastructure.	were governed, operated, and experimented with by the research community itself.

SHOW YOUR WORK.
SHARE YOUR WORK.

Lifecycle Journal empowers researchers at every stage of the research lifecycle, supported by trusted evaluation services.



https://cos.io/lifecyclejournal

Slides: https://osf.io/tfnh5

Interested? https://cos.io/lifecyclejournal

Authors

Reviewers

Evaluation Service Partner

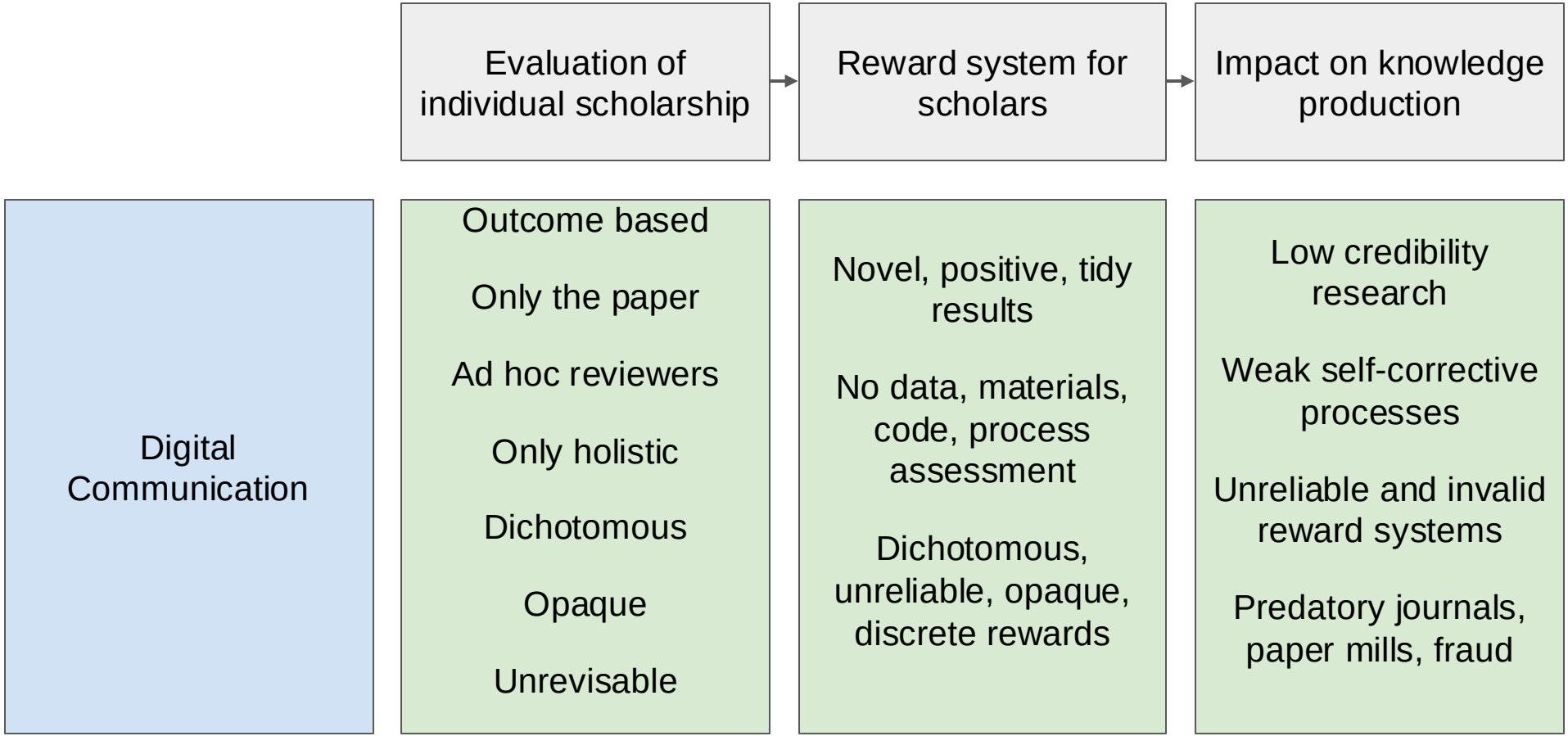
Metascientists

Vision for *Lifecycle Journal*

We envision a community-led, transparent, continuous amalgam of human, machine, and empirical assessments of the process, outputs, and outcomes of scholarly research across the research lifecycle to promote openness, rigor, credibility, and self-correction in knowledge production.

https://cos.io/lifecyclejournal

These slides: https://osf.io/qsbn2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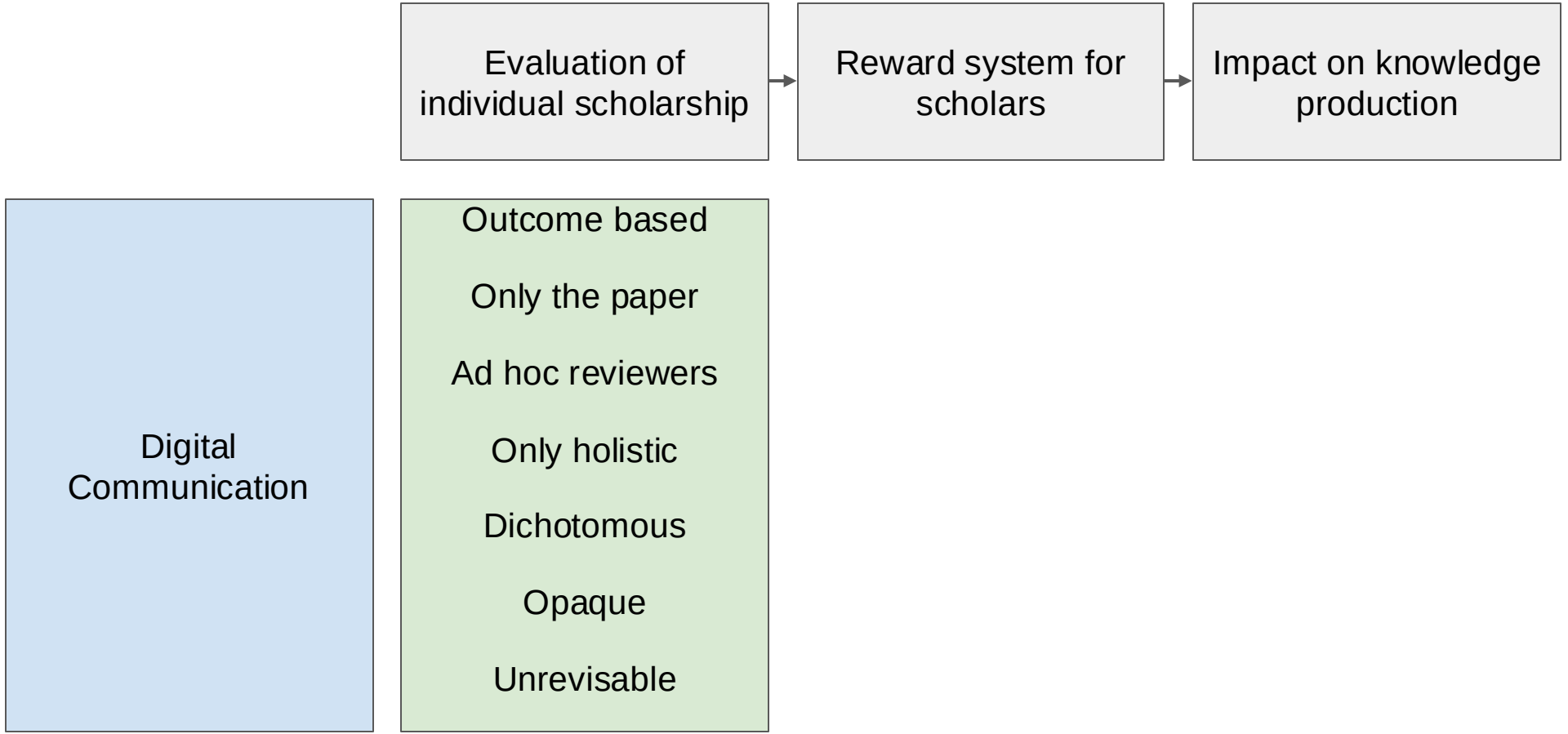
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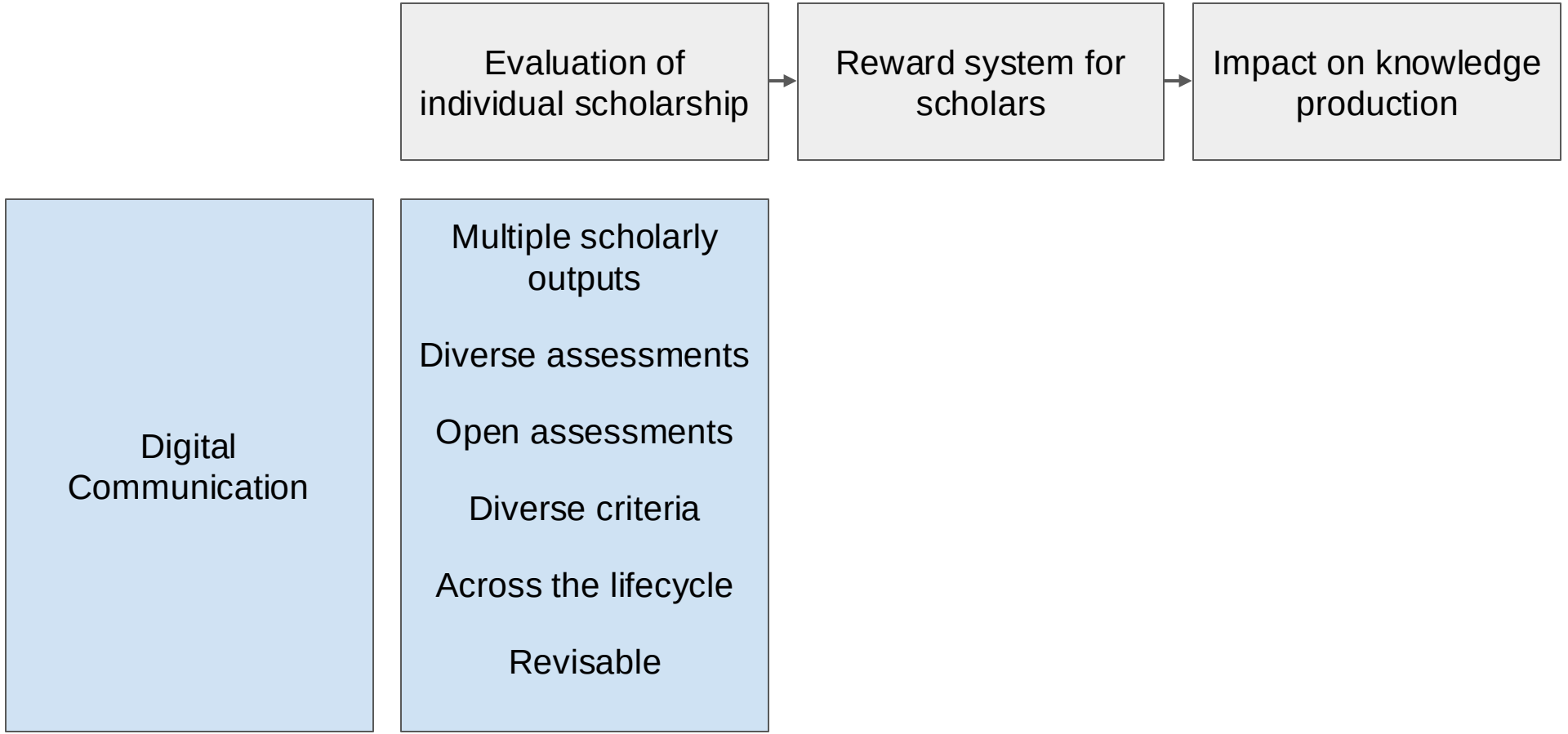
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Across the lifecycle
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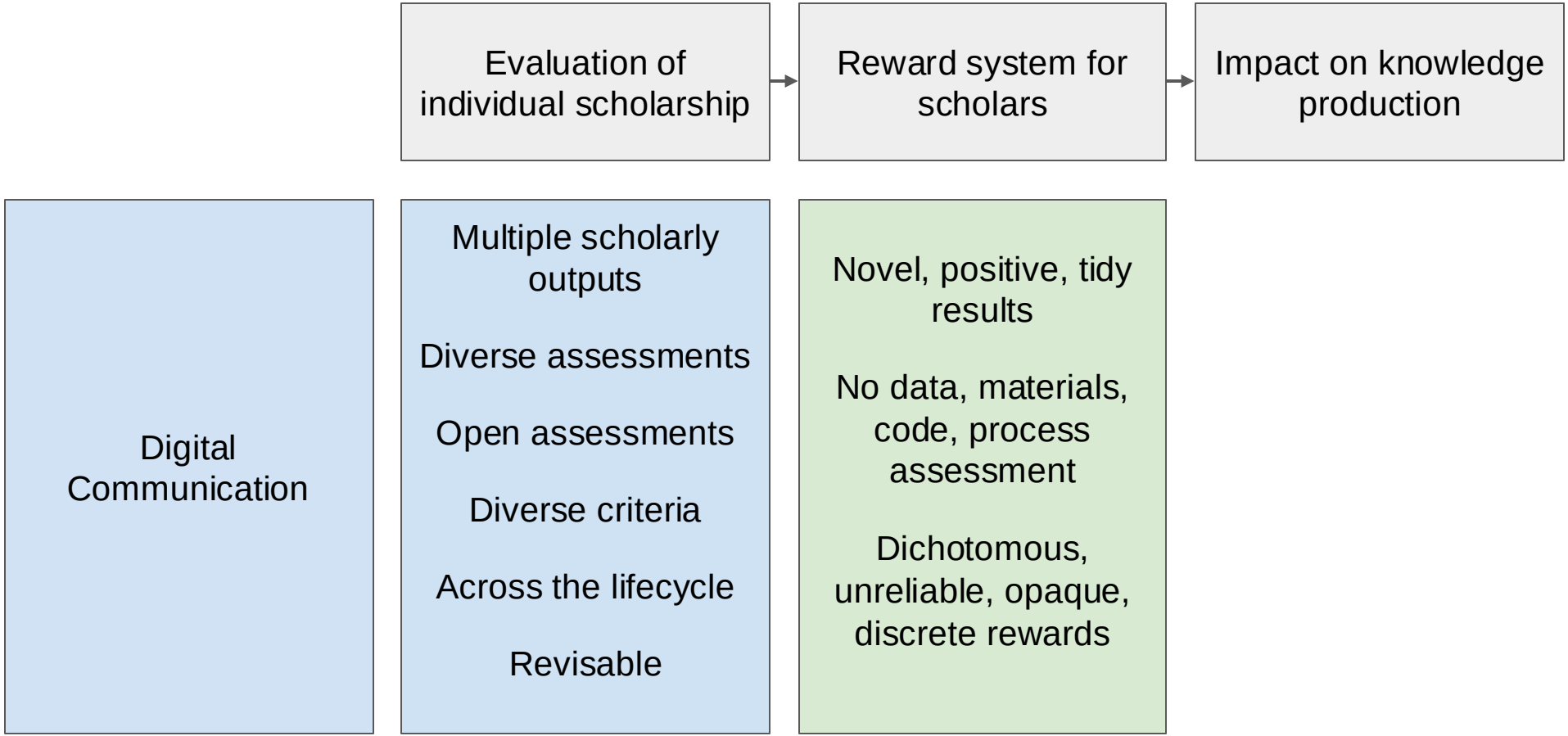
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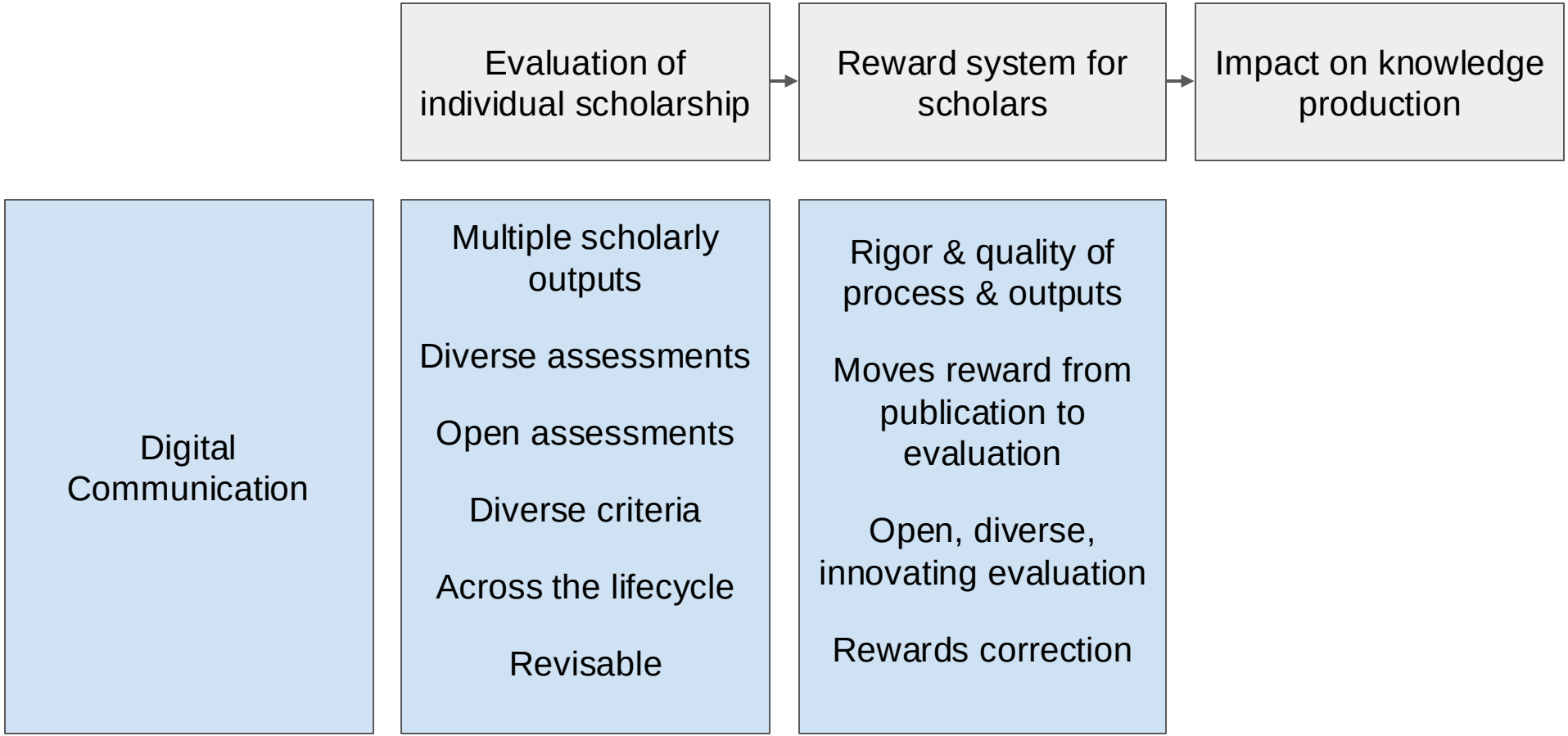
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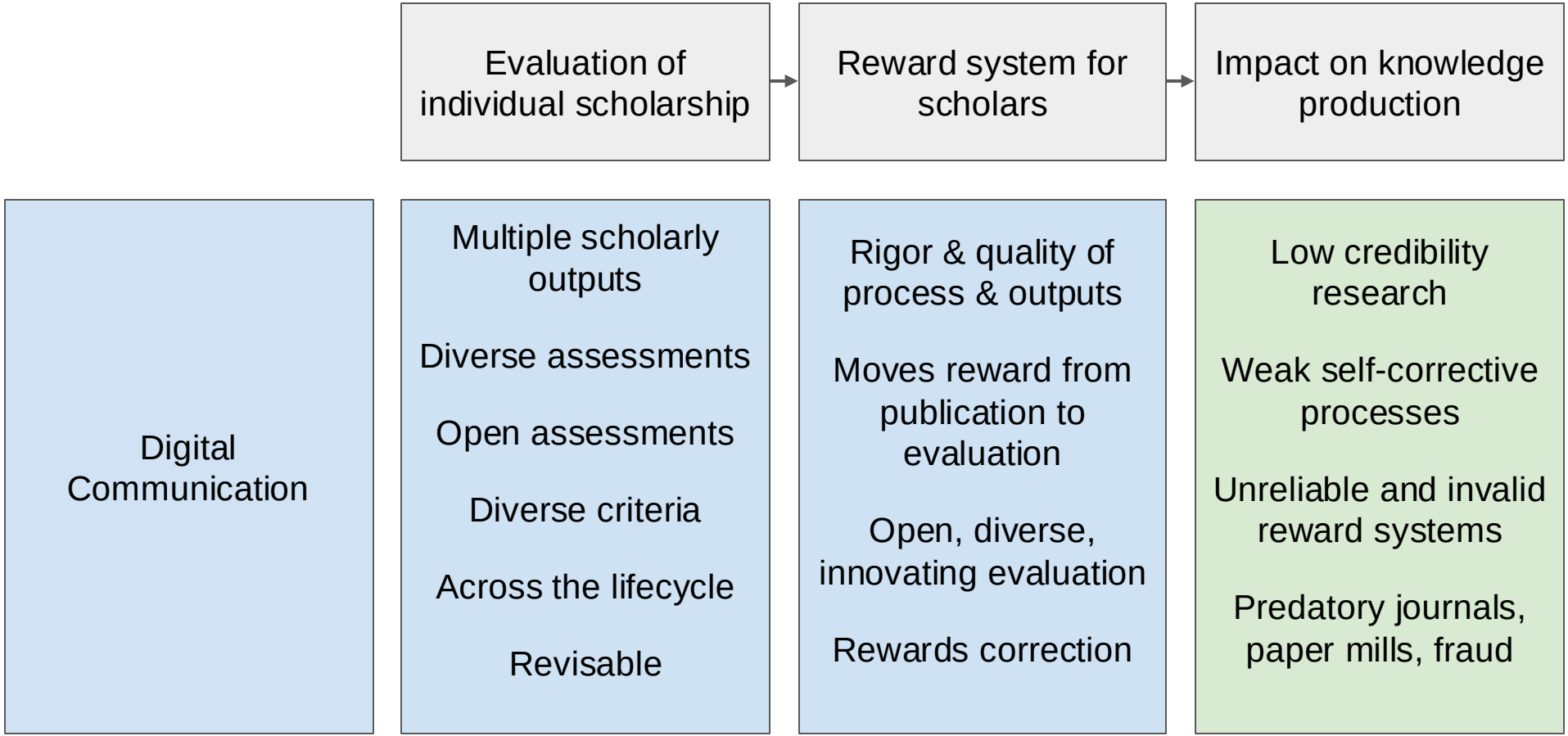
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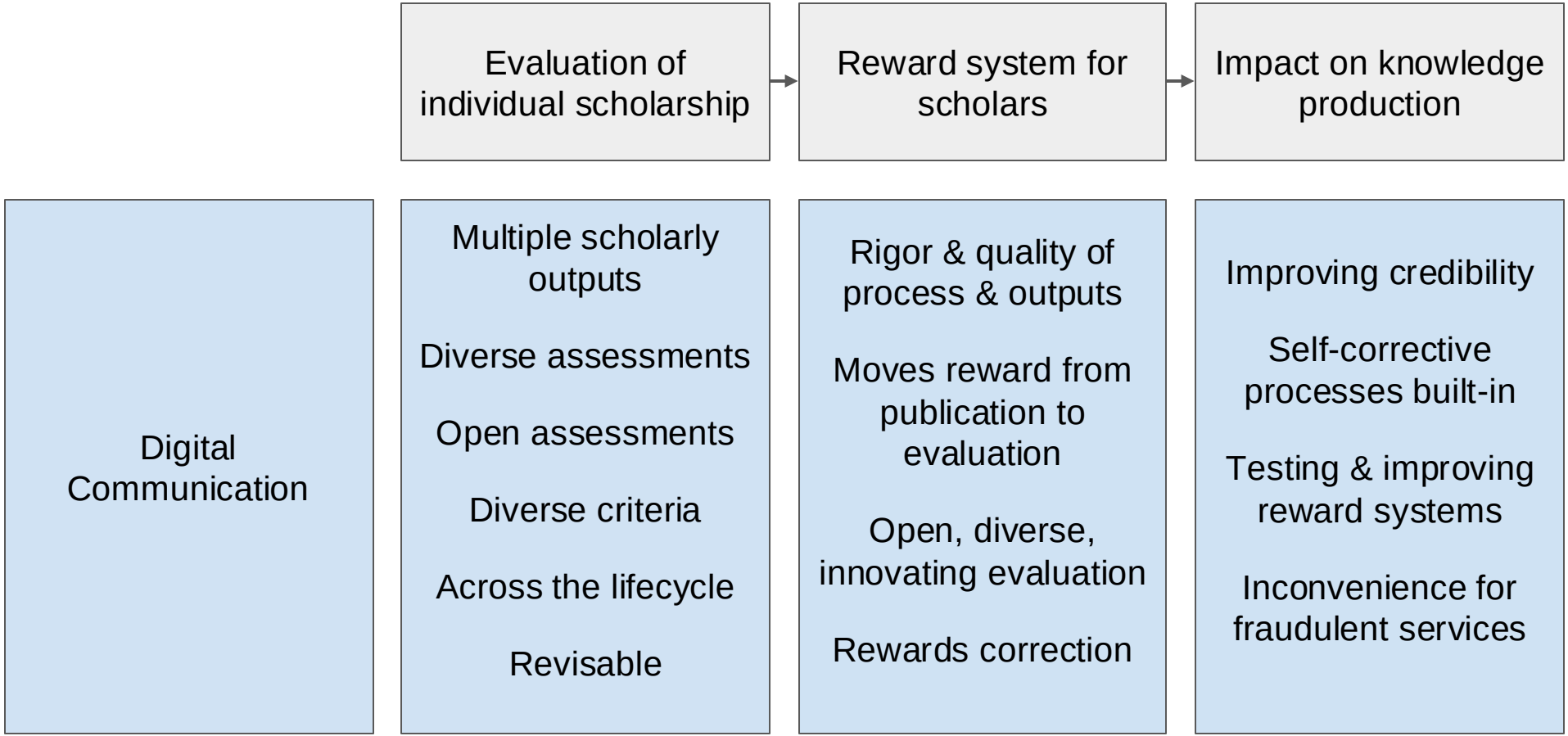
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