
Realigning Incentives for Biomedical Researchers and Journals Through Researcher-Shared Outputs

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ABSTRACT

Current incentives for researchers place a strong emphasis on journal publications, with the number and perceived prestige of journal articles contributing to researchers' competitiveness for jobs, promotions, and funding. Meanwhile, business models and the reputation of journals depend on selecting these research articles for exclusive publication. While journal peer review helps to validate and improve research reporting, researcher and journal incentives that tie journal peer review to editorial selection of articles can also work against the timely and authentic communication of research findings.

To realign incentives in scientific publishing with what matters most — advancing trustworthy, impactful scientific knowledge — we propose a framework that prioritizes researcher-shared outputs over journal-shared outputs. Researchers would be evaluated based on what *they* choose to share, for example as preprints, not what journals select. Journals and related service providers would be compensated for two distinct services, which should be functionally and financially separated: (1) **author-facing appraisal**, which reviews and improves researcher-shared outputs, and (2) **reader-facing curation**, which highlights these outputs for journal audiences. These service boundaries are transitional by design, expected to shift as transparent peer review practices and AI tools mature.

By anchoring researcher evaluation in researcher-shared outputs and journal business models in service execution instead of exclusivity, this framework fosters more inclusive, transparent, and efficient assessment of scientific work, while ensuring that journals are appropriately compensated for the value that they add.

The Problem: Goodhart's Law in Action

Academic publishing offers a textbook illustration of Goodhart's Law: "When a measure becomes a target, it ceases to be a good measure." Once intended as a means of disseminating new knowledge to the scientific community, journal publications and journal-based indicators have evolved into the primary measure of scientific achievement. As a result, researchers have found themselves navigating a system that increasingly rewards publication count, citations, and journal prestige, sometimes at the expense of the most meaningful or rigorous contributions to their fields [1,2].

Researchers are not the only ones who face distorted incentives. Publishers do, too. Journals earn revenue and prestige by selecting articles, either through subscription paywalls or article processing charges (APCs), and their strategies inevitably reflect the pressures to monetize exclusive publication of research findings. When the act of article selection becomes a financial target, timely and rigorous appraisal of the authors' work can become secondary. This shows up in

different ways across the journal system. Less selective journals, driven by the incentive to publish at scale, struggle to maintain rigorous peer review processes that can contend with the growing flood of paper mill- and AI-generated submissions. Meanwhile, highly selective journals, in their quest to publish the most impactful discoveries, have maintained their status by increasing rejection rates and demands for revisions, often delaying publication of good work and burdening authors, peer reviewers, and editors in the process [3,4,5]. Unfortunately, neither strategy translates into an improvement of research integrity, as evidenced by record numbers of retractions [6,7] and high-profile misconduct cases.

Incentives focused on journal publications create a paradox. Journal acceptance was meant to signal rigor and noteworthiness, but now contributes to scholarly communication's biggest problems: delays in the time-to-publish, a bias towards publishing positive results, challenges to find suitable reviewers, and the rise of low-quality and non-replicable literature [4,8,9,10,11]. This is Goodhart's law in action.

This paradox extends to everyone involved in publishing. Most authors, reviewers, and editors act with integrity and skill, which can give the impression that the system "works." Yet even exemplary individual performance does not yield an efficient or trustworthy system overall. A conscientious reviewer may identify critical flaws that lead to rejection at one journal, only to see the same paper accepted elsewhere. Expert editors, though deeply knowledgeable in their fields, struggle to find willing reviewers in an era of escalating review requests and increasingly interdisciplinary research. And diligent authors, aware of which reviewer comments are most substantive, often choose to implement every suggested revision simply to secure acceptance—creating a dissonance between meaningful scientific progress and the performative demands of publication, especially apparent to trainees executing those revisions.

At the systems level, these high-quality individual contributions are undervalued because incentives still revolve around producing journal publications. The problem is compounded by the universality of journal indicators: when a single set of metrics becomes the proxy for research quality across many contexts, their errors are amplified system-wide, and the pressure on researchers and journals alike to game those very metrics only intensifies. To improve incentives for both researchers and journals, **we propose that researchers should be recognized and evaluated based on the outputs they have shared directly (i.e. independently of journals), while journals should be compensated for the value they add through rigorous peer review and curation, not for the privilege of exclusive publication.** This new incentive framework built around researcher-shared outputs is designed to elevate transparency, quality, and authenticity in scientific reporting. Preprints, published and updated at the authors' discretion, are at the heart of this paradigm.

The Limits of Current Incentives

Academic Incentives

Incentives in academia should support the behaviors that allow scientific discovery to thrive. This requires that researchers receive appropriate recognition for the full range of their scholarly contributions. Today, assessment of researchers is tied to editorial decisions, leveraging journals' roles in quality control and filtering of scientific literature. But this reliance comes at a cost: journal articles are, by design, curated narratives, shaped by format constraints, audience priorities, and financial considerations. They highlight research but also compress and reframe it, offering

only a selective projection of a broader body of work. In doing so, they restrict how contributions are expressed, recognized, and ultimately credited to the researchers themselves.

Here are some examples.

First, journals define the format and scope of publication. With journal publications serving as the currency for career advancement [12,13,14], researchers feel pressure to maximize the number of journal articles and to prioritize publication in highly selective venues. To ensure that they can publish in these coveted venues, researchers may feel the need to inflate interesting observations into full-length journal articles when shorter formats could transmit the new knowledge more succinctly and faster. After a manuscript has been reviewed, authors may need to invest months in revising it to meet the expectations of editors who seek to publish more extensive, more “impactful” narratives. In both scenarios, researchers spend significant time ‘packaging’ their research discoveries into artifacts that are acceptable to journals — time that could otherwise be spent advancing new lines of inquiry.

Second, editorial practices such as copyediting and limits on citations aim to streamline articles for readability and appeal. Articles often grow substantially during peer review, only to have to be pared down before publication to meet journal formatting constraints. These interventions can sometimes dilute the author’s voice and compromise nuanced language that conveys uncertainty, contextual framing, or the subtleties of methodology. Moreover, restrictions on references can truncate the scholarly context, obscuring how a contribution builds on or challenges prior work.

Third, and perhaps most importantly, opaque peer review systems reward authors for polished final products but fail to credit the reviewers for their input or to surface the scholarly discourse for readers. If formal peer review is to remain a cornerstone of scholarly communication, it should generate visible scholarly outputs — published peer review reports and author responses — to enable recognition of peer reviewers for critical, constructive feedback and authors for timely corrections to their work. Publishing this information enhances accountability, reveals how research evolves through critical feedback, and can contribute to a better public understanding of how science works.

These constraints on the expression of scholarship cannot be resolved so long as journals retain exclusive publishing rights. Such restrictions curtail authors’ control over how and when their work is shared and deprive the scholarly community of access to the most complete account of the research — an account only the researchers themselves can provide. To remedy this, researchers should be free to release the full arc of their work, before and after peer review, separate from and in addition to the curated journal article. This scientific equivalent of a “Director’s Cut” affirms researchers’ intellectual independence and their right to communicate discoveries. Crucially, such freedom is not only about dissemination; it’s about honoring the creative and exploratory nature of scientific inquiry.

Financial Incentives for Journals

Today’s dominant scientific publishing business models, whether paywall- or open access-driven, link financial gain to the selection of articles. This creates a conflict of interest that distorts how science is communicated and valued. Consider an analogy: Imagine if Michelin awarded its coveted stars only to chefs who paid a fee and revised their recipes to suit their food critics’ tastes. The result would be a rating system that fails to reflect the full breadth of culinary innovation and creativity. Science may rest on data rather than taste, but the translation of nuanced peer-review feedback into a binary accept-reject decision inevitably depends on judgment—a kind of “taste” of its own.

Open access publishing, in particular, introduces a stark form of this dilemma. Authors — or more often, their institutions and funders — are being asked to pay for the exclusive selection of their own work, despite their obvious vested interest in that selection. This *pay-to-publish* dynamic makes article processing charges (APCs) resemble advertising fees more than quality assurance fees. This dynamic creates pressure at both ends of the publishing spectrum: high-volume journals may be tempted to sell a “stamp of approval” without providing commensurate peer review, while highly selective journals may maintain rigorous review but charge accepted authors steep APCs to offset the cost of the large number of rejected submissions. These high fees effectively exclude underfunded researchers from participating in and benefiting from open access publishing.

More subtly, and perhaps more pervasively, this conflict of interest affects selective journals in general, regardless of whether they are funded through APCs or subscription paywalls. Editorial acceptance is often contingent upon substantial revisions that require significant time, labor, and resources from authors. These editorially prescribed changes, which can outweigh even the highest APCs in cost and effort, create a hidden form of transactional exchange: authors comply with editors’ demands in return for approval to publish. This process reinforces structural inequities and creates a system where access to publication depends not just on quality, but on the ability to meet resource-intensive conditions.

In sum, the selection-driven business models of journals, whether through direct payments or editorial gatekeeping, create deep-seated conflicts of interest. These undermine fairness in scholarly publishing and a sustainable transition to open access that all authors can participate in. It is common to place blame on the commercialization of journals or the rise of professional editorial staff. If only editorial decisions were made by academic editors at nonprofit publishers, the argument goes, the problems would disappear. But this view misses the deeper issue: the *quid pro quo* dynamic is baked into the structure of journal exclusivity. It can persist regardless of whether a journal is nonprofit or commercial, or whether editors are academics or professionals.

Resolving this issue requires more than reforming who edits journals or how they are funded. It demands a structural separation between *dissemination* (publishing and peer review) and *selection* (curation). This is precisely the shift envisioned by the **Publish–Review–Curate (PRC)** model which we and others have proposed [15,16,17,18]. In this model, researchers release their findings as preprints in open repositories, thereby making their work publicly available by default when they deem it ready. Subsequently, peer review services help authors improve their preprints and offer context and evaluation to readers. Finally, curation services select and interpret content for specific audiences. This framework separates the processes of publication, peer review, and curation, allowing for greater transparency and efficiency.

The shift toward researcher-driven publishing is underway, but it remains incomplete. Researchers increasingly post preprints and associated research products such as data, code, and protocols outside the journal system [19]; and the PRC model has gained traction, most visibly through eLife’s adoption [20]. Yet major obstacles persist. Many journals continue to treat preprints as provisional rather than legitimate publications, weakening their role in establishing priority and recognition. Moreover, revised versions of articles typically remain confined to journal publications, restricting researchers’ ability to disseminate updates and corrections on their own terms. These practices are entrenched by academic incentive systems that privilege journal-branded articles over preprints and by publishers who suppress preprint updates to protect exclusivity-based business models. As long as these outdated incentives remain intact, reform will be stalled. Our proposed incentives framework would accelerate the shift toward a publishing system

in which publication, review, and curation are distinct, transparent, and optimized for scientific progress [21].

Aligning Future Incentives Around Researcher-Shared Outputs

The exclusivity of journal publications lies at the core of today's misaligned incentives for both researchers and journals. We outline how a re-alignment of incentives can be accomplished if we center incentives for researchers and journals on researcher-shared outputs. Our focus is on preprints because they are the closest equivalents to journal articles; however, the same logic applies to other research products such as data, software, protocols, preregistrations, etc. By *preprints*, we mean articles that authors publish *and update* independently of journals. This contrasts with the narrow definition of preprints as merely “unreviewed manuscripts” — a framing often reinforced by journals — because it explicitly encompasses revised versions improved through peer review. Preprints as defined here accelerate the dissemination of reliable knowledge and promote incentives for rigor and openness over the prestige-oriented incentives fostered by journal exclusivity. Going forward we may need a different terminology than ‘preprints’ to refer to researcher-shared articles. An umbrella term could be ‘articles on open repositories’ where open repositories include preprint servers and institutional repositories. Such terminology would avoid the misconception that researcher-shared articles are by definition unreviewed or precede journal publication, and would instead emphasize that these articles can exist independently of journals and stand as scholarly contributions in their own right.

Evaluate Researchers Based on Researcher-Shared Outputs

Selection criteria for hiring and funding are among the most powerful incentives shaping researcher behavior, since they determine who receives the resources to pursue research. We propose a fundamental change in what counts: researchers should be assessed not by journal publications or journal-based metrics, but by the outputs they have publicly shared themselves, most notably preprints with supporting evidence, such as data. Specifically, hiring and funding committees should give priority to the most complete version of a preprint, particularly when it incorporates revisions from peer review, rather than to the corresponding journal article (Fig. 1B).

This approach enables a more accurate and fairer assessment of scholarly merit. It values contributions in the researchers' own words rather than through the lens of editorial preferences. Such a model is also better aligned with the core mission of research organizations: to foster innovative, investigator-led science. After all, it is paradoxical that researchers — who have earned the recognition of institutions and funders through highly selective hiring and funding processes — are required to seek selection once again from journal editors at the very moment they are ready to share the results of their work.

By recognizing researcher-shared outputs, evaluators can take into account a broader spectrum of research contributions, including new formats that may turn out to be a better fit for a digital knowledge sharing environment [22,23] and outputs that are undervalued by journals: null results, brief communications, datasets, software, code and research tools. Researchers in turn would enjoy greater flexibility in how and when they release their work: some may publish early and often to engage with the community, while others may wait to release more comprehensive bodies of work. Both strategies are valid, yet selective journals implicitly favor the latter. As long as institutions and funders only reward outputs that are publicly available, researchers will remain incentivized to disseminate their findings in a timely fashion.

A common objection to prioritizing researcher-shared outputs is that evaluators often lack the time, expertise, or both to sift through large volumes of unfiltered preprints. Yet effective mechanisms for filtering and evaluating these outputs already exist, as we discuss below. Importantly, these need not conform to the one-size-fits-all model imposed by journals: a diversity of approaches, combining human insights with state-of-the-art AI tools, can be adapted to specific evaluation contexts — whether hiring, tenure, grant funding, or awards — and is better equipped than uniform journal-based filters to recognize bold, unconventional, and high-risk work, and less vulnerable to Goodhart's law. Some of these strategies are already in use; others are emerging as feasible.

One effective solution already in wide use is for candidates to present curated selections of their key outputs, each accompanied by a brief narrative explaining its relevance and impact. These self-assessments, common in performance evaluations across professional domains, offer essential context and interpretation from the perspective of the candidate. The increasingly popular narrative CV format offers a natural platform for this approach [24,25,26,27] and can be easily adapted to emphasize preprints rather than journal publications.

Peer review reports, when published alongside preprints, offer an additional and transparent source for evaluation (Fig. 1B). In the traditional journal-centric model of researcher assessment, peer review functions as a binary filter: journal publication signals that the article passed the journal's peer review process. By contrast, our model shifts attention to the content of peer reviews themselves — specifically, the reasoning behind judgments about strengths, weaknesses, and significance. Such input helps both experts and non-experts on review panels, offering reasoned arguments that are easier to assess than producing those judgments from scratch. Summaries of peer review reports, whether produced by humans or AI, can further enhance accessibility and utility. These summaries can serve as brief perspectives from informed peers to complement the candidates' self-narratives.

The focus on a limited number of key outputs, enriched by commentary from both authors and peer reviewers, helps mitigate information overload, especially in contexts with large applicant pools. It also enables scientifically literate generalists — those with a strong track record of sound judgment but not necessarily deep domain expertise — to engage meaningfully in assessing candidates.

In summary, the true challenge in shifting academic incentives lies less in evaluating more diverse and unfiltered works; tools for filtering researcher-shared outputs are already effective and will only improve as peer review becomes more transparent and AI- and human-generated summaries become more common place. Rather, the challenge is largely cultural: journal-based indicators are deeply entrenched in research evaluation, from citing the work of other scholars to getting jobs and grants. Displacing the primacy of these metrics is therefore disorienting and difficult.

Pay Journals Separately for Services that Appraise and Curate Researcher-Shared Outputs

In a publishing ecosystem centered on researcher-shared outputs, journals no longer control the dissemination of scientific discoveries. Still, journals and other service providers retain a vital role in executing functions that improve and contextualize researcher-shared outputs. These functions currently fall into two categories — **appraisal services** (author-facing) and **curation services** (reader-facing). Appraisal helps authors refine their work before they share it publicly in original or revised form; curation helps readers navigate and interpret the literature.

Currently, most journals combine appraisal and curation into a single process that culminates in one output: the journal publication (Fig. 1A). We envision a system where journals continue to perform both functions, but in a more transparent and accountable way (Figure 1B). To reduce conflicts of interest and eliminate perverse incentives,

appraisal and curation should be **decoupled** — producing distinct outputs and compensated independently. This decoupling of appraisal and curation would also enable organizations to specialize in one function or the other, fostering innovation and quality in both.

Appraisal services support quality control and improvement through manuscript checks, including transparent peer review. Here, an appraisal fee does not compensate acceptance but rather the management of a review process that results in publication of review reports, author responses, and revised article versions, all of which become part of the public scholarly record. The visibility of these outputs creates accountability for authors, reviewers, and journals alike and justifies a standalone appraisal fee. Repeat appraisal at a different journal can incur a new fee, but because earlier reviews are published, they can inform the next round, much as replication can strengthen scientific rigor and build consensus. The appraisal fee compensates for service coordination, not for reviewer labor, which can be recognized as a scholarly contribution in its own right because the review reports are published. Dedicated peer review organizations that would benefit from a sustainable business model, initially based on appraisal fees, already exist within and outside the traditional journal system; examples include eLife, Peer Community In, and Review Commons [28,29]. These services can offer peer review that is more transparent and broadly useful than traditional journal evaluations, whose ultimate purpose is to inform editorial publishing decisions. But they can inform publishing decisions too. Peer Community In and Review Commons provide journal-agnostic peer review that partnering journals rely on. Maturation of peer review services, supported by appraisal fees and delivered by traditional journals and dedicated peer review organizations alike, could gradually drive system-wide improvements in both quality and cost-efficiency.

While appraisal services improve researcher-shared outputs, **curation services** can continue to monetize the selection and production of journal content. As researcher-shared outputs become more accessible, however, curation services may want to offer more than formatting, copyediting, and branded dissemination. They could evolve to include synthesis pieces that combine related researcher-shared outputs, produce thematic reviews, or generate curated reading lists that help readers make sense of a growing and diverse literature.

Curation services are inherently reader-facing while appraisal services are (currently) initiated by authors and thus inherently author-facing. This makes it reasonable to expect that readers might cover curation fees while authors cover appraisal fees. This model already represents an improvement over current paywalls and article processing charges (APCs). Paywalls for curation services would apply only to journal-curated content, while researcher-shared preprints would ensure that the underlying research findings — including improvements resulting from peer review — remain freely accessible. Likewise, appraisal fees would be tied to the execution of a service rather than the acceptance of a manuscript. Because revenue would no longer depend on publishing decisions, accepted papers would no longer need to subsidize the cost of rejected submissions. A modest submission fee could further reduce cross-subsidization between manuscripts that proceed to full appraisal and those screened out at the initial stage. As a result, appraisal fees could be lower, more transparent, and less susceptible to conflicts of interest than APCs. However, any author-pays model carries the risk of reproducing the same issues associated with APCs — namely, the creation of a pay-to-play dynamic that places disproportionate burdens on researchers with limited access to funding.

The most direct solution is to remove individual author fees altogether by shifting the cost of publishing infrastructure to institutions, funders, and scholarly communities collectively. This is the principle underlying ‘diamond’ open access publishing, which offers services that are free for both authors and readers [30,31,32,33]. It is worth distinguishing between two distinct uses of diamond open access publishing: diamond-funded journals that maintain exclusive

editorial selection and diamond-funded repositories and other open infrastructure that support researcher-shared outputs. Diamond journals where editors select articles for exclusive publication, even when community-governed and free to authors and readers, must still compete head-to-head with long-established journals operating under the same selection logic. This places them at a structural disadvantage and limits their ability to reshape the publishing ecosystem and incentives. Based on the framework we propose, diamond funding should instead be deployed to sustain repositories and connective infrastructure that focus on researcher-shared outputs. Anchoring diamond funding at this publishing “core” of researcher-shared outputs (Fig. 1C) creates a more robust and evolvable ecosystem; it provides a stable, non-competitive foundation on which diverse appraisal and curation services, nonprofit and commercial alike, can build and differentiate themselves by the quality of the value they add.

This division of labor between a diamond-funded core and value-adding services acknowledges an essential feature of any scholarly communication system that aims to capture research outputs comprehensively: it is inherently noisy. The full range of research outputs necessarily includes contradictory, incomplete, preliminary, and sometimes incorrect claims, reflecting the exploratory and often nonlinear process by which scientific knowledge becomes trustworthy. A central role of appraisal and curation services is therefore to increase the signal-to-noise ratio by helping authors improve their work and helping readers interpret it.

Peer review reports are central to this signal-boosting role and should be included in the diamond core as bona fide scholarly outputs that researchers can and increasingly do publish themselves. Community-facing peer review and peer review training programs already support this practice — examples include [ASAPBio’s Crowd preprint review](#), [Company of Biologists’ preLights](#), [PREreview clubs](#), [PREreview peer review training](#) and [HHMI’s Transparent and Accountable Peer Review Training Program](#). By treating peer review reports as first-class outputs within the diamond-funded core, rather than as exclusive products of journal processes, peer review could come to mirror the emerging relationship between researcher-shared preprints and curated journal articles: iterative, cumulative, and non-exclusive. In this future, peer review as a journal service would combine elements of appraisal and curation, drawing on both commissioned and spontaneously contributed reviews to surface the most informative critiques and insights. Journals would then function as curators of a community-wide conversation rather than gatekeepers of peer review.

The evolution of peer review illustrates how the distinction between appraisal and curation, which helps to uncouple journal services during the transition (Fig 1B), may matter less in the future than *when* services operate relative to public sharing (Fig. 1C). **Pre-publication services** function much like a food safety inspection in our restaurant analogy: they apply community standards to establish baseline expectations for integrity, transparency, and traceability, thereby distinguishing researcher-shared outputs that have passed certain quality checks from unvetted self-posting. These checks may include author identity verification, screening for image or text integrity, metadata verification, confirmation of data provenance, and assessment of compliance with reporting standards [17]. Over time, these services are likely to integrate electronic lab notebooks and AI-assisted tools to streamline documentation, data provenance and integrity checks.

Institutions and funders are particularly well positioned to connect researchers with such pre-publication services, as they are closer to the conduct of research than journals and already bear responsibility for research integrity and compliance. Emerging examples include the Gates Foundation’s collaboration with [verixiv](#) to support preprint quality assurance; the tracking of open science practices by Aligning Science Across Parkinson’s [34]; and institutional

provision of image- and text-integrity screening tools such as [Proofig](#) and [iThenticate](#).

Post-publication services rely on expert judgment, and increasingly on AI, to contextualize, evaluate, and synthesize researcher-shared outputs over time. Importantly, curated journal content can continue to add value and maintain journal brands. Scientists will still value coverage in journals known for highlighting outstanding work, and the public and popular press may likewise continue to view journal articles as trusted signals of editorial certification and expert synthesis.

But trustmarkers other than journal selections will also emerge as key public outputs of post-publication services, and of pre-publication services that release summaries of their checks at the moment of preprint posting (Fig. 1C). Trustmarkers could include checklists of completed quality-control steps, structured summaries of peer review, or badges [35,36,37,16,17]. Crucially, these trustmarkers should be designed to point evaluators *toward* the underlying scholarship, not to replace it. For this reason, they must not function as new quantitative shortcuts that risk recreating Goodhart's Law dynamics at a different level. Unlike journal-level metrics, trustmarkers are specific to individual outputs and transparent about what they represent and how they are generated; their validity can therefore be scrutinized and contextualized by evaluators rather than accepted as a black-box signal of quality. The full-length, authentic outputs — articles, data, peer review reports — remain openly accessible on diamond-funded repositories as the ground truth that trustmarkers serve to index, not supplant.

A powerful example of an emerging trustmarker is eLife's use of prescribed vocabulary in editorial assessments to categorize peer review outcomes across two dimensions: the significance of the reported findings and the strength of supporting evidence [38]. Terms range from “useful” to “landmark” for significance, and from “inadequate” to “exceptional” for strength of evidence. Rather than transmitting a single binary signal of acceptance, these assessments convey a richer and more honest picture of where a piece of work stands, making visible what traditional journal peer review keeps hidden. Crucially, because this vocabulary is linked to longer-form peer review reports, it illustrates how trustmarkers can serve as meaningful guides to the literature without collapsing into the single-number proxies that Goodhart's Law warns against.

In summary, a more accountable and efficient publishing ecosystem can emerge if researchers disseminate their work through diamond-funded repositories with appraisal and curation services layered on top. We can catalyze the transition to this future by reinforcing better incentives now (Table 1): rewarding researcher-shared outputs and compensating journals for service execution instead of exclusive publication. Together, these changes start to address the root cause of misaligned incentives — the exclusivity of journal publications — while preserving meaningful roles for journals as trusted appraisers and curators. Professional societies, mission-driven publishers, community-led initiatives and commercial publishers can find fertile ground to develop appraisal and curation services that can replace exclusivity-based business models.

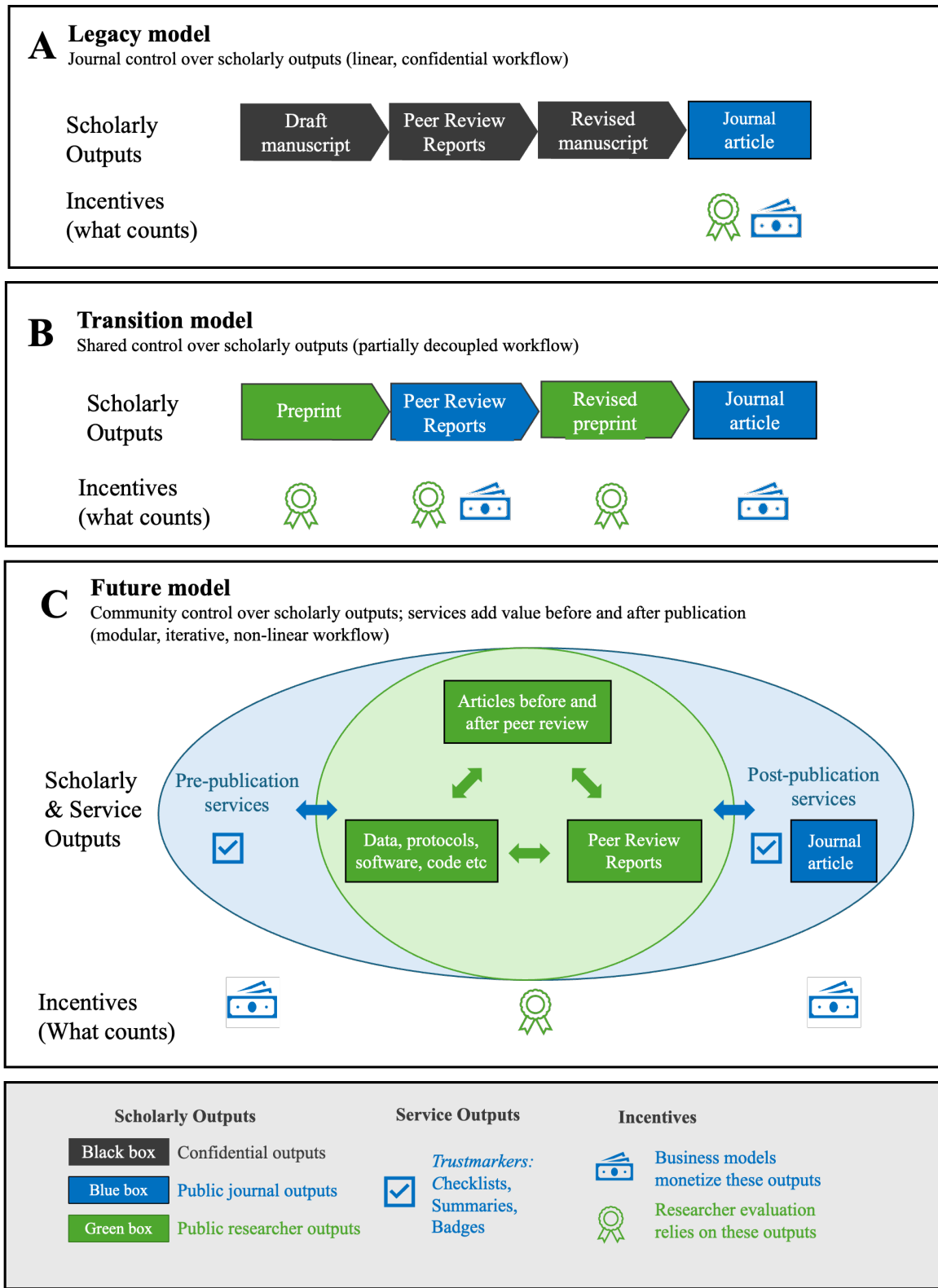


Figure 1. Evolution of scholarly communication and incentive structures from journal-centric control toward a community-controlled publishing core enhanced by services. Across panels A–C, control over scholarly outputs shifts from journals to researchers and the research community. Journal business models shift from monetizing exclusive gatekeeping to monetizing service execution and outcomes; researcher incentives shift from rewarding exclusive journal publication to rewarding researcher-shared outputs and their iterative improvements.

A. Legacy model. Scholarly communication is dominated by confidential ("black box") journal processes. Incentives for both researchers and journals, whether financial or reputational, are tied to journal articles and journal-level metrics.

B. Transition model. Public release of intermediate outputs, including researcher-shared preprints (initial and revised versions) and journal-shared peer review reports, diversifies incentives beyond the journal article and journal-level metrics. Researchers can be evaluated based on publicly available contributions on preprint servers contextualized by transparent peer review. Journals can monetize intermediate products, notably peer review reports, through appraisal fees. While the Publish, Review, Curate (PRC) publishing workflow best represents this transition model, journals can participate in this transition without adopting the full PRC workflow. Traditional APCs, however, are hard to reconcile with this model because they link payment to acceptance and thus fail to incentivize intermediate outputs. High-volume open access journals are well positioned to replace APCs with appraisal fees, while more selective journals can maintain income streams through a combination of appraisal and subscription fees.

C. Future model. A community-controlled publishing 'core' of repositories hosts and connects researcher-shared outputs (articles, peer review reports, data, protocols, software, code, etc.). This core should be funded directly by coalitions of funders and institutions to make it free to authors and readers. For-profit and non-profit journals and other providers add value through pre- and post-publication tools and services that improve, evaluate and certify outputs on 'core' repositories. Service execution can lead to public outcomes such as curated journal content and trustmarkers, such as output-specific checklists, peer review summaries or badges.

Table 1. Comparison between legacy incentives based on journal publications and proposed incentives based on researcher-shared outputs and value-add services.

Feature	Legacy System	Future System
Foundation	Journal brand and exclusivity	Transparent appraisal and community control over researcher-shared outputs
Incentives	Journal-shared outputs	Researcher-shared outputs and value-add services
Review Process	Confidential and binary (accept/reject)	Transparent and cumulative
Financial Target	Exclusive selection	Verifiable execution of service
Evaluation Proxy	Journal name and impact factor	Trustmarkers; summaries of primary research articles and peer review reports

Impact on Behavior: Enabling a Culture of Timely Correction of the Scholarly Record

We use the example of timely correction of the scholarly record to illustrate how realigning incentives can help address persistent challenges in scientific publishing by positively influencing the behavior of both researchers and journals.

Under current journal-centered incentives, corrections are often made only during the confidential peer review process to secure journal acceptance. In other instances, accountability for fixing mistakes is weaker. When a journal rejects an article, authors can simply resubmit elsewhere without addressing reviewers' concerns. Once published, the "version of record" becomes resistant to updates, as formal corrections or retractions not only carry stigma and reputational risk [39] but are also procedurally cumbersome and labor-intensive. As a result, many known errors remain unaddressed in the literature [40,41,42]. This 'written in stone' way of thinking is an artifact of the print era and no longer appropriate for the fast pace of science in the digital age.

When preprints, revisions, and reviews are public and count toward assessment, researchers have stronger motivation to correct, refine, or defend their work openly and promptly, contributing to a more trustworthy and dynamic scientific record. Similarly, journals compensated for open appraisal as a separate service would have stronger incentives to conduct and publish critical but fair review reports. Over time, a track record of rigorous, published review reports would become a reputational asset for journals — replacing the current incentive to protect exclusivity with an incentive to demonstrate service quality.

Next Steps: What Various Stakeholders Can Do

Transforming deeply entrenched incentive structures in science will not happen overnight. To accelerate this shift, action is needed from all corners of the research ecosystem. Here we outline concrete, immediate steps that three key groups—**research organizations**, **journals**, and **researchers**—can take to reorient incentives around researcher-shared outputs rather than journal publications. This realignment is not only possible—it is already underway.

Research Organizations: Redesign Incentives and Funding Models

As the architects of reputational and financial incentives, research funders and institutions hold the key to better practices. By redefining how they assess researchers and how they allocate support for publishing services, they can catalyze the transition to a more transparent and equitable model.

Shift Policies and Research Assessment Toward Author-Sharing in Three Progressive Steps

- **Reward preprints:** Allow and encourage preprints in grant applications and progress reports. Acknowledge their value as timely indicators of research productivity, transparency, and engagement.
- **Mandate preprints:** Require all major research contributions from your organization to be published as preprints. Preprints should be published before formal peer review and after feedback from peer reviewers has been incorporated to ensure that improvements to the work are publicly available.
- **Assess only preprints:** Prioritize these preprints over journal articles in the assessment of researchers.

De-Prioritize Journal Branding

- **Remove journal names from citations:** Citations stripped of journal names remind evaluators to focus on the science, not the publication venue.

Recognize Peer Review Reports and Author Responses as Scholarly Output

- **Use review reports in evaluations:** Peer review reports offer valuable insight into the strengths, weaknesses, and evolution of a research project. They enrich the evaluation process.
- **Recognize timely corrections of the scholarly record:** Researchers who publicly correct or update their own work in a timely manner — whether in response to peer review, replication attempts, or self-identified errors — should be credited for this rather than penalized. CVs and evaluation forms should make explicit room for such corrections as evidence of scientific integrity and rigor.
- **Encourage peer review as scholarly contribution:** The number of peer review reports written and the prestige of the journals involved are poor proxies for review quality; instead, CVs and reporting formats should make room for published peer review reports, so their scholarly content can inform the assessment of both reviewed articles and the reviewers themselves.
- **Train future reviewers:** Preprint peer review should be incorporated into graduate and postdoctoral training. Reviewing preprints fosters scientific judgment without the bias of journal gatekeeping, and the reviews themselves become citable scholarly products that trainees can add to their CV.

Redirect Journal Funding Toward Services

- **Increase funding for service-based publishing models:** Partner with preprint servers, journals and peer review services to ensure robust infrastructure and appraisal services; tie the payment of service fees to the release of public service outputs like peer review reports.
- **Reduce dependence on traditional APC and subscription models:** Reallocate funds away from models that tie payment to article selection, which reinforces exclusivity and creates conflicts of interest.

Two of these interventions, in particular, are powerful actions that research organizations can implement on their own, without buy-in from other stakeholders: removing journal names from citations and mandating preprints.

If journal names remain visible in bibliographies, they will inevitably undermine even the most well-intentioned efforts to reform researcher assessment. Worse, such reforms risk driving journal-based indicators underground, where their influence becomes more subtle—but no less powerful. Funders and institutions may publicly declare that journal metrics no longer factor into evaluations, yet as long as journal names appear in CVs and reference lists, they will continue to shape perceptions and decisions. Anyone who has compared a bibliography with and without journal names can attest to the intuitive judgments they trigger, as reviewers quickly form impressions of a candidate's productivity and impact based on journal prestige. That is precisely what journal indicators are designed to enable: swift, surface-level evaluation.

Of course, reviewers can still find out which journal highlighted an article if they wish. But the extra work to look up journal information partly defeats the purpose of a swift, surface-level evaluation. More importantly, removing journal names compels committees to invest in designing truly journal-agnostic evaluation processes that rely on narratives and not on lists of publications, along the lines of what we describe above. Reforming academic incentives must begin by eliminating the inappropriate proxies that created the distortion in the first place.

Encouraging—and ultimately mandating—preprints is another cornerstone of the incentive realignment we propose. Currently, fewer than 15% of life science journal articles are first released as preprints [43], a share too small to make preprints a reliable basis for researcher assessment or to establish publishing services built around them as the default.

A preprint mandate, particularly one that includes revised versions incorporating peer review feedback, also offers research organizations a powerful and practical path to achieving open access [44] (see textbox). When authors post preprints before and after peer review, access is immediate, and publishing costs can shift from APCs to more transparent and cost-effective appraisal fees. This not only makes research freely available earlier but also lays the groundwork for a more efficient and equitable publishing ecosystem.

Our own organization, the Howard Hughes Medical Institute (HHMI), is taking these two steps to prioritize researcher-shared outputs in the assessment of our researchers. The citation format that HHMI scientists use in materials submitted for their HHMI review no longer includes journal names ([HHMI citation style on Zotero](#)), and starting in January 2026, HHMI has mandated that our scientists post initial and revised preprints for major scholarly contributions. In future, HHMI plans to assess scientists based on their (revised) preprints rather than journal publications.

Textbox: Preprints and 'green' open access

Current open access policies typically include a 'green' open access option, where authors may self-archive the manuscript accepted by the journal in a designated repository. In our view, conditioning green open access on journal acceptance blurs the distinction between researcher- and journal-shared outputs resulting in ineffective open access.

Requiring a journal's stamp of approval relinquishes author control at a critical moment and grants journals additional leverage over researcher-shared outputs. This leverage is exercised through journal policies that allow immediate self-archiving of accepted manuscripts only if authors choose the "gold" open access route and pay an article processing charge. As a result, green open access often functions less as an independent path to openness than as an extension of journal business models.

Green open access would be more coherent and effective, if it were independent of journal endorsement, that is, if researchers published preprints before and after peer review without requiring acceptance by a journal. This approach ensures immediate access to improved versions of the work, abolishes delays from editorial processes, and aligns more closely with the principle that researchers should be able to share their scholarship on their own terms.

Some journals discourage or prohibit posting preprints after peer review. Yet the justification for such restrictions is weaker than their justification for restrictions on accepted manuscripts. Journals have largely accepted preprints as beneficial because they facilitate early community engagement. It is inconsistent to permit preprints for early discussion while blocking the very products of that engagement such as revised preprints that incorporate peer review feedback.

A substantive concern for journals is their investment in organizing peer review and other appraisal functions. Our proposed appraisal service model (Fig. 1B) addresses this directly by compensating journals for peer review as a service, independent of exclusive publication. This aligns journals' interest with the public availability of peer reviewed preprints that precede — and complement — their curated versions.

In summary, open access policies that support publishing preprints before and after peer review are better aligned with empowering researchers, accelerating open access, and securing journal participation, especially when paired with service-based appraisal models that compensate journals transparently for the value they add.

Journals: Separate Services and Embrace Openness

Journals play a vital role in improving and interpreting the scientific record. But to remain relevant in a future centered around researcher-led dissemination, they must embrace transparency over exclusive publication rights.

Support Preprints as Primary Research Outputs

- **Acknowledge claims in preprints:** Editors and reviewers should treat preprints as legitimate scientific disclosures, especially when evaluating overlapping submissions. Failure to do so distorts credit attribution and undermines trust.
- **Facilitate revised preprints:** Journals should allow and encourage authors to post updated preprints after receiving peer review, even if the journal process is ongoing. Preprints facilitate communication and discussion of research findings within the community. This benefit of transparency does not stop when an article is under consideration at a journal.

Embrace Transparent Peer Review

- **Publish peer review reports regardless of outcome:** Selective transparency, where only positive reviews of accepted articles are published [45], turns peer review reports into advertising for accepted articles [46]. True openness requires advance agreement to share reports whether or not a paper is selected for publication in a journal. This can best be accomplished by decoupling peer review from editorial selection.
- **Avoid charging for author rights:** Fees for posting author manuscripts to repositories should not be disguised as service charges [47]. Legitimate appraisal fees must be tied to public, verifiable outputs for these services, such as peer review reports.

By committing to these principles, journals can become trusted service providers in a research ecosystem that values service quality and integrity.

Researchers: Seed the Future Through Everyday Practices

Researchers may feel constrained by current incentives, but many actions are already within their control. By choosing behaviors that align with the future they want, without risking their success in the present, they can help drive change from within the research community.

Publish and Recognize Preprints and Other Researcher-Shared Outputs

- **Preprint all research:** Treat preprints as the default mode of communication. They increase visibility, invite feedback, and achieve open access without delay.
- **Share revised versions:** Make sure improvements to preprints are documented and made public.
- **Use designated repositories to share data, software, code, etc:** Depositing large output files associated with preprints in purpose-built repositories with appropriate metadata ensures that contributors receive proper credit and that these outputs remain accessible, discoverable, and reusable. This approach is superior to burying them in journal supplements, where they are often overlooked and difficult to integrate into future research.
- **Cite scholarship, not the publication venue:** In the era of print journals and library shelves, including the journal name in a citation was a practical necessity—it told readers where to find the article. Today, however, citing a journal article (with the journal name embedded in the citation) often conflates recognition of the

scholarship itself with signaling the prestige of the journal in which it appeared. Citing the most recent version of a researcher-shared output—a preprint, a dataset, a peer review report, etc.—allows the focus of recognition to remain squarely on the relevant work and its authors. When the purpose of a citation is to highlight the perceived reception or impact of the work, it may still be appropriate to reference the journal version.

Participate in Open Peer Review

- **Review only preprinted manuscripts:** Declining to review journal manuscripts that aren't publicly available sends a clear message about transparency and accountability.
- **Post reviews publicly:** When reviewing preprints, publish the reviews (with a pseudonym or anonymously, if necessary) ([instructions here](#)). This contributes to community dialogue and builds a portfolio of scholarly contributions.
- **Publish peer replication:** Publish whether prior studies can or cannot be replicated in the course of your own research program [48].

Embed Open Practices in Training

- **Use preprints in journal clubs:** Evaluate preprints as a regular lab activity. This normalizes early dissemination and critical engagement.
- **Teach preprint peer review:** Mentor trainees in writing constructive, public peer reviews. This builds skills, adds to their CV, and contributes meaningfully to the research ecosystem.

Conclusion: Realigning for the Future

Science stands at a crossroads. If we remain tethered to researcher recognition and journal revenue models rooted in exclusive editorial selection, science will continue to be warped by incentives that fail to reflect the true value of researchers' and journals' contributions.

Yet a better system is within reach. The foundational infrastructure — preprint servers, data repositories, open peer review platforms — is already in place. While more investment is needed to enhance usability and better integration of researcher-shared outputs, the technical means are available. What we lack is not capability, but commitment: the resolve to evaluate researchers based on what *they* choose to share, not what journals choose to select, and the will to reward journals for the *quality* of their services, not the exclusivity of the research they report.

With these changes, scientific narratives can evolve to reflect the actual work done by researchers — flexibly, transparently, and on timelines that serve science. Peer review can be recognized as a meaningful scholarly contribution in its own right. And journals can build sustainable business models by offering valuable, non-exclusive services that enhance the visibility, quality, and trustworthiness of research.

Transparency is a critical enabler of this transformation. Without it, we cannot hope to achieve scientific reporting that is as accurate, complete, and useful as possible. But transparency alone is not enough. It must be a means to an end, not a new target to game. A preprint does not automatically gain intrinsic value simply because it has undergone open peer review or satisfies a checklist of open science practices.

The effective assessment of individual researchers and research projects will always require more thoughtful and nuanced indicators than metrics can provide. Authors and peer reviewers can do this, with support from AI tools, by summarizing key outputs without displacing the longer form work itself. This is how we can continue to surface meaningful scholarship.

Otherwise, we risk falling into the same trap outlined by Goodhart's Law. The proliferation of low-quality and AI-generated articles already threatens to drown out genuine insight. Extending this noise to other research outputs, like peer review reports and datasets, would only deepen the problem.

What we need is a values-driven approach that aligns incentives for both researchers and journals with what matters most: advancing trustworthy, impactful scientific knowledge. Change doesn't require a revolution. It begins with a realignment — of values and incentives.

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