Why does research assessment need systems thinking?

Journal Impact Factor (JIF) is now widely deployed in academia largely because of its simplicity. However, the entrenched misappropriation of this proxy indicator has created systemic imbalances and inequity in the production and recognition of quality scholarship.

In complex systems like research assessment there is rarely a one-size-fits-all approach, and any effective intervention to replace JIF will require significant cooperation and the re-alignment of goals across a variety of different entities.

Reliance on JIF holds the system in place
The conflicting motivations and drivers of individual entities create complex interactions and relationships, with each entity playing its specific role to maintain the system in a stable state in tight relationships. For example, as long as JIF provides advantages for academic career advancement, publishing in high JIF journals will continue to be a top priority, especially for those in their early career.

A systems perspective can further thinking about how new relationships and value flows can productively disrupt this stable system.

Because it is a firmly entrenched and familiar measure of quality, institutions may not question whether JIF is actually the best way to measure or compare quality scholarship.

JIF provides a quantifiable and comparable measure that mitigates cognitive burden in grant evaluation, but may also lead to a false sense of confidence when making funding decisions.

Certainty of measurement travels more easily than disciplinary authenticity

A lack of alternate evaluation methods demotivate cross-disciplinary cooperation

Simplicity of measurement travels more easily than disciplinary authenticity

嵌入性偏见支持系统不平等

Barriers and drivers behind behaviors
Because JIF is currently used as a dominant form of “currency” in review and promotion decisions, researchers seeking career stability may not only emphasize publishing activities over service and teaching, but choose projects and journals with the intent to deliver high-JIF results over other valuable interests and options.

Understanding the causes of the issues that are visible in the system and knowing where patterns of behaviors stem from can help organizations consider why players act the way they do and prepare for how players may act in response to changes in the system.

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What can we do?

Systems thinking can provide insight into areas where institutions have the highest chances of making strategic interventions, with the goal of advancing practical and robust approaches to research assessment globally and across scholarly disciplines.

Stable systems can be difficult to change, which may cause tensions within the current system and require disruption to achieve a more desirable one. The interactions and relationships between entities with conflicting behavioral drivers produce tensions that can create unintended outcomes and reinforce perverse incentives for action.

We identified seven primary tensions resulting from dynamics in the current state of the research assessment system, which pit opposing values against one another. While neither value is entirely good or bad, the values at the top — perfectionism and rigor, competition, quantification, reputation, risk aversion, efficiency, and short term results — tend to emerge from or reinforce a reliance on JIF, while those below — contributions to the field, collaboration, societal impact, equity, balance of risk/reward, effectiveness, and longer term viability — are more aligned with a research assessment context that rewards broader notions of quality scholarship.

Starting from these three tensions of focus, institutions can embrace a system perspective of research assessment in a practical way. By making achievements visible and concrete across disciplinary and geographic boarders, institutions can create a momentum for lasting change and expand its network for partnership for a better system of research assessment.

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