If the next big thing in R&D evaluation is AI, who benefits?

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ABSTRACT. Artificial intelligence (AI) applications, particularly those involving machine learning and natural language processing, have emerged as the "next big thing" in evaluation (Mason and Montrosse-Moorhead, 2023). However, before we grasp yet another shiny object, it is essential that we first consider the potential consequences of adoption of the new technology in terms of the ethics and duties of evaluators of investments in the research development and innovation enterprise. We are responsible for ensuring that the voices of our funders, their awardees, and the diverse communities served are included as we incorporate innovative technological methods into practice. In this paper, we apply Everett Rodgers' (1962) diffusion of innovation theory and its more recent expositions, to explore the inclusivity of our AI modeling practices. According to Rogers, an innovation must have five characteristics to spread: (1) high relative advantage, (2) testability, (3) observability, (4) compatibility, and (5) low complexity. We then show how we can use these characteristics as heuristics that aid in identifying how to include diverse voices in the products and processes of AI modeling (Kapoor, Bommasani, et. al. 2024).

Depth versus Breadth in the Hierarchical Recombination of Technology

Likun Cao

ABSTRACT. The human knowledge system, just like many other complex systems, is in a process of continuous evolution. Among approaches to study the driving forces of knowledge emergence, recombination theory represents a large and growing scholarly focus in social science (Xiao et al., 2021). The recombination theory assumes a resemblance between biological and knowledge evolution: Just like offspring in the biological world are born out of genetic reshuffling through reproduction, new ideas and concepts in the knowledge system are also generated by shuffling the components of prior ones. This notion has been echoed by many empirical works. To date, two branches of studies—mostly based in sociology and management—investigate the conditions for combinatorial innovation in knowledge.The first focuses on the features of knowledge components, which are the basis for combinations. These features include component newness, particularity, and familiarity. The second stream of work examines component architecture, focusing on structural concepts such as "depth" vs. "breadth", hierarchy and modularity, often measured on a level above components.

Deviations in Peer Review Processes: A Study of Funding Selection Practices

Daniela Maciel Pinto

ABSTRACT. Recent discussions regarding more transparent practices of research prioritization, selection, and funding involves, among other aspects, a deeper understanding of traditional procedures for scientific evaluation, known as peer review. In this context, discussions frequently highlight potential limitations of the classic peer review model, which is seen as vulnerable to various forms of interference and inaccuracies that

may impact both the selection of research for funding and the determination of publication outcomes (Recio-Saucedo et al., 2022). Despite this acknowledgment, research on peer review is scarce, both when considering this practice in the context of scientific journals (Squazzoni et al., 2020) and funding agencies. One of the main reasons for this gap is the absence of data.

The Effect of Research Funding on Early-Career Researchers: Insights from the New Vision Investigator Award

Shea Andrews

ABSTRACT. Research grants provide critical career resources and opportunities that substantially influence a researcher's career advancement, mobility, and overall trajectory (Melkers et al. 2022). For early career researchers, securing a competitive research award is a critical step in establishing oneself as an independent researcher by creating protected time to conduct research based on their own research questions and designs. Recipients of career development awards from federal agencies have been shown to be more likely to show an increase in the number of publications and securing additional funding (Conte and Omary 2018; Millsap et al. 2001; Nikaj and Lund 2018). Similarly, privately funded early-career awards result in increased funding and higher-impact publications (Dorismond et al. 2021). Nevertheless, there is a need for further investigation to evaluate the impact of receiving early career awards from private entities on researchers' productivity and influence.

Neural Author Name Disambiguator: Developing a Global Researcher Registry for an Interconnected Research System

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ABSTRACT. The exponentially growing global research system has resulted in a complex, disconnected network that hinders effective research [2]. Specifically, the exponential growth is underscored by the global number of researchers growing by 15% from 2014 to 2018 [7]. Additionally, traditional research structures were not inherently designed to accommodate such scale. For example, the surge in the number of researchers has created challenges in identifying suitable experts for various research processes [see e.g., 6]. The need for appropriate experts extends to research processes, such as: identifying appropriate peer reviewers, discovering isolated researchers for conference talks, fostering collaborations across disciplinary networks, and driving large-scale projects.

Early Indicators of Academic Articles' Online Popularity

Toma Hirose

ABSTRACT. Science communication has undergone dramatic changes over the past decades [1]. Although the description and prediction of content popularity on online platforms have been widely studied [2], virality of content in the scientific communication domain still needs investigation. To fill this gap in prior research, we provide insights into what features are associated with the popularity of research articles online. Identifying