



# STI 2018 Leiden

*23rd International Conference on Science and Technology Indicators  
"Science, Technology and Innovation Indicators in Transition"*

## **STI 2018 Conference Proceedings**

*Proceedings of the 23rd International Conference on Science and Technology Indicators*

All papers published in this conference proceedings have been peer reviewed through a peer review process administered by the proceedings Editors. Reviews were conducted by expert referees to the professional and scientific standards expected of a conference proceedings.

### **Chair of the Conference**

Paul Wouters

### **Scientific Editors**

Rodrigo Costas  
Thomas Franssen  
Alfredo Yegros-Yegros

### **Layout**

Andrea Reyes Elizondo  
Suze van der Luijt-Jansen

The articles of this collection can be accessed at <https://hdl.handle.net/1887/64521>

ISBN: 978-90-9031204-0

© of the text: the authors

© 2018 Centre for Science and Technology Studies (CWTS), Leiden University, The Netherlands



This ARTICLE is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License

## Cumulative Advantage in Scientific Visibility: Citation Performance of Repeat Authors in Economics Journals

Kyle Siler\*, Cassidy R. Sugimoto\*\* and Vincent Larivière\*\*

\*[k.s.siler@uu.nl](mailto:k.s.siler@uu.nl)

Innovation Studies Group, Utrecht University, Utrecht, Netherlands

\*\* [sugimoto@indiana.edu](mailto:sugimoto@indiana.edu); [vincent.lariviere@umontreal.ca](mailto:vincent.lariviere@umontreal.ca)

Indiana University, Bloomington, USA; Université de Montréal, Montréal, Canada

### ABSTRACT

Cumulative advantage – commonly known as the Matthew Effect – influences scientific output and careers. Given the challenge and uncertainty of gauging the quality of new scientific research, evaluators and gatekeepers often possess incentives to prefer the work of established scientists. Such preferences breach scientific norms of fairness and can stifle innovation. This article analyzes repeat authors as an exemplar of the Matthew Effect. Although a scientist publishing in the same journal multiple times is rare within individual careers, the phenomenon is relatively common at the level of scientific journals. Using publication data for 347 economics journals from 1980-2016, we analyze whether articles written by repeat authors tend to fare better or worse than less-experienced authors. Ordinary Least Squares models show a curvilinear (inverted U-shaped) relationship between repeat authorship and citation impact. In these models, citation impact peaks at the fourth repeat publication, suggesting both liabilities of newness and liabilities of senescence in science. Fixed effects models show that within individual scientific careers, authors tend to be most impactful with their debut publication, then experience declining impact with each subsequent repeat authorship. Implications for innovation incentives for scientists and gatekeepers alike are discussed.

## INTRODUCTION

Processes of cumulative advantage are a common mechanism underpinning and exacerbating social inequalities. Cumulative advantage – generated via a variety of institutional and interpersonal sources – is an especially powerful and prevalent force in science. To explain cumulative advantage in science, Merton (1968) famously coined the Matthew Effect<sup>1</sup>, a term denoting processes by which privileged scientists accrue further advantages and rewards solely by virtue of their status. These processes are at odds with Merton's (1973 [1942]) norm of universalism – the notion that scientists and their work should be judged and rewarded irrespective of their personal or social characteristics – as well as contemporary beliefs about meritocracy and fairness. Scholarly journals are the heart of this reward system, which gravitates around hierarchies reflected by citation-based indicators such as the Journal Impact Factor. In this system, top journals attract what are believed to be the most important papers, which in turn, bestow symbolic capital upon authors (Bourdieu, 2004). This article examines repeat authorships within scientific journals – authors who publish repeatedly in the same journal, especially high-status journals – as a specific phenomenon that reflects Matthew Effects in science. Via luck, social positioning and/or talent, repeat authors occupy finite space in these top journals, as well as attention in scientific fields.

A variety of status and professional life-course factors influence career and innovation incentives for scientists, as well as signaling and gatekeeping incentives for journals. These factors will be discussed, focusing on how they might influence the prevalence and success of repeat authors in scientific journals. Specifically pertaining to our case study of academic economics, we focus on various status effects in science – including individual and

---

<sup>1</sup> Merton named the Matthew Effect after the Bible verse Matthew 25:29: “For whoever has will be given more, and they will have an abundance. Whoever does not have, even what they have will be taken from them.”

institutional prestige, professional age and gender – on the visibility of their scholarly publications.

### Status Effects in Science

Sauder, Lynn & Podolny (2012) identified two main mechanisms underpinning the Matthew Effect: advantaged actors receive 1) more favorable evaluations and 2) increased resources. Causal relationships between quality and status can interact and flow in both directions (Azoulay, Stuart & Wang, 2014). When faced with uncertainty, people often weight the social status and other ascriptive characteristics of others to help inform appraisals and decisions (Podolny, 2008). In science, scholars are more likely to invoke particularistic characteristics of authors (e.g., gender, institutional status) as decisive information under conditions of uncertainty (Long & Fox, 1995; Pfeffer et al., 1977), such as at the frontier of new scientific research (Cole, 1983). Particularly in evaluative settings, scientists are often influenced by the social status of an author. For example, numerous previous studies identified the influence of the institutional status of authors on scientific evaluations. (Peters & Ceci, 1982; Leahey, 2004; Simcoe & Waguespack, 2011; Tomkins, Zhang & Heavlin, 2017; Bravo et al., 2018).

Merton (1968) posited that science was prone to generating Matthew Effects; self-fulfilling prophecies where high-status scholars accrue further rewards and cumulative advantages them by virtue of their previous privileged status (also see Azoulay, Stuart & Wang, 2014). Relatedly, intellectually conservative tendencies and incentives have been identified in science (Bourdieu, 1988; Horrobin, 1990; Lamont, 2009; Wang, Veugelers & Stephan, 2017). Successful academics accrue power and influence, enabling leaders in scientific fields to judge scientific work according to their preferred principles, in a sort of ‘victor’s history.’ Travis and Collins (1991) defined the phenomenon of preferring

intellectually similar work as *cognitive particularism*. Biases in favor of cognitively proximate work and/or from socially close authors may even have benefits. Past studies have found that evaluation quality (Li, 2017) and citation impact (Laband & Piette, 1994; Medoff, 2003; Brogaard et al., 2014) improve with increased social and intellectual closeness of referees (cf. Kraemer, 1991). In turn, Matthew Effects in science can be underpinned by rational incentives and may offer some positive consequences for gatekeepers and broader scientific fields. This may particularly be the case in disciplines that are less cumulative—such as the social sciences and humanities, where what is considered as important research has a higher degree of social construction (Davis, 1971)—and less the case in natural and medical sciences, where luck and serendipity might play a larger role (Merton & Barber, 2011).

Established authors may have signalling advantages with getting cited after high-profile publications, as they have pre-existing reputations and histories to establish visibility and credibility with other scholars. When scientists receive high-profile awards, their previous publications receive a boost in citations (Azoulay, Stuart & Wang, 2014), which also causes intellectually proximate scholars to be crowded out of the research area (Reschke, Azoulay & Stuart, 2017). Prestige-garnering publications in high-profile journals may function like similar public adornments of status on scientists. More established scholars also tend to enjoy professional advantages with social and intellectual networks, further helping them gestate and expose their work. In turn, science tends to reproduce itself in both ideas and personnel (Bourdieu, 1988). Consequently, science usually updates orthodoxies slowly and tends to protect the status quo (Kuhn, 1962). Paradigmatic and professional advances are often made possible via the death or retirement of prominent scholars, opening attention and journal space for other scientists, as science advances “one funeral at a time” (Azoulay, Fons-Rosen & Graff Zivin, 2016).

Career and Aging Effects in Science

Professional age is another factor which influences authorial strategies, goals and cognitions in science. Cognitive skills vary – some qualities improving, others attenuating – over both professional careers and the broader life-course. In particular, fluid intelligence – speed and capacity for processing information – peaks early in adult life then gradually decreases over time. In contrast, crystallized intelligence – stored knowledge, experience and expertise – accumulates over a lifespan (Li et al., 2015). Different mixes of fluid and crystallized intelligence are optimal for various cognitive challenges. In turn, people tend to reach peak career performance at different ages in different professions.

The tenure system also presents scientists with differing resources and incentives in their early, middle and late careers. Hermanowicz (2003, 2009) found that academic scientists vary in their intellectual preferences and professional choices throughout their careers, influenced in part by the type of university where they worked. While scientific creativity tends to peak relatively early in the career of a scientist (Simonton, 1988; 1997), the tacit knowledge, social networks, experience and reputations scientists develop over time also entail considerable professional and intellectual advantages. Merton (1973 [1942]) labeled science as a *gerontocracy*. A review of previous studies on scientific productivity and age found that different case studies yielded advantages for younger scholars (Simonton, 1988), while others showed advantages for older scholars (Gingras et al., 2008). In other cases, the relationship between age and productivity is curvilinear, with advantages (Bakanic et al., 1987) and disadvantages (Beyer et al., 1995) for mid-career scientists. In turn, scientific careers involve navigating trade-offs between *liabilities of newness* (Stinchcombe, 1965) vis-à-vis *liabilities of senescence* (Aldrich & Auster, 1986). Exogenous and institutional factors influence the relationship between age and innovation in scientific careers. For example, the

average age of scientists making major discoveries in science are getting progressively later. Scientific disciplines may be changing professionally and cognitively, but increases in lab size and specialization, as well as hiring bottlenecks and declines in funding are also influencing these delays (Jones, 2010; Daniels, 2015). Such changes in the scientific opportunity structure would favor older – if not also repeat – authors in scientific journals.

If older or repeat authors receive more citations with later articles, this could be an indication of skill increasing over the course of the career of a scientist. Professional successes and failures influence future decision-making; effective learning from outcomes can contribute to skill improvement (Cyert & March, 1963). However, success is also conducive to increased specialization in the future, as people tend to exploit and expand upon successful established niches in science, as opposed to exploring new terrain (March, 1991; Audia & Goncalo, 2007) or establishing new subfields (Heinze et al., 2013). The inverse relationship between success and exploration may cause successful scientists to be more conventional and less innovative later in their careers. At the very least, the positive feedback and professional influence successful scientists receive influence the types of science that is practiced and promoted by field leaders.

Through internal labor markets, as well as tenure and promotion protocol, academia winnows scientists over time. Scientists cannot accrue lengthy publication histories if not given the opportunity. In turn, longevity alone may be associated with skill in science. The infamous “publish or perish” dictum in science may privilege quantity over quality. Sarewitz (2016) expressed concerns that some scientists sacrifice quality for quantity of publications in their careers (also see Wager et al., 2015; Osterloh & Frey, 2014). In an analysis of National Academy of Sciences members, Michalska-Smith & Allesina (2017) found that the positive relationship between productivity and highly-cited articles can be explained solely by the fact that prolific authors produce more opportunities to have a ‘hit’ article. More broadly,

Simonton's (1997: 73) Equal Odds Ratio posits that "the relationship between the number of hits and the total number of works produced in a given time period is positive, linear, stochastic, and stable." In turn, high citation counts accrued by authors or articles often involve some random, lucky or extraneous influences (see Salganik et al., 2006 on causal mechanisms of viral diffusion). However, Larivière & Costas (2016) showed more productive authors were more likely to have a higher proportion of highly-cited papers, suggesting that cumulative advantages play a role in the attribution of rewards. Reflective of the influence of luck and serendipity on scientific careers and breakthrough innovations, Sinatra et al. (2016) posited that there is a substantial random element to scientific publishing; scientists can produce high-impact work at any juncture of their careers (also see Simonton, 2004; Yaqub, 2018). Similar analyses based on agent-based models seem to confirm the role of luck in success (Frank, 2016; Pluchino, Biondo, & Rapisarda, 2018).

### Gender in Economics

Another distinctive detail of the discipline of economics is its historical and current male overrepresentation. As of late 2017, 19.1% of authors in the RePEc Author Service are women (Zignago, 2017); this resembles findings in our dataset, which identified 20.1% of authors as women. While most social sciences possess higher proportions of women than natural sciences, economics is an anomaly, and resembles disciplines such as astronomy, philosophy and mathematics (Leslie et al., 2015). Intellectually, the academic discipline of economics has been accused of privileging male concerns, topics and methodologies (Ferber & Nelson, 1993; Jayachandran & Daubenspeck, 2018) and fostering a 'chilly' professional climate for women (*The Economist*, 2017). Rates of female enrolment in economics PhD programs and tenured women faculty have stagnated in the last two decades (Wolfers, 2018).

Women in economics also take longer – and exert more effort with writing – in the peer review process (Hengel, 2017). A distinctive disciplinary norm in economics is listing co-authors in article bylines in alphabetical order. A consequence of this practice is that information regarding author contributions and credit are obfuscated, which are usually denoted in scientific articles by authorship order (Dance, 2012). This obfuscation could be disadvantageous for women – and those with other disadvantageous status characteristics – in economics. Relatedly, women tend to be attributed less credit and receive fewer professional rewards for article co-authorship than men in the field of economics (Sarsons, 2018).<sup>2</sup>

Our research also considers the role gender plays with repeat authorship, as well as the propensity for articles to be highly cited. As a specific instantiation of the Matthew Effect, Rossiter (1993) coined the Matilda Effect to describe cumulative disadvantages attributable to gender inequality. Given the historical and continued underrepresentation of women in the field, especially in its upper echelons, economics also provides a vivid case study to examine the relationship between gender, visibility of research, and cumulative advantage in science. Potential exists for ‘old boys clubs’ in both upmarket and downmarket journals in the discipline. Status characteristics and social capital associated with gendered networks provide advantages to access to academic, professional and social information, which facilitate publishing opportunities.

In sum, various sources of stratification in science are conducive to promoting publication of articles produced by repeat authors in scientific journals. We use the academic discipline of economics as a case study, due to its particularly strong professional boundaries

---

<sup>2</sup> In addition to the unequal – if not also unfair and inaccurate – attribution of credit, Sarsons’ research illuminates two additional interesting issues regarding co-authorship and scientific reward structures. First, are scientific rewards zero-sum, negative-sum or positive-sum for co-authors? While co-authors share ownership of a single article, the sum of the credit and professional rewards they enjoy for that article can be equal, less or greater than one. A second question is when credit is usurped and/or bestowed upon co-authors, particularly when one co-author possesses status characteristics (e.g., male, previously published) that co-authors do not. While Sarsons presents evidence that credit is often usurped from women in economics, other research suggests that new entrants into a market benefit from the legitimacy and status boosts affiliation with high-status actors provides (see Burt, 1998).

and intra-professional hierarchies of status (Whitley, 2000; Fourcade, Ollion & Algan, 2015; Colussi, 2018). The field of economics is distinctive within the social sciences both for its heightened prestige and visibility as a discipline, as well as low levels of interdisciplinary citations to other disciplines (Pieters & Baumgartner, 2002; Angrist et al., 2017). These scientific and professional boundaries (Gieryn, 1983; Abbott, 1988) strongly demarcate economics as a distinctive, autonomous scientific field. In turn, the discipline and profession of economics offers a unique, competitive, increasingly hierarchical context to analyze factors that underpin cumulative advantage, scientific diffusion and the success of innovations.

## METHODS

*Data.* Scientific articles from 347 economics journals published during the 1980-2016 period were retrieved from Clarivate Analytics' Web of Science, hosted at the Leiden University Centre for Science and Technology Studies (CWTS). Those journals represent all journals categorized under the discipline 'Economics' in the 2016 Journal Citation Report. Article authors were disambiguated using the method developed by Caron and van Eck (2014), which means that we recreated the entire publication history in economics over the entire period studied. The dataset includes 250,334 authors who had at least one authorship on the 334,056 identified papers, leading to a total of 639,720 author-paper combinations (or authorships).

*Dependent variable.* Since we are analyzing factors conducive to article visibility and the diffusion of ideas in science, we use citations as a measure of scientific influence and attention. While citations are not necessarily a signal of inherent scientific quality, citations are a metric signaling which articles receive attention, prominence and usage in scientific fields (see the comprehensive review by Bornmann, 2008). Since scientific citations tend to

be exponentially distributed, with a few articles possessing extremely large values on the right tail of the distribution (Lotka, 1926; Barabási & Albert, 1999; Baum, 2013), the citations per year variable was re-centered and logged. In turn, the dependent variable in our study is the logarithm of citations received per year for each published article.

*Independent variables.* Institutional affiliations of scientists can function as a status signal and are often perceived as a signal of quality. This is especially true in the profession of academic economics, which institutional status hierarchies are especially pronounced – even by academic standards – with a relatively small number of departments exerting disproportionate influence and enjoying exalted status in the field (Fourcade, Ollion & Algan, 2015). To measure institution status within the field of economics, we counted the number of citations accrued by each institution in our dataset of economics citations from 1980-2016. Since citations are artefacts of attention and/or deference, we assume that institutions that receive more citations possess higher status. The first listed affiliation for each author was assigned as their home ‘institution’ when assigning citation values for institutional status.

Following the method developed in Larivière et al. (2013), author gender was assigned on the basis of listed first names, which were compared with United States Census lists and other gender-related given names lists found on the Internet. This algorithm yielded results of 90,166 female authorships (14.09%), 360,401 male (56.34%) and 189,153 (29.57%) authors of unknown gender. Most of the authors with unknown gender have not contributed to papers after 2008, when Clarivate began to index the full given names of authors.

In order to measure repeat authorship, we compiled for each author appearing on the byline of each article, whether that article represented the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>,... N<sup>th</sup> article published in that journal by that author. Most authorships were first authorships; most authors (175,552 authors, 70.12%) have published only one article in our dataset. On average, authors contributed to 2.55 papers in the discipline in our dataset.

Many articles in our dataset have multiple authors (mean number of authors per paper = 1.91). Authors with numerous different social and demographic characteristics can co-exist on the byline of the same article. For the purposes of our research, we assume that credit and attention will tend to focus on the most ‘distinguished’ author on each co-authored paper. In turn, we limit our analyses to the author who has published the most publications in the given journal at that precise moment in time (i.e., publication year), leaving a total of 491,139 ‘senior’ repeat authors on articles in our dataset. This exceeds the total number of papers as, on many papers, more than one author has the same ‘max’ number of papers in that journal. Academic age for each authorship was calculated as the number of years between the senior author’s first publication in the WoS, and the publication year number of that particular article.

*Control variable.* Like most scientific disciplines, there is a hierarchy of journals in economics. We use percentile ranks of historical Journal Impact Factors as an empirical measure of journal prestige. It is expected that journals with higher impact factors will inherently generate more citations for published articles. In turn, it is necessary to include Journal Impact Factors as control variables while using total citations as a measure of scientific influence.

## RESULTS

Table 1 reports summary values of repeat authors in academic economics journals. As expected, there is an exponentially declining distribution of authorship; most authors publish in a given journal only once in their career. Notably, this table excludes the vast majority of potential authors in economics who never publish in particular journals; zero publications is the implicit modal outcome in Table 1.

**Table 1 - Summary of Total Author Publications (Max. Value of All Authors on Article) in Focal Journal for Articles (N=491,139)**

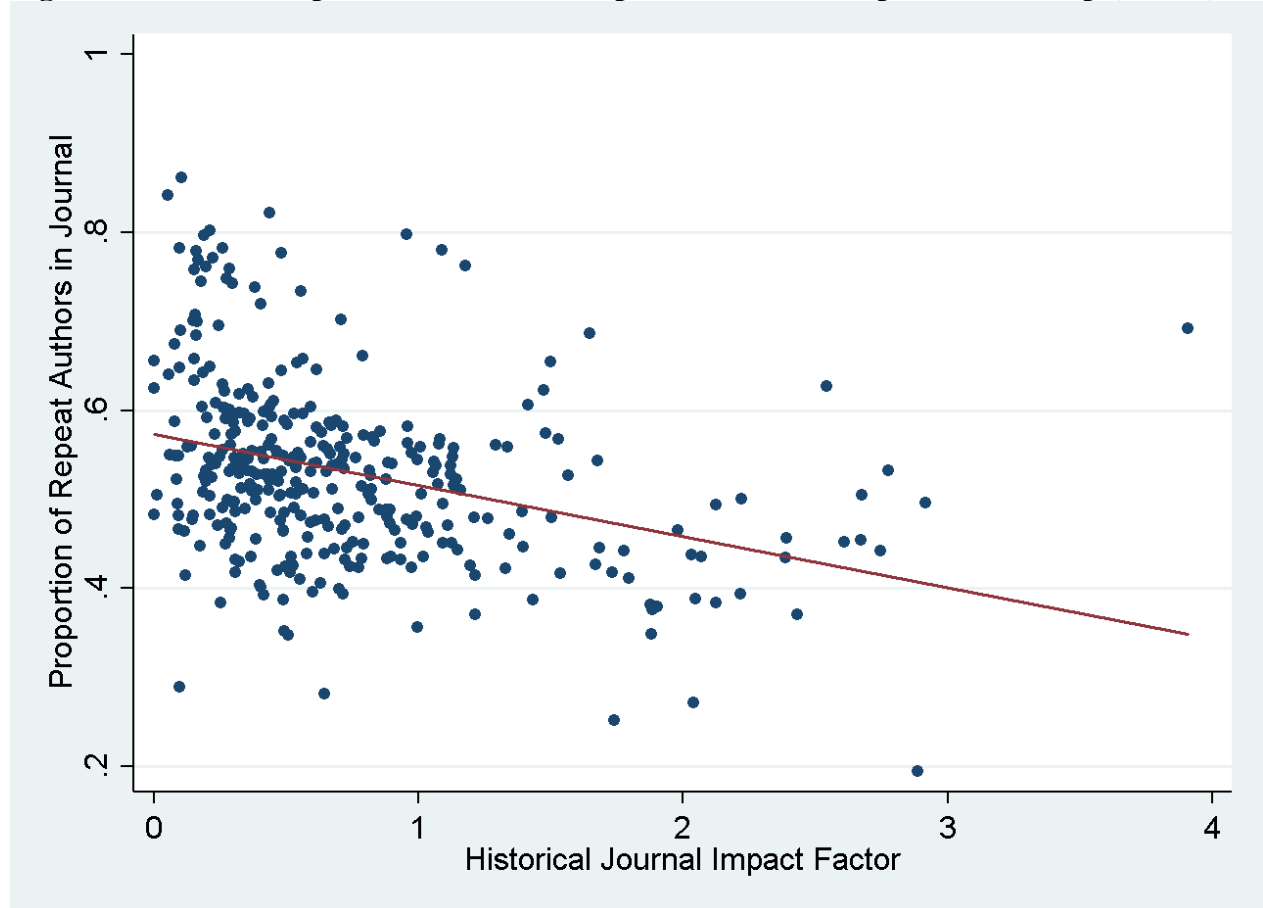
	<b>N</b>	<b>% of Total</b>
Author Appearance in Journal: #1	344,459	70.13
Author Appearance in Journal: #2	67,391	13.72
Author Appearance in Journal: #3	28,778	5.86
Author Appearance in Journal: #4	15,571	3.17
Author Appearance in Journal: #5	9,550	1.94
Author Appearance in Journal: #6	6,313	1.29
Author Appearance in Journal: #7	4,380	0.89
Author Appearance in Journal: #8	3,110	0.63
Author Appearance in Journal: #9	2,346	0.48
Author Appearance in Journal: #10	1,775	0.36
Author Appearance in Journal: #11	1,362	0.28
Author Appearance in Journal: #12	1,082	0.22
Author Appearance in Journal: #13 or more	5,022	1.02

From an individual perspective, repeat authorships are rare within the careers of academics. However, from a collective perspective, they are relatively common within academic journals. Repeat authors also tend to be especially influential and important in science. Particularly in high-status journals, repeat authors set and shape disciplinary agendas. High-status authors also tend to be consecrated with attention and awards, which is particularly salient given the importance accorded to awards including the John Bates Clark Medal (awarded to the best economist under the age of 40) and the Nobel Prize in Economics<sup>3</sup> in the academic field and profession of economics.

Figure 1 reports the prevalence of repeat authorship in our population of academic economics journals.

---

<sup>3</sup> Officially known as the Swedish National Bank's Prize in Economic Sciences in Memory of Alfred Nobel.

**Figure 1 – Relationship Between Journal Impact Factor and Repeat Authorship (N=347)**

There is a steady decline with repeat authorships with increased Journal Impact Factors, which can be understood as a rough proxy for journal status. Journal Impact Factor is moderately negatively correlated (-.34) with repeat authorship. This appears to be evidence of competition in economics publishing; one can expect higher-status journals to receive more submissions and have higher rejection rates; a finding which has been confirmed in ecology (Aarssen et al., 2008). Given crowding effects of increasing prospective authors, higher-status journals should theoretically be less likely to choose the same author multiple times out of a larger pool of potential contributors.<sup>4</sup> There is also substantial variance in the prevalence of repeat authors among journals of similar historical Journal Impact Factor, suggesting that numerous causes can compel journals and their gatekeepers to relatively prefer or eschew

<sup>4</sup> See Ellison (2002a, 2002b) for perspectives on the slowdown and changing norms of the peer review system in economics, which reflects the competitiveness of the field, particularly in elite journals.

repeat authors. Despite intense competition effects and very high rejection rates, many high-JIF journals have average or above-average rates of repeat authorship, showing that repeat authorships can flourish in highly-visible journals despite intense crowding.

The stakes and effects of competition in economics journals may be escalating over time. Figure 2 reports the variance explained ( $R^2$ ) of article citation outcomes by Journal Impact Factor from 1997-2014.

**Figure 2 – Variance Explained of Citation Outcomes by Journal Impact Factor, 1997-2014**

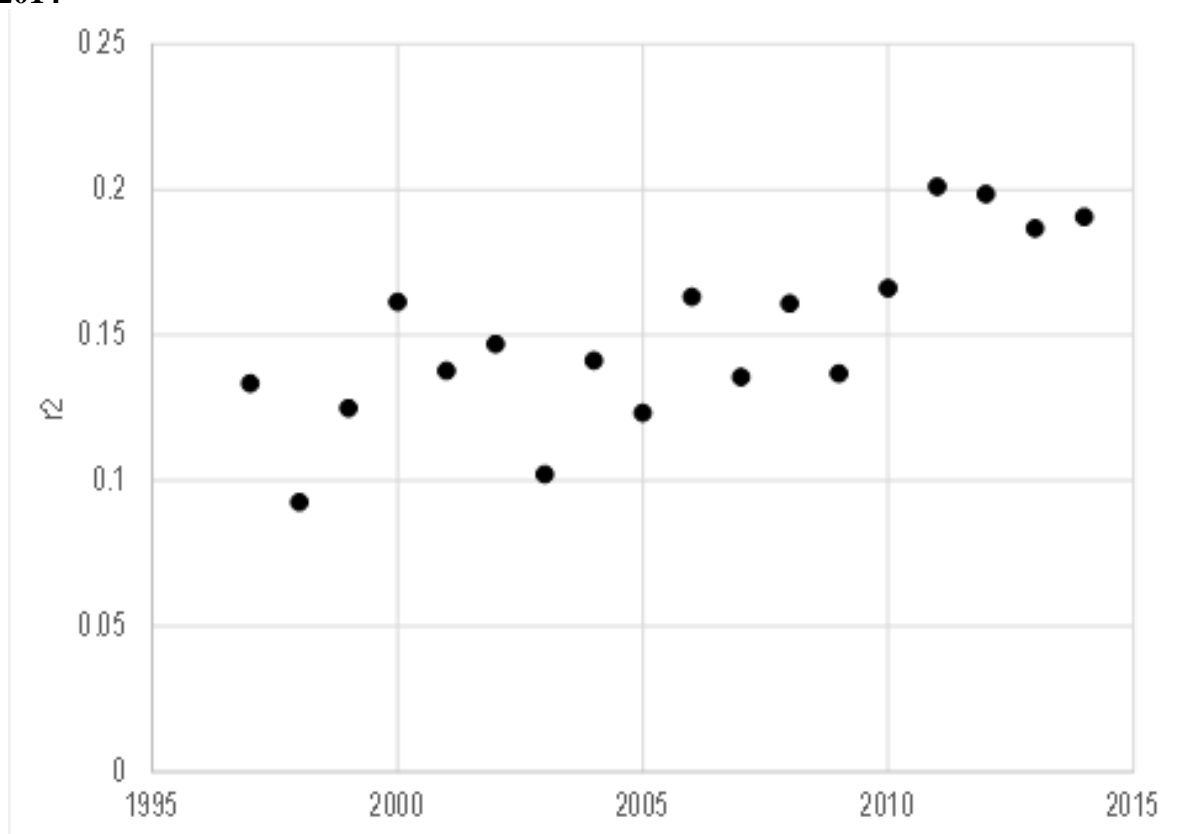


Table 2 reports multivariate regression analyses of article, individual, journal-level level characteristics which influence article citation performance.

**Table 2 - Regressions of Author, Article and Journal Characteristics on Article Citedness (N=491,139)**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Author Appearance in Journal: #1	.199*** (.029)	.027 (.031)	.912*** (.013)
Author Appearance in Journal: #2	.214*** (.029)	.150*** (.031)	.757*** (.013)
Author Appearance in Journal: #3	.228*** (.029)	.196*** (.031)	.665*** (.013)
Author Appearance in Journal: #4	.220*** (.030)	.203*** (.032)	.594*** (.014)
Author Appearance in Journal: #5	.199*** (.030)	.191*** (.032)	.527*** (.015)
Author Appearance in Journal: #6	.198*** (.031)	.194*** (.033)	.478*** (.016)
Author Appearance in Journal: #7	.154*** (.032)	.161*** (.034)	.408*** (.017)
Author Appearance in Journal: #8	.161*** (.033)	.167*** (.036)	.397*** (.018)
Author Appearance in Journal: #9	.098** (.035)	.104** (.037)	.321*** (.020)
Author Appearance in Journal: #10	.086* (.036)	.108** (.039)	.290*** (.022)
Author Appearance in Journal: #11	.044 (.038)	.067 (.041)	.228*** (.024)
Author Appearance in Journal: #12	[Omitted]	[Omitted]	.170*** (.026)
Author Appearance in Journal: #13 or more	-.090** (.032)	-.075* (.034)	[Omitted]
Citations Received by Author Institution		.025*** (.000)	
Years Since Author Debut		-.010*** (.000)	
Male		.265*** (.004)	
Journal Impact Factor: 10-25 percentile	-.644*** (.005)	-.552*** (.006)	-.595*** (.006)
Journal Impact Factor: 25-50 percentile	-1.100*** (.004)	-.986*** (.005)	-1.074*** (.006)
Journal Impact Factor: Bottom 50 percentile	-1.838*** (.004)	1.664*** (.005)	-1.673*** (.006)
Constant	3.156*** (.029)	2.865*** (.031)	2.444*** (.013)
R-squared	.319	.335	.298
Fixed Effects	No	No	Author

\* p <.05; \*\* p <.01; \*\*\* p <.001 (two-tailed tests). Note: Standard Errors are in parentheses.

Models 1 and 2 analyze effects of author, article and journal characteristics on article citedness in OLS models. Model 1 includes author appearances in focal journals, as well as historical Journal Impact Factors. Model 2 adds additional author characteristics to the model; namely academic age, gender, and the institutional status in the field of economics of the author's listed affiliation. Models 1 and 2 yield similar results, showing a curvilinear (inverted U-shaped) relationship between author appearances in a focal journal and the citation performance of articles. Citation performance of articles rises and peaks around the third or fourth article an author publishes in a focal journal, then continually declines with additional appearances. Since Models 1 and 2 are OLS regression models, these results can be interpreted from the perspective of journals, regarding which types of authors tend to yield the best citation outcomes. Model 2 also included author characteristics. Analogous – but not identical – to repeat authorships, there appear to be liabilities of senescence in economics publishing, with diminished impact with increasing age.<sup>5</sup> Both particularistic characteristics in Model 2 – gender (male) and institutional status – also have clear positive effects on article citation outcomes.

Individual authors vary in talent, intellectual biographies, career trajectories and other personal characteristics. A second publication in a focal journal can entail many different things in the careers of different authors. In turn, it is also important to conduct analyses from the perspective of individual author careers. The author-level fixed effects regression reported in Model 3 analyzes repeated authorships from the perspective of each senior author. In contrast to the curvilinear relationship yielded by the OLS models, the fixed effects model shows a steady decline in citation impact with repeated authorships. In the fixed effects

---

<sup>5</sup> Academic age and journal article appearance were moderately positively correlated (0.38 in the entire dataset (N=639,720), 0.40 when restricting to the author with most appearances in a given journal (N=491,139)). Repeat authors will tend to be older than debut authors, but the process of repeat authorship is not necessarily parallel or proportional to the process of aging.

model, authors make their largest impacts with their first published article. Citation performance then steadily declines with each additional appearance in the same focal journal.

## DISCUSSION

Editors and journals may prefer articles by repeat authors out of risk-aversion and/or due to a real or mistaken belief that repeat authors have better innovation and citation outcomes. Leaders tend to be more cognizant of downside risk than upside risk (March & Shapira, 1987). The uncertainty of the scientific research frontier (Cole, 1983) is also conducive to decision-making challenges. People tend to rely on heuristics – familiar, simple rules and schemas – to inform decisions when faced with uncertainty (Kahneman, 2011). These decisions and heuristics can be informed by otherwise irrelevant or unfair social and personal characteristics (Podolny, 2008). In turn, uncertainty can breed risk-aversion and preferences for the intellectual and professional status quo, particularly when more certain options are present (Fox & Tversky, 1995). Recent research suggests that gatekeepers treat innovative work more harshly (Boudreau et al., 2016; Siler & Strang, 2017). Confirmation bias has also been documented in science, where evaluators prefer work that reflects the status quo (Mahoney, 1977). In short, there are numerous incentives for editors and journals to publish – or even prefer – repeat authors.

The contrast between the curvilinear (inverted-U) and downward-sloping effects in the OLS and fixed effects models reveal that both individual talent and broader social/institutional factors play roles in influencing the reception of scientific articles from different authors. The OLS model presents incentives from a journal's perspective; based on journals placing high importance on accruing attention and citations from others in the

scientific community (see Larivière and Sugimoto, 2018).<sup>6</sup> From a journal's perspective, there are citation advantages to publishing articles with authors who have three to five total publications in the focal journal. This is in part a 'skill' effect, since relatively few authors survive to publish multiple times in the same journal. The curvilinear OLS models suggest that there are *both* liabilities of newness and liabilities of senescence in publishing. Debut authors – who constitute the majority of articles in our dataset – fare relatively poorly with citations, as do later articles from the few scholars who accrue many publications in the same journal.

The fixed effects models provide results from the perspective within the careers of individual scholars. These results suggest liabilities of senescence within the careers of academics. On the whole, authors tended to be most impactful with their debut publication in a journal. Impact steadily declined with each subsequent publication in the same journal. The contrasting results for the relationship between repeat authorships and citations received – inverted U-shape with OLS; linear, negative with fixed effects – can co-exist due to apparent talent differences (or selection effects) between authors. From the perspective of a journal, it is preferable to publish authors with 3-5 publications in the journal, but this is conditional on the author being skilled and/or lucky enough to publish multiple times in the same journal. In other words, the OLS model reflects survivor biases, since debut publications from authors that go on to be prolific in a given journal are apparently different than those published by a debut author who never publishes again in that journal. The fixed effects results suggest that publishing a debut article from an author who goes on to publish multiple times in the journal is especially valuable. However, predicting and distinguishing future 'prolific' from 'one-hit-wonder' debut authors is likely a difficult task for gatekeepers, apart from the already difficult task of gauging the quality of new research contributions.

---

<sup>6</sup> Szenberg & Ramrattan (2014) chronicled numerous editorial histories challenges and philosophies in economics journals. Gatekeeping and gestational functions of journal peer review and editorial-decision-making are both highly subjective and strategic.

The underperformance of women in regards to citations received is another notable – and perhaps discomfiting – finding. The Matilda Effect (Rossiter, 1993) may be particularly strong in the field of economics. A fine-grained analysis of these findings and their implications is beyond the scope of this particular study. However, the intellectual and professional devaluation of subfields and topics overrepresented by women (Ferber & Nelson, 2017), social networks, hierarchies in tenure, promotion and institutional status, underrepresentation of women graduate students in elite economics departments (Weeden, Thébaud & Gelbgiser, 2017) and conscious or unconscious biases against the evaluation and engagement of women in economics are all possible explanations. These factors are all potential causes and/or effects of lower tenure rates for women economists in academia, as observed by Ginther & Kahn (2004). The field of economics is showing cognizance of these gender issues in the profession and field, with a number of recent works and opinion pieces identifying problems and solutions to gender equity issues in the discipline (e.g., Hengel, 2017; *The Economist*, 2017; Wolfers, 2018; Sarsons, 2018).

Our results also raise normative and empirical issues regarding whether journals should prefer repeat authors, both from fairness and citation impact viewpoints. Alternatively, should journal gatekeepers take action to include more debut and less-experienced authors? Since scientists tend to prefer to cite high-status authors and studies (Lynn, 2014; Azoulay, Stuart & Wang, 2014), are redistributive policies and actions warranted to counteract such biases? Mark Effects – systems which redistribute rewards to less-privileged actors, contra Matthew Effects (Bothner, Podolny & Smith, 2011) – exist in some scientific contexts. For example, in a study of four high-status economics journals, Card & DellaVigna (2017) found that more prolific authors tended to be more highly-cited, leading them to conclude that editors judge such submissions more stringently.

Learning is another factor that influences the success of repeat authors in peer review, and also the work produced by such authors. Journals editors also learn from their experiences interacting with authors in the peer review system, as well engaging the entire publishing ecology of published (and often previously rejected) article (Szenberg & Ramrattan, 2014). Experience with the peer review system in a given journal – whether as an author or peer reviewer – helps develop tacit knowledge to successfully navigate that system in the future. Since innovators tend to repeat or emulate successful outcomes, this underpins incentives to focus on exploiting successful niches, instead of exploring new terrain (March, 1991; Audia & Goncalo, 2007). Exploitation of normal science might be a safer choice for authors and gatekeepers alike, but tends not to generate breakthrough innovations and paradigm shifts (Kuhn, 1962) that garner high citation counts. Learning and positive feedback might be valuable for scientists, by improve their propensity to successfully navigate peer review and publish their work in preferred outlets. Paradoxically, these learning processes and incentives might also undermine strategies and preferences for generating high-impact work. Repeat authorship increases likelihood of redundancy for both authors and journals. If scientific innovation is a matter of randomness or volume of ideas produced (Simonton, 1997; Sinatra et al., 2016; Michalska-Smith & Allesina, 2017), then producing similar ideas will reduce the odds of a breakthrough innovation.

Another implication of repeat authorship and learning, is whether the types of science produced by such scientists tends to differ vis-à-vis debut authors. While learning theory posits that success results in a narrowing of subsequent work (March, 1991; Audia & Goncalo, 2007), accrued academic capital may be mutable and deployed in numerous ways. For example, scholars adorned with the Fields Medal – the most prestigious prize in the field of mathematics – began to “play the field” and engage with numerous new research areas, at the expense of short-term productivity (Borjas & Doran, 2015). Legitimacy and scientific

status can be transferable within and between subfields. Depending on the context, processes of cumulative advantage – or Matthew Effects – can give repeat authors latitude to publish on similar work. On the other hand, Matthew Effects can also grant high-status scientists latitude to publish work on new topics with a modicum of legitimacy.

Another question repeat authors in science raise is whether the scholars who cite work by high-status, established scientists differ from those who tend to cite debut, or less-established scholars. Lynn (2014) observed that citations to high-status scholars tend to accrue in cognitively distant situations, where citers are likely less familiar with a research field and use author status as a means of dealing with this uncertainty. Articles can diffuse through many different scientific fields over time (McCain & Salvucci, 2006). Likewise, the careers of scientists can exhibit similar variability. Early, middle and late adopters of innovations tend to differ demographically and ideologically (Bass, 1969; Rogers, 2003). This raises the empirical question of whether citers of articles by repeat authors follow these diffusion curves, particularly when authors and their oeuvres are exemplars of broader ideas diffusing through the scientific communities.

In recent years, high-status journals in economics have accrued increasing influence over article citation outcomes. Regardless of whether article quality and/or journal status are influencing these changes, this further underpins competitive incentives to publish in high-JIF journals. DellaVigna reported that as of 2017, acceptance rates in elite economics journals had declined to between 2.5% (*Quarterly Journal of Economics*) and 5% (*American Economic Review*) (sdellavi, 2018). More broadly, scientific incentives for scholars and innovation trajectories – particularly in regards to where to attempt to publish research – are influenced by disciplinary trends and cultures. This trend of increasing concentration of influence in leading journals runs counter to most other fields in contemporary science, which are instead

seeing trends of decreased concentration of citations in top journals (Lozano, Larivière & Gingras, 2012).

## CONCLUSION

Our research suggests that repeat authorship offers different incentives to journal gatekeepers and scientists. From a citation impact standpoint, journal gatekeepers benefit from publishing authors with a moderate number of repeat authorships. However, there are selection biases; an author being able to publish multiple times in the same journal is likely indicative of some sort of talent. Within the individual careers of scientists, citation impact steadily declines with each repeat authorship. This suggests that authors may be well served by diversifying their publishing portfolio. Alternatively, the development of skills and tacit knowledge to make a scientist more skilled in navigating the idiosyncratic peer review processes of certain journals may also undermine potential innovative impact of their published work. Declining citation impact with age also suggests costs of trading exploratory for exploitative innovation strategies. Our results also suggest a potential downside of the Matthew Effect. Preferring repeat authors may be a risk-averse decision-making strategy for journal gatekeepers dealing with the uncertainty of appraising and choosing the most meritorious science to publish. However, these cumulative advantage incentives and processes can also undermine the innovative impact of science, if not also norms of meritocracy in the profession.

## WORKS CITED

- Aarssen, L.W., T. Tregenza, A.E. Budden, C.J. Lortie, J. Koricheva, J., R. Leimu. 2008. "Bang for your buck: rejection rates and impact factors in ecological journals." *The Open Ecology Journal*, 1(1): 14-19.
- Abbott, Andrew. 1988. *The System of Professions*. Chicago: University of Chicago Press.

- Aldrich, Howard, Ellen R. Auster. 1986. "Even dwarfs started small: Liabilities of age and size and their strategic implications." *Research in Organizational Behavior*, 8(2): 165-198.
- Angrist, Joshua, Pierre Azoulay, Glenn Ellison, Ryan Hill, Susan Feng Lu. 2017. "Inside Job or Deep Impact? Using Extramural Citations to Assess Economic Scholarship." NBER Working Paper #23698: <http://www.nber.org/papers/w23698.pdf>
- Audia, P.G., J.A. Goncalo. 2007. "Past Success and Creativity over Time: A Study of Inventors in the Hard Disk Drive Industry." *Management Science*, 53(1): 1-15.
- Azoulay, Pierre, Christian Fons-Rosen, Joshua S. Graff Zivin. 2016. "Does Science Advance One Funeral at a Time?" Accessible: <http://www.nber.org/papers/w21788>
- Azoulay, Pierre, Toby Stuart, Yanbo Wang. 2014. "Matthew: Effect or Fable?" *Management Science*, 60(1): 92-109.
- Bakanic, Von, Clark McPhail and Rita J. Simon. 1987. "The Manuscript Review and Decision-Making Process." *American Sociological Review*, 52(5): 631-642.
- Barabási, Albert-László, Réka Albert. 1999. "Emergence of scaling in random networks." *Science*, 286(5439): 509-512.
- Bass, Frank. 1969. "A new product growth model for consumer durables." *Management Science*, 15(5): 215-227.
- Baum, Joel A.C. 2013. "The Excess-Tail Ratio: Correcting Journal Impact Factors for Citation Distributions." *M@n@gement*, 16: 697-706.
- Beyer, Janice M., Roland G. Chanove and William B. Fox. 1995. "The Review Process and the Fates of Manuscripts Submitted to AMJ." *Academy of Management Journal*, 38(5): 1219-1260.
- Borjas, George J. and Kirk B. Doran. 2015. "Prizes and Productivity: How Winning the Fields Medal Affects Scientific Output." *Journal of Human Resources*, 50(3): 728-758.
- Bornmann, Lutz and Hans-Dieter Daniel. 2008. "What do citation counts measure? A review of studies on citing behavior." *Journal of Documentation*, 64(1): 45-80.
- Bothner, Matthew S., Joel M. Podolny and Edward Bishop Smith. 2011. "Organizing Contests for Status: The Matthew Effect vs. the Mark Effect." *Organization Science*, 57(3): 439-457.
- Boudreau, Kevin J., Eva C. Guinan, Karim R. Lakhani, Christoph Riedl. 2016. "Looking Across and Looking Beyond the Knowledge Frontier: Intellectual Distance, Novelty, and Resource Allocation in Science." *Management Science*, 62(10): 2765-2783.
- Bourdieu, Pierre. 1988. *Homo Academicus*. Stanford : Stanford University Press.
- Bourdieu, Pierre. 2004. *Science of Science and Reflexivity*. Cambridge (UK): Polity Press.
- Bravo, Giangiacomo, Mike Farjam, Francisco Grimaldo Moreno, Aliaksandr Birukou and Flaminio Squazzoni. 2018. "Hidden connections: Network effects on editorial decisions in four computer science journals." *Journal of Informetrics*, 12(1): 101-112.
- Brogaard, Jonathan, Joseph Engelberg and Christopher A. Parsons. 2014. "Networks and Productivity: Causal Evidence from Editor Rotations." *Journal of Financial Economics*, 111: 251-270.
- Burt, Ronald S. 1998. "The Gender of Social Capital." *Rationality and Society*, 10(1): 5-46.
- Card, David, Stefano DellaVigna. 2017. "What do Editors Maximize? Evidence from Four Leading Economics Journals." NBER Working Paper No. 23282. <http://www.nber.org/papers/w23282>
- Caron, Emiel, and Nees Jan van Eck. 2014. "Large scale author name disambiguation using rule-based scoring and clustering." In Proceedings of the 19th international conference on science and technology indicators (STI-2014), pp. 79-86. Leiden: CWTS-Leiden University.

- Cole, Stephen. 1983. "The Hierarchy of the Sciences?" *American Journal of Sociology*, 89: 111-39.
- Colussi, Tommaso. 2018. "Social Ties in Academia: A Friend is a Treasure." *Review of Economics and Statistics*, 100(1): 45-50.
- Cyert, R.M. and J.G. March. 1963. *A behavioral theory of the firm*. Englewood Cliffs: Prentice Hall.
- Dance, Amber. 2012. "Authorship: Who's on first?" *Nature*, 489:591-593.
- Daniels, Ronald J. 2015. "A generation at risk: Young investigators and the future of the biomedical workforce." *Proceedings of the National Academy of Science*, 112(2): 313-318.
- Davis, Murray S. 1971. "That's Interesting: Towards a Phenomenology of Sociology and a Sociology of Phenomenology" *Philosophy of the Social Sciences*, 1(4): 309-344.
- Ellison, Glenn R. 2002a. "The Slowdown of the Economics Publishing Process." *Journal of Political Economy*, 110(5): 947-993.
- Ellison, Glenn R. 2002b. "Evolving Standards for Academic Publishing: A *q-r* Theory." *Journal of Political Economy*, 110(5): 994-1034.
- Ferber, Marianne A., Julie A. Nelson (Eds.). 1993. *Beyond Economic Man: Feminist Theory and Economics*. Chicago: University of Chicago Press.
- Fourcade, Marion, Etienne Ollion, Yann Algan. 2015. "The Superiority of Economists." *Journal of Economic Perspectives*, 29(1): 89-114.
- Fox, Craig R. and Amos Tversky. 1995. "Ambiguity Aversion and Comparative Ignorance." *Quarterly Journal of Economics*, 110: 585-603.
- Frank, Robert H. 2016. *Success and Luck*. Princeton: Princeton University Press.
- Gieryn, Thomas F. 1983. "Boundary-work and the Demarcation of Science." *American Sociological Review*, 48: 781-795.
- Gingras, Yves, Vincent Larivière, Benoît Macaluso, Jean-Pierre Robitaille. 2008. "The Effects of Aging on Researchers' Publication and Citation Patterns." *PLOS ONE*, 3(12), e4048.
- Ginther, Donna K. and Shulamit Kahn. 2004. "Women in Economics: Moving Up or Falling Off the Academic Career Ladder?" *Journal of Economic Perspectives*, 18(3): 193-214.
- Heinze, Thomas, Richard Heidler, Heiko Heiberger, Jan Riebling. 2013. "New patterns of scientific growth: How research expanded after the invention of scanning tunneling microscopy and the discovery of Buckminsterfullerenes." *JASIST*, 64(4): 829-843.
- Hengel, Erin. 2017. "Publishing while female: Are women held to higher standards? Evidence from peer review." [http://www.erinhengel.com/research/publishing\\_female.pdf](http://www.erinhengel.com/research/publishing_female.pdf)
- Hermanowicz, Joseph C. 2009. *Lives in science: How institutions affect academic careers*. Chicago: University of Chicago Press.
- Hermanowicz, Joseph C. 2003. "Scientists and Satisfaction." *Social Studies of Science*, 33(1): 45-73.
- Horrobin, David F. 1990. "The Philosophical Basis of Peer Review and the Suppression of Innovation." *Journal of the American Medical Association*, 263(10): 1438-1441.
- Jayachandran, Seema and Jamie Daubenspeck. 2018. "Gender Differences in What Development Economists Study." <http://blogs.worldbank.org/impactevaluations/gender-differences-what-development-economists-study>
- Jones, Benjamin F. 2010. "Age and Great Invention." *Review of Economics and Statistics*, 92(1): 1-14.
- Kahneman, Daniel. 2011. *Thinking Fast and Slow*. New York: Farrar, Straus and Giroux.
- Kraemer, Helena Chmura. 1991. "Do we really want more "reliable" reviewers?" *Behavioral and Brain Sciences*, 14(1): 152-154.

- Kuhn, Thomas. 1962. *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.
- Laband, David N. and Michael J. Piette. 1994. "Favoritism versus Search for Good Papers; Empirical Evidence Regarding the Behavior of Journal Editors." *Journal of Political Economy*, 102(1): 194-203.
- Larivière, V., Sugimoto, C.R. 2018. "The Journal Impact Factor: A brief history, critique, and discussion of adverse effects." In in Glänzel, W., Moed, H.F., Schmoch U., Thelwall, M. (2018). *Springer Handbook of Science and Technology Indicators*. Cham (Switzerland): Springer International Publishing.
- Larivière, Vincent and Rodrigo Costas. 2016. "How Many is Too Many? On the Relationship between Research Productivity and Impact." *PLOS ONE*, 11(9): e0162709.
- Larivière, Vincent, Chaoqun Ni, Yves Gingras, Blaise Cronin and Cassidy R. Sugimoto. 2013. "Bibliometrics: Global gender disparities in science." *Nature*, 504(7479): 211-213.
- Lamont, Michèle. 2009. *How Professors Think: Inside the Curious World of Academic Judgment*. Cambridge: Harvard University Press.
- Leahey, Erin. 2004. "The Role of Status in Evaluating Research: The Case of Data Editing." *Social Science Research*, 33(3): 521-537.
- Leslie, Sarah-Jane, Andrei Cimpian, Meredith Meyer, Edward Freeland. 2015. "Expectations of brilliance underlie gender distributions across academic disciplines." *Science*, 347(6219): 262-265.
- Li, Danielle. 2017. "Expertise versus Bias in Evaluation: Evidence from the NIH." *American Economic Journal: Applied Economics*, 9(2): 60-92.
- Li, Ye, Jie Gao, Zeynep A. Enkavi, Lisa Zaval, Elke U. Weber, Eric J. Johnson. 2015. "Sound credit scores and financial decisions despite cognitive aging." *Proceedings of the National Academy of Sciences*, 112(1): 65-69.
- Long, J. Scott and Mary Frank Fox. 1995. "Scientific Careers: Universalism and Particularism." *Annual Review of Sociology*, 24: 45-71.
- Lotka, Alfred J. 1926. "The Frequency Distribution of Scientific Productivity." *Journal of the Washington Academy of Sciences*, 16: 316-322.
- Lozano, G. A., Larivière, V., & Gingras, Y. 2012. The weakening relationship between the impact factor and papers' citations in the digital age. *JASIST*, 63(11), 2140-2145.
- Lynn, Freda B. 2014. "Diffusing through Disciplines: Insiders, Outsiders, and Socially Influenced Citation Behavior." *Social Forces*, 93(1): 355-382.
- Mahoney, Michael J. 1977. "Publication Prejudices: An Experimental Study of Confirmatory Bias in the Peer Review System." *Cognitive Therapy and Research*, 1:161-175.
- March, James G. 1991. "Exploration and Exploitation in Organizational Learning." *Organization Science*, 2(1): 71-87.
- March, James G. and Zur Shapira. 1987. "Managerial Perspectives on Risk and Risk Taking." *Management Science*, 33(11): 1404-1418.
- McCain, Katherine and Laura Salvucci. 2006. "How influential is Brooks' Law? A longitudinal citation context analysis of Frederick Brooks' The Mythical Man-Month." *Journal of Information Science*, 32(3): 277-295.
- Medoff, Marshall H. 2003. "Editorial Favoritism in Economics?" *Southern Economic Journal*, 70(2): 425-434.
- Merton, Robert K. 1973 [1942]. *The sociology of science: Theoretical and empirical investigations*. Chicago: University of Chicago Press.
- Merton, Robert K. 1968. "The Matthew Effect in Science." *Science*, 159(3810): 56-63.

- Merton, Robert K. and Elinor Barber. 2011. *The travels and adventures of serendipity: A study in sociological semantics and the sociology of science*. Princeton: Princeton University Press.
- Michalska-Smith, Matthew J., Stefano Allesina. 2017. "And, not or: Quality, quantity in scientific publishing." *PLOS ONE*, 12(6): e0178074.
- Osterloh, Margit and Bruno S. Frey. 2014. "Ranking Games." *Evaluation Review*, 39(1): 102-129.
- Peters, D.P. and S.J. Ceci. 1982. "Peer Review Practices of Psychological Journals: The Fate of Published Articles, Submitted Again." *Behavioral and Brain Sciences*, 5: 187-195.
- Pieters, Rik and Hans Baumgartner. 2002. "Who Talks to Whom? Intra- and Interdisciplinary Communication of Economics Journals." *Journal of Economic Literature*, 40(2): 483-509.
- Pfeffer, Jeffrey, Anthony Leong and Katherine Strehl. 1977. "Paradigm Development and Particularism: Journal Publication in Three Scientific Disciplines." *Social Forces*, 55(4): 938-951.
- Pluchino, A., A.E. Biondo and A. Rapisarda., 2018. Talent vs Luck: the role of randomness in success and failure. arXiv preprint arXiv:1802.07068.
- Podolny, Joel M. 2008. *Status Signals: A Sociological Study of Market Competition*. Princeton: Princeton University Press.
- Reschke, Brian P., Pierre Azoulay and Toby E. Stuart. 2017. "Status Spillovers: The Effect of Status-conferring Prizes on the Allocation of Attention." *Administrative Science Quarterly* [Online First]
- Rogers, Everett M. 2003. *Diffusion of Innovations*. New York: Simon & Schuster. 5<sup>th</sup> Ed.
- Rossiter, Margaret W. 1993. "The Matthew Matilda Effect in Science." *Social Studies of Science*, 23(2): 325-341.
- Salganik, Matthew J., Peter S. Dodds, Duncan J. Watts. 2006. "Experimental Study of Inequality and Unpredictability in an Artificial Cultural Market." *Science*, 311(5762): 854-856.
- Sarewitz, Daniel. 2016. "The pressure to publish pushes down quality." *Nature*, 533(7602): 147.
- Sarsons, Heather. 2018. "Gender Differences in Recognition for Group Work." <https://scholar.harvard.edu/sarsons/publications/note-gender-differences-recognition-group-work>
- Sauder, Michael, Freda Lynn, Joel M. Podolny. 2012. "Status: Insights from Organizational Sociology." *Annual Review of Sociology*, 38: 267-283.
- sdellavi. 2018. "Fact 3 on Top Journals: Given facts 1 and 2, acceptance rates in top journals keep declining, are at 2.5% for QJE, 3% for RES, 4% at JPE, 5-6% at AER and EMA" Apr. 25 [Tweet].
- Siler, Kyle and David Strang. 2017. "Peer Review and Scholarly Originality: Let 1,000 Flowers Bloom, but Don't Step on Any." *Science, Technology & Human Values*, 42(1): 29-61.
- Simcoe, Timothy S. and Dave M. Waguespack. 2011. "Status, Quality, and Attention: What's in a (Missing) Name?" *Management Science*, 57(2): 274-290.
- Simonton, D.K. 2004. *Creativity in Science: Chance, Logic, Genius, and Zeitgeist*. Cambridge: Cambridge University Press.
- Simonton, D.K. 1997. "Creative productivity: A predictive and explanatory model of career trajectories and landmarks." *Psychological Review*, 104(1): 66-89.
- Simonton, D.K. 1988. "Age and outstanding achievement: What do we know after a century of research?" *Psychological Bulletin*, 104(2): 251-267.

- Sinatra, Roberta, Dashun Wang, Pierre Deville, Chaoming Song, Albert-László Barabási. 2016. “Quantifying the evolution of individual scientific impact.” *Science*, 354(6312): aaf5239.
- Stinchcombe, Arthur L. 1965. “Social Structure and Organization.” Pp. 142-93 in *The Handbook of Organizations*, J. March (Ed.). Chicago, IL: Rand McNally.
- Szenberg, Michael and Lall Ramrattan (Eds.). 2014. *Secrets of Economics Editors*. Cambridge: MIT Press.
- The Economist*. 2017. “Inefficient Equilibrium: Women and economics.” Dec. 19.
- Tomkins, Andrew, Min Zhang and William D. Heavlin. 2017. “Reviewer bias in single-versus double-blind peer review.” *Proceedings of the National Academy of Sciences*, 114(48): 12708-12713.
- Travis, G.D.L. and H.M. Collins. 1991. “New Light on Old Boys: Cognitive and Institutional Particularism in the Peer Review System.” *Science, Technology & Human Values*, 16: 322-341.
- Wager, Elizabeth, Sanjay Singhvi, Sabine Kleinert. 2015. “Too much of a good thing? An observational study of prolific authors.” *PeerJ*, 3: e1154.
- Wang, Jian, Reinhilde Veugelers, Paula Stephan. 2017. “Bias against novelty in science: A cautionary tale for users of bibliometric indicators.” *Research Policy*, 46(8): 1416-1436.
- Weeden, Kim A., Sarah Thébaud and Dafna Gelbgiser. 2017. “Degrees of Difference: Gender Segregation of U.S. Doctorates by Field and Program Prestige.” *Sociological Science*, 4: 123-150.
- Whitley, Richard. 2000 [1984]. *The Intellectual and Social Organization of the Sciences*. 2<sup>nd</sup> Ed. Oxford: Clarendon.
- Wolfers, Justin. 2018. “Why Women’s Voices Are Scarce in Economics.” *New York Times*, Feb. 2.
- Yaqub, Ohid. 2018. “Serendipity: Towards a taxonomy and a theory.” *Research Policy*, 47(1): 169-179.
- Zignago, Soledad. 2017. Women in economics: new RePEc data.  
<https://www.linkedin.com/pulse/women-economics-new-repec-data-soledad-zignago/>