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The blockbuster hypothesis: influencing the boundaries of knowledge

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Abstract We argue that the creation of new knowledge is both difficult and rare. More specifically, we posit that the creation of new knowledge is dominated by a few key insights that challenge the way people think about an idea; generating high interest and use. We label this the blockbuster hypothesis. Using two large samples of published management studies over the period 1998–2007 we find support for the blockbuster hypothesis. We also find that numerous studies in the leading management journals are flops, having little impact on the profession as measured using citation data. Additional tests indicate that journal "quality" is related to the ratio of blockbusters to flops a journal publishes and that journal rankings are a poor proxy for study influence. Consistent with the notion that editorial boards are able to identify new knowledge, we find that research notes significantly under-perform articles in both the same journal and articles published in lower ranked journals. Taken together, the results imply that only a few scientific studies, out of the thousands published in a given area, change or influence the boundaries of knowledge, with many appearing to have little impact on the frontiers of knowledge. Overall, this analysis indicates that the development of new knowledge is rare even though it appears to be recognizable to knowledge gatekeepers like journal editors.

Keywords Knowledge creation · High impact knowledge · Knowledge gatekeepers · Academic journal quality

Introduction

A common view is that the development of new knowledge is important and value adding (Hall et al. 2005; McFadyen and Cannella 2004; Upham and Small 2010). Conventional

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knowledge research focuses on issues such as the acquisition of knowledge, the development of organizational structures to manage knowledge, the transferability of knowledge within and between organizations, and the exploitation of new knowledge (Liebeskind 1996; Dunlap-Hinkler et al. 2010). The relative scarcity and the ability to identify new knowledge however have not been extensively researched. Yet the idea that the creation of new knowledge is an important competitive advantage suggests that it should be rare. Furthermore organizations need to be able to recognize new knowledge so they can reward scientists for their efforts and apply this new knowledge to the development of new competitive advantages.

In the social sciences, however, there is a common perception that discerning new knowledge from existent knowledge is difficult, especially in the business disciplines where research is aimed at influencing the way people think about organizations and their environment. Because of this, organizations as diverse as universities, research foundations, and funding institutions frequently use counting rules regarding published articles to evaluate scholarly accomplishment. One rationale for this counting approach is that it is challenging to identify the creation of new and influential perspectives out of the multitude of studies that are published each year (Gittelman and Kogut 2003). Yet the use of counting rules implies that knowledge creation is common and incremental, with only small differences in knowledge creation among published works in a particular set of journals. In this paper we explore the issue of knowledge scarcity and identification to examine the relative scarcity of knowledge creation and the difficulties inherent in recognizing it.

While research papers are the primary method avenue through which new knowledge creation is identified in the natural sciences (Seglen 1997), a number of other methods are used including patents (Acs et al. 2002; Agarwal and Henderson 2002), research reports (Zack 1999) and new product development (Mudambi and Swift 2011). However, in the social sciences the choices to address this identification problem are more limited, resulting in a greater reliance on publishing, especially in prestigious outlets, as a proxy for knowledge creation. The gate-keeping process undertaken by editorial boards, whereby comments are provided and only few studies are chosen for publication out of a large number of submissions, is often perceived to be an indicator of the importance and newness of the knowledge reported. This is especially true in case of more abstract knowledge that is an increasingly important part of the innovation process (Mudambi 2008). Highly regarded journals, especially, are thought to act as a screening mechanism of knowledge quality and importance. Yet, this screening process faces pressures because editors need to publish a group of papers each period, regardless of the lumpiness in the flow of knowledge creation (Hargadon and Sutton 1997). Despite this, there is a tendency to use journal "quality" as a proxy for knowledge creation in evaluating performance.

In this paper we argue that new knowledge creation is rare. While research journals publish numerous studies each year, we hypothesize that only a few of these studies challenge or influence the boundaries of knowledge. These are the studies that change the way people think about an issue and are associated with "research fronts" (Upham and Small 2010). More specifically, we posit that common measures of research quality are driven by the relatively small handful of influential studies that are published in a particular journal. We label these influential studies as "blockbusters" and predict that although they are rare, they account for the bulk of the citations. The flip side of this argument is that most published papers will have only a limited influence on the boundaries of knowledge, with many having no discernable impact. We label these studies with no discernable influence as "flops". Overall, the blockbuster hypothesis suggests that common

performance measures, such as journal rankings, are driven by the relative number of blockbusters and flops in each journal. Our central premise is that the creation of new knowledge is dominated by these relatively few blockbuster studies.

The blockbuster hypothesis also predicts that lower ranked journals will have studies that create new knowledge, albeit fewer of them. In other words, we predict that blockbusters and flops occur in journals of various reputations, although the lower ranked journals should have relatively fewer blockbusters and more flops. This implies that you cannot tell the quality of the knowledge in a study simply by the journal in which it is published; the most influential papers in the lower ranked journals should have considerably more influence than the least influential papers in higher ranked journals. While, we primarily focus on blockbusters and flops, a third category does exist in our framework which consists of those studies that make a more incremental contribution. Thus, our theory indicates there are three recognizable types of studies, suggesting that simple counting rules of studies published in the top journals provide a misleading measure of knowledge creation.

Lastly, as part of the blockbuster hypothesis we argue that the knowledge gate-keeping process undertaken by editors is important in identifying those studies that truly develop new knowledge. The decision concerning what papers to publish, along with the suggested improvements to the paper that are typically generated in the review process are an important aspect of developing new insights that change the boundaries of knowledge. This suggests that that the editorial designation of some studies as "Articles" and others as "Research Notes" should be an important predictor of the impact of a study on the boundaries of knowledge.

There are several policy implications of our argument that new knowledge creation is rare but is identifiable through the editorial process. First, proxies based on journal quality are often misleading and are biased against influential (blockbuster) studies that are published in lower ranked journals. A second implication is that because research notes are not the same as their article brethren, placing equal weights on the two types of study in personnel evaluations (e.g., not identifying them separately) can provide a distorted view of accomplishments. A third implication is that flops are quite common in lower ranked journals, suggesting that counting rules are even less effective as one moves down the ranking of journals. Fourth, our analysis indicates that it is the scarcity of new knowledge, not identification that is the primary issue facing editors; suggesting that editors only need 1 or 2 reviews of a paper for evaluation. Finally, our analysis suggests that compensation contracts for knowledge creation should incorporate both short- and long-term components.

Knowledge creation: lumpy or smooth?

Although universities are tasked with the creation and dissemination of knowledge (Trieschmann et al. 2000), the reality is that most universities focus primarily on knowledge dissemination, i.e., teaching. Two interpretations of this peculiarity abound. One idea is that research is simply not that important and so most schools ignore it. This interpretation seems problematic since the schools that are heavily involved in research are usually ranked as the top universities (for example in the *Business Week* and *Financial Times* rankings). In addition, Pfeffer and Moore (1980) found that research productivity, even before the current trend of press rankings of business schools, was valuable to academic institutions. In fact March (1991) suggests that ignoring research actually erodes the foundation for innovation at a university, leading to poor long-term performance.

A second view is that research is demanding and new knowledge development is scarce. Cohen and Levinthal (1990) observed that the creation of new knowledge requires both expertise and experience, suggesting that the creation of new knowledge is both difficult and rare. It has been argued that the capacity to develop breakthrough knowledge is a core competency that requires unique skills and capabilities (Dunlap-Hinkler et al. 2010). In this setting, few schools are successful at research simply because of the difficulties involved.

Supporting the notion that business research is indeed valuable, Schlossman et al. (1987) observed that until the 1950s business schools were held in low regard due to their lack of scientific rigor or methods. Gleeson and Schlossman (1992) concluded that the emphasis on rigorous and original research by business academics beginning in the late the 1950s led to the rapid growth in US business school enrollments and status. This implies that new knowledge, while rare, is valuable to business schools just as the development of new knowledge is valuable to businesses (Henderson and Clark 1990; Henderson et al. 2005).

Yet the question remains, what is knowledge? Knowledge is commonly defined as the sum of what has been discovered or learned (*Webster's Dictionary*) or "information whose validity has been established through tests of proof" (Liebskind 1996: 95). Likewise, McFadyen and Cannella (2004) define new knowledge as discoveries about phenomena that were not previously known by researchers in the field. In this context, we believe that new knowledge changes the way people think about a problem or issue. Because knowledge creation is path dependent, understanding and evaluating the relevance of new knowledge requires a shared or common base of knowledge (Smith et al. 2005). This suggests that since new knowledge builds on prior creation, citations of prior studies are a good method for evaluating knowledge value (Dahlin and Behrens 2005; Seglen 1997).

The knowledge creation process and skew citation distributions

A key problem in evaluating new knowledge creation is that it may not occur in a smooth linear fashion. Hargadon and Sutton (1997) for instance, suggest that knowledge creation is lumpy. Yet journal editors are tasked with filling the pages of their journals on a continuous, linear basis. Starbuck (2005) suggests that journals are inundated with weak studies, making it difficult to find enough good papers to publish each issue. Consequently, we posit that the identification of new knowledge (from extant knowledge) is not the primary problem faced at most research journals; instead it is the scarcity of new knowledge creating studies, the need to fill journal pages on a continuous basis, and the high demand (from competing journals) for those few studies that contain new knowledge.

On the other hand the popularity of simple journal/study counting rules at many institutions suggests an alternative view of knowledge creation. Namely, that knowledge creation is primarily incremental, occurring in a smooth-linear fashion. Therefore, all published research is valuable because it contributes to the body of knowledge, the only difference being that the blocks are not uniform in size. One implication of this incremental view of new knowledge creation is that citations should be evenly distributed among published studies, especially in the same journal because each study contains a contribution to the body of knowledge. In contrast, the blockbuster hypothesis maintains that scarcity is the primary concern, so that all journals contain a large number of flops (studies that receive no citations) that are mixed with relatively few blockbusters (studies with many citations).

It is relatively well established in the literature that citation distributions are highly skewed to the right, "with a relatively small number of highly cited patents and papers, and

a relatively large number of documents which are cited only once or twice, or not at all" (Narin and Noma 1985: 369). However, most of the extant evidence in this body of literature does not directly imply of high level of skewness in the citation rates of articles published *within a single journal*. It is possible for citation distributions to be highly skew with the skewness emanating entirely from journal quality, so that the few papers published in the highest quality journals all obtain high citation counts, while the many published in lower ranked journals receive low counts. However, there is some evidence in the natural sciences that while the skewness of citations within a single journal is less than the skewness of the overall citation distribution (Seglen 1992), such distributions are still highly skew. This squares with our arguments that even the highest quality journals will contain relatively few papers that have a significant impact on the field. Examining data drawn from the Science Citation Index, Seglen (1997) finds that papers in the top half of the citation distribution in each journal are cited ten times as often as those in the bottom half, a finding that resonates with the findings reported here for the field of management.

Blockbusters and flops

Academics, in response to the recognition that research is valuable to universities, seek to publish. This pressure to publish creates a demand for journals as outlets for these numerous papers that are created each year. For instance, the 19 leading management journals in our sample publish about 1,000 studies a year, with similar patterns observable in finance and marketing. These numbers do not include the remaining 519 management journals that are listed in *Cabell's Directory of Publishing Opportunities in Management: 2002*, suggesting a population of thousands of new management papers published each year.

To simplify the process of evaluating all of these studies, proxies or rules often emerge to quickly evaluate scholarly records. One common rule is to simply count the number of refereed publications, while perhaps a more popular rule is to count the number of "A" papers, typically defined as papers published in some subset of journals (for example the list of journals used by the *Financial Times* to rank universities). Both approaches, to varying degrees, assume that knowledge creation is uniform (either across the discipline or within a subset of journals).

We build on the notion that the creation of new knowledge is lumpy, that new knowledge creation is rare, and argue that only a few of the thousands of studies published each year will account for the majority of citations and have a substantial influence in the profession. We argue that the creation of new knowledge is dominated by these blockbusters that challenge the way people think about an idea, generating high interest and citations.

Implicit in foregoing discussion, is the idea that most studies will have little to no influence in the profession. As we operationalize influence using citation data, our argument is that there will be numerous studies that have zero citations. We operationalize flops as those studies with zero citations. Given our view that new knowledge is rare, coupled with the pressure to publish, we posit that the number of flop studies is substantially greater than the number of blockbuster studies, even among the leading journals in the discipline.

As noted above a common approach to evaluating research quality is to use counting rules that are adjusted for quality differences among journals (e.g., number of "A"s). The result of this approach is the constant need for updated lists of relative journal quality. One of the most common procedures for evaluating journal quality is to compute average citation counts. This approach typically relates the number of citations to papers published

in a particular journal during some period, scaled by the number of papers published in that period. To illustrate, consider an example from Podsakoff et al. (2005) where from 1995 to 1999 *AMJ* (*Academy of Management Journal*) papers were cited 1,951 times. As *AMJ* published 271 papers during that 5 years period, an impact factor of 7.2 is computed. Typically, this procedure or some variant will be done for each journal, generating a ranking chart.

Our arguments suggest that the number of blockbusters and flops that a journal publishes is a key determinant of journal quality. Consequently, we argue that citation based rankings are driven by the relative percentages of blockbuster and flop studies that the journals publish. One of the most striking implications of our central theme relates to the use of citation-based rankings to assess research quality.

Recall that our underlying premise is that new knowledge is relatively scarce and the demand for it is high. As the top ten journals in management (by citation impact) publish over 450 papers a year, we posit that a substantial number of these will not be blockbusters. Yet, if blockbusters do in fact drive journal rankings, then the top studies published in the lower ranked journals will still consist of several blockbusters. The implication is that a substantial number of studies in the top journals create little new knowledge, but benefit from the halo effect generated by the few blockbuster studies. Further and perhaps more perniciously for the purposes of assessment, they will perform significantly worse than the best studies in lower tier journals. To test this notion we use a variant of procedure adopted by Seglen (1997) and consider the average study citation data for the bottom half of studies (by citations) in the higher ranked journals to the average citations of studies in the top quartile of the lower ranked journals. This assesses our notion that a publication in a high ranked journal is not always an "A" but sometimes a study in a lower tier journal may be. This provides additional evidence that journal level average citation data provides a poor proxy for the best and worst studies in each journal (Seglen 1997).

Knowledge gate-keepers: the editorial process

Our analysis so far has focused on the notion that new knowledge is scarce. But we also suggest that within the profession it is typically recognizable. To examine this issue of recognizability we consider the differentiation that some journals make between articles and research notes. A research note is often described as an article that would appeal to a more limited audience. Alternatively, research notes might be described as studies that the editor believes make only a minor contribution to the literature. Theoretically both statements make essentially the same claim, namely that research notes are studies that the editor feels deserve less room because they contribute less to new knowledge creation.

Under the standard premise that new knowledge is difficult to identify, the editorial process of classifying some studies as articles and some as research notes should have only a limited impact on a study's influence (i.e., its citation count). In contrast, because we believe that within the profession new knowledge is relatively easy to identify but scarce, we posit that studies designated as research notes will have significantly less influence (as noted by their significantly lower citation counts) than studies designated as articles by the editorial process.

Our final argument centers on the comparison of research notes in higher tier journals relative to articles published in lower tier journals. If new knowledge is relatively easy to identify as we contend, there should be relatively few (if any) blockbusters among the research notes. In contrast, lower tier journals should still have blockbuster articles, albeit fewer of them than the higher ranked journals. Thus, one testable inference is that research

notes in higher ranked journals should have lower influence (lower average citation counts) than the best articles (the top quartile articles) in lower ranked journals. This argument extends the idea that publications in "A" journals are not always blockbusters but sometimes those in "B" journals are. Designating a study as a research note indicates the editor's belief that the paper is not a blockbuster.

Methods

Data

Data were collected over the period 2004–2010 using a two-step process and relate to journal citation data over the period 1993 to 2007. In step one a systematic selection process was used to generate a large set of leading management journals to include in the analysis. In step two, citation information was gathered for the articles and research notes published in the selected management journals.

Selection of management journals often involves simply using lists published in previous studies. A concern with this approach is that it assumes that journal quality is static, with no changes in the ranking and knowledge contribution over time. Further, newer journals may be under represented because they were not included in the first list which becomes the basis of future research lists. To avoid this selection bias we used Thomson's Institute for Scientific Information (ISI) to generate a current list of leading management journals. Our selection process proceeded as follows. First, we selected only those journals classified as "management" in ISI. Second, we included journals that received at least 500 citations during 2003. Third, we eliminated journals that had ISI impact factors of less than 0.500. Finally, we kept only those journals with half-lives greater than 7.5. This process resulted in a listing of 19 premier management journals that we used for further analysis. Although the cut-off values for each step in our process (i.e., total cites, impact factors, etc.) were somewhat arbitrary, our aim was to obtain a comprehensive yet manageable list of well respected management journals. It is important to note that our empirical analysis thus focuses on the most influential journals, suggesting that the remaining 48 management journals listed by ISI would presumably have fewer blockbusters and greater flops on average.

We collected citation data using a multi-step process. In order to obtain a generalizable distribution of citation information and minimize truncation bias, we selected a 10-year (beginning 1993) and a 5-year (beginning 1998) window for citation counts. After identifying all articles and research notes published in our list of management journals for these two base years, we gathered citation information for each article/note published in each journal through the end of 2003. Consequently, we captured the citation patterns for each study/journal for either a 5 or 10 years window. Citation data from published works was collected from Google Scholar and manually from selected management journals, as well as from the EBSCO and ISI databases. All data were collected in late 2004 for the period ended December 2003. Only three of the journals in our listing published a significant number of research notes during the sample years: the *Academy of Management Journal (AMJ)*, the *Strategic Management Journal (SMJ)* and the *Journal of International Business Studies (JIBS)*.

To address the skewness of individual journal citation distributions (Seglen 1997), we created a second data set to examine the conditional mean number of citations (top 10%) for most of the top two tiers of management journals, including: *Academy of Management*

Journal, Academy of Management Review, Strategic Management Journal, Administrative Science Quarterly, Management Science, Research Policy, Journal of International Business Studies, Organization Science, Journal of Management, Journal of Business Venturing, Organizational Behavior and Human Decision Processes, and *Journal of Management Studies*. Data for the years 1995–2007 was extracted in late 2010 from the Thompsons Institute for Scientific Information (ISI) database, thus allowing for a reasonable window in which published studies can receive citations, should they be considered contributions to knowledge and referenced in the work of others. Given the relatively low number of articles published by each journal per year, the top 10% was used to gain a sufficiently large sample of highly cited studies. This allowed us to quantify, over time, the citation performance of the top 10% of studies from each journal and compare the journals of the basis of the best studies they published rather than the average.

Identifying blockbusters and flops

Finally we identified those studies to be classified as flops and blockbusters. Flops were defined as those studies with zero citations since publication. The key then was to define what constitutes a blockbuster study. We used data based on major business associations' best paper awards to develop a measure to identify blockbuster studies. A basic premise of our analysis is that scholars in the same discipline are well situated to identify research quality because identifying new knowledge requires an understanding of the current knowledge base (Smith et al. 2005). More specifically, we examined the citation patterns for studies that were "best paper" award winners from the top management (Academy of Management—*AMJ* and *AMR* best paper awards), finance (American Finance Association—Smith Breeden prize for the *Journal of Finance*) and marketing (American Marketing Association—Harold H. Maynard award for the *Journal of Marketing*) societies. We contend that scholars in the same discipline can easily identify knowledge creating studies. Since best paper awards are a professional society's judgment about the previous year's studies that will make the largest contribution to knowledge, we used these societies' determinations of "best papers" to measure the number of citations that were generated by blockbuster studies.

Specifically, we included the best papers for each society for the 3 years period preceding our sample period (1989–1992) which we believe gives us a long enough time period to reflect the full range of citations. For each award winning study we collected citation data and calculated an average annual citation count. This method allows us to capture a citation count that approximates the citation level needed for a study to be considered a blockbuster. This process resulted in an average citation rate of about 9 cites per year for these "best papers".

We also experimented with two alternative methods of determining blockbuster citation rates. One method was to select the top 5% of all the studies in our sample, based on average annual citation counts, a method that identifies blockbusters as studies that average a bit over 8 cites per year. The second method was based on discussions with fellow academics who indicated that studies with 100 or more citations over a 10 years period would be perceived as being very influential. This implies that we should consider blockbusters as studies with 10 or more citations annually. We examined the impact of each of these alternative methods of determining what a blockbuster study looks like. The outcomes of all three configurations were qualitatively similar. We present results based on the "best paper" award method because we believe this is the most objective method for determining the blockbuster citation rate.

Findings

Columns 1 to 3 in Table 1 show the breakdown of the 2012 papers that were published by our 19 leading management journals during the 2 years included in our study. Our theory suggested that among these numerous papers, only a few of them would be blockbusters and create new knowledge. Our arguments suggest that these few blockbuster studies would capture a disproportionate percentage of citations. Column 5 shows the number of blockbusters published in each journal, with a total of 84 studies identified as blockbusters. Column 7 shows the percentage of blockbusters in each journal and Column 9 gives the percentage of the citations garnered by the blockbuster studies. As Table 1 reveals, although blockbusters made up 4% of the studies published, they only accounted for about 29% of the total citations.

This implication is borne out over a time. By examining the conditional mean of the top 10% of papers by citation counts, we were able to examine the relative contribution of the top performing papers for each journal, spread out over time (1995–2007). Table 2 shows the impact of the most highly cited papers, emphasizing that new knowledge stems from a relatively small set of papers. Further analysis of this data reveals these conditional means are 3–5 times higher than each journal's unconditional mean.

We argued that because knowledge creation is lumpy and journals are published on a continuous basis, the number of flop studies (studies with no citations subsequent to their publication) would be substantially higher than the number of blockbusters. Columns 6 and 8 in Table 1 show the number of flops and the percentage of flops in each journal. Comparing Columns 5 and 6 one can see that there are almost twice as many flop studies as blockbusters in our sample (84 blockbusters, 152 flops), providing support for this position. The twin pressures for academics to get published and the editors' need to fill their journals helps explain this flop imbalance. We speculate this ratio of flops to blockbusters would be dramatically greater if we expanded the list of management journals to include the hundreds of weaker journals.

Further, we suggested that journal rankings and the number of blockbusters/flops are connected. Table 1 provides support for this hypothesis and shows that higher ranked journals tend to have a greater proportion of blockbuster studies (column 7) and a lower proportion of flops (column 8) compared to journals ranked lower on the list. Hence, it appears that journal rankings are driven by the mix of blockbusters and flops that each journal publishes with higher ranked journals having more blockbusters and fewer flops than lower ranked journals.

Building on earlier arguments, we suggested that despite the preponderance of blockbusters in the top ranked journals, lower ranked journals also publish influential papers that have an impact on the way we view the world. We argued that the best studies in the lower ranked journals should significantly outperform the less influential studies in the higher ranked journals. Table 3 shows that there are significant citation differences between studies from the top quartile of lower ranked journals and studies from the bottom half of the top ranked journals. For example, we found that the top quartile of studies published in the *Journal of Management Studies* had a significantly higher average citation rate than half (the bottom half) of the studies published in journals like *Administrative Science Quarterly* and *Academy of Management Journal.*

This result is reinforced by examining the conditional mean citations of the top 10% of papers published in each journal (Table 2). Some years show a more substantial contribution from the top tier journals than from the second tier. However, in other years, the contribution of lower ranked journals cannot be ignored. In 2003, the top 10% of papers in

Table 1 Blockbusters and flops

Column number Journal name	1 Number of 1998 studies	2 Number of 1993 studies	3 Total number of studies	4 Average cites per study	5 Number blockbusters	6 Number flops	7 % of blockbusters	8 % of flops	9 % Total cites by blockbusters
Academy of Management Review	38	21	59	60.37	23	0	39.0%	0	70.7%
Administrative Science Quarterly	26	22	48	49.00	10	0	20.8%	0	50.4%
Academy of Management Journal	44	67	111	38.90	15	1	13.5%	0.9%	35.7%
Strategic Management Journal	70	61	131	33.01	12	2	9.2%	1.5%	46.2%
Organization Science	57	33	90	17.80	5	6	5.6%	6.7%	22.3%
Journal of Product Innovation Management	38	27	65	16.77	2	4	3.1%	6.2%	17.9%
Journal of International Business Studies	41	36	77	15.74	2	5	2.6%	6.5%	18.1%
Organizational Behavior & Human Decision	59	61	120	15.01	3	5	2.5%	4.2%	13.0%
Journal of Management Studies	39	41	80	14.59	2	3	2.5%	3.8%	21.8%
Journal of Management	32	42	74	14.20	1	1	1.3%	1.4%	4.3%
Management Science	143	115	258	12.84	6	18	2.3%	7.0%	18.6%
Organization Studies	41	25	66	11.36	1	3	1.5%	4.6%	16.5%
Research Policy	89	29	118	10.61	2	6	1.7%	5.1%	11.6%
Journal of Business Venturing	39	36	75	9.36	0	6	0	8.0%	0
Organizational Dynamics	22	50	72	9.13	0	10	0	13.9%	0
Human Relations	83	63	146	9.07	0	29	0	19.9%	0

Table 1 continued

Column number Journal name	1 Number of 1998 studies	2 Number of 1993 studies	3 Total number of studies	4 Average cites per study	5 Number blockbusters	6 Number flops	7 % of blockbusters	8 % of flops	9 % Total cites by blockbusters
Journal of Business Research	61	43	104	6.12	0	17	0	16.3%	0
Human Resource Management	24	25	49	5.89	0	13	0	26.6%	0
Journal of Business Ethics	157	112	269	5.16	0	23	0	8.6%	0
Total/average	1,103	909	2,012	16.25	84	152	4.2%	7.6%	28.7%

Table 2 Conditional mean cites: top 10% of papers

Journal	Year												
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Academy of Management Review	816.75	393.75	393.67	782.50	268.00	283.40	257.33	403.67	187.67	111.00	114.00	95.80	64.80
Academy of Management Journal	514.29	398.50	293.60	286.75	202.00	227.57	192.57	151.57	81.00	98.83	84.67	71.67	37.29
Administrative Science Quarterly	481.50	557.00	768.50	206.67	527.33	295.50	170.50	152.00	219.00	60.00	96.00	31.50	31.50
Organization Science	305.75	488.75	195.25	196.83	242.25	272.50	211.80	289.50	117.80	119.80	80.25	39.80	21.57
Strategic Management Journal	236.20	623.29	550.86	305.86	246.50	433.00	219.33	137.71	129.13	92.57	70.57	49.67	46.57
Research Policy	188.40	73.67	188.75	104.63	84.20	152.29	91.75	121.38	101.70	62.22	54.89	44.22	26.89
Journal of International Business Studies	145.25	141.50	132.67	124.50	117.75	70.25	105.40	81.25	69.75	100.00	64.00	45.40	26.14
Management Science	131.93	160.62	217.50	130.08	152.00	292.09	108.58	121.80	126.30	79.00	61.14	41.29	20.54
Journal of Management	106.80	137.75	284.67	153.00	118.75	251.20	128.00	93.00	109.25	83.25	59.50	48.25	40.75
Journal of Business Venturing	96.00	93.33	110.67	97.00	50.33	81.00	70.33	48.67	118.75	45.25	59.00	23.25	19.25
Organizational Behavior and Human Decision Processes	93.00	162.50	94.63	120.00	102.50	155.20	145.50	67.17	45.50	40.25	47.25	36.40	24.20
Journal of Management Studies	65.00	72.25	58.75	57.75	44.25	74.80	71.80	96.60	53.13	58.67	38.43	40.29	20.86

Table 3 Top quartile studies' citation rates versus bottom half studies' citation rates*

Top quartile citations		Bottom half citations																	
		AMR 23.5	ASQ 19.8	SMJ 8.7	AMJ 15.4	JPIM 4.7	OS 4.7	JIBS 5.5	OBH 4.2	JMS 4.0	MS 3.5	JM 6.1	OSt 3.0	RP 2.8	HR 1.7	OD 2.1	JBV 3.0	JBR 1.5	JBE 1.7	HRM 0.7
Academy of Management Review	136.5	–																	
Administrative Science Quarterly	115.8	**4.37**	–																
Strategic Management Journal	94.1	**4.34**	**>10**	–															
Academy of Management Journal	87.5	**>10**	**>10**	**>10**	–														
Journal of Product Innovation Management	42.3	**2.71**	**3.23**	**4.22**	**3.66**	–													
Organization Science	39.6	**3.47**	**4.15**	**5.36**	**4.67**	**>10**	–												
Journal of International Business Studies	39.3	1.95	**2.40**	**3.46**	**2.88**	**4.28**	**4.20**	–											
Organizational Behavior & Human Decision	37.8	**3.32**	**4.23**	**>10**	**5.10**	**>10**	**>10**	**>10**	–										
Journal of Management Studies	36.6	1.74	**2.20**	**3.30**	**2.70**	**3.82**	**3.77**	**3.72**	**3.78**	–									
Management Science	32.0	**2.53**	**3.63**	**>10**	**5.22**	**>10**	**>10**	**>10**	**>10**	**>10**	–								
Journal of Management	29.3	**2.14**	**3.85**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	–							
Organization Studies	28.7	0.79	1.36	**2.82**	**2.04**	**3.43**	**3.38**	**3.31**	**3.41**	**3.48**	**3.42**	**3.25**	–						
Research Policy	27.2	0.96	**2.00**	**4.84**	**3.38**	**5.66**	**>10**	**>10**	**>10**	**>10**	**>10**	**5.96**	**>10**	–					
Human Relations	24.9	0.50	1.68	**5.36**	**3.43**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	–				
Organizational Dynamics	24.5	0.45	1.42	**3.93**	**2.66**	**>10**	**4.79**	**4.71**	**4.79**	**4.94**	**4.71**	**4.63**	**5.18**	**4.99**	**5.07**	–			
Journal of Business Venturing	23.4	−0.02	1.49	**>10**	**3.95**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	–		
Journal of Business Research	15.9	**−3.18**	**−1.88**	**4.77**	0.43	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	–	
Journal of Business Ethics	12.3	**−4.50**	**−3.52**	**2.88**	**−2.08**	**5.36**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	–
Human Resource Management	10.7	**−3.89**	**−2.98**	0.57	−1.68	1.62	**2.22**	**1.98**	**2.40**	**2.47**	**2.57**	1.78	**2.80**	**2.80**	**3.08**	**3.06**	**2.81**	1.34	**3.16**	–

* *t*-statistics greater than 1.96 are significant ($p < 0.05$) and are shown in bold

Academy of Management Journal generated an average of 81.00 citations as compared to 101.70 for the top 10% of papers from *Research Policy*. This is repeated in 2004, when the top 10% of papers in *Administrative Science Quarterly* generated an average of 60.00 citations as compared to corresponding figure of 100.00 for *Journal of International Business Studies*. This provides additional evidence in support of our thesis that the journal ranking is a crude and often misleading measure of new knowledge creation.

We ran two tests to examine the veracity of arguments concerning the recognition of path breaking knowledge. We suggested that editors select certain manuscripts to be published as research notes because they recognize that these manuscripts do not create substantially new knowledge. Hence, we expected that on average research notes would have significantly lower citation rates than full articles in the same journal. We used v*t*-statistics to test this contention. As Panel A in Table 4 indicates, we found that there were significant ($p < 0.01$) differences in average citation rates between research notes and full articles published in the same journal. For instance, *Strategic Management Journal* articles were cited about 2.7 times as often as their notes (35.77 cites for articles vs. 13.2 cites for notes). As our theory suggested, research notes had significantly lower citation rates then full articles in the same journal.

Consistent with the underlying premise of the blockbuster hypothesis, we suggested that research notes contribute less to new knowledge creation, and thus have lower citation counts, than the best articles in lower ranked journals. Using *t*-statistics, panel B of Table 4 shows that research notes published in *JIBS* had significantly lower average citation counts (7.1 citations) than the best articles in all but three lower ranked journals and even in these three cases, they were not significantly different. Likewise, research notes published in *SMJ* had significantly lower average citation counts (13.2 citations) compared to the best articles in all but three lower ranked journals. The average citation count for *AMJ* research notes (28.8 citations) was significantly lower than the best articles in 2 lower ranked journals, were not significantly different from 11 lower ranked journals' best articles, but did have significantly more citations than the best articles in *Journal of Business Research, Journal of Business Ethics,* and *Human Resource Management.* These results suggest that the best articles in the second tier of our list of leading management journals tended to be as good as or better than the research notes published in the top journals.

Robustness tests

We have limited our study to management journals, in an effort to compare apples with apples, so to speak. However, we recognize that management is a very broad field and citation practices and patterns can differ substantially across sub-fields. We conduct several tests to ensure that our findings are robust. The three tests we construct are based on subfield citation practices, subfield size and journal practices regarding self-citation.

In the first test, we focus on subfield citation practices. Consider two articles in subfields A and B, each of which accumulates 100 citations over 5 years, but where the average article in subfield A contains 20 references while the average article in subfield B contains 80 references. It could fairly be argued that the article in subfield A has had considerably more impact than the article in subfield B. Citations in subfields in which articles tend to include a large number of references are less valuable than citations in subfields where articles refer to relatively few prior studies. Therefore, we use the average number of references in each journal to generate a deflator. Thus, for the journals in our sample, articles in the *Academy of Management Review* and the *Administrative Sciences Quarterly* contain more references than the average, implying that citations received by articles in

Table 4 Research notes versus full articles

Panel A: intra-journal analysis

Journal name	Average citation count per article (excluding notes)	Research notes compared to articles in the same journal[a]		
		AMJ cites per note	*SMJ* cites per note	*JIBS* cites per note
		28.8	13.2	7.1
Academy of Management Journal—Articles	46.10	−2.87**		
Strategic Management Journal—Articles	35.77		−3.34**	
Journal of International Business Studies—Articles	17.18			−3.05**

Panel B: relative influence of research notes

Journal name	Cites per article—top quartile	Research notes compared to top quartile articles[a]		
		AMJ cites per note	*SMJ* cites per note	*JIBS* cites per note
		28.8	13.2	7.1
Academy of Management Review	136.5			
Administrative Science Quarterly	115.8			
Academy of Management Journal—Articles	98.1	–		
Strategic Management Journal—Articles	98.0	−3.63**	–	
Organization Science	39.6	−2.30*	−4.82**	
Journal of International Business Studies—Articles	40.9	−1.07	−3.91**	–
Journal of Product Innovation Management	42.3	−1.80	−3.94**	−5.08**
Organization Behavior & Human Decision	37.8	−1.72	−4.62**	<−10**
Journal of Management Studies	36.6	−1.01	−2.84**	−3.79**
Journal of Management	29.3	−0.11	−3.70**	<−10**
Management Science	32.0	−0.86	−3.87**	−3.84**
Organization Studies	28.7	0.01	−2.14*	−2.31*
Research Policy	27.2	0.31	−2.81**	−2.93**

Table 4 continued

Panel B: relative influence of research notes

Journal name	Cites per article—top quartile	Research notes compared to top quartile articles[a]		
		AMJ cites per note	*SMJ* cites per note	*JIBS* cites per note
Journal of Business Venturing	23.4	1.34	−2.32*	−2.46*
Organizational Dynamics	24.5	0.67	−2.40*	−2.58*
Human Relations	24.9	0.75	−2.56*	−2.67**
Journal of Business Research	15.9	3.05**	−0.68	−0.97
Journal of Business Ethics	12.3	3.83**	0.22	−0.12
Human Resource Management	10.7	3.86**	0.56	−0.24

[a] Two-sample *t*-tests with unequal variance; * $p < 0.05$; ** $p < 0.01$

these journals are worth relatively less. In contrast, *Management Science* and *Organizational Dynamics* contain fewer references than the average, meaning that the citations received by articles in these journals are worth relatively more.

In the second test, we introduce subfield size. We obtained the size of divisions within the Academy of Management over the period 2006–2010 to generate a measure of the relevant population of academics who are potential citers of articles in a particular journal. We use these sizes to generate a "citing pool" index. This approach is based on the empirical evidence that that an Academy-wide journal like the *Academy of Management Journal* contains articles covering the entire domain of management (Colquitt and Zapata-Phelan 2007). Hence the relevant population of academics who are potential citers of articles in such a journal encompasses all the divisions of the Academy of Management, so that the citing pool index for Academy-wide journals like the *Academy of Management Journal* and *Academy of Management Review* is unity (1.0). By the same token, the citing pool index for specialized journals that relate to only a few divisions of the Academy of Management is relatively small. Such journals include the *Journal of Business Venturing* and the *Journal of Product Innovation Management*.[1]

As a final test of the robustness of our blockbuster hypothesis we examined the impact of self-citations on the journal rankings and blockbuster/flop counts for our list of leading management journals. Journal self-citations were defined as citing a study from the same journal. As Table 4 indicates, self-citation rates ranged from a low of 2.3% (*Organizational Dynamics*) to a high of 69.4% (*Journal of Business Ethics*). The elimination of self-citations had a minor impact on the relative ranking (based on average citations) of 5 of the 19 journals included in our study: *Organizational Behavior & Human Decision Processes* and *Journal of Management* both moved up the ranking while *Journal of Product Innovation Management, Research Policy*, and *Journal of Business Venturing* each moved down the ranking.

While journal rankings were only marginally affected by the adjustments for citation practices, subfield size and the elimination of self-citations, other study quality measures were more substantially impacted. Perusing Table 5, we note that the number of blockbusters in *Management Science* increases dramatically after adjusting for citation practices and subfield size. The adjustment for citation practices brings the number of blockbusters in the *Academy of Management Review* into line with the other top journals. The overall number of blockbusters increases after adjusting for subfield size, since the Academy-wide journals retain their citation counts, while the focused journals each receive a positive adjustment.

Table 6 shows that excluding self-citations from our analysis resulted in even fewer studies reaching the blockbuster citation level (68 blockbusters vs. 84 blockbusters); fewer studies appear to move the boundaries of knowledge forward if one eliminates citations to studies in the same journal. In addition, elimination of self-citations resulted in a substantial increase in the number of studies classified as flops (254 flops vs. 152 flops). However, the majority of this increase can be attributed to the substantial number of flop studies that appear in *Journal of Business Ethics*. These results provide a more conservative view of research quality and contributions to new knowledge creation than previous tests in this study, yet the implications are similar; research quality cannot be determined simply by counting publications or identifying rankings of journals, individual study

[1] This index does not correct for the citing population of management journals outside the field of management. In order to deal with this issue, we examined the percentage of citations the journals received outside of the list of management journals maintained by ISI. We found that the citations received from outside the field of management did not vary dramatically across our set of journals.

Table 5 Adjusted blockbusters—citing patterns and subfield size

	Raw data		Citation practices		Subfield size	
Column number Journal name	1 Average cites per study	2 # block-busters	4 Reference factor	5 Adj # block-busters	6 Subfield size factor	7 Adj # block-busters
Academy of Management Review	60.37	23	0.712	12	1.000	23
Administrative Science Quarterly	49.00	10	0.739	5	1.000	10
Academy of Management Journal	38.90	15	1.011	15	1.000	15
Strategic Management Journal	33.01	12	1.001	12	0.288	16
Organization Science	17.80	5	0.892	3	0.777	7
Journal of Product Innovation Management	16.77	2	1.274	4	0.140	9
Journal of International Business Studies	15.74	2	1.101	2	0.158	7
Organizational Behavior & Human Decision Processes	15.01	3	1.220	4	0.553	5
Journal of Management Studies	14.59	2	0.891	1	1.00	2
Journal of Management	14.20	1	0.696	0	1.00	1
Management Science	12.84	6	1.685	16	0.322	16
Organization Studies	11.36	1	0.915	1	0.777	2
Research Policy	10.61	2	1.173	3	0.140	4
Journal of Business Venturing	9.36	0	1.018	0	0.131	2
Organizational Dynamics	9.13	0	4.804	7	0.777	0
Human Relations	9.07	4	0.984	4	0.306	5
Journal of Business Research	6.12	0	1.334	0	1.000	0
Human Resource Management	5.89	0	1.352	1	0.240	1
Journal of Business Ethics	5.16	0	1.442	0	0.277	0
Total/average	16.25	84		89		120

citation information needs to be examined to determine the true extent of a study's contribution to knowledge.

Finally, we address the basic question as to why any blockbuster studies appear in lower ranked journals. If knowledge is so scarce that even the very best journals are unable to find an adequate number *and* if it is recognizable by expert editors, all blockbuster studies should find their way into the top ranked journals. The answer to this apparent contradiction is that while the quality of a paper may be apparent to a senior scholar occupying an editorial position, this expertise is built up over time. Junior scholars may be less capable at judging the quality of their own work. Further, they may be under high pressure to publish, choosing a lower ranked journal where they perceive a higher probability of acceptance or a shorter editorial process or both.

Thus, journal submission is a matching model (Jovanovic 1979) with one-sided asymmetric information that decreases with the seniority of the submitting author(s). We test this contention by compiling the number of blockbuster articles written by junior scholars, defined as those less than 6 years out of graduate school. We find that the lower ranked

Table 6 Adjusting for journal self-citations

Journal name	*N*	Average cites per study			Excluding self-cites	
		Including self-cites	Excluding self-cites	Percentage reduction	Number blockbusters	Number flops
Academy of Management Review	59	60.37	56.27	6.79	21	1
Administrative Science Quarterly	48	49.00	45.06	8.04	8	0
Academy of Management Journal	111	38.90	35.65	8.36	13	1
Strategic Management Journal	131	33.01	25.96	21.35	9	3
Organization Science	90	17.80	15.71	11.74	2	10
Journal of Product Innovation Management	65	16.77	11.22	33.12	1	5
Journal of International Business Studies	77	15.74	12.99	17.49	2	5
Organizational Behavior & Human Decision	120	15.01	13.32	11.26	2	5
Journal of Management Studies	80	14.59	12.61	13.55	2	5
Journal of Management	74	14.20	12.86	9.40	0	1
Management Science	258	12.84	11.60	9.62	6	23
Organization Studies	66	11.36	9.91	12.76	1	7
Research Policy	118	10.61	8.34	21.40	1	7
Journal of Business Venturing	75	9.36	6.73	28.10	0	6
Organizational Dynamics	72	9.13	8.92	2.34	0	10
Human Relations	146	9.07	8.40	7.37	0	30
Journal of Business Research	104	6.12	5.44	11.11	0	18
Human Resource Management	49	5.89	4.71	20.03	0	14
Journal of Business Ethics	269	5.16	1.58	69.45	0	103
Total/average	2,012	16.25	13.80	20.98	68	254

A journal self-citation is the citation of a paper in the same journal

journals have a significantly higher percentage of such articles compared to the top ranked journals. In other words, blockbuster articles in lower ranked journals are highly likely to be the result of mismatch in the journal submission process.

Discussion and conclusions

This study indicates that although new knowledge creation is rare it is recognizable. Only a relatively few studies tend to capture the interest and attention of other researchers each year. Many other studies appear to contribute virtually nothing to our knowledge base. Further, our results suggest that the knowledge gate-keeping process run by editors appears

to do a good job of recognizing and publishing important contributions to knowledge. Scarcity of new knowledge, not identification appears to be the primary issue. As such, our findings imply that common methods of evaluating research quality appear to be flawed. The use of counting rules and journal rankings hides the fact that a relatively small number of studies make a significant impact on new management knowledge creation and that a large number of published studies have little or no impact on the way we view the world of business.

Focusing on publishing often seems to ignore the reason business schools participate in research; namely the creation of new knowledge that changes the way managers assemble and operate organizations. Only high impact knowledge has this effect: indirectly as it finds its way into business school curricula and directly as when businessmen, often unknowingly, take guidance "from some academic scribbler of a few years back" (Keynes 1936: 383).

In this study we have focused on two important classes of research, blockbusters and flops. Blockbusters are those relatively rare papers that make an important contribution to knowledge, expanding the boundaries of knowledge, and have a significant impact on the way we think. Flops on the other hand appear to make no contribution to the boundaries of management knowledge. These differences in knowledge creation have important implications for the way we should evaluate research quality and the way journal knowledge gate-keeping processes should work. Consequently we suggest that alternative methodologies should be used to gain greater insights into the qualitative contribution of scholarly research in management.

Evaluating quality

Historically organizations (such as universities, research foundations, and ranking agencies) have tended to rely on publication counts as a method of identifying research quality. Whether counting just the number of published papers, or restricting the count to a subset of journals, both methods treated all studies published in the selected outlets equally. This methodology does not discriminate between those studies that are highly influential and make a significant contribution to knowledge, and those that have little or no influence. As our results indicate, just being published in a top journal is not sufficient evidence that a study has truly influenced the boundaries of knowledge.

We do not suggest that these counting methods are without merit. For relatively new research scholars counting methods perhaps provide a reasonable proxy of future impact. Because newer scholars tend to have only recently been published, they may have relatively few citations; it takes time for papers to be read, included in new research, and for this new research to get published. Publication counts (from some select group of journals) might provide a rough guide to future research quality. However it is important to realize this is simply a proxy for quality instead of a quality measure.

For more seasoned research scholars the publication count method is a misleading proxy for research quality. Our research suggests that for a study that has been in the public domain for 5–10 years, it is more accurate to evaluate its contribution to knowledge using citation data, rather than the journal where it is published. Since some studies in lower-ranked journals provide high quality knowledge contributions (blockbusters), and lower ranked journals often outperform higher ranked journals even in terms of the average impact of their most highly cited papers, there is less of a link between journal ranking and study quality than simple counting rules indicate. Further, even in the leading management journals included in our research, we find that many studies that make little or no

contribution to knowledge (flops) co-exist with the few that make a substantial contribution to knowledge. Thus, we argue that different methods of identifying research quality need to be used depending on the researcher's seniority.

In many organizations, financial/workload rewards are tied to publication performance. Here again we suggest that there is a need to focus on and reward blockbusters differently than other publications. We found that the best articles in lower ranked journals appear to make a more significant contribution to knowledge than half of the studies published in higher ranked journals. The implications of this are that quality evaluations used to provide financial/workload rewards need to take into account the individual study, instead of the journal. Not everything you read in the top journals makes an important contribution to knowledge. Likewise, important contributions can be found in studies published in lower ranked journals. The analysis of the conditional means of the top 10% of articles (Table 2) suggests that second tier journals are a viable platform upon which to showcase new knowledge.

The implications of these findings are that research should be rewarded in a way that encourages knowledge creation. We suggest a two stage reward system that incorporates both short- and long-term measures of knowledge creation. Publication counts (perhaps from a group of selected journals) are the best method of rewarding researchers on a short-term basis for their output. Many organizations offer financial and/or workload rewards for research publications that the organization hopes will become blockbusters. In an effort to tie production of research publications to rewards, one cannot wait to determine the impact (citation rate) of each publication; instead organizations need to be very selective in their journal lists and counting rules. However, rewards tied to short-term publication output might also be short-term in nature. For example a financial bonus (not a change in salary) or temporary workload reduction may accompany publication in a top journal. Once the actual impact of the publication can be determined then more long-term rewards can be offered; for instance an increase in salary and more permanent workload reduction. Hence, because organizations may have short-term difficulty in determining the impact of a contribution to knowledge both a short-term and a long-term reward system should be instituted.

This study also has implications for the way organizations motivate and reward researchers. Publishing itself is not the key objective; instead creating knowledge that influences our understanding of business should be the focus. For instance, our analysis indicates that a blockbuster has substantially greater value than the combined effect of a large number of even average articles in some of the most respectable outlets (e.g., a blockbuster in *Research Policy* vs. 3 average papers in *Academy of Management Journal*). Organizations should focus more on encouraging and rewarding studies that expand the boundaries of knowledge, instead of emphasizing publishing per se. Because the creation of new knowledge takes time and is lumpy, focusing on the contribution or the value-added of research would benefit both the organization and the business world.

This study focused on blockbusters and flops; only peripherally examining the impact of those studies that lie in between. We do not intend to imply that these other studies are unimportant. In fact, while these other studies tend to have lower citation rates than blockbusters, unlike flops they achieve some attention and recognition from other researchers. While making less of a contribution to knowledge than blockbusters these other studies appear to appeal to a smaller group of scholars and fill knowledge gaps in specific niche areas. Our research implies that these other studies do add value and make a contribution to knowledge. Hence when evaluating research quality three categories of published research need to be recognized even in the leading management journals; some

with no impact, many with limited impact, and a few that contain influential new knowledge. These types of studies should be recognized and rewarded in very different ways.

A potential limitation of our analysis is that some of the studies that we identified as having no influence, because they received zero citations in subsequent years, could be studies ahead of their time. At some point in the future these studies could be recognized as having greater meaning and influence. While, it is easy to imagine this occurring on an individual basis it would appear unlikely to be true on average. For instance, citation data for both patents and articles suggests that very short windows, even as little as 2 years provide a good idea of future impact (Starbuck 2005). In addition, the cited-half life for the median journal in the 67 management journals covered by ISI is about 5.5 years, suggesting that 5 and 10 years windows provide a robust test of the blockbuster hypothesis.

Editorial process

This study also has important implications for the journal editorial process. It appears that editors (and reviewers) do a good job of identifying quality research. Since research scholars familiar with a discipline appear to be able to identify studies that make a significant knowledge contribution, having multiple expert reviewers seems redundant. This implies that manuscripts may only need to be reviewed by one or two reviewers, not three or more as occurs at some leading management journals.[2]

Our results on full articles versus research notes suggest that, in general, editors appear to do a good job of assessing quality. However, especially in the age of online publication, editors need to ask "is it necessary to publish a certain number of papers in every issue?" Given the large number of flops and studies with very minor impact which appear in even the best journals, these editors could dramatically increase the impact of their publications by eliminating the studies they deem to be marginal. This might explain why so few journals publish research notes as a regular part of their annual output. Further, including both articles and research notes tends to reduce average journal citation rates, influencing the ranking of journals and the perceived value of publishing in these outlets. Finally, to the extent that articles and notes are not separated in researchers' resumes, journals that routinely publish notes risk "cheapening" their brand.

In conclusion, our research differs substantially from past knowledge research which tends to focus on incremental and radical breakthroughs. Our research indicates that there is a substantial volume of essentially useless research that occurs (at least in an academic setting) which generates no new contributions to knowledge. Further, this study tends to suggest that contributions to knowledge can be found in most of the leading management journals. Yet the distribution of these contributing studies does not necessarily coincide with the journal ranking. Hence, determining contribution to knowledge based solely on the journal in which a publication appears can be misleading (creating both positive and negative errors). There are significant contributions to knowledge in what might be considered mid-tier journals and many studies (especially research notes) published in top-tier journals appear to make only minor contributions. This implies that identifying incremental knowledge simply on the basis of the journal in which it is published, may mislabel a radical breakthrough (a blockbuster). Overall, these results suggest that only a few scientific studies, out of the thousands published, change or influence the boundaries of knowledge, with many of the remaining studies having little influence or impact.

[2] In this context, see also Schultz (2010) and Kochen et al. (1981).

Fortunately it appears from our analysis that these knowledge breakthroughs (or blockbusters) are recognizable and the identification of new knowledge may not be as murky as previous research tends to indicate.

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