Can Early-Career Scholars Conduct Impactful Research While Trying to Get Tenure?: Playing "Small Ball" vs "Swinging for the Fences"

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CAN EARLY-CAREER SCHOLARS CONDUCT IMPACTFUL RESEARCH? PLAYING "SMALL BALL" VERSUS "SWINGING FOR THE FENCES"

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Given the disproportionate influence that high-impact articles have on the field of management, it is not surprising that PhD students trying to establish themselves early in their careers would like to know how to write such articles. Unfortunately, these students often receive conflicting advice about whether they should bide their time by conducting incremental research until they reach tenure (play "small ball"), or try to write impactful research early in their careers ("swing for the fences"). We explore the characteristics of high-impact management articles and examine whether early-career scholars are capable of publishing them. Our analysis shows that over half (53%) the authors of 235 high-impact management articles published them in the pre-tenure period of their careers. We use the results of this study, along with the lessons from previous research, to provide recommendations to faculty mentors and advisors on how PhD students can increase their chances of conducting high-impact research.

During the past few years, the first author of this article has participated in the Organizational Behavior Junior Faculty Workshop at the Annual Academy of Management Meetings. At this workshop, junior faculty members are given the opportunity to interact with more experienced faculty members (referred to as "fellows") to discuss topics ranging from various aspects of research and teaching, to successfully managing the promotion-and-tenure process. In addition to providing feedback on junior faculty members' research ideas, the fellows are also asked to participate in panel discussions that address topics of interest to junior faculty members. For example, the first author served as a panelist in a session entitled "How to Conduct High-Impact Research." In this session, the faculty fellows were asked to address two questions: The first asks what "high-impact" research means to them. The second asks panelists to provide some recommendations on how junior faculty members can balance the sometimes-conflicting desire to work on high-impact research in their pre-tenure years, while at the same time recognizing that such research might be riskier, or take longer to develop, than less impactful research.

Based on the lively discussions that have taken place in these sessions, it is obvious that many academics are interested in these issues. Moreover, subsequent discussions by the first two authors of this article with PhD students and colleagues at other business schools suggest there are mixed opinions about whether it is wise for doctoral students to attempt high-impact research in the early part of their careers. On one side of the coin, some doctoral students (and colleagues reflecting on their own doctoral programs) have told us they received advice discouraging them from undertaking such research. This advice comes in many forms, but includes comments from advisors such as, "a good dissertation is a finished one," "you need to concentrate on getting

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enough publications to get a job, and then get tenure," or "you can focus on more substantive research once you have received tenure." On the other side, doctoral students and colleagues have told us their advisors emphasize(d) "the importance of doing the most impactful research possible," that "the dissertation is a great opportunity to make a significant contribution to the field," or that "it is time to show the field what you have learned in the program."

These contradictory statements raise an important question: "Can PhD students and other early-career scholars, produce high-impact articles?" If the evidence shows that early-career scholars have not been successful in publishing high-impact research, then faculty advisors and mentors may be wise to warn their doctoral students to bide their time and focus on learning and refining their craft during the pretenure period of their careers, rather than focusing on research that might have a big impact on the field. In the vernacular of major league baseball, this strategy is analogous to playing "small-ball."

The basic tenet of small-ball is to advance runners into scoring position (i.e., advance the field of management) by bunting, hitting singles to the opposite side of the field, or hitting sacrifice fly balls (i.e., publishing articles that move the field incrementally forward). On the other hand, if the evidence indicates that early-career scholars can conduct high-impact research, then faculty advisors and mentors may want to encourage their PhD students to do so. In baseball terminology, this approach reflects a "long-ball" strategy, in which players (PhD students) are encouraged to "swing for the fences" and try to hit home runs (i.e., publish high-impact articles; Ashford, 2013). In this case, the important question is "what advice should faculty mentors and advisors give to PhD students to increase the students' probability of conducting impactful research?" Unfortunately, we are not aware of any research in the field of management on the relationship between one's career stage and the publication of high-impact articles. Nor, with a few possible exceptions (Mitchell, 2007; Schneider, 1985), has much been written about the advice mentors should give PhD students to help them write high-impact articles, in the event that the evidence shows students are capable of doing so.

Therefore, the purpose of this paper is threefold: First, we provide a review of studies that have examined the determinants of an article's impact on the field of management. Our goal in this section is not to review all the research that has been published in this area. Rather, it is to identify patterns that help explain why some articles have a high impact and others do not. Although several of the articles that have addressed this issue are quantitative in nature (Antonakis, Bastardoz, Liu, & Schriesheim, 2014; Bergh, Perry, & Hanke, 2006; Colquitt & Zapata-Phelan, 2007; Judge, Cable, Colbert, & Rynes, 2007; Kuskova, Podsakoff, & Podsakoff, 2011), we also examine more qualitative studies (Ashford, 2013; Daft, 1984, 1985; Daft, Griffin, & Yates, 1987; Ghoshal, 2006) that provide insights into the factors that help determine an article's influence on the field.

The second goal of this paper is to report the results of a study designed to examine the potential impact of factors that have not typically been the focus of previous research. One of these factors is the career stage at which authors write high-impact articles. However, we are also interested in addressing other questions that relate to the focus of high-impact articles (HIA), as well as the role that theory plays in these articles. To address these questions, we identified articles that were published in 33 top-tier management journals and received at least 1,000 citations in the *Web of Science* and compared them to two matched samples of less highly cited articles. Although these HIA represent a very small fraction of all the articles published in the management literature (substantially less than 1%), like Baum and McKelvey (2006), we believe the analysis of extreme cases may provide the field with additional information that has not been reported in previous studies.

The final, and perhaps most important, goal of our paper is to provide scholars in the field of management with a specific set of recommendations aimed at increasing the probability of conducting high-impact research. Our recommendations are aimed primarily at the faculty advisors and mentors of PhD students and early-career scholars in the field of management; due to the relatively long lead times necessary for conducting and publishing articles, the lessons we learn from this study will have the biggest impact on doctoral students in the early part of their careers. However, where appropriate, we also provide some specific recommendations to the PhD students themselves. To meet this objective, we draw on the cumulative knowledge garnered from the previous literature and our own research to provide some suggestions regarding how PhD students can enhance the likelihood of publishing high-impact articles. In addition, where possible, we identify various types of contributions that high-impact articles have made on the field and provide examples to which early-career scholars can refer as they develop their own research programs.

This paper makes several contributions to the literature: It is the first study that provides information

about the relationship between the career stages of management scholars and the publication of high-impact articles. Thus, our study can help determine whether it is advisable for PhD students and junior faculty members to attempt to produce high-impact research. Second, our research provides additional insights into the characteristics associated with high-impact articles. Specifically, we examine the effects that the type of article (e.g., theoretical, review, empirical, methodological, etc.), its research focus (micro, meso, macro), the journal in which it is published, and the breadth of its audience (e.g., number of different research domains and journals citing the focal article) has on article impact. These insights are important, not only for early-career scholars, but also for editors and reviewers who are trying to identify articles likely to become highly cited in the field of management. Finally, this article provides a concrete set of recommendations that can be used by faculty advisors and mentors of PhD students to improve the probability of conducting impactful research. In so doing, it extends the previous work of Mitchell (2007) and Schneider (1985) regarding what PhD students need to understand to get their research published.

WHAT DO WE MEAN BY HIGH-IMPACT ARTICLES, AND WHY ARE THEY IMPORTANT?

Ashford (2013: 624) has defined high-impact articles (what she calls academic "home runs") as those that "contribute to or change the intellectual conversation about its topic . . .also in what people are talking about . . . and what influences their work, either [in] the topics they take up or their take on those topics." Consistent with this definition, our own experiences suggest that high-impact research expands and deepens our understanding of important phenomena, addresses significant gaps in the literature, influences the nature and direction of the topics thought to be important in the field, and stimulates thinking and conversations about the topic of interest. However, in contrast to Ashford, we believe that one of the best indicators of the impact that an article has on the field is the number of citations that the article receives in the *Web of Science*. Although article citations are not without their limitations as measures of impact (Ashford, 2013; Garfield & Welljams-Dorof, 1992), we believe they represent the most effective (valid) measure, for several reasons.

First, compared to subjective measures (such as peer ratings), citations are a relatively objective, transparent, and readily accessible method of assessing an article's impact. Second, unlike other quantitative measures, such as the number of articles a journal publishes or an author writes, citations tend to be a better indicator of the quality of one's contributions to the field. Evidence in support of this argument has been provided by Garfield (1998), who reported that of almost 33 million articles included in the *Science Citation Index* from 1945 to 1988, approximately 56% received only one citation, 3.6% received between 25 and 99 citations, and only about 0.5% received more than 100 citations. Podsakoff, MacKenzie, Podsakoff, and Bachrach (2008) further support this argument by reporting that the variance shared between the number of articles a scholar publishes in the field of management and the number of citations (s)he receives is only about 36%. Taken together, these findings suggest that although publishing articles is a necessary condition for having influence on the field, it is not a sufficient condition for doing so. This is consistent with Schneider (1985: 239), who has noted that the "career of a scientist is not established by getting published, it is established by getting read. . .the important point here is that a long-term career as a researcher/scholar depends upon a certain amount of notoriety ("reputation") and the only way this happens is for others to read your work and cite it."

Third, several scholars (Cronin, 1984; Judge et al., 2007) have noted that citations not only provide tangible evidence of the origins and evolution of streams of research for the scientific record, but also help guide the efforts of other scholars who work in similar research areas. As noted by Judge and his colleagues (2007), this latter point is particularly important in fields such as management, which are characterized by what Pfeffer (1993) has called weak paradigm development, as researchers in these fields typically face more uncertainty when they are trying to identify research questions that will contribute to the literature. Finally, it is worth noting that even researchers, such as Ashford (2013: 624), who do not "always worry about citation counts and . . . [who] care most about work that really seems to contribute to or change the intellectual conversation about its topic," acknowledge that "[t]his [impact] shows up in citation counts."

WHAT DOES THE LITERATURE TELL US ABOUT THE FACTORS THAT ARE RELATED TO HIGH-IMPACT ARTICLES?

In this section, we summarize what we know about the factors that are associated with article impact in

the field of management. For the purposes of this summary, we focus on evidence from three types of sources: The first is quantitative studies that have examined the effects of various types of author, article, or journal characteristics on the number of citations that an article receives (Antonakis et al., 2014; Bergh et al., 2006; Colquitt & Zapata-Phelan, 2007; Daft, 1984; Judge et al., 2007; Kuskova et al., 2011). The second source is qualitative studies based on in-depth interviews with authors about their own experiences. These authors reflect on two key topics: (a) their experiences conducting significant, as well as not-so-significant studies (Daft, 1984; Daft et al., 1987), and (b) their thoughts on what types of articles researchers in the field ought to aspire to write (Ashford, 2013; Ghoshal, 2006). Finally, the third source of information is based on editors' discussions of the reasons why manuscripts are rejected for publication in some of our most prestigious journals (Campbell, 1982; Daft, 1985). Of course, it could be argued that the information obtained from this source does not directly tell us about those factors that have been shown to be determinants of high-impact articles. However, we think that this information is relevant to our discussion because it helps identify the characteristics that prevent an article from being published in top-tier journals in the first place. These journals, as we will see, publish a disproportionately large percentage of the most highly cited articles in the field. Therefore, this information is important, and we include it in our summary.

Author Characteristics

Sustained personal interest. Several studies have noted the importance that a researcher's personal interest in a topic has on the publication of high-impact articles. For example, Daft (1984) found that one of the major distinctions that well-known scholars reported between their experiences conducting significant and not-so-significant research was that the significant research projects were undertaken because of the researcher's personal interest in and curiosity about the topic, rather than what was happening in the discipline. Similar results were reported by Ashford (2013), whose analysis of "home-run hitting" articles led her to conclude that because the topics addressed in these articles were personally relevant to the authors, they were more committed and less willing to compromise conceptually, methodologically, and artistically in writing them.

In a related observation, the literature also suggests that personal interest in a topic is conducive to creating sustained curiosity over extended periods of time. Accordingly, Ghoshal's (2006) analysis led him to conclude that Miles and Snow's (1978) book on organizational strategy has had an enduring effect on the field because of the authors' curiosity and willingness to undertake a long intellectual journey that sustained their interest over several decades. Ghoshal went on to contrast Miles and Snow's single-minded focus on the topic with a description of what he perceived to be the case for many other researchers. Specifically, he noted that "many of us today, when asked about what we are working on, list a diverse range of 'papers' that we are writing, typically with different co-authors, perhaps on a variety of unrelated topics. There is little adventure in this process, and little sustained curiosity. Such an approach to research, while necessary perhaps for meeting career needs or personal preferences for variety, is unlikely to create enduring contributions" (Ghoshal, 2006: 6).

Quality vs. quantity of ideas. In addition to the interest a scholar has in a particular topic area, research suggests that quality of one's ideas, rather than the quantity, is also an important determinant of an article's impact. This has been demonstrated directly by Dewett and DeNisi (2004), who found that the quality (but not the quantity) of work produced by management researchers had an effect on the number of citations the authors received, and by Bergh et al. (2006), who reported that management scholars who write fewer articles, but with higher citation counts, tend to receive more citations for articles subsequently published in *SMJ*. The importance of Bergh et al.'s findings for young scholars has not been lost on Ashford (2013: 624–625), who noted that

> Research on scholarly impact in the strategy field . . . has shown that those who write fewer but high-quality papers earlier in their careers go on to also write fewer but high-quality papers later in their careers; while those who write a large number of poorly cited papers will continue to write lots of poorly cited papers . . . These data-based conclusions suggest that one story that many young faculty members tell themselves—that they will wait until later to do more important work, but will start off doing smaller pieces of work now so they can increase their publication counts—may not pan out in reality. Bergh et al.'s (2006) research suggests that there is an imprinting effect of these early decisions. Faculty members who started off doing bigger and more impactful pieces of work continued to do so post-tenure, and faculty members who started off doing smaller pieces also continued in that pattern post-tenure. So it matters what we aspire to, and it may especially matter what we aspire to in early on our careers.

Article Characteristics

Research also suggests that there are several characteristics of an article that influence its potential impact on the field. Some of these characteristics relate to conceptual or methodological issues, whereas others relate to how well the article is written.

Theory-focused. One of the most consistent findings in the literature is that high-impact articles tend to focus on the development or testing of theories in the field. For example, Colquitt and Zapata-Phelan (2007) report that the extent to which an empirical article both builds and tests theory is significantly related to citations for articles published in *AMJ*. These findings are consistent with Judge et al. (2007), who found that quantitative articles with exploration plots (those that change a fundamental part of a theory) receive more citations than articles that simply refine or extend an existing theory; and with Kuskova et al. (2011), who reported that in the field of entrepreneurship, scale development articles that are firmly grounded in theory receive more citations. These studies are also consistent with Daft's (1984) finding that significant research is concerned with the development and application of theory, and with his observation (Daft, 1985) that the main reason he rejected manuscripts submitted for publication at *AMJ* and *ASQ* was a lack of theory expressed within these submissions.

Significance of issues. There is also evidence that high-impact articles address issues that are important to the field. For example, Daft (1984) reported articles that were identified as being significant in the field tended to focus on important issues, such as clarifying a poorly understood issue, helping resolve a conflict, or testing competing theories. Additionally, Campbell (1982) noted that one of the primary reasons for rejecting an article during his editorship at *JAP* was that it was not meaningful and did not contribute useful knowledge to the field.

Rigor of research methods. Several studies have reported that significant research and high-impact articles tend to use more sophisticated or rigorous methods. For example, Daft (1984) reported that significant research uses more rigorous methodological techniques and often brings new methods to bear on old problems. These findings are generally consistent with the results reported by a collection of other studies that explore factors associated with high citation counts. To summarize the findings, articles receive more citations when they: (a) control for more threats to validity (Antonakis et al., 2014; Bergh et al., 2006); (b) include longitudinal designs (Judge et al., 2007); (c) use more sophisticated analytical procedures, such as HLM or SEM (Antonakis et al., 2014); and (d) employ (in scale development articles) a greater number of rigorous construct validation techniques (e.g., factor analysis, reliability estimates, convergent, discriminant, and criterion-related validity) than those that do not use as many of these techniques (Kuskova et al., 2011). These findings are also consistent with Campbell (1982), who noted that one of the main reasons for the rejection of manuscripts while he was editor of *JAP* was the manuscripts contained too many methodological problems (e.g., unreliable or invalid measures, or poor research designs).

Clarity of writing. One final characteristic of articles that appears to be important to their impact is the clarity with which they are written. For example, Judge et al. (2007) report that articles that are written in a clear and readable manner receive more citations than those written less clearly. In a related observation, Ashford notes that "home run hitting" articles tend to be based on simple, communicable ideas. Consistent with these findings, when Daft (1985) and Campbell (1982) reflected on their time serving as editors, they reported that among the main reasons for rejecting article submissions was that the articles were either difficult to understand or demonstrated a lack of good writing skills in terms of flow, style, tone, and integration of the material.

Journal Characteristics

Most studies that examine the factors related to high-impact articles have been either conducted in only one journal (Antonakis et al., 2014; Bergh et al., 2006; Colquitt & Zapata-Phelan, 2007), or do not consider the issue explicitly (Ashford, 2013; Daft, 1984; Daft et al., 1987). Still, studies that do include journal information in their analyses indicate that the quality of the journal in which an article is published has a significant effect on the number of citations it ultimately receives. For example, Kuskova and her colleagues (2011) report that articles published in top-tier journals receive significantly more citations than articles published in lesser journals. Similarly, Judge et al. (2007) report that journal quality accounts for more unique variance in the total number of citations an article receives than any other factor included in their study. Summarizing their findings, Judge and his colleagues (2007: 491) note that "[t]o make a long story short, we find that although certain characteristics of both articles (e.g., research plot, quality of writing) and authors (e.g., affiliation of the

first author) influence citations, the single most important factor driving citations to an article is the prestige or average citation rate of the journal in which the article is published."

However, perhaps the most compelling evidence regarding the importance of journal quality comes from a recent study reported by Lariviere and Gingras (2010). These authors used the *Web of Science* to identify 4,532 identical articles published in two journals with different impact factors (for a total of 9,064 articles) to compare their scientific impact. To ensure that the articles were identical, they had to have: (a) the exact same title, (b) the same first author, and (c) the same number of cited references. Once these articles were identified, Lariviere and Gingras recorded the number of citations received by the articles in the higher impact factor journals and compared them with the identical articles in the lower impact factor journals. They found that the articles published in the higher impact factor journals received approximately twice as many citations as the same articles reported in the lower impact journals, and that only about 30% of the articles published in the journals with higher impact factors had gone uncited, whereas over 40% (41.1%) of the articles that had appeared in the journals with lower impact factors had gone uncited. Thus, in addition to the inherent quality of an article, the journal in which it is published also has a significant impact on whether or not it is read (and cited).

ENHANCING OUR UNDERSTANDING OF HIGH-IMPACT RESEARCH BY ANALYZING EXTREME CASES

Our review of the extant literature has provided us with useful insights into the determinants of the number of citations that articles in the field of management receive. However, the emphasis of most of this research has been relatively narrow, typically focusing on a sample of articles in one (or at most a few) journals. Thus, we possess very little knowledge about the specific characteristics of high-impact articles. Specifically, we lack insight on (a) the relative rarity of high-impact articles in the field of management; (b) how these articles are distributed across management publication outlets; (c) the nature of their research focus (e.g., whether they focus on theory-building, theory-testing, methodological issues, etc.); (d) whether they tend to concentrate primarily on micro, macro, or meso domains; (e) whether they are more likely to be written by a single author, or a group; and (f) whether such articles are typically published by older, more experienced scholars, or whether junior scholars (e.g., those in the pre-tenure years of their career) also publish such articles. Although answers to all of these questions should prove interesting to scholars in the field of management, for PhD students and early-career scholars, the last question is of particular importance, especially given the increased time, effort, and risk that are often associated with attempting to publish high-impact articles (Ghoshal, 2006). Specifically, if the data show that the publication of high-impact articles is rarely written by authors in the early stages of their careers, PhD students and young scholars might be wise to dedicate their pre-tenure years to improving their research skills and focusing on publishing "low-hanging fruit," and reserving their post-tenure years for more impactful research projects.

Of course, because very highly cited articles are, by their very nature, outliers, it may be argued that there is little reason to believe that the characteristics of these articles will provide much insight into their determinants. However, as noted by Baum and McKelvey (2006), even though many scholars warn against being overly influenced by extreme values, managers and management researchers are often immersed in the power laws that govern extremes, and these extremes can be the most important events to understand. Evidence in support of Baum and McKelvey's argument has been provided by Podsakoff et al.'s (2008) analysis of scholarly influence in the field of management. For the purposes of their research, these authors were interested in identifying the universities and research scholars who have had the greatest impact on the field of management from 1981–2004 and the factors that influenced their impact. Using bibliometric techniques and samples of more than 1,600 universities and 25,000 management scholars, Podsakoff et al. found that 5% of the universities included in their sample accounted for 72% of the total number of citations received by all the universities, and that 5% of the management scholars accounted for 53% of the total number of citations received by all the scholars included in their sample. Perhaps more interesting, they found that less than 1% of the scholars accounted for 17% of all the citations received by the authors included in the sample. This finding means that less than 1% of the scholars account for over a sixth of the citations in the field!

With that said, it is important to note that our examination of extreme cases is not the only, or even the first, study of its kind in the academic domain.

Indeed, there are several other studies that use extreme cases to develop a better understanding of the factors that influence scientific developments. For example, Zuckerman's (1977, 1996) research on Nobel Laureates has been widely hailed (Allison, 1978; Benison, 1978; Rosenblum, 1979) as one of the definitive works on the processes and mechanisms at work in the stratification of science. Similarly, Simonton's (1988, 2004) research on scientific geniuses has also considerably enhanced our understanding of the important role that chance and creative processes play in scientific breakthroughs. Taken together, these studies suggest that ignoring extremes may, in some instances, prove to be detrimental to our understanding of focal phenomena. Therefore, to enhance our understanding of the characteristics of high-impact articles, we gathered information about those articles that have truly distinguished themselves from others in the field—those that have received 1,000 or more citations.

METHODS

Sample

To collect our sample data, we searched for all articles in 33 management journals in the *Web of Science* (*WOS*) that had been cited 1,000 times or more. The majority (31) of these journals were selected for our analysis on the basis of their having been included in previous studies of author, article, or journal impact in the field of management (cf. Coe & Weinstock, 1984; Extejt & Smith, 1990; Gomez-Mejia & Balkin, 1992; Johnson & Podsakoff, 1994; Judge et al., 2007; Kirkpatrick & Locke, 1992; Podsakoff, MacKenzie, Bachrach, & Podsakoff, 2005; Podsakoff et al., 2008; Salancik, 1986; Sharplin & Mabry, 1985; Tahai & Meyer, 1999). In addition, we added two journals to the list (*Academy of Management Learning & Education* and *Management Learning*) that focus primarily on management learning and education (Currie & Pandher, 2013). As indicated in the left-hand column in Table 1, all the main areas of research in the field of management are represented, including strategic management, personnel and human resources management, leadership, general management, industrial and labor relations, entrepreneurship, organizational behavior, learning and education, organizational theory, organizational development and change, international management, management science, operations management, decision sciences, technology and innovation management, and research methods. From these journals, we identified 235 articles that had been cited at least 1,000 times in the *Web of* Science by the end of 2016.[1] Although the earliest of these articles was published in the mid-1950s, the majority of them (73%) have been published since 1990. This corresponds to the year that the *WOS* became available as an online database, which is likely the key reason for the growth in high-impact articles since that time.

Although obtaining information about high-impact articles is important, this information is more valuable when it is compared to other articles that have been published in the field. Therefore, in addition to gathering information about these extreme cases, we also obtained data from two different stratified random samples of articles to compare the characteristics of the articles through 2009. (Because no articles with 1,000 citations or more were found in our primary sample after 2009, this year was selected as the appropriate end date.) The first comparison sample (referred to as the "Matched" sample) was stratified both by year of publication and by the journal in which the articles were published. This sample allowed us to conduct a conservative comparison of the characteristics of our primary (high-impact article) sample to other articles that were published in the same journals and during the same years. The second comparison sample (referred to as the "Typical" sample) was stratified only by the year of publication across the 33 journals. This sample allowed us to compare the characteristics of the high-impact articles with those of a typical article published in the field. Because virtually all the articles in our primary sample were listed as "articles," "proceedings papers," "reviews," "notes," or "editorial material," under the "Documents" heading in the *Web of Science* database, in both the matched and the typical samples we limited our search to these types of documents. The percentage of articles

[1] Our preliminary examination indicated that the *Web of Science* (*WOS*) did not track *all* of the years of publication for several of the journals included in our study. Therefore, to minimize the possibility that we might have missed some high-impact articles because of these omissions, we conducted a search on the missing years using the "Cited Reference Search" function in the *Web of Science*. This search function differs from the "Basic Search" function in that, in addition to providing citation information for articles in journals that have been included in the *WOS* database, it also provides information about articles that have been cited in journals that are part of the *WOS* database, even when the article in question does not appear in the *WOS*. Using this search function, we identified five articles that did not appear in our initial examination.

TABLE 1
Comparison of Articles in the High-Impact, Matched, and Typical Samples by Management Journals

	High-impact article sample (Primary sample)	Matched article sample (stratified by journal and year of publication)	Typical article sample (stratified by year of publication)
1. *Academy of Management Journal* (*AMJ*)	23 (9.79%)	23 (9.79%)	11 (4.68%)
2. *Academy of Management Learning & Education (AMLE)*	1 (0.43%)	1 (0.43%)	0 (0.00%)
3. *Academy of Management Review* (*AMR*)	38 (16.17%)	38 (16.17%)	6 (2.55%)
4. *Administrative Science Quarterly* (*ASQ*)	33 (14.04%)	33 (14.04%)	10 (4.26%)
5. *California Management Review* (*CMR*)	2 (0.85%)	2 (0.85%)	9 (3.83%)
6. *Decision Sciences* (*DS*)	0 (0.00%)	0 (0.00%)	8 (3.40%)
7. *Group & Organization Management* (*G&OM*)	0 (0.00%)	0 (0.00%)	4 (1.70%)
8. *Harvard Business Review* (*HBR*)	11 (4.68%)	11 (4.68%)	18 (7.66%)
9. *Human Relations* (*HR*)	2 (0.85%)	2 (0.85%)	10 (4.26%)
10. *Human Resource Management* (*HRM*)	0 (0.00%)	0 (0.00%)	4 (1.70%)
11. *Industrial & Labor Relations Review* (*I&LRR*)	1 (0.43%)	1 (0.43%)	1 (0.43%)
12. *Industrial Relations* (*IR*)	0 (0.00%)	0 (0.00%)	5 (2.13%)
13. *Journal of Applied Behavioral Science* (*JABS*)	0 (0.00%)	0 (0.00%)	1 (0.43%)
14. *Journal of Applied Psychology* (*JAP*)	19 (8.09%)	19 (8.09%)	17 (7.23%)
15. *Journal of Business Research* (*JBR*)	0 (0.00%)	0 (0.00%)	13 (5.53%)
16. *Journal of Business Venturing* (*JBV*)	1 (0.43%)	1 (0.43%)	4 (1.70%)
17. *Journal of Human Resources* (*JHR*)	1 (0.43%)	1 (0.43%)	3 (1.28%)
18. *Journal of International Business Studies* (*JIBS*)	5 (2.13%)	5 (2.13%)	6 (2.55%)
19. *Journal of Management* (*JOM*)	7 (2.98%)	7 (2.98%)	10 (4.26%)
20. *Journal of Management Studies* (*JMS*)	0 (0.00%)	0 (0.00%)	4 (1.70%)
21. *Journal of Occupational and Organizational Psychology* (*JOOP*)	1 (0.43%)	1 (0.43%)	6 (2.55%)
22. *Journal of Organizational Behavior* (*JOB*)	3 (1.28%)	3 (1.28%)	2 (0.85%)
23. *Journal of Vocational Behavior* (*JVB*)	3 (1.28%)	3 (1.28%)	12 (5.11%)
24. *Leadership Quarterly* (*LQ*)	2 (0.85%)	2 (0.85%)	0 (0.00%)
25. *Management Learning (ML)*	0 (0.00%)	0 (0.00%)	1 (0.43%)
26. *Management Science* (MS)	20 (8.51%)	20 (8.51%)	16 (6.81%)
27. *Monthly Labor Review* (*MLR*)	0 (0.00%)	0 (0.00%)	16 (6.81%)
28. *Organization Science* (*OS*)	19 (8.09%)	19 (8.09%)	4 (1.70%)
29. *Organizational Behavior and Human Decision Processes* (*OBHDP*)	5 (2.13%)	5 (2.13%)	14 (5.96%)
30. *Organizational Research Methods* (*ORM*)	2 (0.85%)	2 (0.85%)	0 (0.00%)
31. *Personnel Psychology* (*Per. Psych*)	4 (1.70%)	4 (1.70%)	6 (2.59%)
32. *Sloan Management Review* (*SMR*)	0 (0.00%)	0 (0.00%)	4 (1.70%)
33. *Strategic Management Journal* (*SMJ*)	32 (13.62%)	32 (13.62%)	10 (4.26%)

obtained from each of the journals included in our study for all three samples is reported in Table 1.

In all, we identified 59,067 articles using our search criteria. Table 2 provides a breakdown of the distribution of these articles by the number of citations they received. The data reported in this table indicate that the modal number of citations received by articles in our sample was 0 (13.42%), almost 40% (39.34%) of the articles received fewer than 10 citations, and the median number of citations was somewhere between 10 and 19. In addition, only about 15% of the articles in our sample received over 100 citations, only about 6% received over 200 citations, and less than 0.40% of the articles received over 1,000 citations. Taken together with the fact that the 33 journals included in our sample are among the most-cited in the field of management, and that the percentage of articles that received at least 1,000 citations would diminish if we included other management journals in our study, these findings indicate that high-impact articles are indeed exceedingly rare.

Measures

Citation measures. One of the first comparisons we were interested in exploring was the difference between the average number of citations that each of these sets of articles had received. Thus, we gathered the total number of citations for all the articles in our three samples from the *Web of Science*. In addition, we also used information from the *Web of Science* to

TABLE 2
Distribution of the Number of Citations Received in the Total Sample (N = 59,067)

Number of citations	Percentage	Cumulative
0	13.42%	13.42%
1	5.45%	18.87%
2	4.07%	22.94%
3	3.31%	26.25%
4	2.70%	28.94%
5	2.51%	31.45%
6	2.26%	33.71%
7	2.00%	35.71%
8	1.86%	37.57%
9	1.78%	39.34%
10–19	13.31%	52.65%
20–29	8.71%	61.36%
30–39	6.27%	67.63%
40–49	4.77%	72.40%
50–59	3.68%	76.09%
60–69	2.98%	79.07%
70–79	2.55%	81.62%
80–89	1.99%	83.61%
90–99	1.72%	85.33%
100–199	8.27%	93.59%
200–299	2.79%	96.38%
300–399	1.31%	97.69%
400–499	0.71%	98.39%
500–599	0.41%	98.81%
600–699	0.30%	99.11%
700–799	0.20%	99.31%
800–899	0.12%	99.43%
900–999	0.18%	99.61%
1000+	0.39%	100.00%

obtain the total number of different research *areas* and the total number of different *source titles* (journals) that cited the focal articles in our study. We obtained these measures because we believe, in general, that high-impact articles should be more influential in other disciplines and journals than the comparison articles.

Article characteristics. We coded all the articles included in our study on the following characteristics: number of authors, primary focus, and level of analysis (micro, macro, or meso). We measured the first characteristic (number of authors) to determine if high-impact articles are primarily written by single authors, or by a collaboration of multiple authors. To measure the second characteristic (the article's primary focus), articles were classified into one of six categories: (a) theoretical paper, (b) review of the literature, (c) empirical paper, (d) methods paper, (e) statistical modeling, or (f) other. For those articles that were empirical in nature, we also coded the extent to which an article built and tested theory using the scales reported by Colquitt and Zapata-Phelan (2007). According to these authors, the theory-building dimension of their taxonomy captures the extent to which an empirical article develops new theory using a scale ranging from a low of 1 ("*Attempts to replicate previously demonstrated effects*") to a high of 5 ("*Introduces a new construct – or significantly re-conceptualizes an existing one*"); whereas the theory-testing dimension captures the extent to which "existing theory is applied in an empirical study as a means of grounding a specific set of a priori hypotheses," on a scale ranging from a low of 1 ("*Is inductive or grounds predictions with logical speculation*") to a high of 5 ("*Grounds predictions with existing theory*"). Finally, the third characteristic that we measured was the level of analysis that was examined in each article (micro, macro, or meso). However, because some articles did not fit easily into one of these categories, we also included a classification of "other" when classifying an article by its level did not seem to apply.

Author characteristics. In addition to identifying the above characteristics, we were also interested in two other questions related to the authorship of high-impact articles. The first is whether these articles are widely distributed across a large number of researchers or concentrated among a smaller set of them. We addressed this question by counting the number of high-impact articles written by each of the 339 authors included in our primary sample. The second question is whether high-impact papers tend to be published primarily by more experienced researchers, as opposed to scholars who are in the early stages of their careers. This question was addressed by determining the year that the authors of the high-impact articles received their doctoral degrees, using a variety of different sources (e.g., faculty and university websites, faculty resumes, the Proquest Dissertation Abstracts database, or contacting the authors directly). We found that seven of the authors in our sample apparently had not received a terminal degree. Of the remaining 332 authors in our database, we were able to obtain graduation dates for 315 (95%) of them. Once we identified the graduation dates for these authors, we counted the number of authors who had written a high-impact article within 7 years of their doctoral degree. The 7-year period was selected because the standard tenure clock at most Tier-1 universities is 6 years, and it generally takes a minimum of 1 year for an article to be published in the field of management once it has been submitted. Therefore, articles

published within the 7-year period after graduation should capture those articles that were accepted before the 6-year tenure decision is made. Because it is also possible that authors who write high-impact articles may do so in either the middle or the more advanced stages of their careers, we divided the years after the graduation into two stages: a mid-career stage (the period of time between the promotion and tenure decision, and becoming a full professor), and a late-career stage (the period of time after advancement to full professor). To maintain some consistency, we applied the same general rule we used for the pre-tenure period, by assuming that the mid-career stage would be between the 7th year and the 14th year of each author's career, and that the late career stage would start in the 15th year after graduation.

To assess the reliability of the measures, three of the authors coded 30 of the articles drawn randomly from our overall sample. Once the articles had been coded, we checked for the interrater reliability of these codes using one of two estimates of reliability. For those measures that were categorical in nature (number of authors, number of citations, number of areas cited, number of sources cited, research focus, level of analysis), we used Cohen's Kappa, whereas we used the ICC (1) form of the interclass correlation (Bliese, 2000; James; 1982; Shrout & Fleiss, 1979) for those measures that were relatively continuous in nature (theory-testing, theory-building). All of the interrater reliability ratings were acceptable, with the reliability estimates of the categorical measures approaching 1.00, and all of the ICC (1) values exceeding .75. Having established adequate reliability of our measures, three of the authors coded the remainder of the articles.

RESULTS

Journals

Consistent with previous research (Judge et al., 2007; Kuskova et al., 2011), an examination of Table 1 indicates that the journal in which an article is published does influence the number of citations it receives. For example, this table indicates that 78% of the high-impact articles in our sample were published in only seven journals (*AMR, ASQ, SMJ, AMJ, MS, JAP, and OS).* Roughly speaking, this is consistent with the Pareto Principle, in that approximately one-fifth (21%) of the journals accounted for almost four-fifths of these articles. After these journals, the journal with the next greatest number of high-impact articles is *HBR* (accounting for about 5% of the HIAs). This is interesting because, unlike the other journals with high relative frequencies of high-impact articles, *HBR* tends to be viewed as more of a "practitioner" journal, which rarely publishes original data or theory.

Breadth of Appeal

Table 3 summarizes the differences in the characteristics of high-impact articles relative to the two stratified samples we included in our research. Although this table provides statistical comparisons of all three samples, we focus our attention on the differences between the high-impact article sample and the matched and typical samples. As indicated in this table, the average high-impact article receives significantly more citations than articles in the two comparison samples. Specifically, on average, high-impact articles receive almost 15 times more citations than articles from the matched sample (1,966.55 *vs.* 128.60) and 34 times more citations (1,966.55 *vs.* 57.00) than articles in the typical sample. Moreover, when compared to articles that come from both comparison samples, the data suggest that high-impact articles also address bigger topic areas that appeal to significantly broader audiences than articles that have not achieved this status. Supporting this conclusion are two key findings: The first is that the number of research areas that cite high-impact articles is over three times greater than that of the matched sample (44.69 *vs.* 13.91), and approximately five times greater than the typical sample (44.69 *vs.* 9.02). The second finding is that the number of unique source journals that cite high-impact articles is over five times greater than that of the matched sample (341.51 *vs.* 61.68), and over 10 times greater than articles in the typical sample (341.51 *vs.* 33.00).

Research Focus

Theory driven. Turning our attention to research focus, one of the major differences between high-impact articles and others published in the field is that high-impact articles tend to be much more theory driven. This is reflected by the fact that there is a significantly larger proportion of theoretically oriented articles in this sample than in either the matched sample (35.3% *vs.* 23.8%) or the typical sample (35.3% *vs.* 13.2%). This finding is also reflected by the fact that the empirical studies included in the high-impact article sample had significantly

TABLE 3
Article Characteristics Across Samples

	High-impact sample	Matched sample	Typical sample
Number of citations	1,966.55[a] (1,807.78)	128.60[ab] (184.08)	57.00[ab] (101.60)
Mean no. of different research areas that cite focal articles	44.69[a] (14.12)	13.91[ab] (14.15)	9.02[ab] (8.60)
Mean no. of different source titles (journals) that cite focal articles	341.51[a] (159.45)	61.68[ab] (72.46)	33.00[ab] (46.67)
Research Focus			
• Theory	83 (35.3%)[a]	56 (23.8%)[ab]	31 (13.2%)[ab]
• Review	27 (11.5%)[a]	11 (4.7%)[a]	11 (4.7%)[a]
o [Meta-analytic review]	[10] (4.3%)[a]	[3] (1.3%)[a]	[3] (1.3%)[a]
• Empirical	87 (37.0%)[a]	129 (54.9%)[a]	127 (54.0%)[a]
o Theory building[c]	3.91[a] (1.01)	2.26[ab] (1.01)	1.97[ab] (1.11)
o Theory testing[c]	3.44[a] (1.39)	3.17[b] (1.23)	2.58[ab] (1.20)
o [Construct validation]	[15] (6.4%)[a]	[2] (0.9%)[a]	[2] (0.9%)[a]
• Research methods	19 (8.1%)	14 (6.0%)	15 (6.4%)
• Modeling	7 (3.0%)a	10 (4.3%)	17 (7.2%)a
• Other	12 (5.1%)[a]	15 (6.4%)[b]	34 (14.5%)[ab]
Theoretical level			
• Micro	60 (25.9%)[a]	88 (37.8%)[ab]	110 (46.8%)[ab]
• Macro	112 (47.7%)[a]	91 (38.7%)[ab]	90 (25.5%)[ab]
• Meso	37 (15.7%) [a]	30 (12.8%)	23 (9.8%)a
• Other (methods or modeling articles)	26 (11.1%)	26 (11.1%)	42 (17.9%)
Average no. of authors per article	1.88 (0.86)[a]	1.93 (0.97)	2.06 (1.06)[a]
Number of Authors/article			
• 1	37.0%	38.3%	35.3%
• 2	43.8%	40.0%	36.6%
• 3	14.5%	14.0%	18.3%
• 4	3.8%	6.0%	7.2%
• 5	0.9%	1.3%	1.7%
• 6	0.0%	0.4%	0.9%

Note: Numbers/percentages reported in the "matched" and "typical" sample columns that share a superscript [a] in the same row as a high-impact article (HIA) sample column are significantly different from the HIA sample at the $p < .05$ level. Numbers/percentages reported in the "typical" sample column that share a superscript [b] in the same row as the "matched" sample column are significantly different from each other at the $p < .05$ level. [c] The measures of theory-building and theory-testing used in our study were taken from Colquitt and Zapata-Phelan (2007).

higher scores on Colquitt and Zapata-Phelan's (2007) measure of theory-building than empirical studies included in either the matched (3.91 *vs.* 2.26) or the typical samples (3.91 *vs.* 1.97). The high-impact articles also had significantly higher scores on their measure of theory-testing than those in the typical article sample (3.44 *vs.* 2.58) and tended to be higher on this measure (but not significantly different) than the matched article sample (3.44 *vs.* 3.17). Taken together with the fact that between 53% and 55% of the articles in the typical and matched samples are empirical in nature, but only about 36% of the high impact articles are of this type, these findings suggest that empirical articles that have a strong theoretical orientation are likely to have a substantial impact on the field.

Reviews. Review articles also comprised a significantly larger percentage of high-impact articles (11.5%) than articles in either the matched sample or the typical sample (4.7% in both samples). These findings suggest articles that do a good job of summarizing, integrating, and explaining the existing literature often have a high-impact on the field. In addition, meta-analytic reviews made up a significantly larger proportion of the total number of high-impact articles (4.3%) than they did in either of the other samples (1.3% in both samples). The latter finding is consistent with those of Judge et al. (2007), who reported that meta-analytic studies had relatively strong effects on the number of citations received by theoretical or review articles, even after controlling for the quality of the journal in which the article was published, the clarity and readability of the article, and the quality of the idea presented in the article. Given that meta-analytic reviews became popular in the field of management in the 1990s, we fully expect that the proportion of high-impact articles employing meta-analytic techniques to increase in the future. Indeed, all 10 of the high-impact meta-analytical review articles we

found were published after 1990, and six of them (60%) appeared after 2000. Accordingly, we expect that the number of meta-analytic reviews to achieve high-impact status will increase significantly in the future.

Construct validation. We found that 15 of the 87 empirical articles (17.2%) in the high-impact article sample focused on the construct validation of a measure. This finding is interesting, because it means that whereas empirical articles that focus on the construct validation of a measure accounted for about six percent (6.4%) of the total number of high-impact articles, these articles were virtually nonexistent in the other two samples (accounting for only 0.9% in the matched and typical samples, respectively). These findings suggest that articles that conceptualize and validate measures of new or revised constructs are more likely to receive a high number of citations.

Methods. Although the proportion of articles that focuses primarily on methods issues was not found to significantly differ across the three samples (8.1% in the primary sample, 6.0% in the matched sample, and 6.4% in the typical sample), the methods articles in the high-impact sample had a much broader appeal than the methods articles in either the matched or the typical article samples. For example, our follow-up analyses indicated that the number of research areas that cite high-impact methods articles is over four times greater than that of methods articles in the matched sample (56.37 *vs.* 12.21) and approximately five times greater than methods articles in the typical sample (56.37 *vs.* 10.79). We also found that the number of unique source journals that cite high-impact methods articles is over eight times greater than that of methods articles in the matched sample (431.68 *vs.* 48.93) and over 15 times greater than methods articles in the typical sample (431.68 *vs.* 27.43).

An examination of the 19 high-impact articles included in the methods category indicated that the majority of these articles fell into one of three types. The first was comprised of eight articles that focus on quantitative methods used to assess: (a) the quality of one's measures (Bagozzi, Yi, & Phillips, 1991; Vandenberg & Lance, 2000); (b) the reliability of one's measures (Cortina, 1993; James, Demaree, & Wolf, 1984); or (c) the potential effects of method biases (Lindell & Whitney, 2001; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff & Organ, 1986; Spector, 2006). This suggests that methods papers focusing on minimizing biases either in the measurement of constructs, or in the assessment of the relationships between these constructs, have wide-ranging appeal in the field. The second category was comprised of four articles that focus on the advantages of using qualitative and quantitative methods to triangulate research findings (Jick, 1979), or on how qualitative research methods can be used to develop theory (Eisenhardt, 1989a, Eisenhardt & Graebner, 2007; Langley, 1999). The articles included in this category are interesting for two reasons: The first is that several recent studies (Antonakis et al. 2014; Bergh et al., 2006; Swygart-Hobaugh, 2004) show that articles using qualitative research methods tend to be published less frequently and receive fewer citations than articles using quantitative research methods. The second reason is that three of the four qualitative articles focus specifically on how these techniques can be used to generate new theory. This is an interesting finding, as it reemphasizes the important role that theory-building has in the field of management. The final methods category was comprised of five articles that focus on the application of specific methods for addressing a particular data analytic problem. Two of these articles (Andersen & Petersen, 1993; Banker, Charnes, & Cooper, 1984) deal with issues related to data envelopment analysis, and the other three articles (Fisher, 1981; Hulland, 1999; Slovic & Lichtenstein, 1971) deal with the application of analytical procedures for studying phenomena in specific research domains.

"Other" articles. Finally, it is worth noting that in contrast to the articles in the high-impact (5.1%) and matching samples (6.4%), there were a significantly greater proportion of articles (15.2% in the typical sample) with "other" foci. These articles included introductions to special issues, discussions of labor market issues (in *MLR*), and a variety of practitioner-focused discussions (typically in either *CMR* or *HBR*).

Theoretical Level

Table 3 also indicates that high-impact articles tend to differ from other articles in terms of the focus of their theoretical level.[2] Perhaps the biggest difference is that the high-impact article sample has a significantly smaller proportion of micro-oriented articles (25.9%) than either the matched article sample (37.4%) or the typical article sample (46.8%). In addition, we found that (a) although the high-impact article sample and the matched article sample did not differ from one another in terms of the proportion of meso-oriented articles (15.7% *vs.* 12.8%, respectively), or macro-oriented articles (47.7 *vs.* 38.7%, respectively); (b) the

[2] Research methods and statistical modeling articles were omitted from these analyses.

articles in the high-impact sample did differ significantly from the typical article sample in terms of the percentage of macro-oriented articles (47.7 *vs.* 25.5%); and (c) contained a greater proportion of meso-oriented articles (15.7 *vs.* 9.8%) than the typical article sample (although the difference only approached traditional levels of significance: $p = .053$). Taken together, these findings suggest that articles that focus solely on individual-level phenomena tend to reach the 1,000-citation milestone somewhat lower proportions than articles that focus on firm- or organizationally based (macro) phenomena, or those that focus on the intersection between organizational- and individual-level (meso) phenomena.

Number of Authors per Article

Our analysis of the average number of authors per article in the three samples indicated that although there were no appreciable differences between the high-impact sample (1.88) and the matched sample (1.93), the average number of authors for the high-impact articles was somewhat smaller than for the typical sample (2.06) on this variable. Further analysis indicated that the majority of articles in all three of these samples had either one or two authors (80.80% in the primary sample, 78.30% in the matched sample, and 71.90% in the typical sample). However, the small differences in the average number of authors across these samples were primarily due to two key factors: First, the typical sample had a somewhat lower percentage of articles with only a single author. Second, the typical sample had a somewhat greater percentage of articles with three or four authors than either the high-impact sample or the matched sample.

Career Stage

Our analysis indicated that approximately 53% of the authors (168 of the 315 for which we were able obtain graduation dates) published a high-impact article within the first 7 years of their academic careers, 19.4% published a HIA in the middle stage of their careers, and the remaining 27.6% published a HIA in the later stage of their careers. Although the majority (147) of the early-career authors published only one HIA, 18 of these authors published two high-impact articles, two of them published three high-impact articles, and one author published four HIA in the early stages of their career (i.e., the first 7 years after graduation). In addition, it is worth noting that 43 of the 168 (25.6%) authors who published a high-impact article before reaching tenure actually published a HIA before they graduated from their doctoral program, and seven of these authors published another HIA before reaching tenure. These findings suggest that junior scholars are capable of conducting high-impact research, and are actually somewhat over-represented compared to faculty members in the middle and later stages of their careers.

Because we were interested in trying to develop a better understanding of the specific role that the authors who had published a high-impact article before tenure had in the publication process, relative to that of their coauthors, we conducted a closer examination of both the order of authorship, and the career stage of the lead coauthor for these articles. What we found was quite interesting. First, 22.2% of the authors who had written a high-impact article in their pre-tenure period had served as a sole author of the article, and another 28.6% served as the lead author of the papers that were published. Thus, over 50% of the authors who had written a HIA in the pre-tenure period of their career had done so as the primary authors on these articles. Second, we found that even though approximately 40% of the *lead coauthors* (the coauthor who was the closest to the focal author in the author string) were in the late stage of their careers, approximately 30% of the coauthors were in the pre-tenure years of their careers, and the remaining 30% of them were in the middle of their careers. These findings suggest that although there is a tendency for authors who write a high-impact article early in their careers to do so with a more senior scholar as a coauthor, this tendency is not a very substantial one. However, it is also possible that more senior faculty members who provide assistance to their mentees are more willing to let them publish the paper as the lead author.

Turning our attention to the whole sample of authors, we found that 67 of the 339 authors in our sample had published more than one high-impact article. More specifically, we found that although most authors (272) had published only one high-impact article (HIA), 48 authors (14.2%) published two high-impact articles, 14 authors (4.1%) published three HIA, two authors (0.5%) published four HIA, and one author each (0.3%) published five, six, and seven HIA. Thus, about a fifth (19.7%) of the authors who published high-impact articles published more than one of these articles.

Further analysis of the authors who had published more than one high-impact article indicated that the clear majority of these authors focused on the same (or similar) topic area in their multiple HIA articles. For example, 40 of the 48 authors (83%) who published two high-impact articles, published the articles

on virtually the same or related topics. In addition, 11 of the 14 authors (79%) who published three high-impact articles published these articles on very similar topics, and the remaining three authors published two (out of a possible three) articles on the same topic area. Similarly, (a) of the two authors who published four high-impact articles, one published all four of his/her articles on the same topic area, and the other author published two articles that focused on one area and two articles that focused on another; (b) the author who published five high-impact articles published three articles in one area, and the other two articles in a related area; and (c) the author who published six HIA published all but one of the articles in one area. Finally, in the case of the author who published seven high-impact articles, all but three of these articles focused on one of two topic areas. Thus, taken together, these findings suggest that authors who publish multiple high-impact articles tend to focus their research efforts in one (or at most a few) research domains.

Finally, we were also interested in determining whether there was any discernable pattern to the articles published by the authors of multiple high-impact papers.[3] We found that of the 67 authors who had published more than one HIA, seven of them (about 10%) published at least two of these articles in the same year, and that one of these authors published three HIA in the same year. We also found that 35 more multiple HIA authors (about 52%) published at least two high-impact articles within 3 years of each other, whereas one of these authors published three HIA in a 3-year span, and two other authors published four high-impact articles in a 4-year span. Taken together, these findings mean that almost two-thirds (42 of 67, or about 63%) of the authors who published more than one high-impact article tended to publish these articles in relatively close temporal proximity to each other. These findings suggest that most authors who write multiple high-impact articles do so during particularly productive periods of their career.

IMPLICATIONS FOR FACULTY ADVISORS, MENTORS, AND JUNIOR SCHOLARS

Our research indicates that over half (53%) of the authors who have published high-impact articles in the field of management do so within the first 7 (pretenure) years of their careers, and that approximately 14% of all of the authors who published a high-impact article did so while they were still doctoral students. Moreover, about half of these early-career scholars served as either the sole author or the primary author on these articles. Taken together, these findings suggest that PhD students and other early-career scholars make important contributions to the field of management. Accordingly, in this section, we turn our attention to a summary of our findings and the implications that can be gleaned from them for the faculty advisors and mentors of PhD students, as well as the students themselves. A summary of our findings and their implications is provided in Table 4.

Aspire to Publish in the Best Journals

The clear majority of high-impact articles (nearly 80%) are published in one of the following seven journals: *AMJ, AMR, ASQ, JAP, MS, OS,* and *SMJ.* Unfortunately, Judge et al. (2007) have noted that a significant challenge facing PhD students aspiring to publish in top-tier journals is the growing number of submissions to these journals. These authors go on to say that

> [g]iven the difficulty of publishing in top-tier journals, along with the errors that can occur in the review process, most junior faculty members are seriously disadvantaged by systems that emphasize journal placement over individual article quality. However, arguing for the quality of an article that appears in a second- or third-tier journal is a risky business, especially since the arguments must carry over the multiple disciplines involved in promotion and tenure processes in business schools (Judge et al., 2007: 502).

Thus, even though publishing in top-tier journals is not easy, PhD students and early-career scholars should continue to aspire to publish in them, especially given the advantages in terms of citations associated with successful publication in these journals.

Implications for faculty advisors and mentors. We think that the best way to encourage PhD students to focus their efforts on publishing in top-tier journals is to create a climate that emphasizes the importance of these journals to their careers. This can be accomplished in a variety of ways by faculty advisors and mentors, including (a) communicating their expectations for students to publish in top-tier journals during their PhD program; (b) showing students the list of top-tier management journals that their school (and other top-tier and/or peer schools) uses for promotion and tenure purposes; (c) providing articles published in top-tier journals to students as exemplars of good research; (d) creating

[3] We thank an anonymous reviewer for raising the issue regarding the potential pattern of articles for authors with multiple HIAs.

TABLE 4
Summary of Findings and Implications for Faculty Advisors, Mentors, and PhD Students

Research findings	Implications for faculty advisors and mentors	Implications for PhD students and early-career faculty members
Aspire to publish in the best journals o Publishing papers in top-tier journals dramatically increases the likelihood they will become high-impact articles.	**Create a culture that emphasizes the importance of publishing in top-tier journal outlets** o Communicate expectations for students to focus on publishing in top-tier outlets. o Provide examples (models) to students of good top-tier publications. o Create a dialogue with students about the requirements of different top-tier journals. o Share vitas of job candidates to emphasize that the best candidates typically publish in top-tier journals. o Encourage doctoral students (and junior faculty members) to attend doctoral consortia (or junior faculty research workshops) where they are exposed to influential scholars. o Expose students to the review process, so that they are not shocked by the feedback they receive.	**Familiarize yourself with the requirements of publishing in top-tier journals** o Read editorial statements from top-tier journals to develop a better understanding of what their editors consider important, to see where your interests might overlap with the journal's interest. o Read articles from top-tier journals on topic areas you are interested in pursuing. o Focus attention on learning about the elements of papers submitted to top-tier journals. o Attend a paper development workshops offered by Academy of Management publications.
Early career stage is not a limiting factor o Over half (53%) the authors in our sample published a high-impact article in the (typical) pre-tenure career stage. o One quarter (25.6%) of early-career authors publishing a HIA did so before completing their doctoral degree. o Almost 50% of authors who published a HIA in their pre-tenure period were the sole authors, or the first-authors, on the article. o Faculty members who publish a multiauthored HIA during the pre-tenure stage of their careers published these articles with coauthors at a variety of different career stages, including other early-career scholars.	**Encourage students to focus on impactful topics, not simply "getting the next pub"** o Coach students to understand that although having publications is important to be considered for an academic position, focusing on interesting topics and getting publications are not mutually exclusive; indeed, they may be complementary. o Encourage students to present their ideas in the classroom and in presentations to their peers and the faculty, where they can receive constructive feedback on how to further develop their thinking and ideas. o When students become interested in a particular topic area, ask them to provide a list of as many research ideas as they think can be studied in that area; the length and quality of the ideas on the list should provide some tangible evidence of the potential importance of the topic to the field.	**Don't focus only on "incremental" research in the early stages of your career** o Understand that having good ideas is not limited to faculty members at more advanced stages of their career. o Seek the advice of other colleagues and more senior faculty members about the viability of various research domains you are interested in pursuing. o Work with other colleagues who share your research interests and have demonstrated a history of success. o Use presentations at national meetings to receive feedback about the quality of your ideas from more experienced scholars.
Conduct programmatic research that appeals to a broad audience o The vast majority of authors who published more than one HIA did so by focusing their research efforts on one (or at most a few) topic areas.	**Encourage students to develop a focused research program** o Encourage students to focus their interests on topics that have not been over-researched.	**Take a long-term perspective** o Focus on topics that you personally find interesting and that sustains your interest over the long haul. o Beware of the switching costs accrued by conducting a series of studies with different authors on unrelated topics.

TABLE 4
(Continued)

Research findings	Implications for faculty advisors and mentors	Implications for PhD students and early-career faculty members
o High-impact articles appeal to a significantly larger audience, both in terms of the number of research areas and the number of journals that cite them.	o Discuss the opportunities (as well as the limitations) that are associated with the specific research areas that students are interested in. o Encourage students to think about topics that will hold their interests for the long term. o Encourage students to present their research ideas, and give them feedback about the viability of these topic areas.	o Research that addresses big, broad questions may be hard to publish in journals; break broad questions down into multiple publishable pieces while maintaining the focus on the bigger research question you are trying to address.
Identify research ideas that advance the field o Review articles (both narrative and meta-analytic reviews) appeared significantly more in the HIA sample, than in either comparison sample. o Articles that develop and validate measures of new (or revised) constructs are over-represented in the HIA sample, compared to the other samples. o Although not over-represented in the HIA sample, high-impact research methods articles were cited by a broader base of unique research areas and journals, compared to research methods articles in the comparison samples.	**Help students understand different ways to advance knowledge** o Teach students how to conduct both narrative and meta-analytic reviews that allow them to integrate and advance a literature. o Help students understand the importance of developing clear conceptual definitions of the constructs they are interested in exploring in their research. o Encourage students with methodological skills to identify specific content areas that would benefit from the application of specific analytical tools. o Expose students to the way in which qualitative methods can be combined with quantitative methods to develop a "deeper" understanding of the phenomenon they are interested in pursuing.	**Look for areas where you can advance knowledge in the field** o Read the literature widely to identify gaps or address unresolved problems; select a topic that confronts or contributes to a "Grand Challenge." o Define a new construct (or redefine an existing construct) and develop and validate a measure of it. o Identify creative or novel ways of looking at phenomena by applying concepts from Davis (1971) and/or heuristics from McGuire (1997) to develop research ideas. o Conduct reviews that integrate and extend existing knowledge. o Develop competence in the use of rigorous methods in your area of interest.
When possible, build theory o Theoretical articles are over-represented in the HIA sample, compared to articles in the matched and typical samples. o Empirical articles that have a stronger emphasis on theory-building (and to a lesser extent, theory-testing) are over-represented in the HIA sample.	**Emphasize and teach about the importance of theory** o Teach students about the criteria of good theories, the common styles of theorizing, and the elements of good theory-building. o Expose students to the goals, scope, assumptions, propositions, and limitations of various theories in the field. o Provide examples of good theoretical articles, and of empirical articles that build or test theory in an effective manner.	**Familiarize yourself with the elements of good theory** o Familiarize yourself with theories in the field of management, as well as in psychology, social psychology, sociology, economics, and other, related disciplines. o Where possible, work at the intersection of theory and practice. o Emphasize both the theoretical and practical implications of research studies.

TABLE 4
(Continued)

Research findings	Implications for faculty advisors and mentors	Implications for PhD students and early-career faculty members
	o Use small groups of students to practice theory-building by drawing the theoretical models in the articles they review for class; and then ask them to provide the theoretical rationale for adding a new element to these models (e.g., a new independent, dependent, mediating, or moderating variable). o Have students write a conceptual paper in an early stage of their doctoral program to begin to develop a better understanding of what good theory requires.	
The quality of writing matters o Research shows that the quality of writing is related to the number of citations an article receives.	**Teach students about elements of good writing** o Have students read about the elements of effective writing. o Share articles with students that are particularly well-written, and explain your reasoning to the students. o Ask students to explain the reasons they like the way a particular article is written. o Have students critique scholarly articles in terms of their writing structure and style. o Require students to submit written papers to faculty members and provide them with feedback, not only on the quality of the ideas in their papers, but also how well these ideas are expressed.	**Practice effective writing** o Practice writing a clear story with well-defined characters (constructs); a plot that connects them (the research question and conceptual framework that ties them together); and a compelling theme (what we have learned from your research that we didn't already know). o Pick a few authors in the field whose research you particularly enjoy reading and identify what they do in their writing that makes it enjoyable.

a dialogue with students about the requirements of different top-tier outlets; (e) sharing vitas of job candidates to emphasize the fact that the best candidates typically publish in top-tier outlets; (f) encouraging students to attend doctoral consortia, where they are typically exposed to faculty members who publish in top-tier journal outlets; and (g) providing students with evidence of the relationships between publications in top-tier journals (or the citations received from such publications) and faculty compensation (Gomez-Mejia & Balkin, 1992); scientific reputation (Cole & Cole, 1967); and the amount of awards faculty members receive (Cole & Cole, 1967). In addition, we also encourage faculty advisors to share examples of the type of editorial feedback that they have received from an article that they submitted to a top-tier journal to prepare students for the kind of scrutiny they are likely to receive during the review process.

Implications for PhD students and early-career scholars. Because top-tier journals publish substantially more high-impact articles than other journals, PhD students should (a) read editorial statements from top-tier journals to develop a better understanding of what the editors of these journals consider important; (b) determine where their own interests and the journals' interests overlap; (c) read articles from these journals in their own topic areas of interest; (d) focus attention on the way articles in these journals are typically structured and formatted; (e) try to attend one of the many paper development workshops put on by Academy of Management publications (for more information about these workshops, see the web pages of *AMD*, *AMJ*, and *AMR*); and (f), when possible, serve as a reviewer for top-tiered journals in the field. Although these activities do not ensure that the papers one submits to the most prestigious journals will be accepted, we believe that these strategies will increase the probability of that outcome.

Early Career Stage Is Not a Limiting Factor

The results of our research indicate that an early career stage is not a limiting factor to publishing high-impact articles. Over half (53%) of the authors in our sample published a HIA before the end of the (typical) 7-year tenure period, and over 50% of the authors who published a high-impact article in the early stages of their careers were the sole authors, or the first authors, on the article. This finding suggests that if there is a "sweet spot" for publishing a high-impact article among management scholars, it may be during the pre-tenure period of their careers. In addition, our findings indicate that the lead coauthors of high-impact articles are almost as likely to be scholars in the pre-tenure period (30%) or the middle of their careers (30%), as they are senior scholars (40%). Taken together, these findings suggest that early-career scholars do not have to wait until they have "paid their dues" to make important contributions to the field. Nor is it necessary to work exclusively with senior faculty members to make such contributions. Indeed, the data suggest just the opposite. In fact, PhD students interested in conducting impactful research have several examples of others who have been successful in "swinging for the fences" early in their careers. Thus, the advice given to some early-career scholars that they must play small-ball until they have job security is not necessarily warranted.

Perhaps there are good reasons why a disproportionate number of early-career scholars have a hand in writing high-impact articles. For example, it is possible that they are more open to new discoveries, and subsequently are less constrained by the rules or paradigms that govern the field. In addition, it is worth noting that PhD students typically devote more time and energy to their dissertations than any other research projects they will conduct in their future, and it is rare for most scholars to receive the quality of feedback PhD students receive from their dissertation committees. Finally, early-career scholars are often spared the distractions of the more intense service activities that faculty members in the middle and latter stages of their career are often expected to perform. However, whatever the reason, the fact that early-career scholars play such a prominent role in writing high-impact articles has several implications, for both faculty advisors and mentors, as well as for PhD students and other junior scholars.

Implications for faculty advisors and mentors. Faculty mentors and advisors should encourage their charges to focus their research on important topics, and not simply on getting the next "pub." One way to accomplish this objective is by coaching PhD students to understand that although having publications is important to their success as academics, getting publications is not mutually exclusive of focusing on important topics. Indeed, these activities may be complementary. Another way to coach students is to encourage them to present their ideas in the classroom and to their peers and faculty, so that they can receive constructive feedback on how to further develop their thinking and ideas. Finally, when students become interested in a particular topic area, we recommend that faculty advisors ask

the students to provide them with a list of as many research ideas as they think can be studied in that area; the length and quality of the ideas on this list should provide some tangible evidence of the potential importance of the topic to the field.

Implications for PhD students and early-career scholars. The primary implication of our finding that being an early-career scholar is not a deterrent to publishing high-impact articles, is that PhD students do not have to focus only on incremental research during the initial phase of their careers. Of course, not all junior scholars may feel motivated to publish high-impact articles, because they believe that these articles take more time and effort to write, or because they lack the skills, expertise, or confidence to do so. However, for those junior scholars willing to accept this challenge, we have a few words of advice. First, understand that generating good ideas is not an action limited to faculty members at advanced career stages. Indeed, because of your inexperience, you may actually be more likely to generate creative ideas that move the field forward. Second, we encourage you to develop relationships with other scholars who possess complementary knowledge and skill sets and are interested in the same topic areas. This advice is consistent with the recent findings reported by Liu, Olivola, and Kovacs (2017), who conclude that among the most important reasons why authors collaborate with each other is that the coauthors bring unique skills to the project and that having coauthors motivates researchers to keep the project going. Finally, it is important for early-career scholars interested in publishing high-impact research to recognize that this feat is a very challenging endeavor. After all, high-impact management research has been the domain of a very small group of authors, and several highly respected researchers in the field have never published a high-impact article in their careers. Therefore, attempts to produce HIA may never be fully realized. However, the advice we provide in the following sections should improve the quality of early-career scholars' research, the probability of its being published, and the impact that it ultimately has, even if it does not garner 1,000 citations.

Conduct Programmatic Research That Appeals to a Broad Audience

The results of our study indicate that about 20% of the authors in our primary sample published more than one high-impact article, and that the majority of these multi-HIA authors tend to focus their research efforts on one (or at most a few) topic areas. In addition, the results show that high-impact articles tend to appeal to a much broader audience than do their counterparts, both in terms of the number of research areas they influence, as well the number of journals that cite them. Taken together, these findings suggest that by taking a long-term view and conducting programmatic studies on a few, broad subject areas that truly capture and hold their interest, early-career scholars can avoid the pitfall of focusing on producing a large number of articles that tend to move the field forward only incrementally.

Taking a long-term perspective is also consistent with the recommendations of other researchers who have examined the characteristics of high-impact articles. For example, Ghoshal (2006) has argued that it is important for researchers to focus on topics they find personally engaging, because by doing so, they are better able to sustain their attention and efforts over long periods of time and avoid the trap of writing a series of papers with different coauthors on a variety of unrelated topics. Similar points have been made by Daft (1984) and Ashford (2013). Daft found that authors described themselves as more emotionally committed and involved in research projects that turned out to have a significant impact on the field, especially as compared to their interest level in research projects which ultimately did not have a significant impact. Similarly, Ashford encouraged early-career scholars to stay out of the publication "arms race" and focus their research efforts on bigger research projects. She suggests that researchers should commit themselves to topics about which they are truly passionate, rather than undertake incremental research studies created from "slicing" their research into small pieces.

The danger of focusing on too many different topic areas with too many different coauthors can be illustrated by a brief anecdote from the first author of this article:

> A few years ago, an early-career scholar ("Chris") approached me requesting some feedback. Specifically, Chris wanted me to comment on any perceived "holes" which might exist in her vita. Chris was a few years away from tenure. After reviewing the document, I noticed that she had listed 16 different research projects which were currently underway! Making matters worse, many of these research projects focused on unrelated topics with different coauthors. When I asked Chris about the motivation for working on so many different projects, she reported that since she did not have a good sense of which projects might be publishable in top-tier journals, she thought it was better to try to publish in as many different topic areas as possible.

Although Chris' approach may appear logical at first glance, there are several problems with this strategy. The first relates to the "switching costs" that are incurred each time she moved from one paper to the next. According to Burnham, Frels, and Mahajan (2003: 110), switching costs are defined in a marketing context as the "costs that customers associate with the process of switching from one provider to another." Among the different types of switching costs these authors identify, two appear to be particularly pertinent to our discussion. The first is *procedural switching costs*, which in our context involves the lost time and effort associated with reading, studying, and learning about new topic areas. (Indeed, Chris indicated that one of the biggest challenges she faced was in switching from one topic area to the next, as these transitions often required her to spend several days getting back "up to speed.") The second is *relational switching costs,* which are the costs associated with establishing, breaking, and (possibly) reestablishing working relationships with various coauthors involved in different research projects. As most researchers with this experience will attest, successfully coauthoring research is predicated on the development of healthy working relationships, an endeavor requiring significant investments of both time and energy. In the story above, Chris's relational switching costs were compounded by the fact that she had been attempting to navigate several different coauthor relationships, each one demanding of her time and energy. On top of the more obvious problem related to the difficulty of concentrating on any one of her projects for an extended period, Chris was unwittingly up against powerful procedural and relational switching costs that posed a serious threat to her research objectives.

Following the anecdote above, one could refer to Chris's inclination to work in a variety of disciplines as the "wide net" approach, which is akin to the age-old adage to fishermen/women to "cast a wide net" (implying that one should think about a large number of articles that focus on a variety of topic areas when conducting research). The wide net approach should not, however, be confused with what one could refer to as the "deep dive" approach: directing one's attention to fewer articles that focus on bigger issues. There are several reasons why the latter approach is likely to prove a more effective strategy than the former. First, only by digging deeply into a topic area is it possible to understand some of the important nuances that exist there. Related to this idea, by focusing one's attention primarily on a few topic areas, early-career scholars are more likely to see the gaps that exist in the literature. Moreover, only by conducting a deep dive into a particular area is it likely that a researcher will make a contribution substantial enough to be recognized by other scholars in the field. Finally, when utilizing the wide net approach, the tendency is to become a jack of all trades, rather than an expert in any one topic area.

Implications for faculty advisors and mentors. Based on our findings, we believe it wise for faculty advisors to encourage PhD students to focus on a broad-based topic for which they have developed a passion. Among the ways that this can be accomplished are by encouraging students to focus their energies on topics they are interested in and that have not been over-researched, and discussing what they (the faculty advisors) consider to be the opportunities (as well as the limitations) of the research areas students identify as those that capture their interest. Of course, one might argue that encouraging students to work on big topic areas might be putting them in danger of "biting off more than one can chew," and therefore, increasing the risks of not getting published. To combat these risks, we recommend that once PhD students have chosen a few broad research areas in which they are interested, faculty advisors help their students break these topics into multiple publishable projects.

Several examples of this approach exist in the literature. First, consider Richard Hackman's research on job characteristics. In one of the initial papers on the job characteristic model, Hackman and Lawler (1971) developed and tested a conceptual framework that identified the characteristics of jobs that increase the motivation to perform well, and then examined the moderating effects of employees' growth need strength on the employees' responsiveness to these job characteristics. Following this, Hackman and Oldham (1975) reported on the development and validation of the Job Diagnostic Survey, a measure designed to evaluate the key variables in the Job Characteristics Model, and then further examined the validity of this model by comparing its predictability to other theories of job design (Hackman & Oldham, 1976). Another example is Lyman Porter, Richard Steers, and Richard Mowday's research on organizational commitment. In one of their first papers on this topic (Porter, Steers, Mowday, & Boulian, 1974), these authors examined the ability of employees' organizational commitment, relative to that of employees' job satisfaction, to predict turnover in a longitudinal study. They followed this by reporting on the development and validation of their organizational commitment questionnaire (Mowday,

Steers, & Porter, 1979). Finally, a more recent example is illustrated by Jason Colquitt's research on organizational justice. In 2001, Colquitt published one article (Colquitt, 2001) designed to explore the construct validity of a new, multidimensional measure of organizational justice, and a meta-analysis on the relationships between organizational justice dimensions and several outcome variables (Colquitt, Conlon, Wesson, Porter, & Ng, 2001).

All the articles referenced in the examples above have subsequently gone on to receive over 1,000 citations in the literature. However, what is perhaps more important for our recommendation is the fact that the authors discussed in the examples have tended to follow the deep-dive approach by focusing their energies on a limited set of topics. For example, a substantial portion of research that Hackman conducted in his career focused on the topic of job characteristics and job design, while the same is true for Porter, Mowday and Steers in the case of organizational commitment, and for Colquitt in the case of organizational justice. In addition, with the exception of Lyman Porter, all the authors on the list above who published multiple high-impact articles (e.g., Colquitt, Hackman, Oldham, Mowday, & Steers), published at least one of these articles in the pre-tenure period of their careers. Thus, we conclude that by focusing on a small set of topic areas (or research questions), and dividing these topic areas into several publishable projects, a researcher can increase the probability of writing high-impact articles.

Implications for PhD students and early-career scholars. The implications of our findings for PhD students mirror those for faculty advisors, in that students would be wise to spend time identifying a few broad topic areas that (a) they find engaging; (b) have not been over-researched; and (c) allow them opportunities to break the topics into more manageable studies. Of course, it is worth noting that although finding a broad topic area in which one is interested may be a necessary condition for taking a long-term view, it is not a sufficient condition for producing high-impact articles. Some research areas may simply not generate much attention from the field. However, with that said, we believe that focusing on areas that capture one's interest is far more likely to prove worthwhile in the long-run than chasing after a series of topics that one does not find very engaging.

Identify Research Areas That Advance the Field

Although previous research (Bergh et al., 2006; Daft, 1984; Dewett & DeNisi, 2004; Judge et al., 2007) suggests articles that advance the field receive more citations than those that do not, this begs the question of which specific kinds of articles perform this function. Fortunately, the results of our study suggest there are a variety of ways that this may be accomplished, including conducting integrative reviews, defining a new construct and developing measures of it, and elaborating upon some specific methodological techniques.

"[W]hat is perhaps more important for our recommendation is the fact that the authors discussed in the examples have tended to follow the deep-dive approach by focusing their energies on a limited set of topics."

Implications for faculty advisors and mentors. The fact that review articles appeared significantly more times in the high-impact article sample than in either of the other two samples, and that there are several outlets for these types of articles (e.g., *Academy of Management Annals*, *Journal of Management, Journal of Organizational Behavior*, *Research in Organizational Behavior*), suggests that teaching PhD students how to perform such reviews is a valuable investment of time. However, writing quality reviews is not easy. A good narrative literature review serves several purposes, including summarizing the contributions of studies included in the review to the research issue being examined; identifying new ways to interpret prior research; revealing gaps that might exist in the literature; resolving contradictory findings from previous studies; identifying those areas that have been adequately studied to prevent duplication of effort; and identifying areas (hot topics) that need additional research focus (Galvan, 2014; Machi & McEvoy, 2012; Ridley, 2012).

"[B]y focusing on a small set of topic areas (or research questions), and dividing these topic areas into several publishable projects, a researcher can increase the probability of writing high-impact articles."

A good example of a review article that embodies many of these attributes is Brown and Eisenhardt's (1995) article on product development. After noting that the literature on product development continued to grow at a rapid pace during the preceding decade, Brown and Eisenhardt organized the literature

in this area into three streams of research (product development as a rational plan, a communication web, and as disciplined problem-solving). Following this categorization, they synthesized the research findings into an integrative model that identified the factors that affect the success of product development efforts, and highlighted the distinction between process performance and product effectiveness. Finally, Brown and Eisenhardt identified several paths for future research based on the concepts and linkages that were missing or not well defined in their integrative model.

Cropanzano (2009) and Short (2009) have provided two relatively good resources for faculty advisors who are interested in providing their students with an overview of what a good review should contain. However, we would recommend the books by Ridley (2012) and Galvan (2014) for those faculty advisors who are interested in providing more detailed discussions of the steps involved in conducting a literature review to their doctoral students. In addition, given the fact that—as did Judge et al. (2007)—we found that meta-analytic reviews made up a larger proportion of articles in the high-impact sample than the comparison samples, these types of review articles will likely become more important in the future. Therefore, for faculty members interested in helping their students understand meta-analyses, two worthwhile sources are the books by Schmidt and Hunter (2014) and Borenstein, Hedges, Higgins, and Rothstein (2009).

The fact that construct validation studies are overrepresented in the high-impact article sample, relative to the other samples included in our study, indicates that another avenue to publishing impactful research is to develop and validate measures of new constructs in the field. The recent editorial in the *Academy of Management Discoveries,* in which Bamberger (2017) notes the centrality of these types of studies to the journal's mission suggests that such articles have a ready home. However, it is worth noting that a closer examination of the articles included in this category indicates that the majority of them not only follow good scale development practices (Churchill, 1979; Schwab, 1980; MacKenzie, Podsakoff, & Podsakoff, 2011), but that they also typically develop clear conceptual definitions of the constructs that are being measured. That is why we recommend that faculty mentors and advisors working with students on the development of new measures first help the students understand the importance of clarifying the definition of the constructs that they are measuring (Klein, Molloy, & Cooper, 2009; Podsakoff, MacKenzie, & Podsakoff, 2016; Suddaby, 2010), before attempting to develop measures of these constructs.

The findings of our research indicate that although research methods articles are not over-represented as a proportion of the in the high-impact articles, methods articles in the high-impact category tended not only to receive citations from a broader number of research domains, but also from a broader base of source journals relative to those methods articles included in the matched and typical samples. Thus, there are some advantages to writing broad-based methods articles, and we encourage interested and qualified PhD students to consider writing them. Our examination of the high-impact methods articles indicates that most articles included in this category tend to focus on how to improve the measurement properties of the instruments used in the field, how to minimize measurement biases, or how to use qualitative methods to help in the theory development process. With that said, like Colquitt and Zapata-Phelan (2007), we believe that the coalescence of the methods in the field around other techniques such as structural equation modeling (SEM) offer additional avenues for future high-impact articles.

Of course, we doubt that many PhD students will be interested in writing articles focused solely on methodological issues. However, developing competence in the use of the methodological techniques that are pertinent to one's research interests could prove important to being able to write content articles that have an impact on the field. For example, several researchers (Lazarus, 2000; Lazarus & Folkman, 1984; Tennen, Affleck, Armeli, & Carney, 2000) have argued that a transactional, process-oriented approach is necessary to adequately study the stress and coping responses of human beings:

> Transaction implies the mutual interplay of person and environment variables. This interplay, in turn, implies process, since the relationship between the person and the environment is constantly changing. In order to capture these changes and the factors that contribute to them, it is necessary to observe the same person again and again. Yet change is not commonly assessed in research... Dynamic, process-oriented approaches are the exception rather than the rule... Studying the same person again and again requires comparing the person with himself or herself at different times or under different conditions. This *intraindividual* perspective contrasts with *interindividual* comparisons of that person with other persons under common conditions (Lazarus & Folkman, 1984: 299, *italics in original*).

Thus, PhD students interested in studying stress and coping responses would be wise to learn how to conduct research using within-person process-oriented methods that examine individuals over time. Two particularly good sources for this are Larson and Csikszentmihalyi's (1983) chapter on the use of the experience sampling method (ESM) technique and Tennen et al.'s (2000) article on the use of daily process designs in the study of coping responses. Similarly, given the number of studies written about the importance of meso approaches for integrating micro- and macro-research domains (Cappelli & Sherer, 1991; House, Rousseau, & Thomas-Hunt, 1995; Mathieu & Chen, 2011), early-career scholars interested in examining meso phenomena would be wise to develop multilevel modeling skills (Hofmann, 1997; Klein & Kozlowski, 2000; Mathieu & Taylor, 2007).

Implications for PhD students and early-career scholars. For PhD students, the obvious implication of our findings is to work on developing good ideas. Although this objective is clearly much easier said than achieved, junior scholars might pursue several avenues to accomplish this goal. One course of action is to read the literature widely both inside and outside (related) fields to identify and clarify gaps, or to address unresolved problems. This latter point is consistent with the recommendations of Colquitt and George (2011: 432), who argue that "a starting point to consider when selecting a topic is whether the study confronts or contributes to a grand challenge... [and] ... The fundamental principles underlying a grand challenge are the pursuit of bold ideas and the adoption of less conventional approaches to tackling large, unresolved problems."

Another recommendation is to think about ways of changing the perspective (or the lens on the camera) that is currently being used to examine a particular phenomenon in the field. Two articles that are particularly worthwhile in this regard are Murray Davis's (1971) classic article on the characteristics of theories that make them interesting and William McGuire's (1997) work on creative hypothesis-generating heuristics. According to Davis, interesting theories are those that deny certain assumptions of the audience, whereas uninteresting ones are those that affirm certain assumptions of their audience. As an example of this approach, Davis (1986: 287) notes that "Weber's assertion that the Protestant Ethic produced capitalism denied the then commonly held assumption that religion is either unrelated to the economy or (for Marxists) derived from it." Davis (1971) goes on to identify 12 categories of what he considered interesting propositions that either related to (a) the characterization of a single phenomenon (e.g., what appears to be an unorganized phenomenon can actually be organized, what appears to be a local phenomenon is in reality a generalizable one, what appears to be a stable phenomenon is in reality an unstable and dynamic one, what appears to be a bad phenomenon is in reality a good one, etc.); or (b) the relationships among multiple phenomena (e.g., what seem to be unrelated or independent phenomena are in reality correlated interdependent phenomena, what seems to be a similar phenomenon are in reality different phenomena, what seems to be the independent variable in a causal relationship is in reality the dependent variable in the causal chain, etc.).

McGuire's (1997) work complements Davis's by noting that although research in the social sciences involves generating theories and hypotheses and then testing them, traditionally most of the focus has been on identifying the methods for testing our hypotheses, rather than on procedures for generating them. He goes on to identify 49 heuristics that are designed specifically for this purpose and organizes them into five major categories. These categories include (a) heuristics requiring sensitivity to provocative natural occurrences; (b) heuristics involving simple conceptual analysis (or direct inference); (c) heuristics calling for complex conceptual analysis (or mediated inference); (d) heuristics demanding reinterpretation of past research; and (e) heuristics necessitating the collection of new data or reanalyzing old data. Our own experiences in working with doctoral students have shown us that the suggestions provided by both Davis and Murray are useful ways to generate good research ideas. Thus, we would encourage junior faculty members who are interested in developing novel, interesting, or creative ideas to examine these two articles.

"Yet another way of developing good ideas is to work with colleagues who have them."

Yet another way of developing good ideas is to work with colleagues who have them. Where possible, this approach may mean seeking out opportunities to work with more experienced colleagues who have already demonstrated an ability to publish interesting or creative research in the student's topic areas of interest. Such networks can be developed by

regularly attending academy meetings, putting together symposia with other junior scholars who share similar research interests, and becoming an active participant in the many listservs that are currently available.

When Possible, Build Theory

Turning our attention back to the results of our study, we found that theoretical papers are over-represented as a proportion of high-impact articles, and empirical articles that become highly cited tend to rate higher than less impactful articles on the extent to which they build and test theoretical propositions. There are several potential reasons why articles with sound theoretical underpinnings have such a big impact (Bacharach, 1989; Colquitt & Zapata-Phelan, 2007; Dubin, 1978; Suddaby, 2014; Sutton & Staw, 1995; Weick, 1995; Whetten, 1989). The first is that good theories organize the complex world into a more understandable set of propositions that help scholars and practitioners behave more effectively (Bacharach, 1989). The second reason is that good theories provide fertile questions for researchers to answer and help identify the key constructs that should be emphasized (Dubin, 1978; Whetten, 1989). Related to this, good theories offer novel insights and illuminate relationships that otherwise would not have been as obvious without the theory (Klein & Zedeck, 2004). Finally, it is worthwhile to remember Schneider's (1985: 244) observation that "[t]he most prominent people in the field are known for theory. . .Theory captivates and promotes research activity . . . Even if shown to be incorrect, theory prevails over data in terms of impact because it is usually parsimonious and it promotes research activity." Thus, we think that having a clear understanding of the elements of good theories, as well as how theories can be built and tested is an important part of PhD students' and junior faculty members' repertoire.

The fact that articles emphasizing theory building and testing are over-represented in our sample of high-impact articles relative to those in our comparison samples is interesting because Devers, Misangyi, and Gamache (2014: 248) have concluded that the field of management is "moving toward a future where theory is less important." Although there are several possible reasons for this movement, we agree with Hillman's (2011) observations that writing theory is often perceived to be harder than writing empirical papers, and although there is explicit doctoral training in the use of research methods and techniques, there is often little to no training offered for writing about theory.

Implications for faculty mentors and advisors. Perhaps the most important thing faculty advisors or mentors can do to enhance PhD students' understanding of the importance of theory building to the advancement of scientific knowledge is to teach about it in their classes. This is consistent with Hillman's (2011: 609) argument that "[a]s mentors, we can change doctoral curriculum and requirements to include more theory building. If young scholars do not embrace theory early on, this could end up being a career-long decision. We cannot afford to sacrifice important skills of theory development for what is perceived to be quicker publications." For those faculty mentors and advisors who are interested in improving their ability to teach about theory, a variety of resources are available. As a starting point, the *Academy of Management Review* and the *Academy of Management Journal* have published a series of excellent articles and editorial comments that can be used in the classroom about (a) the role and importance of theory in the field of management (Shaw, 2017; Suddaby, 2014; Van de Ven, 1989); (b) the criteria and elements of good theories (Bacharach, 1989; Bartunek, Rynes, & Ireland, 2006; Sutton & Staw, 1995; Weick, 1995); (c) what constitutes a theoretical contribution (Bergh, 2003; Corley & Gioia, 2011; Whetten, 1989); (d) some common styles of theorizing (Cornelissen, 2017); (e) how to build theories (Eisenhardt, 1989a; Eisenhardt & Graebner, 2007; Oswick, Fleming, & Hanlon, 2011; Rindova, 2008; Suddaby, Hardy, & Huy, 2011; Weick, 1989); (f) writing good theory (Fulmer, 2012); and (g) how to teach theory building (Byron & Thatcher, 2016). In addition, the *Academy of Management Review* website has provided a list of syllabi from a variety of management scholars that are very useful for those faculty members interested in developing a course on theory building.

Although all of the resources identified above provide good starting points, we emphasize the potential benefits of exposing PhD students to the use of grounded theory (e.g., Corbin & Strauss, 2015; Glaser & Strauss, 1967; Locke, 2001; Swanson & Chernick, 2013) and other inductive, narrative, ethnomethodological and qualitative ways of building theory. Gephart (2004) has noted that in contrast to quantitative methods, qualitative methods are particularly good at providing (a) rich and detailed descriptions of actual events in real settings that preserve the meaning that actors ascribe to these events and settings; (b) the bases for understanding

social processes that underlie management; and (c) concrete examples that inform the field—all of which are critical to theory building. One good example of the use of qualitative methods for theory building is Gersick's (1989) examination of the effects that time and deadlines have on the developmental stages associated with the life-span of group projects. Using a grounded theory approach, Gersick observed eight naturally occurring teams from their inception through task completion. Contrary to traditional group development models, which posit that groups gradually go through a universal series of stages, she found that these groups go through a pattern of punctuated "equilibrium" in her text, in which they alternate between long periods of inactivity followed by concentrated periods of change. Based on these observations, she developed a theoretical model to explain the various phases and transition points that groups go through during their life cycles. Qualitative methods have also been used by Eisenhardt (1989b) to develop a theory about the factors associated with making fast strategic decisions in high-velocity environments, and by Ely and Thomas (2001) to develop a theory about the specific conditions under which cultural diversity enhances or detracts from the functioning of work groups. Thus, we believe that having PhD students read Gephart's (2004) article discussing the importance of qualitative research, the methods commonly used in this approach, and some of the challenges and opportunities faced by researchers interested in using these techniques, as well as providing some specific exemplars of the use of these techniques are worthwhile activities.

Unfortunately, in our own experiences we have found that having students simply read about the elements of good theories and how to build them is not enough. Therefore, we have used a variety of classroom exercises designed to enhance students' understanding of how to build or test theory. Although these exercises can be performed by individual students, we have found that they tend to be more effective when students work in small groups (2 to 3 to a group). One of the most effective exercises we have found to get students to actually practice theory development is to have them (a) draw theoretical models (boxes and arrows) from articles that they are reviewing for class, then ask them to; (b) add one or more new elements to these models (e.g., a new independent, dependent, mediating, or moderating variable); and (c) provide a theoretical rationale to explain the linkage between the new element and the original model. Another worthwhile exercise is to have students read and analyze the key elements of a theory (e.g., the goals, scope, assumptions, and propositions of a theory), and then have them practice extending the theory into a different phenomenon or domain. Still another exercise is to have students read McGuire's (1997) heuristics for developing new theories and then apply one or more of these practices to develop new hypotheses (more is said about this in what follows).

Implications for PhD students and early-career faculty members. Of course, the obvious implications of our findings regarding the over-representation of articles that focus on theory among high-impact articles is that PhD students should familiarize themselves with the theories in the field, as well as those in other related fields such as psychology, social psychology, industrial economics, and sociology. However, beyond this, several authors (Ghoshal, 2006; Van de Ven, 2007) argue that the most impactful theoretical papers are those that have practical implications. For example, Ghoshal (2006) has argued that academics live in two worlds and that enduring scholarship exists at the intersection of these two worlds:

> All of us live in two worlds. One is our own world, within the academic community, in which we derive great joy from speaking to one another. . .through our papers. The language of conversation is theory, and its grammar is shaped by rules of logical and empirical rigor. The other world is the real world—of companies, managers, employees, consumers, regulators, [and] students. . .The two worlds sometime connect, as when theory addresses a real-world issue. . . Enduring scholarship always exists at the intersection of these two worlds. Without theory, there is no scholarship; without the real world, there is no endurance. The ultimate purpose of all scholarship is to help, directly or indirectly, make the world a better place, often by first making it better understood place. In this sense, scholarship that divorces the endeavor of building positive theory from normative purposes is unlikely to endure.

Similar points have also been made by Van de Ven (2007) in his discussion of the important role of engaged scholarship in professional schools (e.g., business, engineering, medicine, education, and public administration). Building on the work of Herbert Simon (1976), Van de Ven argues that "[a] central mission of scholars in professional schools is to conduct research that both advances a scientific discipline and enlightens practice in a professional domain" (p. 1). He then goes on to say that

this can be accomplished through engaged scholarship. More specifically, he argues: "Instead of viewing organizations and clients as data collection sites and funding sources, an engaged scholar views them as a learning workplace (idea factory) where practitioners and scholars co-produce knowledge on important questions and issues by testing alternative ideas and different views of a common problem" (Van de Ven, 2007: 7).

A good example of high-impact articles that has proven useful to both practitioners and academics is the work of Michael Porter (1996, 1998). His research in the business strategy area is frequently referenced by business executives and scholars alike. Another example is Nonaka's theoretical research on knowledge-creating processes (Nonaka, 1994) for academics and his research on concepts such as "ba" (e.g., shared space for emerging relationships), which he published in *California Management Review* (Nonaka & Konno, 1998) for practicing managers. Of course, our point is not to identify all the high-impact articles that have proven of interest to practitioners and scholars; rather, it is to emphasize that good research often meets at the intersection of theory and practice. As noted by Ghoshal (2006), several practical career benefits can result from combining good theory with practice, as such an approach can help complement the different aspects of one's professional work such as research, teaching, and consulting. Thus, we would encourage young scholars to think about those aspects of their research that apply to both the theoretical and practical domains, and to strongly emphasize the practical implications of the findings of their studies.

The Quality of Writing Matters

One final point about writing high-impact articles relates to the way they are written. Although we did not explicitly examine the impact of writing style in our study, previous research (Ashford, 2013; Bartunek, Rynes, & Ireland, 2006; Campbell, 1982; Daft, 1983, 1985; Judge et al., 2007) suggests that it is not only an important factor in an article's acceptance for publication, but also in the number of citations it receives after it is published. This is consistent with Bartunek et al.'s (2006) finding that how well an article is written was identified as the third most important reason why *AMJ* editorial board members rated articles as being "most interesting." The implication of these findings for faculty advisors and mentors is clear: work with students to help them understand the elements of good writing. As an initial step in this process, we recommend having students read Ragins' (2012) article on the craft of clear writing. Ragins conducted a poll of editorial boards members and reviewers to find out about the writing problems they most frequently encountered in reviewing for *AMR*. Although the scholars identified a number of pitfalls to effective writing, the majority of them fell into three categories: (a) foggy writing; (b) assuming too much on the reader's part; and (c) the lack of a clear story. Ragins (2012) then discusses the reasons why these problems are likely to occur and the remedies that authors should consider to address them. Although these remedies were designed specifically for authors of *AMR* articles, it is obvious that they are equally applicable to all authors in the management domain whose "goal is not just to publish a paper . . . but also to write a paper that will be read, used, and cited. To do this, we need to see ourselves not only as scholars but also as writers" (Ragins, 2012: 500). Therefore, this article should serve as a useful starting point for PhD students, particularly those students writing in their non-native languages or with grammar conventions different from those of their home country (which Mitchell, 2007, noted accounted for over one-quarter of the doctoral students a decade ago).

Implications for advisors and mentors. For advisors and mentors who feel that they need to provide additional resources about writing, we recommend the books by Elbow (1998) and Douglas (2015). Elbow (1998) provides writers with a set of techniques that are designed to help them transfer their ideas to paper, revise their writing, focus on a specific audience, and deal effectively with feedback. We think that the list of questions that he has developed to assess the effectiveness of one's writing (e.g., its quality, organization, effectiveness of language usage, and inappropriate language usage) should prove particularly worthwhile for novice writers in the field. Douglas' (2015) approach is somewhat different, but also has much to recommend it. Drawing on research on how the human mind processes written language (and a bit of humor), she develops a concrete set of writing principles based around five C's (clarity, continuity, coherence, concision, and cadence). The examples she provides throughout the book do a good job of illustrating her principles, and her chapter takeaways provide useful recommendations to those authors interested in improving their writing.

There are several other actions that advisors and mentors can take to reinforce the importance of good writing. These actions include (a) sharing

particularly well-written articles with PhD students and explaining the reasoning for the positive assessment of these articles' writing quality; (b) asking students to compare well-written articles to poorly written ones; (c) having students critique scholarly articles, not only in terms of theory, analyses, and results, but also in terms of writing style, structure, and effectiveness; (d) asking students to choose an article from researchers whose work they particularly admire and identify why these researchers' writing is enjoyable; and (e) providing students with feedback about papers submitted for class, not only on the basis of the quality of the ideas expressed in these papers, but also in terms of how well these ideas are expressed.

Implications for PhD students and early-career scholars. For students, our strongest recommendation is to think clearly about the "story" they are trying to tell when beginning to write an article. Indeed, we believe that good scientific writing, like good fiction, contains well-defined characters (constructs); a plot that explains the relationships between the characters (the research question and the conceptual framework that explains the linkages between the constructs); and a compelling theme that the story is trying to communicate (what we learned from the research that we did not already know). Daft (1985: 205) does an especially good job of explaining how to use this process when authors are faced with a situation in which they do not have a ready theoretical framework for their study:

> One technique I have found to overcome the lack of theory in a manuscript is for authors to think of each variable in the study as a character in a story. The author's first responsibility is to fully describe the character, and then to explain how and why the characters interact with one another. Storytelling explains the why of the data, and gives meaning to the observed relationships. Storytelling is difficult because we are trained to be rigorous and precise, and to stick to the data in a literal fashion. Storytelling requires conjecture and going beyond the data; it is the opportunity to fill in the blanks between variables. The story provides a larger framework within which each variable has a logical place. The explanations give us insight into organizational processes. The story explains the "why" of relationships in organizational terms. The why is important, and researchers should be creative and ruthless in pursuit of it to solve the theory problem. . . The why, not the data, is the contribution to knowledge.

Similar points regarding the importance of developing a good story have been provided by Ragins (2012). Her summary of the advice she received from *AMR* reviewers indicates the importance of (a) setting the hook (identifying the value-added contribution of the paper) early in the writing process; (b) creating coherence and cohesion in the storyline; and (c) eliminating any material that distracts the reader from the focal points of the article.

Beyond the quality of the story that is told, it is also important to make sure that all the ideas expressed in the article are organized, flow smoothly and logically from each other, and that the article does not contain grammatical, spelling, or punctuation errors. Although this last point may seem trivial, our experiences suggest that articles that contain these types of errors tend to raise other questions by reviewers and editors about the quality of the research being reported there. Thus, we encourage young scholars to not only focus on the story they are trying to tell in their paper, but also to devote attention to detail when finalizing their submissions for publication.

IMPLICATIONS FOR EARLY CAREER SCHOLARS INTERESTED IN ADVANCING THE SCHOLARSHIP OF TEACHING AND LEARNING (SOTL)

Up to this point, we have focused our attention on the implications of our findings for early career scholars interested in publishing high-impact articles in traditional management disciplines. However, we believe that our findings also have implications for scholars interested in advancing the scholarship of teaching and learning (SOTL). Before describing these implications, we explore several factors that may limit the ability of SOTL scholars to publish highly cited articles. The first of these factors is that the focus on the scholarship of teaching and learning is a relatively recent phenomenon; because it typically takes several decades for articles to receive 1,000 citations, it is possible that the discipline is not yet mature enough to have produced an abundance of HIAs.[4] Related to this, it is worth noting that the discipline has not yet developed a significant number of specialized SOTL journals. Thus, in comparison to researchers who focus on more traditional management disciplines, SOTL scholars have fewer publication outlets, and therefore, do not have as many opportunities to have their research cited.

[4] Indeed, only one article in the SOTL domain (Ghoshal, 2005) had received at least 1,000 citations in the *Web of Science* at the time of our search.

However, aside from the lack opportunities, the findings of our research suggest that there might be other reasons why there are not many highly cited SOTL articles. For example, according to Tight (2004), one reason why SOTL articles are not cited very highly is that they do not tend to be grounded strongly in theory. This is problematic, given the important roles that theory building and testing play in the citations received by HIAs. In addition, Healy (2000) and Wankat, Felder, Smith, and Oreovicz (2002) have observed that SOTL publications lack rigor and are often plagued with methodological weaknesses, and Richlin (2001) noted that many social science researchers who otherwise publish methodologically rigorous studies tend to lessen these standards when publishing SOTL research. The final factor that may be limiting SOTL scholars' ability to publish highly cited articles is described by Matthews, Lodge, and Bosanquet (2014). These authors demonstrate that when evaluating the types of activities likely to contribute to their success, early career academics perceive research to be much more valuable than teaching. Therefore, research on teaching and education may receive less attention from other management scholars.

Given this background, we have three recommendations for early career academics interested in publishing SOTL research. The first is to conduct and publish studies that are grounded in theory and are methodologically rigorous. Using this approach should not only increase the probability of getting SOTL articles published, but it may also have the positive collateral effect of elevating academic institutions' perceptions of SOTL research. Because our findings suggest that researchers increase the likelihood they will be highly-cited when they publish studies that appeal to a broad audience, our second recommendation is for SOTL scholars to embrace the study of teaching and learning processes in their widest possible meaning. In this manner, they will be able to develop articles whose implications are broadly applicable across multiple management disciplines. Support for this recommendation can be seen from the most highly cited papers in *AMLE*. For example, Ghoshal's (2005) article is not strictly focused on SOTL, but also has implications for ethics and leadership development. In addition, his article also provides a critique of agency theory, a mainstream management theory which is widely applicable to a number of different disciplines. Other relevant examples include Kolb and Kolb's (2005) implications for experiential learning and cognitive psychology, and Pfeffer and Fong's (2002) implications for the career success literature. Finally, we encourage early-career scholars who enjoy teaching to consider participating in the scholarship of teaching and learning by working on the development of their teaching skills, writing about what they do in the classroom, and submitting this material to *AMLE*. This is consistent with several scholars (Ashford, 2013; Daft, 1984; Ghoshal, 2006), who have found that researchers who are passionate about their work are more likely to have a bigger impact on the field.

LIMITATIONS

As is true of all studies, there are some limitations to ours that should be recognized. First, our article uses citations as the criterion variable, and it is important to note that in addition to the factors we have identified in our paper, other factors also determine which articles are published and ultimately cited in the literature. Among the most important of these factors are the editorial practices and policies that exist in the field. For example, Morgan (1985: 63) has noted that although the review processes used by management journals are devised to ensure that all manuscripts are dealt with in a fair and just manner, the reality of academic publishing is often seen, "as dominated by the 'interests' and subjective decisions of editors and reviewers who are involved in an elaborate and sometimes unconscious game of control conducted under the guise of objectivity." He goes on to say that one of the reasons for this situation is that the editorial practices in these journals tend to favor a positivistic paradigm which looks down on articles that use qualitative methods. To remedy this problem, Morgan recommends that journals move away from a position in which they view their primary function as that of a quality control mechanism designed to regulate the speed and direction of developments in the field, to a position where they promote open inquiry, dialogue, and debate. We agree with Morgan on this point. In addition, we agree with several other scholars (Antonakis et al., 2014; Bergh et al., 2006; Gephart, 2004), who think that qualitative studies are underrepresented and under-cited in our journals. Of course, the fact that several of the most highly cited methods articles in our HIA sample focus on the advantages of using qualitative research to triangulate findings (Jick, 1979) and to develop theory (Eisenhardt, 1989a, Eisenhardt & Graebner, 2007; Langley, 1999) is a promising sign. Nevertheless, we believe that it will take some time for qualitative methods to gain the

same level of acceptance in the field as quantitative methods. Therefore, in the interim, we encourage those PhD students who are interested in using qualitative methods in their research to examine the recommendations provided by Gephart (2004) and Antonakis et al. (2014) as to how they might get reviewers to view their work more positively.

Another related concern about our use of citations as a measure of scholarly impact is that they do not do a very good job of capturing the value of an academic article to practitioners (Aguinis, Suarez-González, Lannelongue, & Joo, 2012; Aguinis, Shapiro, Antonacopoulou, & Cummings, 2014), or to society in general (Bornmann, 2014; Bornmann & Marx, 2014; Samuel & Derrick, 2015). These concerns have led to a number of proposals about how to improve the measurement of scholarly impact by broadening it through the use of altmetrics (Aguinis et al., 2014; Bornmann, 2013; Bornmann & Marx, 2014) and other related types of measures. Although we agree that these are important developments and that additional measures designed to assess the impact of articles on stakeholders outside the field of management may be worthwhile, it is important to note that the use of these new measures is in its infancy, and that there are many issues that still need to be resolved (Bornmann, 2014; Cheung, 2013). Moreover, we do not believe that developing these additional measures negates the importance of citations for determining an article's impact on the scientific community at large—which will remain an important stakeholder for management scholars in the future.

Related to the above issue, several authors (Adler & Harzing, 2009; Bartunek, 2014) have argued that the use of citations as a way of ranking articles or business schools is flawed because they tend to focus only on journal articles, in particular journals, published in particular (English-language) countries, and not on the quality of the articles themselves. Although we agree that citations do have some limitations, we also believe that articles included in our highly cited sample are unlikely to have achieved this status without significantly contributing to the corpus of management knowledge.

Finally, given the fact that reviewing articles is a subjective process, it is impossible to ignore the role that luck plays in determining which articles get accepted for publication and are subsequently cited. Indeed, given the amount of dissensus among reviewers that has been reported in the literature (e.g., Bowen, Perloff, & Jacoby, 1972; Cicchetti, 1980; Fiske & Fogg, 1990; Gilliland & Cortina, 1997; Glick, Miller, & Cardinal, 2007; Gottfredson, 1978; Scott, 1974; Starbuck, 2003), it is not difficult to see how some early-career scholars might conclude that getting published in top-tier journals is, to some extent, based on the "luck of the draw." However, there are several observations worth noting with respect to the data. First, as Campbell (1982) has noted, it is somewhat misguided to focus on the amount of dissensus among reviewers, because they are acting as consultants and advisors to the editors, and they are not the ultimate decision makers regarding whether an article is accepted for publication. Second, there are potentially good reasons for the low consensus often reported in the literature, since "reviewers are seldom, if ever, chosen to represent parallel measures. In fact, they are usually chosen to be deliberately nonparallel, as when one reviewer has substantive expertise and another has methodological expertise. As a result, they focus on different things and may give very different evaluations. The important point is that there is no way a correlation between raters can be regarded as a reliability coefficient. The situation is deliberately set up to yield low correlations." (Campbell, 1982: 695). Therefore, we encourage PhD students and early-career scholars to focus on those outcomes that they can control, such as the factors we have identified in our study, rather than on things that they can't control (such as luck).

"Although we believe that changes will obviously occur, we doubt that developing good ideas that advance the field, focusing on theory-building and -testing, or learning how to write more effectively, will diminish in importance, regardless of whether we look at high-impact articles in the past, or the future."

Beyond the potential problems with the use of citations as measures of scholarly impact are two other limitations of our findings. The first one is that because it takes several years to acquire 1,000 or more citations, our data are right-censored. Thus, we are not able to include all of the articles in our sample that will ultimately become high-impact articles. The second, related limitation is that we are using the past as a guide to the future. These limitations are important, as it is possible that some factors we found to be predictors of article impact in our study may change in the future. Although we believe that changes will obviously occur, we doubt that developing good ideas that advance the field, focusing

on theory-building and -testing, or learning how to write more effectively, will diminish in importance, regardless of whether we look at high-impact articles in the past, or the future.

Finally, it is important to note that the recommendations we have made here have focused on the actions that faculty advisors and mentors can take to increase the probability of their PhD students writing high-impact articles. However, we do not mean to suggest that research is the only dimension on which these students will be evaluated in the early part of their careers. For example, Boyer (1990) has noted that in addition to the scholarships of discovery, application, and integration, which are represented by some of the high-impact articles in our study, teaching also is an important activity that is at the very heart of scholarly endeavors. A similar point has been made by Mitchell (2007), who has noted that new PhDs are facing a changing landscape in which business schools will be held accountable for their educational outcomes, and that this accountability will make it more difficult for these students to be successful by focusing solely on research. We agree with these assessments. Therefore, although the important role that teaching has on the academic success of early-career scholars is not the focus of our paper, we think it wise of PhD students to read Boyer's (1990) and Mitchell's (2007) offerings to get a better understanding of the expectations that they will face in their careers.

CONCLUSION

Notwithstanding the limitations noted above, the results of our research suggest that PhD students can play long-ball and swing for the fences by publishing high-impact articles, and they are not required to play small-ball by focusing on the publication of studies that move the field incrementally forward. However, we do not want to be misinterpreted as saying that writing a high-impact article is (or should be) the goal of PhD students, or any scholar in the field, for that matter. After all, our data suggest that such articles have an extremely low base rate. Thus, even though we believe that the number of articles that receive 1,000 or more citations is likely to increase because of online databases, we also believe that it is unrealistic to assume that the percentage of researchers who write such articles will ever be very substantial. However, that is not really our point. Rather, it is that striving to do good, high-quality research will enhance one's chances of getting published, and that such research will also be a benefit the field.

"[T]he results of our research suggest that PhD students can play long-ball and swing for the fences by publishing high-impact articles, and they are not required to play small-ball by focusing on the publication of studies that move the field incrementally forward."

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