What might get published in management and applied psychology? Experimentally manipulating implicit expectations of reviewers regarding hedges

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ABSTRACT

Researchers' careers depend on publishing papers. There are explicit expectations (e.g., paper structure) that affect editors' and reviewers' perceptions of manuscripts and therefore chances of publishing papers that can be easily conveyed in written feedback. However, previous research uncovered that some expectations could be rather implicit, thus reviewers and editors might not be aware that those may affect their perceptions of manuscripts. Specifically, the use of hedges (i.e., words that create vagueness; e.g., "the results show" vs. "the results *might* show") seems to be expected by editors and reviewers of high impact management and applied psychology journals. However, previous work did not investigate causality of hedges on publishing recommendations. The current experiment introduced reviewers ($N = 96$) from top-tier journals from psychology and management with one of two versions of an introduction differing in the use of hedges. Results provide first evidence that authors' use of hedges impacts reviewers' recommendation for publication and suggest that this expectation is rather implicit. Moreover, the findings call for research on implicit expectations in the publishing process, may have important consequences for reviewers' and editors' awareness of this topic, and raise attention in novice and international researchers to subtle aspects of language that might influence chances of publishing.

Keywords: publishing process, hedging, implicit expectations, academic writing, meta-research

Word count: 11651

Article Highlights

- The use of hedging words (e.g., *might*) affected US editors' and reviewers' recommendation to publish an article
- Research socialization may lead to implicit expectations about the use of certain wording
- Implicit expectations can lead to barriers for novice and/or international scholars regarding publishing

Introduction

Researchers' careers depend on the evaluation of their scientific track record (Smeyers & Burbules, 2011). Typically, the track record is operationalized by the number of researchers' publications in high impact journals. This focus on publications in order to build one's reputation has resulted in the famous phrase "publish or perish", meaning that researchers increasingly try to get their work published in one of the most prestigious journals in order to secure a tenured position in academia (Tourish, 2011; Tsui, 2007; Walsh, 2015). As researchers produce more output than there is space in the top journals, there is fierce competition to publish. Hence, journal acceptance rates of below 10% are fairly common (APA, 2018; Baruch, 2001).

The gatekeepers of journals are editors and reviewers which, for top-tier journals in management and applied psychology, are predominantly from the US (Bajwa, König, & Harrison, 2016; Burgess & Shaw, 2010; Murphy & Zhu, 2012; Ozbilgin, 2004). Their explicit and implicit expectations affect which papers will be published. Explicit expectations are expectations regarding scientific articles that reviewers and editors can (and do) communicate to prospective authors (cf. Bajwa et al., 2016). For instance, guidelines for authors include a variety of explicit expectations regarding structure of manuscripts or regarding word limits. Implicit expectations refer to expectations regarding scientific articles that cannot be readily communicated because editors and reviewers are not aware that these expectations affect their evaluation of scientific articles (cf. Bajwa et al., 2016). For example, this could be the use of specific words.

Low acceptance rates, and a large variety of explicit as well as implicit expectations of what an academic paper looks like make it especially difficult for young researchers to achieve a publication in a high impact journal, as they are often not very "canny" in respect to academic writing (George, 2015). Similarly, this also seems to apply to researchers from outside of the US

who are underrepresented in high impact journals (Baruch, 2001; Cheek, 2017; Podsakoff, MacKenzie, Podsakoff, & Bachrach, 2008) because they may not be accustomed to the expectations of American reviewers regarding academic writing (e.g., George, 2012). Additionally, researchers whose mother tongue is other than English – the language of science – might also need assistance to meet the explicit and implicit expectations regarding scientific papers (Canagarajah, 2002; Flowerdew, 2000; Horn, 2017; Pudelko & Tenzer, in press).

In order to be open for new perspectives from young and/or international researchers, editors and reviewers have realized that it is necessary to be more transparent in respect to the expectations of a submitted manuscript so that prospective authors can adhere to standards that have been set (e.g., Eden & Rynes, 2003). Already in the beginning of this decade, the Academy of Management Journal (AMJ) as one of the top-tier journals in management published an editorial series providing readers with suggestions how to meet the standards of editors and reviewers (e.g., Colquitt & George, 2011; Sparrowe & Mayer, 2011). This editorial series presented the expectations and recommendations of experienced researchers in order to enhance chances of publishing. However, these recommendations were mostly experience-based and they likely do not capture implicit expectations that neither editors, nor reviewers or successful authors themselves are aware of.

It is only recently that there has been a more evidence-based approach towards expectations of reviewers and editors. Bajwa, König and Harrison (2016) investigated international researchers' use of one of the most researched concepts of applied linguistics: hedges, that are words that make statements vague and fuzzy (Hyland, 1998a). For instance, when discussing findings in a research article, researchers can write "The findings of the current study show…" but they can also include a hedging word (i.e., might) and write "The findings of the current study *might* show…". The hedged version of this part of the sentence makes the

subsequent statement regarding the findings more cautious. Bajwa and colleagues (2016) found significant differences in the usage of hedges, with US management researchers using more hedges than researchers from outside the US (e.g., Europe and India). Although these findings provided a first insight into the relevance of hedges in scientific articles, the study by Bajwa and colleagues only captured the usage of hedges in already published papers. While this made it possible to conclude that US researchers in management and applied psychology use more hedges and that this could be a reason for the lower visibility of non-US researchers in high-impact journals (Podsakoff et al., 2008), it was not possible for them to reveal how editors and reviewers actually perceive papers with more or less hedges.

The current paper therefore aims at getting a more direct grasp at the implicit expectations in respect to hedges by experimentally manipulating the number of hedges in an introduction to a scientific paper. Journal reviewers, members of editorial boards, and editors of top-tier management and applied psychology journals (e.g., AMJ) were randomly presented with an introduction on a hot topic either without the use of hedges or with hedges. Afterwards, they were asked for their perception of this introduction and instructed to give a recommendation for publication. This allowed us to analyse whether reviewers' recommendation for publication of an article based on this introduction depends on the use of hedges.

Theoretical background

Expectations regarding scientific articles

In applied psychology and management research, there is a limited number of undoubtedly top-tier journals which are relevant for most researchers. For instance, the Academy of Management Journal and the Journal of Applied Psychology (JAP) are widely recognized; most researchers follow the publications in these journals; and they rank the highest concerning the impact factor within research on management and applied psychology (Aguinis et al., 2017;

Judge, Cable, Colbert, & Rynes, 2007; Podsakoff et al., 2008). Therefore, most management and applied psychology researchers would probably agree that they would be happy if their work was published in one of these journals. Accordingly, many researchers approach this goal by submitting their work to these journals (Canagarajah, 2002; Judge et al., 2007; Monatersky, 2005).

It may be no surprise that a high number of submissions to top-tier journals contributes to a high workload for editors and reviewers – a fact that is not limited to management and applied psychology journals (Wood, 2016). It seems therefore plausible that editors and reviewers across disciplines expect manuscripts to fulfill their basic expectations in order to save them valuable time and give them the capacity to fully concentrate on the aspects that matter the most (e.g., the scientific contribution of the article) (Rynes et al., 2005). For instance, these can be explicit structural expectations in a way that certain pieces of articles are in the places where readers would expect them to be (e.g., description of study methods in the methods section). Not meeting these expectations can lead reviewers and editors to quickly reject a manuscript (e.g., George, 2012). However, editors and reviewers have realized and acknowledged that it might not provide justice to researchers' work if their manuscripts are dismissed solely on the basis of structural expectations, and thereby ignoring the actual value of their research (Eden & Rynes, 2003; George, 2012). Yet, reviewers and editors still balance their decision about manuscripts on the basis of their structural expectations, as well as authors' writing style, and originality of the research question (Colquitt & George, 2011; Hyland & Salager-Meyer, 2008). Therefore, such expectations affect young researchers' chances to start or engage in research debates because they are still learning how to conduct rigorous research and present it on paper (Huff, 1999). Similarly, prior research has found that researchers from outside of the US are underrepresented in top journals which might be caused by struggling to understand reviewers and editors

expectations (Bajwa et al., 2016; George, 2012). However, internationalization and diversification of academic journals seems to be an important goal to further the internationalization of research, which in turn would help working towards knowledge that generalizes across borders (Leung, 2009).

Hence, it makes sense to gain more insights into the first and crucial barrier for gaining visibility in high impact journals: the review process (Ahlstrom, Bruton, & Zhao, 2013). Editors' and reviewers' (and likely readers') expectations regarding manuscripts are potentially influenced by research socialization processes. Over the years, several researchers have pointed out that most top-tier journals' editorial boards predominantly consist of US scholars (Bajwa et al., 2016; Burgess & Shaw, 2010; Murphy & Zhu, 2012; Ozbilgin, 2004). Consequently, reviewers and editorial board members were socialized in the American academic system possibly shaping and streamlining their expectations for academic papers. In other words, less nationally diverse compositions of editorial and review boards might have more similar expectations which consequently affect expectations regarding submitted manuscripts (Martinko, Campbell, & Douglas, 2000; Ozbilgin, 2004).

Most journals try to communicate their expectations to authors transparently. Whereas it is comparatively easy for editors and reviewers to share their very basic and explicit expectations with prospective author (e.g., in the guidelines for authors) (Ahlstrom et al., 2013), it is by definition much more difficult to understand and communicate expectations that reviewers and editors are not aware of (i.e., implicit expectations; e.g., Hyland, 1998b).

One attempt to tackle this shortcoming was an editorial series in AMJ from 2011-2012 where successful researchers have tried to give insights into their expectations by using best-practice examples and providing experienced-based advice on topics such as choosing an interesting topic (Colquitt & George, 2011), aligning research designs and research questions

(Bono & McNamara, 2011), writing an introduction (Grant & Pollock, 2011), and writing the methods and discussion section (Geletkanycz & Tepper, 2012; Zhang & Shaw, 2012).

However, there are other aspects of academic writing that editors or reviewers are not able to point out in guidelines, reviews to authors, or in attempts to pass on their experience with publishing processes and academic writing (such as the editorial series of the AMJ). Moreover, successful researchers seem to be willing to share their experience with other authors in great detail but they could still not be able to point the finger to success factors regarding publishing that they implicitly learned either through socialization or their profound experience with submission and review processes (Bajwa et al., 2016).

An example for this kind of implicit learning from socialization and experience appears to be outlined by Huff (1999) who cited a fellow colleague who described research conversations as a form of intellectual café that researchers frequently visit and thus are aware of the "conversational flows" that occur there. This means that, depending on the group of people that researchers frequently talk to, certain conversational rules are established and violating them might increase the likelihood of experiencing reactance (Hyland & Tse, 2004). Yet the fellow colleague of Huff was not able to explicitly state what constitutes the rules within such "conversational flows" in research.

Evidence-based analysis of implicit expectations

In the case of scientific publishing, editors and reviewers of high impact journals need to have a better, more evidence-based, understanding of their implicit expectations of conversational rules that could influence their decisions to accept or reject manuscripts (cf. Kwan, 2013). Furthermore, authors who wish to publish their research in high impact journals could benefit from research on implicit expectations in the publishing process. If research reveals implicit expectations, editors and reviewers might become aware of these expectations and try to adapt

their attitudes towards language specific factors (comparable to changing attitudes towards error-free English writing; see McKinley & Rose, 2018). With growing evidence and further insights into implicit expectations, it could also become feasible to communicate implicit expectations explicitly (transforming them into explicit expectations). This way the peer-review barrier could become more transparent and the chances of publishing in top-tier journals could become more equally distributed (Baruch, 2001; Cheek, 2017; Podsakoff et al., 2008).

Bajwa et al. (2016) took one of the first steps into the direction of evidence-based investigation of implicit expectations in research. They incorporated knowledge from applied linguistics in order to get a better grasp of reviewers' and editors' implicit expectations. Research from applied linguistics showed that the linguistic concept of hedges (i.e., expressions that make statements vague; Hyland, 1998a) is most important within academic writing as researchers commonly use hedges to make their statements less definitive. Bajwa et al. (2016) analyzed nearly 2000 papers from US, European, and Indian management and applied psychology journals and found that the frequency with which researchers use these words differ across countries: US researchers used more hedges than their European and Indian colleagues. They deduced from this finding that expectations regarding the proper usage of hedges in manuscripts distinguish across countries and that this might be one of the reasons for the lower visibility of international researchers (Baruch, 2001) in top journals which are predominantly based in the US and led by American researchers (Murphy & Zhu, 2012; Podsakoff et al., 2008).

Despite the importance of the Bajwa et al. (2016) study, there was one important limitation: Their analysis was based on archival data. Therefore, they only indirectly assessed reviewers' expectations because they assumed that characteristics of published papers can be interpreted as revealing implicit expectations after the publication process. However, in order to truly examine whether reviewers implicitly expect authors to use hedges and if this impacts the

likelihood of acceptance, it is necessary to apply a research design that can get a direct grasp at these expectations during the review process. Therefore, the current study experimentally manipulated the number of hedges in an introduction to a scientific paper as introductions are one of the most influential parts of scientific articles (Grant & Pollock, 2011; Swales & Najjar, 1987). This design allows to investigate if the use of hedges affects reviewers' evaluation of the introduction and to check if reviewers are aware of the fact that it was the use of hedges that affected their evaluation of the introduction. If the use of hedges affects the evaluation positively and if reviewers are not able to point the finger to the fact that more cautious language within an article affected their decision, this will provide evidence for hedging as an implicit expectation within publication processes.

Note, that the use of hedges may be expected throughout the entire manuscript, however there might be parts of articles where cautious language could be expected to an even higher extent. Specifically, the methods and results sections usually describe what has been done during a research project (Zhang & Shaw, 2012). This focus on the past should also allow more definitive statements and descriptions of facts which contradicts the use of hedges (Hyland, 1998a). In contrast, in the discussion section authors interpret their findings and speculate about implications of their research for the future (Geletkanycz & Tepper, 2012). In the theoretical background, authors try to integrate sometimes inconsistent findings from other authors or build their argument to test theories. Finally, in the introduction to a scientific article, authors may not want to promise too much in order to not disappoint readers. At the same time, authors might only want to tentatively criticize previous research, so prospective reviewers who could be the authors of the respective articles would not be offended. These goals may indicate the importance

of hedges in introductions and constitute the first reason why we decided to focus on hedges in introductions.[1]

The second reason is that introductions are one of the most important parts of scientific papers. If reviewers' implicit expectations regarding hedges are already violated in the introduction, this could be especially impactful regarding the overall evaluation of the paper as introductions shape the first impression of a manuscript, lay ground for the general idea of a paper, and determine whether readers decide that it is worth to continue reading a paper – some of the causes why successful researchers invest a lot of time writing the introduction (Grant & Pollock, 2011). There are even detailed information on the aims of a good instruction and how to write one. For instance, Grant and Pollock (2011) explain that a successful introduction answers three basic sets of questions. First, it should inform readers about why the article contributes to research and practice. Second, it should outline previous knowledge on the respective topic and where there are still knowledge gaps. Finally, Grant and Pollock (2011) recommend that the respective authors should explain how they will fill this gap and what readers will learn from their study.

Up to this point we highlighted that many researchers try to publish in very few high impact journals. Reviewers and editors have explicit but also implicit expectations for academic articles that should be met in order to increase the likelihood of being published. However, young and/or international researchers might find it hard to meet implicit expectations (cf. Huff, 1999), that are by definition not formalized in the guidelines to authors or clearly reflected in suggestions by successful authors. Therefore, thorough research could help to uncover these

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[1]Bajwa et al. (2016) as the main inspiration of the current study used 21.1 hedges per 1000 words in the introduction, 25.3 in the theoretical background, 18.8 in the Methods, 16.8 in the Results and 32.9 in the Discussion section.

implicit expectations to provide scholars with insights into their decision-making processes. As a surplus, research like this may contribute to making the scholarly system even more aware (above and beyond e.g., Bajwa & König, 2019; Baruch, 2001; Podsakoff et al., 2008) of potential issues of being dominated by the American system. If there are implicit expectations elicited by an American socialization, this could add to the barriers for international scholars to publish in top-tier journals.

The current article therefore used an experimental design where we asked reviewers, members of the editorial boards, and editors of high impact journals to rate an introduction and manipulate the frequency of hedges in an introduction of a paper. In the end, they provided an initial assessment on the likelihood of their recommendation for publication. If hedges constitute an implicit expectation of the stakeholders within publication processes, it is to be expected that there should be significant differences in the recommendation for publication. Thus, we hypothesize:

> Hypothesis: An introduction with hedges is likelier to get a recommendation for publication than an introduction without hedges.

Method

Procedure

First, using a recent conference program of the conference of the Society for Industrial and Organizational Psychology (SIOP), we identified current hot topics in the field of applied psychology. We selected a contribution by Roberts, Walzer, and Sinnett (2015) as the basis for a supposedly new study. This study focused on the use of Big Data in companies in order to assess personality. Next, we wrote an introduction for this supposedly new study that should contribute to the research on Big Data in the context of applied psychology/management. After writing the introduction, we asked experts in the field of personality at the workplace for a friendly review

and used their feedback to improve the language and arguments of the introduction in order to enhance the relevance of the study. During this process, we took care to adhere to conventions of writing an introduction (Grant & Pollock, 2011; Swales, 2004).

After getting content-related feedback on the introduction, we created a hedged and a non-hedged version of the introduction (see Table 1). Except for the use of hedges, the two versions of the introduction were parallel. The non-hedged version consisted of 503 words. In order to develop the hedged version of the introduction, we replaced certain phrases through a hedged version. For instance, "research *has found* a new way of assessing job-relevant traits" was adapted to "research *has attempted to find* a new way of assessing job-relevant traits". This way we replaced 17 phrases through their hedged counterparts which led to a total word count of 527 words in the hedged version of the introduction. Following the classification of Hyland (1998) who described the different forms of hedges, the hedged version included six modals (e.g., *might, could, may*), four lexical verbs (e.g., *attempt, seem, seek*), six adverbs (e.g., *generally, essentially, likely*), and one adjective (*possible*) as hedges.

We further developed an online survey where we tried to carefully recreate the usual review processes in academic journals. This means that after being informed that the survey is part of a scientific study and after giving their informed consent regarding participation, participants were instructed to carefully read the scientific introduction. They were also told that they will be asked about their judgment regarding the introduction afterwards. Then, participants were randomly presented with either the hedged or non-hedged version of the introduction. After they read the introduction, it was again displayed on the left side of the screen, whereas on the right side of the screen participants were presented with the questions regarding the introduction. As a first step of evaluation, participants responded to questions that should inspire them to reflect upon the quality of the introduction. Therefore, participants' received items based on a

published checklists for reviewers regarding the quality of a paper (Sullivan, Baruch, & Schepmyer, 2010). This was done in order to simulate writing a detailed review before deciding for an overall recommendation for publication of an academic article. Following, participants proceeded to the next page of the online survey and provided their overall recommendation for publication as they would during a real review process. Then, participants responded to manipulation check items intended to capture if participants perceived the hedging of the introduction (i.e., perceived that the introduction was written more tentatively and providing more scope for interpretation; Hyland, 1998a). Afterwards, participants responded to questions regarding their prior knowledge on the topic of the introduction and to demographic questions (e.g., age, when participants received their PhD, if they are in editorial boards of academic journals). In the end, participants were debriefed about the goals of this study.

Sample

We used G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) to get an idea about the required sample size. As there was no research informing us about potential effect sizes, we assumed a moderate effect size of $d = 0.5$. For a power of $1-\beta = .80$ in an independent t-test an N of 102 participants would be necessary. A central aspect for this study was to ensure that actual editors and reviewers participate. Using the Journal Citation Report (Thomson Reuters, 2014) we chose the four journals with the highest impact from the fields of “Management” and “Applied Psychology” that cover a diverse number of topics, resulting in the selection of “Academy of Management Review“ (AMR), “Journal of Management“ (JOM), “Academy of Management Journal“ (AMJ) and ”Journal of Applied Psychology“ (JAP). As Bajwa et al. (2016) hypothesized, the usage of hedges might be related to research socialization. Since most of the high impact journals in the field of management are based in the US, and since articles in these journals are predominantly from researchers from the US who might have learned implicit

expectations regarding articles through socialization in the American academic system, we only wanted US-based reviewers to participate. Additionally, reviewers having English as their mother tongue might pay more attention (aware and unaware) to language specific characteristics of manuscripts. For this purpose, we went through the annually published ad-hoc reviewer lists in the most recent issues of these journals, searched for the CVs and email addresses of the reviewers and selected those who were currently working in the US. This resulted in a total pool of 914 reviewers (213 JAP, 381 AMJ, 132 JOM, and 188 AMR reviewers). We contacted those reviewers through email providing a link to the online survey. In total, $N = 114$ people responded to the survey.

In order to ensure that reviewers read the presented introduction carefully, we wanted participants to read for comprehension rather than skimming through the text. Therefore, we measured the time participants stayed on the page where they were instructed to read the introduction. This way we approximated participants reading speed whilst reading the introduction. According to findings from research on reading speed, 350 words per minute (Jodai, 2011; Nation, 2009) seems to be the limit for highly skilled readers to get the content of a text (Carver, 1992). When participants clicked the "continue" button to proceed in the online survey earlier than one minute after they got to the page with the introduction, a pop-up window appeared reminding participants that reading the introduction carefully was a crucial part of the study. This was intended as another reminder to read the introduction attentively. However, there were participants who ignored the reminder message and apparently skimmed the introduction. Therefore, we removed all participants from our sample reading faster than 350 words per minute. This resulted in our final sample consisting of 96 participants, out of which 47 (49%) were presented with the non-hedged and 49 (51%) with the hedged version of the introduction. Participants held their PhD for a mean of 18 years ($SD = 10.95$). Of those participants, 55

(57.3%) stated that they were reviewers for AMJ, 21 (21.9%) for JAP, 14 (14.6%) for the JOM, and 6 for AMR (6.3%). Furthermore, 69 participants (72%) were in editorial boards of academic journals for a mean of 11 years, and of these editorial board members 20 were editors of academic journals.

The groups neither differed significantly regarding their level of previous knowledge on the topics of Big Data ("How much do you know about research on Big Data?", answered on a scale from *1 = little knowledge* to *5 = vast knowledge*, $M_{\text{without hedges}} = 2.49$, $SD_{\text{without hedges}} = 1.04$, $M_{\text{with hedges}} = 2.40$, $SD_{\text{with hedges}} = 0.99$, $p = .69$), nor regarding their level of previous knowledge on conscientiousness ("How much do you know about the topic Conscientiousness in regard to job performance?", $M_{\text{without hedges}} = 2.98$, $SD_{\text{without hedges}} = 1.34$, $M_{\text{with hedges}} = 2.68$, $SD_{\text{with hedges}} = 1.29$, $p = .28$), nor regarding their level of previous knowledge on the combination ("How much do you know about the usage of Big Data to assess personality?", $M_{\text{without hedges}} = 1.64$, $SD_{\text{without hedges}} = 0.80$, $M_{\text{with hedges}} = 1.55$, $SD_{\text{with hedges}} = 0.72$, $p = .57$). Furthermore, groups did not differ in the amount of experience as reviewers ($M_{\text{without hedges}} = 4.09$, $SD_{\text{without hedges}} = 0.82$, $M_{\text{with hedges}} = 4.28$, $SD_{\text{with hedges}} = 0.83$, $p = .28$).

Measures

Reviewer checklist measures. Using published checklists of high impact journals (Sullivan et al., 2010), we created a questionnaire that assessed 11 categories for the review of the introduction and should have led participants to reflect upon the quality of the introduction before they provide a recommendation for publication as our primary outcome variable. Those were: *writing quality, objective, quality of theoretical arguments, style, organization of paper, conceptual adequacy, originality, interestingness, persuasion, significance und importance*. For each item, participants answered on a scale from 1 to 5, with 1 always indicating the worst evaluation and 5 the best evaluation of the respective item. For instance, rating *writing quality*

with 1 would mean *poorly written* whereas a rating of 5 would indicate *well-written,* for *originality* a rating of 1 would mean *unoriginal* whereas a rating of 5 would mean *highly original.*

Recommendation for publication. Participants were asked for a recommendation for publication of an article related to the respective version of the introduction based on a 5-point rating scale that was taken from Sullivan et al. (2010) and implemented as recommendation categories for reviews: *Clear reject; Doubtful, needs major revision for me to tell; Promising, but needs major revision; Accept with minor revision; Accept as is*.

***Manipulation Check*.** In order to examine whether participants were able to identify the purpose of hedges, we assessed the concept of hedging using its definition (Hyland, 1998a). Based on this definition we developed two items. The first item should capture tentativeness of the introduction asking participants: "How fuzzy are the claims" where they answered on a scale from *1 = not at all fuzzy* to *5 = very fuzzy.* The second item should capture the scope for interpretation asking participants: "How much space is left in the argumentation for your own views?" where they answered on a scale from *1 = little space for own views* to *5 = a lot of space for own views*.

Results

Table 2 shows means, standard deviations, and results of the *t*-tests together with effect sizes and their confidence intervals for the control variables, the manipulation check items, the reviewer checklist items, and the overall recommendation to publish. Table 3 presents the correlations of the study variables. First, we checked whether participants were able to detect hedging or the lack of it (i.e., a manipulation check). Our data showed no significant differences in respect to the items assessing hedging (see Table 2), although the results for tentativeness

approached significance (p = .06, d = -0.40), but, the hedged version of the introduction unexpectedly received lower ratings of tentativeness.

Second, our Hypothesis proposed that an introduction with hedges is likelier to get a recommendation for publication than an introduction without hedges. We therefore analysed whether the hedged version of the introduction received more favourable recommendations for publication in comparison to the unhedged version. Reviewers who read the hedged version of the paper were weakly to moderately more positive about the recommendation for publication compared to the non-hedged version (see Table 2), supporting our Hypothesis.

Additional analyses

Although the reviewer checklist items were only included to increase the realism of the study, we examined whether participants who read the hedged or unhedged version differed in their assessment regarding these items. As Table 2 shows, although no difference reached significance, there were some small effects with effect sizes comparable to the one of recommendation for publication (d = 0.41) for differences in writing quality (d = 0.40) and style (d = 0.39), with participants who received the hedged version showing higher values. These results were non-significant because we analysed them with two-tailed t-tests compared to a one-tailed t-test for recommendation for publication where we clearly specified the direction of the effect in our hypothesis.

Discussion

The aim of this study was to investigate if hedges are expected by US reviewers and comprise an implicit expectation. Using an experimental design, we analysed whether the presence of hedges in an introduction has a positive impact on top-tier journal reviewers' decision for the recommendation for publication. We found evidence for the hypothesis that reviewers favourably consider the presence of hedges in an introduction to a scientific paper. At

the same time, our results suggest that the usage of hedges constitutes a rather implicit expectation of reviewers.

First and foremost, we examined whether experimentally manipulating the number of hedges affected participants' recommendation for publication. As hypothesized, there was an effect across the groups, with the group having been presented the hedged version providing more favourable recommendations for publication. Considering the mean values of recommendation for publication, both versions of the introduction would still need a "major revision", but the use of hedges improved the perception of the participants from rather "doubtful" (i.e., a mean value of 2.48 for the version without hedges) to rather "promising" (i.e., a mean value of 2.82 for the hedged version). This effect may be crucial for real review phases, where receiving reviewer feedback that says "I am doubtful about this article as there are major concerns" versus "this article is promising but there are major concerns" may tip the scale from a rejection or high-risk resubmission to a promising resubmission. Moreover, it has to be emphasized that this effect resulted from a minimal intervention (Prentice & Miller, 1992) as we only manipulated the use of hedges in the two versions of the introduction, changing only seventeen words or phrases. Therefore, our study supports previous results of Bajwa et al. (2016) who used already published papers to (indirectly) assess the expectation of hedges by reviewers but also goes beyond it because the method of the current study tried to mimic an actual review process. Specifically, participants assessed a hedged or a non-hedged introduction and thus the results should directly reflect reviewers' perceptions of the respective introduction as a crucial part of a scientific paper which determines if readers continue reading (Grant & Pollock, 2011). Furthermore, we argued that the hedged version of the introduction better fits reviewers' expectations and influenced their recommendation to publish the paper indifferently of the topic or the general structure of the introduction. More precisely, we chose a hot topic according to

recommendations from successful researchers (e.g., Colquitt & George, 2011), followed best practices to write an introduction (Grant & Pollock, 2011), and only manipulated the use of hedges. This significantly affected the chances that a paper based on this introduction would have been accepted for publication.

Based on the aforementioned finding, it might be possible to conclude that reviewers also recognized that one of the versions used more hedges. It could also have been expected that participants will perceive the hedged version of the introduction as more tentative and providing more scope for interpretation as these are basic intentions behind the usage of hedges (Hyland, 1998a). This could have also been the underlying psychological process through which the use of hedges may affect recommendation for publication. Specifically, it could have been anticipated that reviewers expect a certain scope for interpretation and expect authors to be more tentative with the interpretation of their findings which then again could have affected recommendation for publication. Therefore, we included two manipulation check items where it could be expected that the groups would differ based on the use of hedges in the introduction. The results, however, imply a rather implicit impact of hedges on the recommendation for publication as there were only small and non-significant differences between the conditions regarding tentativeness and scope for interpretation. Even more, especially the results for tentativeness indicate that reviewers seemed to have a slight feeling that the *hedged* version of the introduction was written *less cautiously*. This result is rather surprising because hedging is specifically aimed at making statements more tentatively. In the case of our study, there were 17 phrases and words that differed between the hedged and the non-hedged version of the introduction. Additionally, the introduction was visible in one part of the screen during participants' initial evaluation of the introduction, so participants could always read it again. Still the participants perceived the hedged version of the introduction as less tentative than the non-hedged version. Following this result,

we examined the correlation between perceived tentativeness and recommendation for publication which implied that perceived tentativeness was negatively related to the overall recommendation to publish the paper (r = -.21, p < .05). Interestingly, this result supports common wisdom in the field (Bajwa et al., 2016) and reactions when we presented this work at conferences: A number of researchers' gut instincts seems to ask for decisive statements in articles, implying a rather limited use of hedges. The correlation between perceived tentativeness and the recommendation to publish the paper supports this gut instinct (i.e., less tentative language increases your chances to publish) – but this correlation stands in contrast to the higher recommendation for publication for the hedged version of the manuscript. Specifically, the objectively more tentative version of the introduction (the hedged version) would have had a higher chance to be published.

To conclude, there is reason to believe that participants had a better first impression of the hedged version of the introduction, therefore stated that it was less tentative (even if it was objectively more tentative), and evaluated it as having more potential of being published. This could speak for implicit expectations to use more hedging in scientific articles supporting the findings by Bajwa and colleagues (2016). Our study might also demonstrate that any recommendations by experienced scholars to use decisive language may reflect what they are able to explicitly communicate (i.e., an explicit expectation), and actually believe is true - but what actually seems to be wrong in regard of increasing chances to publish papers. At this point, it is necessary to highlight that it could be true that an excessive usage of hedges is also not preferred, but research in applied linguistics shows that the other extreme, i.e., to use boosters (e.g., words such as *clearly, always*) is even less preferred (Hyland, 2005). Hence, our study contributes to this discussion by supporting the use of at least a certain amount of hedges in manuscripts. Yet, our results can only be a starting point for future research clarifying how the

use of hedges actually affects perceptions of scientific articles. Specifically, the underlying psychological processes of how hedging affected the higher recommendation for publication remain speculative calling for future research on this topic.

It could be argued that another possible explanation for different recommendations to publish between the two versions of the introduction could have been differences regarding the reviewer checklist items which we used to initiate reflection about the introduction in participants. However, the results indicate no significant differences and only small effects. This result may be interpreted in a way that reviewers seem to have evaluated both introductions rather similarly – yet the hedged introduction received higher recommendations to be published. This might be another argument for hedges as an implicit expectation by reviewers. It is important to highlight that there were small non-significant effects for writing quality and style in favour of the hedged introduction, which indicate that hedging not only influenced recommendations to publish but can also affect reviewers' perceptions of the authors' ability to express themselves in an academic paper. Nevertheless, as there were no clear differences between the introductions regarding the manipulation check items, this finding might also indicate that hedging is expected as a way of adequately presenting an academic discourse in a written form.

All things considered, our participants seemed to have held a rather implicit common understanding that hedging should be used in academic writing. Since all our participants were Americans and actual reviewers from top-tier journals in the US, integrating our results with the findings from Bajwa and colleagues (2016) implies that research socialisation in the US seems to train the use of hedges as one important attribute of writing an academic article. The current study is the first one to experimentally show that hedging could in fact be a characteristic that US researchers implicitly expect. This expectation might also partially explain why non-American researchers only constitute a minor part of authors in high-impact journals (Baruch, 2001; Cheek,

2017; Podsakoff et al., 2008). Indeed, Bajwa et al. (2016) showed that researchers who did not enjoy socialization in the American academic system used less hedges than American researchers. Therefore, our findings may have important implications for reviewers and editors of top-tier journals but also for young and/or international researchers who would like to increase their chances of publishing in high-impact journals. Note that we do not want to imply that hedging is more important than strong methodology, impactful findings, or meeting general structural expectations by reviewers and editors. However, our findings show that aside such explicitly explainable expectations, there might exist implicit expectations that affect researchers' chances of publishing papers.

Recommendations for publishing practice

Our results imply that recommendations to publish seem to be affected by the use of certain wording and that reviewers and editors might not realize this influence regarding their evaluation of scientific articles. Therefore, editors' and reviewers' should raise their awareness for implicit language-related expectations that could impact their decision to recommend or reject a manuscript for publications (see also Bajwa et al., 2016). This is especially true as explicit and implicit expectations sometimes seem to diverge (cf., our results that the objectively more tentative introduction received lower ratings of tentativeness but higher recommendations for publication). Such an awareness of editors and reviewers could be especially beneficial for novice and international researchers as their ideas and research might lack visibility in part due to a nonconformity of expectations that neither they nor reviewers are aware of. As a specific recommendation to publishing practice, journals could provide reviewer training that explicitly focuses on differences in research socialization.

At the same time, our results imply that novice and international researchers should realize and raise their attention for such language-related peculiarities in order to improve their

chances to get their work published in high impact journals. Hyland and Milton (1997) have pointed out that the appropriate use of hedges is a skill that can be trained. Therefore, we propose that academic writing courses (ideally not restricted to applied psychology and management) could incorporate topics such as “awareness of socialization dependent expectations of reviewers” and should try to train the appropriate use of hedges. For training the appropriate use of hedges, attendees of respective courses could for instance be instructed to write statements that readers would perceive as cautious (or bold) and examine their own reactions during writing and when presenting the respective statement to other attendees. This way, attendees should realize that scholarly writing includes detailed thinking about how to present statements to readers (cf., Huff, 1999) and that single words can make a significant difference. Note that the appropriate use of hedges probably depends on many different factors. Therefore, we need to highlight that it is not necessary to use hedges whenever making an argument. Instead, authors should consider their certainty about a specific argument. For instance, hedging might be less appropriate if there exists a variety of unequivocal research supporting the argument compared to when there is only scarce and/or methodologically questionable research.

As a pragmatic way to support such teaching efforts as well as other researchers regarding their reflection on their use of hedges, we developed a website where colleagues can get an idea on their own use of hedges in scientific papers (www.ko-mit.com/hedging/index.php). On this website, researchers can copy their work into a text field. The website recognizes hedging in the given section of the paper, highlights the hedging words, and builds on the findings of Bajwa et al. (2016) to set a standard for the mean usage of hedges in published work within top-tier journals in management and applied psychology. Specifically, our online tool compares researchers’ use of hedges within the respective provided section to the mean of the papers from high impact management and applied psychology journals (see Bajwa et al., 2016 for a detailed

description regarding the original papers). The result is a comparison of researchers' own use of hedges per 1000 words compared to the use of hedges per 1000 words within articles of high impact journals. This way, we hope that researchers can reflect on their own use of hedges. For instance, this can inform young and/or international researchers if they use significantly less or more hedges in their manuscripts compared to successful papers from high-impact journals. In any case, this feedback regarding their use of hedges should make researchers aware of the importance of certain wording and about the impact that single words have (versus may have) for statements in academic contexts. However, we need to highlight that this kind of reflection can just be a first step to make researchers' aware of language specific characteristics that may affect their publication success. There is still strong need for more research regarding this topic.

Limitations

There are at least four limitations of this study that readers should be aware of. First and foremost, our participants only read an introduction of a scientific paper, and for a final verdict from reviewers and editors, it is necessary to read the complete manuscript. Furthermore, we already mentioned in the theoretical part that the different parts of a scientific paper may distinguish regarding the appropriateness of the use of hedges. Potentially the number of hedges could have different effects regarding the evaluation of the methods or results section. We restricted our study to the introduction as they are one of the most important parts of articles and to reduce the burden of our participants who might already receive many full papers for review as they were reviewers from top management and applied psychology journals. Even with the use of only an introduction, the response rate of our participants was just about ten percent of our initial pool of around 1000 reviewers (although probably all editors of journals know from experience that reviewers also decline requests to review actual papers). Therefore, the appropriateness of hedging for other parts of a scientific article remains an open question for future research.

Second, the participants of the current study were no experts on the topic of the introduction that they had to read. Usually, reviewers of scientific articles are experts on the respective field of research. It is possible that experts on a given topic have other expectations regarding scientific articles than other researchers.

Third, and closely related to the former issue, our study only provides insights into the reactions to hedges in the relatively novel topic of Big Data. It may be possible that the topic influenced participants' expectations in a way that for this specific, rather new topic, it seemed adequate to use more hedges. For another, more established topic (e.g., impression management, see e.g., Levashina & Campion, 2006), it could be less adequate to apply hedges as there is also a broader basis of knowledge to build upon which might affect arguments and discourses. This calls for more research on hedging for other topics but also research areas other than applied psychology/management. For instance, other research areas such as computer science have a different publication system than psychology and management. Articles are usually briefer, the review process is shorter, and conference papers are the most important way to build the academic track record (Goodrum, McCain, Lawrence, & Lee Giles, 2001). Therefore, reviewers and editors have different explicit expectations for manuscripts (e.g., word limits) and implicit expectations (i.e., use of hedges) potentially also differ. For instance, many researchers in the area of information systems tend to think in proof-of-concepts (Peffers, Tuunanen, Rothenberger, & Chatterjee, 2014). Therefore, they potentially aim to convince readers about the feasibility of a new approach to a certain issue. This goal of convincing readers might afford the use of less hedges (and potentially more boosters). Evidently, this assumption could inspire future research investigating the use of various linguistic concepts across different academic disciplines. Moreover, it could contribute to informing researchers in interdisciplinary research fields who possibly struggle meeting implicit expectations when submitting their work to journals dominated

by other disciplines (e.g., psychologists submitting to journals and conferences dominated by computer scientists or vice versa).

Finally, we neither captured potentially multilingual background of our participants nor if they were integrated into an academic system outside of the US for a longer period of time, nor if they collaborated with colleagues from outside of the US. These characteristics of reviewers possibly affect their implicit expectations regarding academic writing. For instance, if scholars frequently collaborate with colleagues from Europe or India, they are potentially more aware of certain peculiarities regarding academic writing in Europe or India. Yet, future work has to investigate if international socialization affects implicit expectations.

Future Research

The aforementioned assumptions support that the topic of implicit expectations on manuscript style and wording opens several exciting avenues for future research. First of all, the process through which the use of hedges may affect recommendation for publication is still unknown. One possible process could be that hedges reduce the quantity of potential targets for criticism in a scientific article. Whereas reviewers of a scientific article may be more inclined to challenge certain statements presented without hedges (e.g., “our results show that…”), this kind of process could be less triggered when presenting the same statement including hedging words (e.g., “our results might show that…”). Therefore, articles including less hedges eventually evoke more criticism and disagreement in reviewers, thus affecting recommendations for publication (cf., Bajwa et al., 2016; Hyland, 1998b). It is important to note that this is just one possible process of how hedges may influence recommendation for publication and there is a strong need for future research on this topic.

Furthermore, future work could take a closer look at boosters (Hyland, 2005) and their impact on the recommendation for publication in the field of applied psychology and

management, but also different research areas (e.g., computer science). An experimental design similar to the one used in this study potentially provides insight into whether boosters positively or negatively affect reviewers' perceptions. Furthermore, research like this might reveal if boosters have a rather implicit effect on recommendations or if readers detect them more easily as some authors suggest (e.g., Hyland, 2000).

Furthermore, it would also be interesting to examine reactions to hedges in articles across cultures, especially if reviewers and editors' cultural background becomes more diverse (which the field should strive for because it should increase the quality of peer review decisions, see Teplitskiy, Acuna, Elmarani-Raoult, Körding, & Evans, 2018). In addition, although reviewers and editors' expectations are important as the gatekeepers to publishing articles, it may also have important implications if readers from different nations react differently to published articles. For instance, if readers from a European country (who use less hedging than Americans; Bajwa et al., 2016) read an article including a lot of hedges, they might be less convinced by the arguments and implications of this paper simply because they perceive it to be written too cautiously. In the end, this could affect their decision to cite and build their work upon the respective paper.

Conclusion

The aim of top-tier journals in management and applied psychology is to provide researchers around the world with meaningful insights around their topics of interest (Baruch, 2001). However, international diversity in publishing is still a utopia (Bajwa & König, 2019). The current study uncovered implicit expectations from editors and reviewers of high impact journals in management and applied psychology that authors probably need to fulfill in order to enhance their chances of publishing a paper. Therefore, this study is one of the first to highlight the importance of more research regarding the topic of implicit expectations in the publishing process. We hope that this paper stimulates future research in this area, making the publishing

process more transparent and aiding novice and international researchers to publish. In the long term, research like this might help to finally increase international diversity in the research within top-tier journals (Alvesson & Gabriel, 2013).

References

Aguinis, H., Ramani, R. S., Campbell, P. K., Bernal-Turnes, P., Drewry, J. M., & Edgerton, B. T. (2017). Most frequently cited sources, articles, and authors in industrial-organizational psychology textbooks: Implications for the science–practice divide, scholarly impact, and the future of the field. *Industrial and Organizational Psychology, 10*, 507–557. https://doi.org/10.1017/iop.2017.69

Ahlstrom, D., Bruton, G. D., & Zhao, L. (2013). Turning good research into good publications. *Nankai Business Review International, 4*, 92–106. https://doi.org/10.1108/20408741311323317

Alvesson, M., & Gabriel, Y. (2013). Beyond formulaic research: In praise of greater diversity in organizational research and publications. *Academy of Management Learning & Education, 12*, 245–263. https://doi.org/10.5465/amle.2012.0327

APA. (2018). Summary report of journal operations 2017. *American Psychologist, 73*, 683–684. https://doi.org/10.1037/amp0000347

Bajwa, N. ul H., König, C. J., & Harrison, O. (2016). Towards evidence-based writing advice: Using applied linguistics to understand reviewers' expectations. *Academy of Management Learning & Education*, *15*, 419–434. https://doi.org/10.5465/amle.2015.0002

Bajwa, N. ul H., & König, C. J. (2019). How much is research in the top journals of industrial/organizational psychology dominated by authors from the U.S.? *Manuscript Submitted for Publication*.

Baruch, Y. (2001). Global or North American? A geographical based comparative analysis of publications in top management journals. *International Journal of Cross Cultural Management*, *1*, 109–126. https://doi.org/10.1177/147059580111010

Bono, J. E., & McNamara, G. (2011). Publishing in AMJ - Part 2: Research design. *Academy of Management Journal*, *54*, 657–660. https://doi.org/10.5465/AMJ.2011.64869103

Burgess, T. F., & Shaw, N. E. (2010). Editorial board membership of management and business journals: A social network analysis study of the Financial Times 40. *British Journal of Management*, *21*, 627–648. https://doi.org/10.1111/j.1467-8551.2010.00701.x

Canagarajah, A. S. (2002). *Geopolitics and academic writing*. Pittsburgh, PA: University of Pittsburgh Press.

Carver, R. P. (1992). Reading rate: Theory, research, and practical implications. *Journal of Reading*, *36*, 84–95. https://doi.org/10.2307/40016440

Cheek, N. N. (2017). Scholarly merit in a global context: The nation gap in psychological science. *Perspectives on Psychological Science*, *12*, 1133–1137. https://doi.org/10.1177/1745691617708233

Colquitt, J. A., & George, G. (2011). Publishing in AMJ - Part 1: Topic choice. *Academy of Management Journal*, *54*, 432–435. https://doi.org/10.5465/AMJ.2011.61965960

Eden, D., & Rynes, S. (2003). Publishing across borders: Furthering the internationalization of "AMJ." *Academy of Management Journal*, *46*, 679–683. https://doi.org/10.5465/AMJ.2003.11901933

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*, 1149–1160. https://doi.org/10.3758/brm.41.4.1149

Flowerdew, J. (2000). Discourse community, legitimate peripheral participation, and the nonnative-english-speaking scholar. *TESOL Quarterly*, *34*, 127–149. https://doi.org/10.2307/3588099

Geletkanycz, M., & Tepper, B. J. (2012). Publishing in AMJ - Part 6: Discussing the implications. *Academy of Management Journal*, *55*, 256–260. https://doi.org/10.5465/amj.2012.4002

George, G. (2012). Publishing in AMJ for non-U.S. authors. *Academy of Management Journal*, *55*, 1023–1026. https://doi.org/10.5465/amj.2012.4005

George, G. (2015, August). *Publishing in AMJ: Tips from the editors (AOM 2015 PDW Vancouver).* Presentation presented at the 75th Annual Meeting of the Academy of Management, Vancouver, BC. Retrieved from http://aom.org/uploadedFiles/Publications/AMJ/AMJ%20PDW%20GG%202015.pdf

Goodrum, A. A., McCain, K. W., Lawrence, S., & Lee Giles, C. (2001). Scholarly publishing in the Internet age: a citation analysis of computer science literature. *Information Processing & Management*, *37*, 661–675. https://doi.org/10.1016/S0306-4573(00)00047-9

Grant, A. M., & Pollock, T. G. (2011). Publishing in AMJ - Part 3: Setting the hook. *Academy of Management Journal*, *54*, 873–879. https://doi.org/10.5465/amj.2011.4000

Horn, S. A. (2017). Non-English nativeness as stigma in academic settings. *Academy of Management Learning & Education*, *16*, 579–602. https://doi.org/10.5465/amle.2015.0194

Huff, A. S. (1999). *Writing for scholarly publication*. Thousand Oaks, CA: Sage.

Hyland, K. (1998a). *Hedging in scientific research articles*. Amsterdam, The Netherlands: John Benjamins Publishing.

Hyland, K. (1998b). Persuasion and context: The pragmatics of academic metadiscourse. *Journal of Pragmatics*, *30*, 437–455. https://doi.org/10.1016/S0378-2166(98)00009-5

Hyland, K. (2000). Hedges, boosters and lexical invisibility: Noticing modifiers in academic texts. *Language Awareness*, *9*, 179–197. https://doi.org/10.1080/09658410008667145

Hyland, K. (2005). Stance and engagement: a model of interaction in academic discourse. *Discourse Studies, 7,* 173–192. https://doi.org/10.1177/1461445605050365

Hyland, K., & Milton, J. (1997). Qualification and certainty in L1 and L2 students' writing. *Journal of Second Language Writing, 6,* 183–205. https://doi.org/10.1016/S1060-3743(97)90033-3

Hyland, K., & Salager-Meyer, F. (2008). Scientific writing. *Annual Review of Information Science and Technology, 42,* 297–338. https://doi.org/10.1002/aris.2008.1440420114

Hyland, K., & Tse, P. (2004). Metadiscourse in academic writing: A reappraisal. *Applied Linguistics, 25,* 156–177. https://doi.org/10.1093/applin/25.2.156

Jodai, H. (2011). *Reading rate and comprehension*. Retrieved from https://eric.ed.gov/?id=ED523331

Judge, T. A., Cable, D. M., Colbert, A. E., & Rynes, S. L. (2007). What Causes a management article to be cited—Article, author, or journal? *Academy of Management Journal, 50,* 491–506. https://doi.org/10.5465/amj.2007.25525577

Kwan, B. S. C. (2013). Facilitating novice researchers in project publishing during the doctoral years and beyond: A Hong Kong-based study. *Studies in Higher Education, 38,* 207–225. https://doi.org/10.1080/03075079.2011.576755

Leung, K. (2009). Never the twain shall meet? Integrating Chinese and Western management research. *Management and Organization Review, 5,* 121–129. https://doi.org/10.1111/j.1740-8784.2008.00135.x

Levashina, J., & Campion, M. A. (2006). A model of faking likelihood in the employment interview. *International Journal of Selection and Assessment, 14,* 299–316. https://doi.org/10.1111/j.1468-2389.2006.00353.x

Martinko, M. J., Campbell, C. R., & Douglas, S. C. (2000). Bias in the social science publication process: Are there exceptions? *Journal of Social Behavior and Personality*, *15*, 1–18.

McKinley, J., & Rose, H. (2018). Conceptualizations of language errors, standards, norms and nativeness in English for research publication purposes: An analysis of journal submission guidelines. *Journal of Second Language Writing*, *42*, 1–11. https://doi.org/10.1016/j.jslw.2018.07.003

Monatersky, R. (2005). The number that's devouring science. *The Chronicle of Higher Education*, *52*, 12–17.

Murphy, J., & Zhu, J. (2012). Neo-colonialism in the academy? Anglo-American domination in management journals. *Organization*, *19*, 915–927. https://doi.org/10.1177/1350508412453097

Nation, P. (2009). Reading faster. *International Journal of English Studies*, *9*(2). Retrieved from http://revistas.um.es/ijes/article/view/90791

Ozbilgin, M. (2004). "International" human resource management: Academic parochialism in editorial boards of the "top" 22 journals on international human resource management. *Personnel Review*, *33*, 205–221. https://doi.org/10.1108/00434804105180559

Peffers, K., Tuunanen, T., Rothenberger, M. A., & Chatterjee, S. (2014). A design science research methodology for information systems research. *Journal of Management Information Systems*, *24*, 45–77. https://doi.org/10.2753/MIS0742-1222240302

Podsakoff, P. M., MacKenzie, S. B., Podsakoff, N. P., & Bachrach, D. G. (2008). Scholarly influence in the field of management: A bibliometric analysis of the determinants of university and author impact in the management literature in the past quarter century. *Journal of Management*, *34*, 641–720. https://doi.org/10.1177/0149206308319533

Pudelko, M., & Tenzer, H. (in press). Boundaryless careers or career boundaries? The impact of language barriers on academic careers in international business schools. *Academy of Management Learning & Education*. https://doi.org/10.5465/amle.2017.0236

Roberts, S. J., Walzer, A. S., & Sinnett, S. A. (2015). *Best of both worlds: Integrating Big Data into HR research*. Presentation presented at the 30th Annual Conference of the Society for Industrial and Organizational Psychology (SIOP), Philadelphia, PA.

Rynes, S. L., Hillman, A., Ireland, R. D., Kirkman, B., Law, K., Miller, C. C., … Shapiro, D. (2005). Everything you've always wanted to know about AMJ (but may have been afraid to ask). *Academy of Management Journal*, *48*, 732–737. https://doi.org/10.5465/AMJ.2005.28563879

Smeyers, P., & Burbules, N. C. (2011). How to improve your impact factor: Questioning the quantification of academic quality. *Journal of Philosophy of Education*, *45*, 1–17. https://doi.org/10.1111/j.1467-9752.2011.00787.x

Sparrowe, R. T., & Mayer, K. J. (2011). Publishing in AMJ —Part 4: Grounding hypotheses. *Academy of Management Journal*, *54*, 1098–1102. https://doi.org/10.5465/amj.2011.4001

Sullivan, S. E., Baruch, Y., & Schepmyer, H. (2010). The why, what, and how of reviewer education: A human capital approach. *Journal of Management Education*, *34*, 393–429. https://doi.org/10.1177/1052562909346687

Swales, J. (2004). *Research genres: Explorations and applications*. New York, NY: Cambridge University Press.

Swales, J., & Najjar, H. (1987). The writing of research article introductions. *Written Communication*, *4*, 175–191. https://doi.org/10.1177/0741088387004002004

Teplitskiy, M., Acuna, D., Elmarani-Raoult, Körding, K., & Evans, J. (2018). The sociology of scientific validity: How professional networks shape judgement in peer review. *Research Policy*, *47*, 1825–1841. https://doi.org/10.1016/j.respol.2018.06.014

Thomson Reuters. (2014). Journal citation reports. Retrieved September 7, 2015, from http://thomsonreuters.com/journal-citation-reports/

Tourish, D. (2011). Leading questions: Journal rankings, academic freedom and performativity: What is, or should be, the future of Leadership? *Leadership*, *7*, 367–381. https://doi.org/10.1177/1742715011407385

Tsui, A. S. (2007). From homogenization to pluralism: International management research in the academy and beyond. *Academy of Management Journal*, *50*, 1353–1364. https://doi.org/10.2307/20159477

Walsh, J. P. (2015). Organization and management scholarship in and for Africa . . . and the world. *Academy of Management Perspectives*, *29*, 1–6. https://doi.org/10.5465/amp.2015.0019

Wood, D. A. (2016). Comparing the publication process in accounting, economics, finance, management, marketing, psychology, and the natural sciences. *Accounting Horizons*, *30*, 341–361. https://doi.org/10.2308/acch-51443

Zhang, Y. A., & Shaw, J. D. (2012). Publishing in AMJ - Part 5: Crafting the methods and results. *Academy of Management Review*, *37*(2), 8–12.

Table 1

Introductions That Were Presented to Participants

Introduction with *Hedges*	Introduction without *Hedges*
The Five Factor model is the <u>most</u> dominant personality model in all fields of psychology (John, Naumann & Soto, 2008; Tupes & Christal, 1992) and also plays an important role in organizational research and human resource development (Hough, Oswald & Ock, 2015; John & Srivastava, 1999). Of the Big Five traits, Conscientiousness **seems to be** the <u>most</u> important predictor of future behavior, with multiple studies showing that it **might be** the best predictor of job performance (Barrick, Mount & Judge, 2001; Costa, 1992; Gandy, Dye & MacLane, 1994). Two facets of Conscientiousness, "achievement striving" and "self-discipline," have been shown to be even better predictors of job performance than the main factor itself (Piedmont & Weinstein, 1994). To assess the Big Five, <u>generally</u>, the approach has been to use questionnaires (John, Naumann & Soto, 2008). One example of such a questionnaire is the NEO-FFI, which has been widely used in the organizational context (Costa & MacCrae, 1992) and <u>essentially</u> assesses the Big Five traits reliably and quickly (Eagen, Deary & Austin, 2000). Nevertheless, there has been a lot of criticism regarding	The Five Factor model is the dominant personality model in all fields of psychology (John, Naumann & Soto, 2008; Tupes & Christal, 1992) and also plays an important role in organizational research and human resource development (Hough, Oswald & Ock, 2015; John & Srivastava, 1999). Of the Big Five traits, Conscientiousness **is** the important predictor of future behavior, with multiple studies showing that it **is** the best predictor of job performance (Barrick, Mount & Judge, 2001; Costa, 1992; Gandy, Dye & MacLane, 1994). Two facets of Conscientiousness, "achievement striving" and "self-discipline," have been shown to be even better predictors of job performance than the main factor itself (Piedmont & Weinstein, 1994). To assess the Big Five, the approach has been to use questionnaires (John, Naumann & Soto, 2008). One example of such a questionnaire is the NEO-FFI, which has been widely used in the organizational context (Costa & MacCrae, 1992) and assesses the Big Five traits reliably and quickly (Eagen, Deary & Austin, 2000). Nevertheless, there has been a lot of criticism regarding the usage of

the usage of questionnaires to assess personality for organizational purposes such as personnel selection. For example, respondents **might be** able to fake and predict results due to the transparency of scales (e.g., Christiansen, Goffin, Johnson & Rothstein, 1994). This susceptibility to impression management **is likely to be** critical in selection contexts (Miller, 2001) and **may distort** the results of these personality assessments (Furnham, 1997; Hofmann & Kubinger, 2001; Krahe & Hermann, 2003; van Iddekinge, 2002). As a consequence, it **seems to be** necessary to find alternative ways of assessing personality.

Recently, research has **attempted to find** a new way of assessing job-relevant traits by using Big Data. In organizational contexts, Big Data refers to huge quantities of data that **can be** captured automatically and relatively simply by using information technology (IT), such as computer log files, punch clocks or location sensors, in order to link them to information on employees and their workplace behavior. The trend to capture Big Data has steadily increased over the last years, which **might be** due to the collection of data in organizations becoming more and more systemized, enabling researchers to design complex statistical models to achieve a better understanding of work-related issues. Hence, Big Data has emerged as an important tool for industrial-organizational psychologists in terms

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In this study, we <u>seek to</u> analyze how to assess the personality facets “achievement striving” and “self-discipline” by using Big Data from organizations. Following the approach of Roberts et al. (2015), we collected several <u>possible</u> indicators of job performance such as punch clock data, performance ratings, merit increase compared to peers and number of promotions/demotions for individuals. Using these indicators, we develop a model to predict “achievement striving” and “self-discipline” scores for individuals and try to show that these scores correlate with self-reported personality scores. Ultimately, this is a first step towards developing an automatic way of assessing predictors of job performance, which, in the future, **could** be used as a basis for decisions in human resource management.	In this study, we analyze how to assess the personality facets “achievement striving” and “self-discipline” by using Big Data from organizations. Following the approach of Roberts et al. (2015), we collected several indicators of job performance such as punch clock data, performance ratings, merit increase compared to peers and number of promotions/demotions for individuals. Using these indicators, we develop a model to predict “achievement striving” and “self-discipline” scores for individuals and show that these scores correlate with self-reported personality scores. Ultimately, this is a first step towards developing an automatic way of assessing predictors of job performance, which, in the future, **will** be used as a basis for decisions in human resource management.

Note. Hedges are marked as bold when they were replaced by other words and underlined when they were left out.

Table 2.

T-Tests for the Control Variables, Manipulation Check Items, Reviewer Checklist Items, and Recommendation for Publication

	Without hedges		With hedges					
Variable	*M*	*SD*	*M*	*SD*	*t*	*df*	*d*	95% CI of *d*
Recommendation for publication	2.48	0.73	2.82	0.91	1.97*	87	0.41	[-0.01, 0.83]
Manipulation check								
Tentativeness	3.18	1.03	2.78	0.96	-1.89	89	-0.40	[-0.81, 0.01]
Scope for interpretation	3.14	0.89	3.11	0.83	-0.16	86	-0.04	[-0.45, 0.38]
Reviewer checklist items								
Overall quality scale	3.37	0.62	3.54	0.68	1.31	94	0.26	[-0.14, 0.66]
Writing quality	3.70	0.81	4.06	1.00	1.95	94	0.40	[-0.01, 0.80]
Objective	4.04	1.02	4.14	0.98	0.49	94	0.10	[-0.30, 0.50]
Quality of theoretical arguments	2.74	1.06	2.92	1.12	0.80	93	0.17	[-0.24, 0.57]
Style	3.83	0.87	4.14	0.74	1.91	94	0.39	[-0.02, 0.79]
Organization of paper	3.63	1.06	3.90	0.87	1.35	93	0.28	[-0.12, 0.68]
Conceptual adequacy	3.20	1.15	3.43	1.04	1.04	93	0.21	[-0.20, 0.60]
Originality	3.23	1.00	3.17	1.02	-0.33	93	-0.06	[-0.46, 0.34]
Interestingness	3.51	0.88	3.53	0.96	0.11	94	0.02	[-0.38, 0.42]
Persuasion	2.96	1.00	3.27	1.00	1.51	94	0.31	[-0.09, 0.71]
Significance	2.83	0.89	2.92	1.02	0.45	94	0.09	[-0.31, 0.49]
Importance	3.32	1.02	3.49	0.96	0.84	94	0.17	[-0.23, 0.57]

Notes. For the recommendation for publication, we calculated a one-tailed *t*-test. Degrees of freedom for the *t*-tests vary slightly because of missing values for the respective variables. $N = 96$. * $p < .05$.

Table 3.

Correlations for the Study Variables.

	Scale	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1.	Tentativeness	-														
2.	Scope for interpretation	.30**	-													
3.	Writing quality	-.28**	-.17	-												
4.	Objective	-.36**	-.17	.35**	-											
5.	Quality of theoretical arguments	-.23*	-.17	.31**	.45**	-										
6.	Style	-.31**	-.21	.48**	.40**	.25**	-									
7.	Organization of paper	-.35**	-.15	.49**	.52**	.41**	.60**	-								
8.	Conceptual adequacy	-.35**	-.18	.34**	.46**	.63**	.34**	.45**	-							
9.	Originality	.03	.03	.23*	.25*	.45**	.37**	.29**	.32**	-						
10.	Interestingness	-.20	-.16	.36**	.41**	.32**	.49**	.53**	.32**	.55**	-					
11.	Persuasion	-.29**	-.35**	.23*	.42**	.44**	.31**	.38**	.33**	.44**	.50**	-				
12.	Significance	.00	-.17	.13	.29**	.43**	.31**	.26**	.35**	.65**	.45**	.58**	-			
13.	Importance	-.09	-.12	.16	.29**	.23*	.32**	.20	.25*	.51**	.53**	.38**	.58**	-		
14.	Overall quality scale	-.33**	-.25**	.55**	.66**	.69**	.65**	.69**	.67**	.70**	.74**	.69**	.69**	.61**	-	
15.	Recommendation for publication	-.21*	-.03	.30**	.36**	.69**	.31**	.35**	.44**	.48**	.36**	.36**	.47**	.31**	.61**	-
16.	Hedging	-.20	-.02	.20	.05	.08	.19	.14	-.03	-.03	.01	.15	.05	.09	.13	.21

Note. Coding of Hedging: -1 = non-hedged version, 1 = hedged version. *N* varies slightly because of missing values for the respective variables. *N* = 96.
*$p < .05$, **$p < .01$.