

**Let 1000 Flowers Bloom, but Please Don't Step on the Daisies:
Scholarly Originality, Peer Review and the
Gestation of Published Social Science**

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ABSTRACT

We examine the criticisms and subsequent changes arising in the course of peer review by articles that make different kinds of theoretical contributions. Fifty-two authors recently published in *Administrative Science Quarterly* were surveyed regarding their peer review experience and how their article changed from initial journal submission to eventual publication. Papers that challenged theoretical perspectives faced distinctively high levels of criticism and change, particularly with attention to methodology, while those that offered a new perspective or extended or combined established perspectives were less criticized and changed. The number of challenge-oriented publications was small as well, suggesting that either few such submissions survive the review process or few are authored in the first place. Overall, the journal publication system appears to encourage the elaboration of theoretical argument but does little to aid in the winnowing out of established perspectives.

Science is Janus-faced. On the one hand, it seeks revolutionary breakthroughs in knowledge. Scientific heroes include scholars like Copernicus, Darwin and Galileo whose bold theories eventually upended the dominant beliefs of their day. Priority – being the first to formulate a new idea or make a novel discovery – is the coin of realm (Merton, 1968a; Dasgupta and David, 2002). Panelists on interdisciplinary review committees prize originality as the cardinal scholarly virtue, associating it with personal qualities like bravery, ambition, and honesty while those perceived to lack originality are described as facile, provincial, and slavish (Guetzkow et al., 2004: 203).

However, science is also tradition-bound. New contributions are framed in relation to prevailing theoretical conceptions and bodies of empirical research (Locke and Golden-Biddle 1997). Opposition to disruptive insights can be fierce; Newton's optical experiments were dismissed by eminent scientists like Huygens and shelved for more than 30 years before being repackaged to stress continuity with extant theories of light (Gross, 1988). Stories abound of Nobel Laureates who were eventually vindicated after initially hostile resistance or studied neglect. The very conception of science as a rational, progressive project implies that practitioners should take the achievements of their predecessors into account so they can build on them.

In fields like astronomy, physics, and chemistry, Kuhn's (1962) model of paradigm dynamics provides a compelling resolution to this tension. Most investigations are "normal science", working out puzzles defined by the current scientific consensus. Established approaches are resistant to change; the holders of a dominant perspective are typically thinned by age rather than converted. Science is also open enough to permit radical shifts when enough

anomalies accumulate and a plausible alternative emerges. Kuhn's analysis portrays science as simultaneously revolutionary and conservative via an intellectual version of punctuated equilibrium.

We lack parallel models of scientific change in non-, pre-, or anti-paradigmatic disciplines. Such fields do not generate normal science in Kuhn's sense, since prevailing conceptual frameworks are too contested to legitimate internal puzzle solving as a core scientific contribution. There is instead great demand for novelty, perhaps on all dimensions. As Weick (1995: 286) noted, "when people work with an undeveloped paradigm, *all* work is innovative" (emphasis in the original). The concept of originality widens in the social sciences and humanities to include original approaches, topics, methods, and data as well as original theory and original findings (Guetzkow et al., 2004). We know little, however, about which types of originality are privileged and which are marginalized.

The tension between old and new is nowhere more visible than in peer review. Referee surveys indicate that originality is highly valued in the abstract (Juhasz et al. 1975; Kerr et al., 1977; Lamont, 2009). Innovation is often praised in principle, but opposed in practice (Flynn and Chatman, 2001). Peer review is a conservative evaluative system in that it relies on the assessments of individuals who are socialized within and generally benefit from the status quo. In the medical sciences, Horrobin (1990: 1439) contended that peer review is an effective means of ensuring quality control but does not deal well with "those rare articles that genuinely offer the possibility of new approaches." In economics, Gans and Shepherd (1994) chronicled numerous cases of groundbreaking articles that were rejected – often multiple times – before eventual publication, vindication, and acclaim. Similar high-profile rejections are rife in the natural and medical sciences (Yalow, 1982; *Nature*, 2003; Siler et al., 2015). In organization

studies, Perrow (1995: 213) emphasized the routine ways that submissions are homogenized: “Journals will occasionally take an out-of-the-way piece, but even then familiar organizational processes of standardization, formalization and specialization take over.”

This article investigates the ways scholarly work is criticized and changed via peer review. It builds on prior work that finds manuscript revision to be dominated by conceptual and interpretive reframing (Author, redacted). We focus here on the response to different types of theoretical contributions, contrasting papers that work within an established framework versus those that do not, and subdividing the latter to distinguish papers that offer novel lines of argument versus those that challenge established perspectives. While all of these articles offer something new to the scholarly conversation, they are treated differently in peer review.

We study a sample of papers appearing between 2005 and 2009 in *Administrative Science Quarterly* (*ASQ*), a flagship journal in organization studies. Drawing on an original survey, we summarize author self-reports concerning the comments they received and the revisions they made in the peer review process. Changes in the research reports themselves are examined, an analysis made possible because survey respondents furnished us with copies of the manuscripts they originally submitted to *ASQ*. We compare the initially submitted manuscripts with the published versions.¹

It is important to underline the limitations imposed by our research design, which reflects the difficulty of investigating peer review in the absence of institutionalized access to journal

¹ A preliminary test of the survey suggested that most scholars would be willing and able to share the original submissions of their published work, but that it would be difficult to obtain manuscripts that had been rejected. A major source of variation was professional age, which reflects shifting norms towards greater openness concerning peer review. While this study did not seek to gather information about rejected manuscripts out of concern that we might thereby “queer the pitch”, we suspect that future students of peer review may find it feasible to gather data on unpublished submissions.

records. Author self-reports and textual comparisons provide rich evidence concerning the response of editors and reviewers to submitted manuscripts. Since we work backward from recent publications, however, we are unable to describe reactions to papers that were rejected or withdrawn. We return to this issue in the discussion section, since empirical patterns of peer review suggest key questions that additional data collection could address.

Theoretical Background

Scientists prize innovative scholarship. A survey of journal reviewers in forty-three fields showed originality to be the most valued component of a submitted paper (Juhasz et al., 1975). Kerr et al.'s (1977) survey of editors and advisory board members from nineteen management journals found that two-thirds were favorably inclined towards papers that tested new theories developed by the author while more than half said they were likely to recommend rejection of replication studies that added no "new theory." Lamont (2009) demonstrated these assessments are moral in character; original scholars are perceived as "courageous risk-takers" while those lacking originality are viewed as "lazy conformists."

The field of organizational studies represents a strong case of the general scientific commitment to originality. Mone and McKinley (1993) argued that the field is marked by a "uniqueness value" evident in the privileging of conceptually novel contributions in editorial commentaries, professional training, and didactic essays. The strength of this uniqueness value can be seen in the largely hostile responses to Pfeffer's (1993) call for the consolidation of organizational research around a dominant paradigm. Mone and McKinley (1993) connect the uniqueness value to support for innovation, quoting Pacanowsky and Strine's (1985: 295)

observation that “perhaps no other social study is more agonizingly self-reflexive or receptive to alternative, nontraditional methods of scholarship than are the organizational sciences.”

Prior studies of peer review indicate some endorsement of originality in practice, though behavioral patterns are more complex than statements of principle would suggest. Beyer et al.’s (1995) analysis of manuscripts submitted to the *Academy of Management Journal* found that papers which claimed to make a novel theoretical contribution were more likely to be revised ($p < .05$) and published ($p < .10$), though the reviewer’s own perception of theoretical novelty bore a weaker and non-significant relationship to revision/acceptance. Beyer et al. also found a positive but statistically non-significant effect of the presentation of disconfirming evidence on a paper’s chances of publication.

One reason that principled endorsement of originality translates into unclear practice is that work diverging from the mainstream is difficult to evaluate. Dornbusch and Scott (1975) found that high levels of uncertainty lead judges to focus on attributes that are relatively clear-cut. Risk-aversion can emerge from simple learning dynamics in the absence of corresponding individual preferences (Denrell and March, 2001; March, 1996). Organizational fast learners tend to eliminate novel, untried alternatives – which typically have low expected value but a high upside – relative to safer bets that work better on average but have less likelihood of leading to a major breakthrough. Since eclectic ideas (Fleming, 2001) and interdisciplinary studies (Leahey et al., 2014) tend to produce highly variable outcomes, the empirical balance between exploration and exploitation is generally weighted towards the latter (March, 1991).

In peer review, a referee’s commitment to established conceptual frameworks may shape scholarly evaluation (Travis and Collins 1991). Reviewers are liable to criticize studies that are

inconsistent with their theoretical preconceptions, a tendency sometimes labeled 'confirmation bias' because it minimizes the evidentiary significance of unexpected results. Mahoney (1977) demonstrated this effect in an experimental study that sent multiple versions of a paper to a sample of reviewers. Those receiving findings consistent with theoretical expectations viewed the submission favorably while reviewers receiving an otherwise identical paper with theoretically unexpected results were likely to recommend rejection, often citing methodological deficiencies. Boudreau et al. (forthcoming) observed that scholarly experts negatively evaluated manuscripts with uncommon topic keywords and Resch et al. (2000) found that researchers were more critical of an article touting an unorthodox treatment versus an orthodox one.

Scholarly interests are intertwined with cognitive priors. Referees are more likely to perceive defects in work that diminishes rather than reinforces the perspectives they are associated with. Li (2013) found that National Institute of Health judges assigned higher scores to research proposals similar to their own. Since referees are typically older, more honored, and more published than the authors they evaluate (Hamermesh, 1994), established perspectives are likely to be overrepresented in the review process. For Bourdieu (1988), academia is a conservative institution in which elites use their status to promote similar ideas and people, reproducing the prevailing social and intellectual order.

In exploring the complex relationship between scholarly values and evaluative procedures, it is important to distinguish among the multiple meanings carried by 'originality' (Lamont, 2009). Locke and Golden-Biddle (1997) offered a nuanced perspective on the rhetorical structure of framing strategies. Drawing on a close textual analysis, they identified three characteristic ways that authors simultaneously construct the literature and distance themselves from it, thereby identifying a problem that their research can solve. Most pertinent

here is their classification of problematizing moves: authors may depict prior work as *incomplete* (requiring attention to understudied issues, but along established lines), as *inadequate* (requiring an infusion of ideas drawn from alternative perspectives), or as *incommensurable* (wrong-headed and requiring a fresh start).

Strategic problematizing moves can be alternatively described in terms of the theoretical contributions that manuscripts embody. Papers that depict the literature as incomplete seek to *extend* a theoretical perspective by addressing understudied empirical phenomena, testing a key prediction, or expanding on an established line of argument. Those who point to the literature's inadequacy remedy this state of affairs by *combining* arguments from multiple theoretical frameworks. Contributions that treat the literature as incommensurable thereby *challenge* dominant perspectives, contending that prevailing arguments should be discarded and replaced by an alternative formulation.

A fourth type of contribution is formed by papers that offer new lines of argument. This category is not identified by Locke and Golden-Biddle (1997), perhaps because it does not have a stable starting point in rhetorical depictions of the literature and its failings. The development of novel theoretical conceptualizations and propositions is a critical form of originality, however, and one that forms a key alternative not only to work that operates within established theoretical perspectives but also to work that challenges prevailing understandings.

While all four types of theoretical contributions are legitimate, *Administrative Science Quarterly's* "Notice to Contributors" indicates that some approaches are more welcome than others:

"*ASQ* asks, "What's interesting here?" But we take pains not to confuse interesting work with work that contains mere novelties, clever turns of phrase, or other substitutes for insight. We try

to identify those ideas that disconfirm assumptions by people who do and study administration. Building a coherent, cumulative body of knowledge typically requires work that suggests syntheses, themes, causal sequences, and propositions that people have not seen before.”

We read this invitation as signaling openness to papers that challenge prevailing arguments and that offer new ones. It echoes Murray Davis (1971), whose iconoclastic essay ‘That’s Interesting!’ argues that a theory garners attention not for its truth value but for the way it challenges its audience’s assumptions (while theories consistent with starting assumptions are viewed as boring). Rather counter-intuitively, *ASQ* describes work that “disconfirms assumptions” and that “people have not seen before” as fostering intellectual coherence and cumulation.²

The recently-published scholars we surveyed saw the evaluative routines of scholarly journals quite differently. While expressing strong support for peer review in general,³ they regarded the evaluation of new and challenging work as its Achilles heel. Some characteristic views:

“Peer review seems to work well for incremental research where standards are clear.”

“[Peer review is] a consensus-based mechanism, while presumably scrutinizing for novelty essentially privileges science that is already legitimate.”

“PR is generally quite conservative, biased against new material and methods.”

“In my view, the great weakness is the chance for reviewers who are threatened by your approach (those concerned about your ability to take intellectual turf from them) to find ways to ding your paper.”

² Recently, current *ASQ* editor Gerald Davis (2015) expressed concern that an over-emphasis on “interestingness” as an evaluation criterion contributes to the publication of questionable findings and fragmentation of the field of organization studies (also see Pillutla and Thau, 2013).

³ For example, one author said “Peer review simply enhances the quality and depth of research articles... One only needs read the contents of online or self-published journals and compare it to peer review articles to recognize the value of peer review.”

ASQ's official stance thus suggests openness to papers that offer new perspectives or challenge established ones, ones while experienced authors anticipate that these kinds of papers are at a structural disadvantage. As we see below, the views of experienced scholars and *ASQ*'s official stance both contain (different) grains of truth but more importantly diverge from empirical patterns of manuscript criticism and change.

METHODS

We conducted an online survey of recent contributors to *Administrative Science Quarterly* (*ASQ*). Founded in 1956, *ASQ* is a leading journal in organizational studies (also referred to as management studies and organizational theory), an interdisciplinary field with ties to sociology, psychology, and economics. In 2013 *ASQ* was ranked seventh out of 172 management journals and fourth of 110 business journals with a five-year impact factor of 7.05. As a highly-ranked generalist journal, *ASQ* provides a good opportunity to observe scholarly evaluation in action.

First authors of *ASQ* articles published between 2005 and 2009 were asked to complete an online survey regarding their experience with that paper. (If the individual was the first author on more than one piece in *ASQ* during this time period, they were queried regarding their most recent publication.) We also asked the author to send us a copy of the manuscript they had originally submitted to *ASQ*. Seventy-eight scholars were contacted; we received fifty-two surveys (a 67% response rate) and 38 original submissions (73% of responding authors, and 49% of the total).

Comparison of survey respondents and non-respondents indicated no significant differences. 54% of the respondents were assistant professors, 17% associate professors, and 29% full professors (versus 47%, 21%, and 32% of surveyed authors overall). 32% of respondents were women (versus 29% overall) and 92% had appointments in business schools (versus 91% overall). On average, respondents had published 12 articles in other peer reviewed publications prior to the article examined here, while non-respondents had published an average of 15. The 52 responding authors had published a total of 51 articles in *ASQ* while the 26 non-respondents had published 22.

A first battery of questions concerned the issues that arose in peer review. Authors were asked “How extensive were criticisms and suggestions for revision...?” in twelve topic areas such as “*theoretical concepts*”, “*data collection methods*”, and “*implications for practice/practitioners*” (see Figure 1 for the full list). Authors responded on a five point scale, from ‘none’ (1) to ‘major proposed changes’ (5). A second battery of questions asked about the level of critical attention to the paper as a whole and to its theory, methods, results, and discussion sections, again scored on a five point scale.

Authors were asked to assess the modifications they had made in revising their original submission, via the prompt “How extensive were the changes you and your co-authors made to the following aspects of the paper?” They answered in terms of the same paper components noted above: twelve topic issues, four sections, and the manuscript as a whole. We also asked how many times the submission was revised prior to publication in *ASQ*. This provides an additional indicator of peer-driven criticism and change, since multiple revisions generally occur when one or more reviewers have difficult-to-resolve concerns, which in turn prompt more extensive modification. Finally, the survey included the open-ended question “From your

perspective, what was the most significant change in the paper that occurred through the review process?”

Content analysis of original submissions and published papers examined change in the length of major sections (theory, methods, results, discussion) and in the bibliography (number of citations dropped and added). Two measures of manuscript orthodoxy were also developed. We counted the number of times each item in a given bibliography was also cited by other articles appearing in *Administrative Science Quarterly* between 2005 and 2009. A paper's *bibliographic orthodoxy* is the sum of these counts divided by the length of its reference list. Following a long tradition in information science of analyzing term frequencies to analyze texts (Sparck-Jones, 1972; Salton and McGill, 1983), we examined word choice in the main body of submitted manuscripts. The distribution of terms (excluding stop words) appearing in a focal article was compared to the corpus of *ASQ* articles appearing in the 2005-2009 period. We used Hermetic Word Count software (<http://www.hermetic.ch/wfc/wfc.htm>) to conduct these comparisons. *Textual orthodoxy* gives the degree to which the fifty most common terms appearing in each manuscript overlapped with the fifty most popular terms appearing in the corpus (measures based on the ten and one-hundred most popular words were also calculated, and showed similar effects).

Types of Theoretical Contributions. We asked authors to indicate whether their work (a) tested or extended a theoretical perspective, (b) combined two or more theoretical perspectives, (c) challenged a theoretical perspective, or (d) offered a new theoretical perspective. The number of papers falling into the four categories were 15, 18, 5, and 11, respectively (three respondents did not answer this question). We read all papers to cross-check and understand the distinctions that authors made.

A few observations are in order. First, the papers as a whole were strongly oriented towards theory development. No paper replicated previous studies, and most in category (a) are better described as extending than testing the perspective they worked within. This was well conveyed in responses to a second survey question that asked authors about the nature of their paper's major contribution. A total of 70% saw their manuscript as primarily advancing theory while 10% said the paper primarily advanced methodology and 20% indicated it primarily advanced empirical knowledge. All five of the papers falling into the "challenge" category and ten of the eleven that offered a new perspective were described as primarily advancing theory, and this was true of a majority of papers that extended or combined established perspectives as well.

A second observation is that the theories at stake were causal or interpretive arguments aimed at specific empirical phenomena. None of the papers were theoretical essays that introduced a broad perspective; all were research reports that analyzed concrete organizational outcomes or issues. Contemporary organizational studies is thus emphatically dominated by Merton's (1968b) 'theories of the middle range'. As Davis and Marquis (2005) pointed out, the focus in contemporary theorizing is on explanatory mechanisms rather than any sort of grand theory building, and this was clearly evident in the papers studied here.

Additional variables. We measured the institutional prestige of the first author according to the 2010 *BusinessWeek* MBA program rankings if that individual was affiliated with a school of management/business, and with the 2010 *U.S. News & World Report* rankings if he or she was affiliated with a social science discipline (all of these authors were in fact sociologists). We also counted the number of articles each author had previously published in *ASQ*, which represent differences in quality and manuscript-journal fit as well as potential biases in scholarly

evaluation. Authors with more extensive publishing experience at *ASQ* are likely to submit papers more closely connected to the journal's intellectual profile and are able to draw on their prior experience in negotiating 'revise & resubmit' verdicts. Institutional status is generally correlated with positive peer review experience either via selection effects or particularistic bias (Peters and Ceci, 1982) Effects of gender, professional position (graduate student, assistant professor, associate professor, full professor), and non-*ASQ* publication were also examined; inclusion of these factors does not alter the substantive findings reported below.

RESULTS

Figures 1 and 2 provide a detailed picture of attention to manuscript topic areas across the four types of theoretical contributions. Figure 1 presents mean levels of criticism and suggestions from referees while Figure 2 indicates the extent of manuscript changes. The two processes are tightly linked – authors generally revised the aspects of papers that referees criticized, with respondent-level correlations between criticisms and change that range from .59 to .87. They also tell much the same story, so we discuss them together.

<Figures 1 and 2 about here>

The key finding is the consistently high level of criticism and change among papers that challenge established perspectives. These submissions were the most heavily criticized in eleven of twelve topic areas and the most heavily modified in every category. This pattern is consistent

enough that it generates statistically significant differentials in many indicators despite the small number of cases involved. In the case of criticisms, ANOVA indicates statistically significant differences ($p < .05$) in three areas: data collection, alternative explanations, and implications for practice and practitioners. Where change is concerned, statistically significant differences arise in seven areas: data collection methods, measurement, analytic methods, scope of empirical analyses, interpretation of empirical findings, consideration of additional explanations, and theoretical implications.

The same pattern is evident in Figure 3 concerning article sections – theory, methods, results, and discussion – as well as peer review of the article as a whole. In every case, studies that challenge established perspectives were the most criticized and modified. Differences are statistically significant ($p < .05$) for criticism of the manuscript as a whole, changes to methods, changes to results, changes to discussion, and changes to the manuscript as a whole. “Challengers” underwent more rounds of revision than other article types (differences not statistically significant at conventional levels), with a mean of 2.40 revisions versus 2.18 for papers that offered new theoretical arguments, 1.88 for those that combined existing perspectives, and 1.86 for those that extended existing perspectives.

<Figure 3 about here>

Table 1 reports regression analyses examining three omnibus measures: the number of times the paper was revised for publication, criticism of the manuscript as a whole in peer

review, and changes made to the manuscript as a whole.⁴ The key difference is again between articles that challenge an established perspective versus all others. The first set of papers were revised more often, criticized more heavily, and modified more extensively. The difference between a paper that challenged a perspective and one that extended a perspective (the omitted category) is statistically significant at the .05 level where criticism and change are concerned. Model fit increases substantially with the addition of indicators for the type of theoretical contribution provided by each article. Articles that offer new perspectives faced more criticism and change than ones that combine perspectives, which in turn faced more arduous evaluation than articles that extend a perspective, but these differences are small and not statistically significant. Neither institutional prestige nor prior *ASQ* publications makes for substantial differences in peer review, though some coefficients are larger than their standard errors.

<Table 1 about here>

Observed Changes from Original Submission to Published Paper

We begin by comparing manuscript change across the four types of theoretical contributions, with particular attention to whether differences are in line with the author self-reports examined above. This can be suggestive at best, since we received the original submissions of only two of

⁴ *Criticisms* and *Changes* were closely related ($r = .87$) while correlations between the two variables and *ASQ Revisions* were less strong though positive ($r = .27$ for *Criticisms*, $.29$ for *Changes*). See the appendix for means, standard deviations, and product-moment correlations for all variables included in the analysis.

the five papers in the “challenge” category. We then examine shifts in content across the full set of papers.

Change in citations provides a good overall measure of manuscript revision, particularly where shifts in conceptualization and theoretical argument are concerned. When reviewers criticized a paper, authors returned to the literature to reframe their contribution, reformulate their arguments, and reground their empirical analyses. Table 2 reports the number of citations dropped and added in the revision process. Overall the bibliographies were extensively modified, with barely half of the citations in the original submission appearing in the final article. Articles that challenge theoretical perspectives showed the most change, both in deleting original citations and in adding new ones.

<Table 2 about here>

Section lengths changed substantially as well. Across all manuscripts, the word count of discussion sections expanded the most, followed by the methods section, while theory sections grew little and results sections shrank slightly. ‘Challengers’ fit this overall pattern, with more growth in discussion and methods sections than any other subtype. These correspond to the high levels of criticism noted in Figures 1 and 2; when articles were heavily criticized authors reworked the text to propose alternative interpretations, legitimate prior decisions, or pursue new analytic strategies.

A close reading of challenge-oriented manuscripts suggested two more subtle shifts in framing. While the original submissions positioned the study as challenging mainstream arguments in the field, this framing was more pointed and distinct in the published paper. We

had anticipated that authors might respond to referee criticism by softening the theoretical opposition raised by their work, but it appears instead that reviewer responses led authors to clarify the divergence between their arguments and mainstream accounts.

In a second seemingly contradictory shift, however, published versions ceded ground relative to the 'conventional wisdom' the study challenged. Original submissions developed the author's argument at great length while giving relatively short shrift to mainstream accounts. In published papers, the latter was described more fully while the author's argument was stated in more guarded terms. For example, one paper provided a detailed account of alternative explanations while demoting its own argument from "the critical condition" accounting for the focal outcome to a more humble "contributing factor." This change in framing is presumably the product of referee resistance which obliged authors to pay greater attention to the arguments they challenged and to make more restricted claims for their own argument.

Table 3 presents measures of bibliographic and textual orthodoxy that test the overlap between each focal manuscript and the larger corpus of published articles making up the *ASQ* corpus. Papers that challenge established perspectives are distinctively low on both counts. These manuscripts drew on sources outside the mainstream literature to a greater extent than other submissions we study and used less standard vocabulary as well. The heavy criticism that challenge-oriented contributions received did not its bibliography appreciably closer toward the *ASQ* norm, and in terms of textual orthodoxy manuscript revision reduced the initially low level of overlap still further.

<Table 3 about here.>

Other types of papers did generally moved closer to the middle of the orthodoxy distribution. Initial submissions that scored high on orthodoxy generally scored lower at the point of publication, while submissions initially scoring low on orthodoxy scored higher. Overall, orthodoxy scores at initial submission and change in the course of revision were negatively correlated (-0.47 for bibliographic orthodoxy and -0.53 for textual orthodoxy), a relationship that is characteristic of regression to the mean. In regression to the mean, random fluctuations lead initial differences to attenuate – in the classic example, children of tall parents tend to be taller than average but not as much so as their parents. Even if there is no purposeful motivation involved, random modifications tend to move articles that initially lie at the extremes of the orthodoxy distribution towards the middle (and articles at the middle towards one of the extremes).

There are also signs, however, that peer review entailed a more substantive process of homogenization. Post-review bibliographic orthodoxy was more tightly clustered than pre-review; the standard deviation fell from 3.96 to 3.57, a 10% reduction. Textual orthodoxy also shows increased clustering after revision, with a 15% reduction in the standard deviation from 167.3 to 141.7. Distributional shifts are by definition not the product of regression to the mean, which leaves the mean and variance unchanged despite the reshuffling of individual cases. While the differences in pre vs post-review variances are not statistically significant in this small sample, they offer suggestive evidence that peer review not only shakes up a paper's citation pattern and language use but also leads papers to more tightly cluster around a prototypical distance from prior work – neither too conventional nor too unusual.

Author Descriptions of Manuscript Revision

The query “From your perspective, what was the most significant change in the paper that occurred through the review process?” gave authors an opportunity to describe manuscript revision in their own words. Authors most often portrayed key changes in terms of the paper’s framing, with eleven using that term. Two examples:

“The most significant change was to the theoretical frame of the paper. The reviews asked that I modify and broaden the organizational literatures that I was engaging, which led to major changes to both the front end and the discussion sections.”

“Reframing and repositioning the paper in the literature and refocusing the theoretical model.”

The centrality of theoretical framing in peer review generated difficulties for papers whose contribution was primarily empirical or methodological. One such author commented,

“The remarkable thing about the paper is that the results and analyses essentially did not change at all from the first submission to the last. The editor and reviewers were concerned about "theoretical novelty" but the paper was an empirical test of existing theoretical claims. It took some time to figure out the "right" framing to make them happy. And a long time. It was ridiculous since the results were the same, although on the margin it is a better paper.”

Some authors described how peer review led them to reframe their research in the language of dominant theoretical accounts. For example, one explained:

“In the first round, we proposed a theoretical model where we brought together rational reputation theory, bounded rationality, and some institutional theory. The reviewers did not like this at all, and we had to reformulate the theory to be much more within the boundaries of mainstream organizational theory (i.e. more heavy on institutional theory). I see that the resulting model is perhaps clearer and more accessible to the average organizational theorist, but I think we lost something in the process.”

While some authors complained about theoretical ‘mainstreaming’, a larger number testified to the creative benefits of peer review. This was particularly true of papers that sought to add new theory, to combine perspectives, or to extend (rather than test) a perspective. Some examples:

The framing of the paper became much bolder. The editor encouraged us to make very explicit claims that we believed about resource creation and challenges to open system models, but which we had treated in a very subtle and nuanced way.
(extended a perspective)

One major change was suggested by the editor, as a way of addressing concerns raised by reviewers. It involved a major change to our theory development, drawing on an earlier paper published about the identities of actors in social movement “fields” There were lots of other changes too! But I think that one change really opened up a way forward...
(combined perspectives)

We received fantastic suggestions to make our paper more highly read. One of the reviewers saw two large theoretical contributions that we overlooked that we subsequently incorporated. Another reviewer suggested we look at other institutional actors. We did and ended up adding two more interaction hypotheses that strengthened our initial arguments. Finally, the editor and another reviewer pushed us to come up with a better mechanism for entrepreneurship. While they did not provide any suggestions, the fact that they gave us the opportunity to theorize and strengthen our mechanism instead of rejecting our paper says a lot about the view these reviewers and editor have of the review process:
That it isn't a zero-sum game, but that we as a field we can work together to understand better organizational phenomena by helping others develop their work.
(offered a new perspective)

This spirit of creative collaboration was generally absent for articles that challenged established perspectives. While one such respondent did note that the editor had helped them sharpen their arguments, this was the exception that proves the rule – most authors of challenge-oriented papers suggested a more oppositional process that entailed not only much methodological and empirical re-work along with an apparent lack of creative synergy:

Completely new dependent variable. Complete reframing of front end.
Elimination of two hypotheses.

Updating of data, which required re-compilation and re-analysis of data and...the results came out somewhat different - Articulation of paper's contribution and engagement with current scholarship - thanks to comments from editor.

By the time the paper was accepted, we had to take out one part of the paper that we had originally thought was a major contribution and just leave that underdeveloped in the paper. We also had to remove from the paper a framing that we thought would be the primary contribution of the paper, which we did in order to satisfy the reviewers. Also in response to their insistence, we changed the title of the paper, and we think for the worse. Our paper has received far less attention than we think it deserves, we think, because the title no longer signals to potential readers the issues that we thought would capture their interest. Although the ideas are still in the paper, they are buried compared to how they were presented in earlier drafts. ... We worked on this paper for 10 years, with the last 4-5 of them at *ASQ*. It took so long to do the two sets of revisions, in part, because we had to learn a whole new statistical technique, which we initially did not think would work with our data.

DISCUSSION

The results of this study can be readily summarized. Papers that challenged prevailing perspectives were more heavily criticized by referees and more substantially revised than papers that made other sorts of theoretical contributions. This was true to a modest extent where criticism of theoretical concepts and arguments were concerned since this was a virtually universal feature of peer review. The more marked difference was in evaluation of research methods and empirical findings; authors of 'challenging' submissions were generally asked to rework their measurement and analytic techniques while this was a secondary consideration where other types of theoretical contributions were concerned.

The key comparison case is provided by articles that offer new lines of argument. Like challenge-oriented contributions, "new theory" papers operate outside the confines of established perspectives. If peer review were simply a conservative mechanism that favors the status quo,

both sorts of manuscripts would presumably be treated in much the same way. In fact, however, papers that offer new approaches were criticized and changed significantly less than challenge-oriented papers, and by some metrics – such as number of citations dropped and added – were less modified than papers that worked within established theoretical frameworks. Novel concepts and mechanisms appear to be readily assimilated in peer review while overt challenges call forth a critical response.

Papers that challenge established perspectives are few and far between as well as heavily criticized in peer review. Barely 10% of the papers studied here (five of 49) fall into this category – less than half the number of papers that add new theory, and an even smaller fraction of those working within established perspectives. Locke and Golden-Biddle (1997) identified the same pattern: of the 80 papers they examined, only eight depicted the literature as incommensurable and in need of a fresh start. By contrast, 38% of described the literature as incomplete and 52% as inadequate, proportions that are in line with the papers that extend or combine perspectives here (31% and 37%, respectively).

The core findings of this study support and specify the notion of confirmatory bias developed by Mahoney (1977), showing that it is not the unexpectedness of findings but their conflict with established beliefs that is most problematic in peer review. Like laypeople (Lord et al., 1979), scholars question methodology when empirics conflict with their expectations (Starbuck, 2003). Stickiness in Bayesian updating is not an issue for contributions that advance novel concepts and mechanisms, since here referees lack opposing prior beliefs. They are committed neither to the author's argument nor to an alternative.

While confirmatory bias could operate as a purely cognitive tendency, we suspect that the interests of evaluators are engaged as well. A paper that challenges established theoretical arguments is likely to be reviewed by at least one representative of that tradition. Indeed, the authors studied here generally viewed turf protection as the key source of peer review's conservatism. For example, one suggested,

“[R]eviewers often reject challenges to existing theory because they feel it might threaten the work they've done. The pride of reviewers keeps new thoughts from emerging, much like ancient religious leaders did scientists in the dark ages.”

while another argued

“The peer review process does not work very well for new theory and functions even less well for work that challenges existing theory...For this kind of work, authors are at the mercy of reviewers and the editor. This kind of work requires highly skilled (particularly intelligent, well-versed, etc.) and open minded reviewers whose interest is the advancement of the field rather than protecting their own ideas and contributions. It requires an editor who deeply understands the area and its land mines so that he or she can understand where reviewers are coming from.”

One limitation of the study reported here is the fact that the key measures rest on the perceptions of each paper's first author. While additional indicators would be valuable, measures based on textual examination are generally consistent with author self-reports. Papers described as challenging established perspectives did in fact explicitly frame their contribution in this way, for example, while those described as offering new theory emphasized the theoretical lacuna they sought to fill. Challenge-oriented manuscripts also had less in common with the *ASQ* corpus than other types of papers, and underwent more substantial change in terms of observables like citations and the reworking of methods and discussion sections. Consistency in 'subjective' and 'objective' measures gives us some confidence that the challenge-oriented

papers studied here did in fact face a distinctively difficult path from original submission to publication.

This study's more important limitation is its lack of access to journal submissions that were rejected or withdrawn. We do not know if the extensive criticism and changes that marked the review of subsequently published challenge-oriented articles also marked the evaluation of papers that never see the light of day. This is important, because the critical response observed in this study would provide a causal explanation for the paucity of challenge-oriented publications if it occurs for all sorts of submissions. While the authors surveyed here succeeded in meeting the concerns of reviewers, the great majority of those submitting manuscripts (some 90%) are not so fortunate. If papers that challenge existing perspectives generally face a sharper critical response than other kinds of theoretical contributions do, they will be under-represented in the pages of selective journals like *ASQ*.

It is conceivable, however, that the heightened criticism and change that challenge-oriented manuscripts experience in peer review is combined with a relatively good publication chances. This non-intuitive pairing would arise if *ASQ* adhered to its mission of giving voice to "ideas that disconfirm assumptions by people who do or study administration" by giving them extra opportunities to address reviewer concerns – an editorial policy that would improve the chances of success while simultaneously increasing the arduousness of the process. In this scenario, the underlying cause of small numbers of challenge-oriented publications is not confirmatory bias but instead the inability or unwillingness of organizational scholars to submit these sorts of papers for review.⁵

⁵ If the probability of accepting a manuscript that challenges existing perspectives is twice that of other submissions, for example, such papers must make up 5% of the original pool if they form 10% of the published articles.

The data examined here does not allow us to arbitrate between these two scenarios, both of which are compatible with the high levels of criticism and change experienced by ultimately accepted manuscripts. The second is less parsimonious, if perhaps more interesting, since it implies a self-fulfilling prophecy (Merton 1948) wherein scholars seldom write challenge-oriented articles because they incorrectly perceive them to have poor chances of publication. We find more plausible the explanation that challenge-oriented contributions face stringent peer review due to conservatism inherent in peer review, and that authors correctly perceive the difficulties of publishing this sort of work. This simpler account is also consistent with the process of homogenization observed here, where manuscripts are revised to give greater weight to mainstream accounts – not the pattern we would expect if peer review were managed to preserve intellectual challenge. To empirically address the issue, however, a quite different research design is needed that identifies the distribution of initial submissions (though not necessarily their individual fates).

While this paper only provides one step towards pinpointing the causal mechanism, the important end product is a literature rich in the construction and elaboration of theoretical arguments but poor at winnowing them out. In evolutionary terms, variety generation is the dominant motif in organization studies. The great majority of papers examined here add theoretical arguments to the literature: some by introducing new concepts and principles, others by extending the reach of established lines of argument, and still others by combining ideas from multiple traditions. There is scant evidence of a selection mechanism, by contrast – few papers are organized to arbitrate between rival theoretical perspectives and even fewer pose an overt challenge to established lines of argument.

The paucity of theoretical challenges is striking given their central place in understandings of scientific discourse. Sociologists of science treat the struggle between investigator and peer dissenters as the very essence of science (Latour, 1987). Locke and Golden-Biddle (1997: 1057) similarly view texts that construct incommensurability as illuminating key conflicts that lie below the surface. But while challenges to taken-for-granted assumptions may indeed be distinctively ‘interesting’ (Davis, 1971), they do not appear to be central to the framing of most research reports, nor are they particularly well received in peer review.

Between five and ten years have passed since the articles we study were published in *ASQ*, allowing us to gauge their reception by the field of organization studies. Citation rates are the best indicator of impact and influence, though not necessarily quality (Bornmann and Daniel, 2008). Table 3 reports citation data drawn from the 2014 Web of Science. Yearly citation rates were highest for articles offering a new theoretical perspective, followed by those that challenge a theoretical perspective. Articles that combine perspectives and those that extend perspectives are less often referenced, with annual citation rates about half those of “new theory” articles and two-thirds of those that challenge established perspectives. Logged citation rates show the same pattern, a useful robustness check since a few articles generally gain the lion’s share of the attention (Barabási and Albert, 1999).

<Table 4 about here>

Differences in citation variability across types of theoretical contributions are also of interest. Papers that offer new perspectives and that challenge existing perspectives are high

variance, as we might expect given the forms of innovation they embody. Authors writing such pieces are “swinging for the fences”, and although they succeed often enough to make themselves a good bet on average it is difficult to tell a priori which will be successful. Papers that test or extend a perspective are on the opposite end of the spectrum – variance is low with scant prospects of becoming a “citation star.”

These citation patterns provide one reason why journals like *ASQ* search diligently for “work that suggests syntheses, themes, causal sequences, and propositions that people have not seen before.” The academic community responds most favorably to papers that add to the arsenal of theoretical concepts and mechanisms while it is less attentive to primarily empirical contributions (Burt, 2004). The anomaly is once again the article that challenges established perspectives, whose strong impact on the field is out of step with the small numbers of such pieces that are published and the critical evaluation they receive in peer review.

CONCLUSION

Science is marked by an ethos that deeply values originality and evaluative practices that privilege the status quo. This paper’s analysis of the gestational effects of peer review indicates that there is no simple ‘novelty bias’ but instead disparate responses to multiple forms of originality. Papers that offer new theory are treated much like work that extends or combines established perspectives. Their conceptual framing is closely scrutinized and intervened in, often in a constructive fashion that adds new ideas to the mix, with modest attention to empirics and methodology. By contrast, papers that challenge established perspectives face a significantly higher level of methodological and empirical criticism, and more infrequently involve a constructive interplay between authors and referees.

Disparities in peer review are associated an intellectual trajectory that we would label *normal innovation*. More than two-thirds of the publications examined here were primarily concerned with adding theoretical concepts and explanatory mechanisms to the field, whether by formulating new lines of argument, conceptually extending established perspectives, or recombining distinct approaches. While the variety of theoretical argument grows apace, few papers questioned prevailing lines of argument or arbitrated between competing theories. Thousands of flowers bloom, but scholars are warned not to step on the daisies.

While our research site is an academic journal with a strong theoretical orientation, the issues examined here have broader implications to evaluation occurring in other settings as well. Evaluative regimes must always balance quality control with support for innovation. Much work (e.g., Staw, 1995; Amabile, 1998; Denrell and March, 2001; Audia and Goncarlo, 2007) suggests that professional communities drift towards evaluative practices that are less open to innovation than they should or intend to be. Individual-level studies point to resistance to change despite stated preferences for unconventional or challenging work (Flynn and Chatman, 2001; Mueller et al., 2011). Decision-makers tend to be especially averse to uncertainty when less uncertain options are also present (Fox and Tversky, 1995). Practices that reinforce success, reduce uncertainty, and reward specialization help achieve key organizational goals, but important forms of innovation may be discouraged in the process.

The effects of peer review thus appear in creative arenas outside science. In a striking historical analysis, for instance, Wijnberg and Gemser (2000) found that French painting's traditional peer-based selection system blocked avant-garde Impressionists from gaining a following. Artists like Monet and Seurat only came to the fore when the Academy's monopoly over artistic reputations was undercut by the rise of art dealers, professional critics, and museum

curators. As Wijnberg and Gemser explain, the emergence of professional mediators fundamentally changed the norms and incentives of the artistic world, creating a system that rewarded radical innovation rather than craft-like perfection of traditional aesthetic styles and subjects.

In the contemporary scientific arena, peer review faces significant challenges as well. Abbott (1999: 169-170) observed that low acceptance rates and the erosion of authorial voice lead some scholars to seek venues other than scholarly journals. As technology makes dissemination of the written word easier via the internet, new modes of evaluation and publication become feasible (see Suls and Martin (2009: 46-48) for alternatives to the traditional peer review model). On the other hand, Lamont (2009) argued that peer review remains indispensable for legitimacy from external stakeholders and Kalleberg (2012) contended that “regardless of the medium, peer review will continue to be essential to maintain the quality of research and thinking that is transmitted.”

The sharp criticism of research methods and empirical findings experienced by authors of challenge-oriented papers is perhaps the best form of peer review. Ionnadis (2005) forcefully contends that the contemporary publication system tends to validate false positives, a tendency that highly selective journals may be particularly prone to (Brembs et al., 2013). Heightened scrutiny may thus be needed to counterbalance strong incentives favoring publication of results that ‘no one has seen before.’ Nobel Laureate Vernon Smith argued that critical evaluation is also beneficial in line with the dictum that ‘what does not kill me makes me stronger, arguing that the initial skepticism that confronted his field of behavioral economics enhanced the quality of the work and fueled its subsequent success (Shepherd, 1994:79).

While critical scrutiny is vital to the scientific enterprise, its uneven application to work that challenges established perspectives appears to us problematic. A troubling symptom is one such author's regret at "the need to eliminate the part of the paper I thought would be of special interest to readers." Nor is this an isolated case: a survey of authors published in the *Academy of Management Journal* and the *Academy of Management Review* found that one-quarter had made revisions that they believed to be incorrect in order to get their work in print (Bedeian, 2003). In our view, the most effective reform is not to soften the sort of methodological scrutiny that we find applied to challenge-oriented contributions but instead to more fully stress methodological issues in the evaluation of all sorts of scholarship. Doing so might not only increase the number of challenge-oriented papers but also give greater weight to systematic empirical inquiry, which often appears secondary to the search for theoretical novelty (Hambrick 2007).

More broadly, and regardless of one's normative stance, the tools of social scientists are as usefully applied to our own tribe as any other – we are as prone to various cognitive biases as others, and generate equally complex and fascinating organizational practices that stand in a complex relation to our values. We would argue that analysis of scholarly evaluation can usefully focus on the types of original contributions that are privileged or resisted, and the implications of these responses for the larger trajectory of scholarship. The question for science is not whether originality is valued but what type of originality is valued.

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Figure 1 – Peer Review Criticisms of Article Characteristics

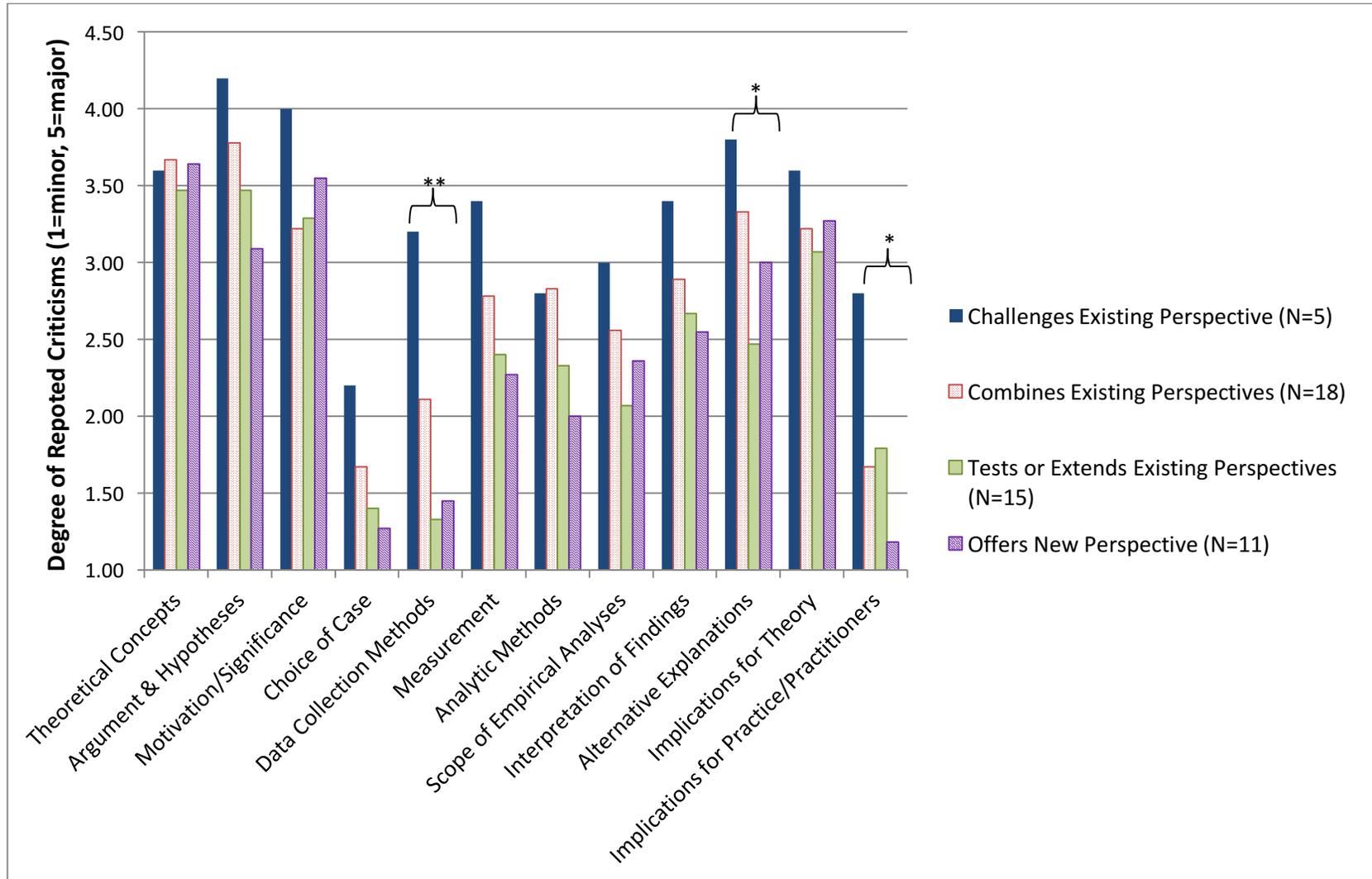


Figure 2 – Author Changes Enacted by Article Characteristics

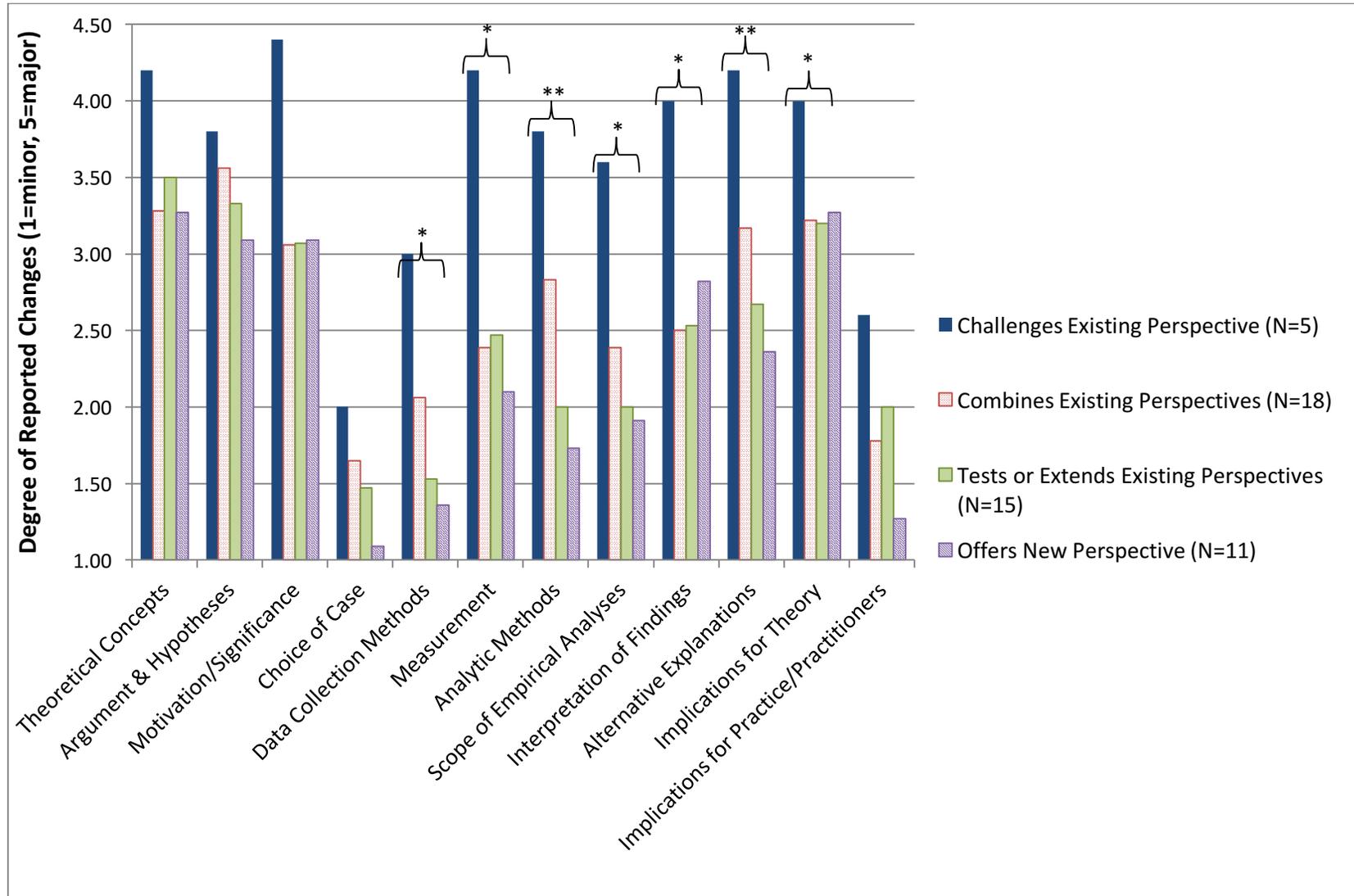


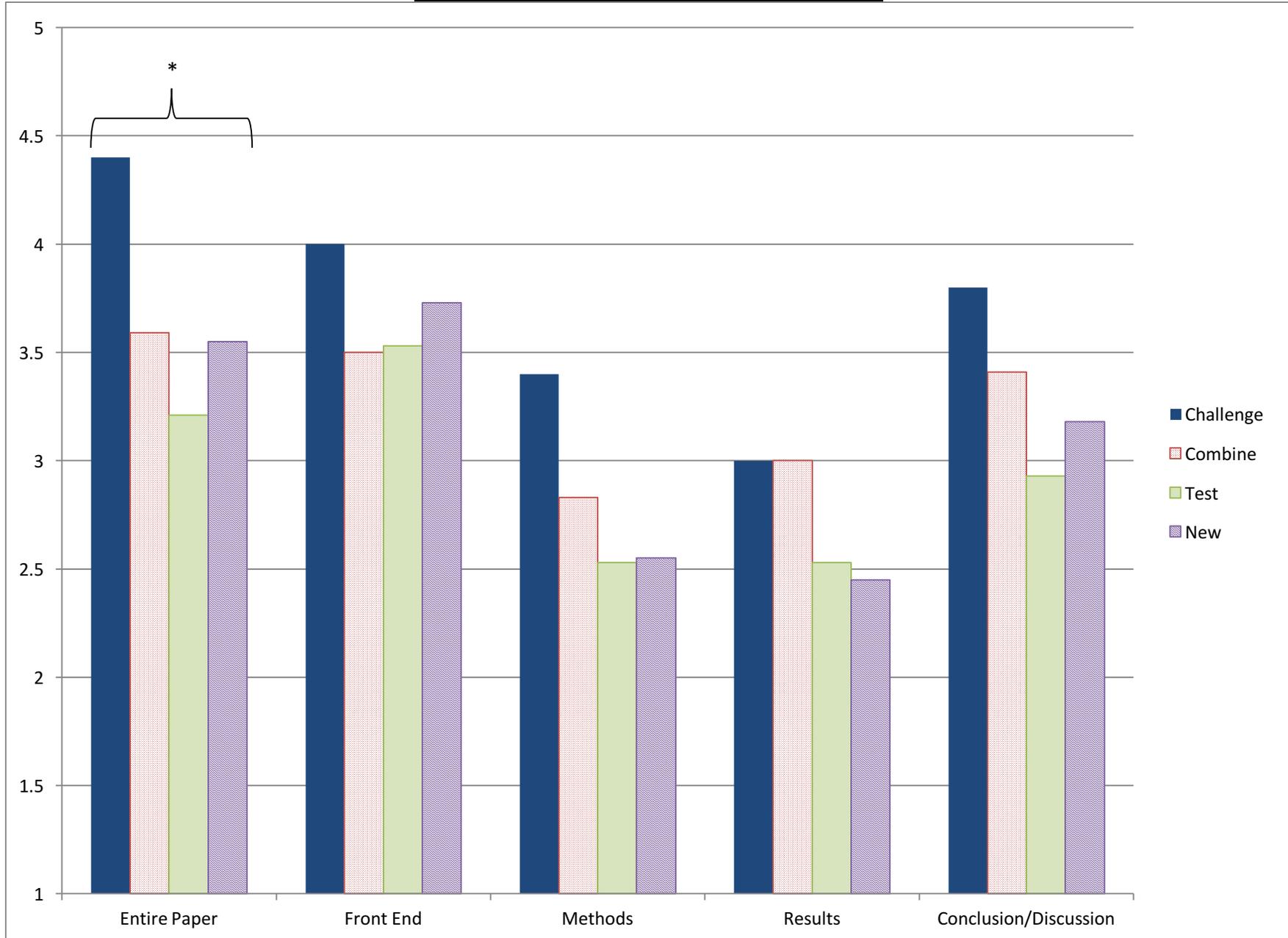
Figure 3a – Criticisms of Main Article Sections

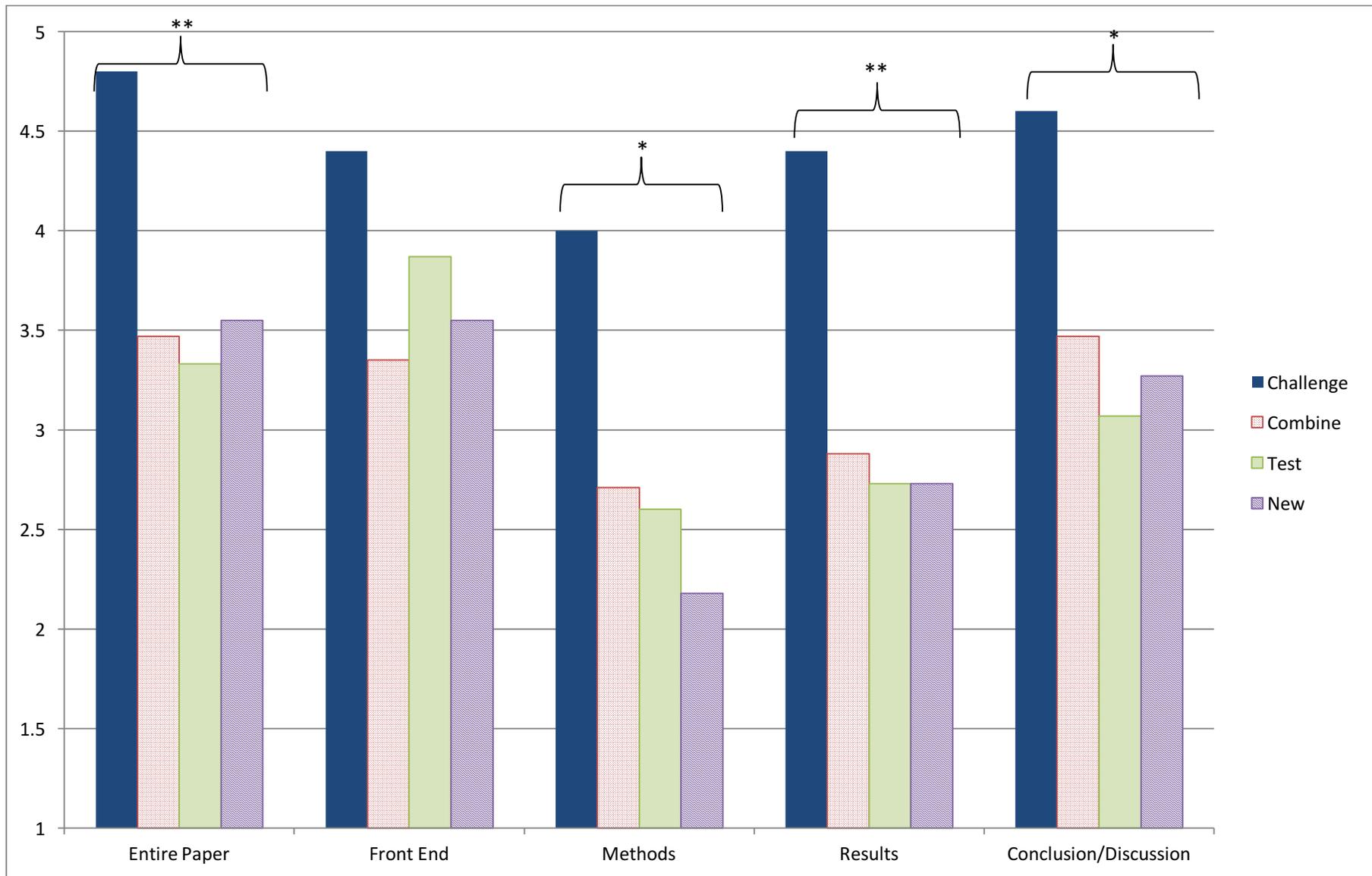
Figure 3b – Changes of Main Article Sections

Table 1 – Revisions, Criticisms and Changes in *Administrative Science Quarterly* Articles by Author and Paper Characteristics

| | Revisions | | Criticisms | | Changes | |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 |
| Author Characteristics | | | | | | |
| Institutional Rank of Highest Ranked Author | -.005 (.006) | -.009 (0.006) | -.002 (.005) | -.004 (.005) | .008 (.006) | -.006 (.006) |
| Past <i>ASQ</i> Publications of Most Experienced Author | -.048 (.041) | .078+ (0.046) | -.022 (.037) | -.028 (.038) | -.015 (.043) | -.006 (.044) |
| Article Characteristics | | | | | | |
| Article Challenges Existing Paradigm | | .570 (.458) | | 1.201** (.383) | | 1.417** (.439) |
| Article Offers New Paradigm | | .615 (.386) | | .442 (.324) | | .182 (.371) |
| Article Combines Existing Paradigms | | -.051 (.312) | | .380 (.266) | | .174 (.304) |
| Article Extends Existing Paradigm | | omitted | | omitted | | omitted |
| | | | | | | |
| Constant | 2.251*** (.211) | 2.147*** (.279) | 3.642*** (.196) | 3.323*** (.237) | 3.422*** (.234) | 3.210*** (.269) |
| <i>R-Squared</i> | 0.033 | 0.117 | 0.009 | 0.203 | 0.053 | 0.241 |
| N | 52 | 49 | 47 | 47 | 48 | 48 |

+ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests)

Table 2 - Citations Added and Dropped From Original Submission to Published Manuscript by Article Type

| | Citations Dropped | Citations Added | Proportion of Original Citations Retained |
|---|-------------------|-----------------|---|
| Challenges Existing Perspective (N=2) | 30.00 | 56.50 | .52 |
| Combines Existing Perspectives (N=14) | 19.79 | 43.07 | .60 |
| Tests or Extends Existing Perspectives (N=12) | 26.67 | 40.58 | .53 |
| Offers New Perspective (N=8) | 22.62 | 46.75 | .54 |
| All Manuscripts (N=36) | 23.27 | 43.81 | .56 |

Table 3 – Orthodoxy Metrics for Manuscripts with Submitted Original Submissions

| | Draft Bibliographic Orthodoxy | Draft Text Orthodoxy | Published Bibliographic Orthodoxy | Published Text Orthodoxy |
|---|-------------------------------|----------------------|-----------------------------------|--------------------------|
| Challenges Existing Perspective (N=2) | 3.85 | 850.86 | 3.92 | 776.88 |
| Combines Existing Perspectives (N=14) | 7.87 | 925.98 | 7.08 | 968.43 |
| Tests or Extends Existing Perspectives (N=12) | 9.20 | 997.63 | 9.82 | 968.17 |
| Offers New Perspective (N=8) | 8.72 | 965.23 | 7.73 | 977.46 |
| All Manuscripts (N=36) | 8.28 | 955.58 | 7.96 | 959.93 |

Table 4 - Annual Citation Rates by Article Type

| | Citations/year | Std. Dev. | Citations/year (log) | Std. Dev. |
|---|----------------|-----------|----------------------|-----------|
| Challenges Existing Perspective (N=5) | 10.18 | 11.83 | 1.81 | 1.11 |
| Combines Existing Perspectives (N=18) | 6.64 | 6.33 | 1.50 | .97 |
| Tests or Extends Existing Perspectives (N=15) | 5.92 | 2.94 | 1.63 | .62 |
| Offers New Perspective (N=11) | 13.38 | 12.39 | 2.22 | .92 |