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Paradigmatic Plurality or Citation Market? A Longue Durée Perspective of Management Writing

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Paradigmatic Plurality or Citation Market?

***A Longue Durée* Perspective of Management Writing**

Abstract:

This essay focuses on the long term emergence of management research journals, and highlights the social, cultural, technological and financial factors that facilitate or constrain such modes of writing. Drawing on historical material and direct observations, two future scenarios can be projected. The first is based on a vast and entirely electronic (co)citation market, in which a writer's "e-reputation" is of central importance. In this context, incentives are purely individual; paradigmatic dimensions have disappeared. The second scenario involves a plurality of paradigms, and consists of diverse communities that employ relatively compatible modes of writing and evaluation. The implications of both scenarios are discussed.

Key words:

Management science; research article; scientific rhetoric; history of scientific communication; scenarios.

Paradigmatic Plurality or Citation Market? :

***A Longue Durée* View of Management Writing**

The History and The Future of Management-Science Writing

The writing and publishing of articles is at the heart of scientific work (Clemens et al., 1995; Forgues, 2001; Lawrence & Honeycutt, 2005). However, over the last thirty years, the reputations of researchers (e.g. in management), derived both from databases and from the Internet, appear to have dramatically evolved (Berry, 2009; Chamayou, 2009; Adler & Harzing, 2009). More and more, these reputations have been condensed by means of the “e-reputation” (Ibid).

An e-reputation is a collective judgment concerning the credibility of an entity (individual, organization or product), and is based on the available digital data connected with that entity, e.g. web-based citations, rankings and indices.¹ Today, e-reputation includes both an entity’s publications (which are related to its perceived prestige) as well as its citations in the new web-based infrastructure of scientific databases.

How will these new electronic mediations affect management-science writing and its evaluation? To answer this question, the *longue durée* history of scientific writing will be examined. Further, using the *longue durée* perspective, the (short) history of scholarly management journals will be put into perspective. Then, the future of management writing and its evaluation will be

¹ In particular through Google, Google Scholar (see Harzing & Vand der Wal, 2008) and ISI Web of Knowledge.

considered. In order to address the problem on a global scale, two developing scenarios will be detailed; the first being pessimistic in nature and the second being optimistic:

(1) Extremely calculating and opportunistic researchers will create a “Global Citation Market” (GCM). The supply and demand for citations (or co-citations) and heavily cited authors (or those with strong citing potential) will lead to a less stable and more fragmented common literature. Furthermore, the so-called “h” and “g” indexes and the impact factors² of scholarly journals will provide the basis of scientific activity, thereby giving additional importance and weight to citations. The acquisition of a positive e-reputation will become the main – or unique – objective for management science writers.

(2) In order to create socially relevant scholarship (as outlined by Özbilgin (2009)), various global and/or continental communities will collectively set up a system of incentives focused on the co-creation of knowledge rather than on individual performance. Europeans, North and South Americans, Asians and Africans will work symbiotically, cultivating unifying concepts, as well as a meta-text. These various writing and research evaluation paradigms – each reflecting its respective community to a certain degree – will co-exist; publications and citations will contribute to more communal scientific reputations that are not solely based on e-reputations.

² The “h-index” was imported from the so-called “hard sciences” and developed by physician Jorge E. Hirsch (2005). It is defined as follows: a scientist has index h if h of his/her Np papers have at least h citations each, and the other (Np-h) papers have no more than h citations each. The “g-index” was proposed by Leo Egghe (2006) and aims to improve on the h-index by giving more weight to frequently cited articles. It is defined as follows: [Given a set of articles] ranked in decreasing order of the number of citations that they received, the g-index is the (unique) largest number such that the top g articles received (together) at least g² citations. The impact factors measures the frequency with which the "average article" in a review or journal has been cited during a particular period or year.

E-reputation already plays an important role in evaluating researchers, and can be identified via a series of increasingly sophisticated indicators, such as Harzing's Publish or Perish database (Harzing, 2007).

This article will show that the trend toward bibliometric analysis is advantageous for the directors of higher-learning institutions (especially the majority of today's academics), despite the fact that the phenomenon does not affect them in the same way. This view runs counter to several recent publications – notably European (see e.g. Berry, 2009; Chamayou, 2009) – which argue that such analyses are already too widely diffused and present limited or no benefit to scholars. Institutions assess academics using the h-index or g-index, as well as by applying espoused theories (e.g. Argyris & Schön, 1974) in order to furnish rationalizations for external stakeholders (ranking agencies, competitors, the government, etc.). Consequently, some doctoral students, teachers and scholars are able to effectively manipulate these new rules (Chamayou, 2009) and make “autonomous regulations” (Reynaud, 1988). This begs the question: are we moving towards a generalization of these behaviors?

First, we will detail the history of scientific writing and its evaluation. Then, we will outline two possible scenarios for the future scientific writing in management.

Management Science's Place in the History of Scientific Writing Between the Seventeenth and Twenty-First Centuries

Numerous histories of science and epistemology, research journals particularly, have examined the history of scientific communication (e.g. Barnes, 1934; Hahn, 1971; Kronick, 1976; Laeven,

1990; Fjällbrant, 1997 and Gross et al., 2002). By concentrating on several topical, syntactic and lexicometric studies – some of which are relatively recent – one can divide the history of research journals into three major periods³: (1) the emergence of learned societies and academic journals from 1600 through 1700; (2) the expansion of academic and scholarly journals and the creation of scientific canons and publishing paradigms between 1800 and 1900; and (3) the standardization of publishing canons and scientific paradigms from 1900 to the present. In discussing this final period, the origins of the first management science journals will be revisited via the *longue durée* historical perspective .

From the First Learned Societies to the First Scientific Journals: 1600 - 1700 A.D.

The first learned societies appeared in the sixteenth century, particularly in Italy. Although these societies usually lasted for only a few years, they were able to bring together aristocrats, clergy, and the bourgeoisie under the protection of politically powerful patrons (Gross et al., 2002). In the seventeenth century, other major learned societies emerged, in particular the Royal Academy in England in 1660, and the Académie des Sciences in France in 1666 (Gross et al., 2002).

These two institutions form a fundamental part of this analysis, as the first academic (in the historical sense) journals developed in their wake, e.g. the *Journal des Savants*, *Philosophical Transactions of the Royal Society*, and *Mémoires de l'Académie Royale des Sciences* (Kronick, 1976; Gross et al., 2002; Gross, 2006).

³ Delimited by major shifts in modes of scientific writing, technologies involved in the process of writing, and relationships between the scientific community and its mode of writing.

Before academic journals emerged in the seventeenth century, medieval and Renaissance scientists employed other means of sharing knowledge. At the end of the sixteenth and beginning of the seventeenth centuries, learned societies (and more generally, enlightened intellectuals) disseminated their ideas via five distinct forms of media: anagrams, letters, books and almanacs (Kronick, 1976; Fjällbrant, 1997).

Over time, the importance of academic journals supplanted that of its competitors in learned societies. This was especially true for two journals whose histories merit closer attention: the *Journal des Savants* and the *Philosophical Transactions of the Royal Society* (see Fig. 1).

INSERT FIGURE 1. Covers of the *Journal des Savants* (left), first published in January 1665, and the *Philosophical Transactions of the Royal Society* (right), first published in March 1665.

The *Journal des Savants* was first published on 5 January 1665, and the majority of historians consider it the very first scientific journal (Kronick, 1976; Fjällbrant, 1997; Gross et al., 2002; Cocheris, 1860). Its contents were contextually abnormal, in that they were comprised of “details of experiments in physics and chemistry, discoveries in arts and sciences, such as machines and the useful and curious inventions afforded by mathematics, astronomical and anatomical observations, legal and ecclesiastical judgments from all countries, as well as details of new books and obituaries” (McKie, 1948: 52).

During this first period (between 1600 and 1700), the *Journal des Savants* often experienced long periods of inactivity (Cocheris, 1860). However, this did not prevent it from being a recurrent outlet for works from members of the *Académie des Sciences*, complementing their output in the renowned *Mémoires* (Hahn, 1971; Gross et al., 2002). The *Mémoires de l'Académie* was first published in 1666, but as Gross et al (2002: 32) point out:

...most of these [works] were not actually published until the early eighteenth century – in the multivolume *Mémoires de l'Académie Royale des Sciences* from 1666 to 1699. However, articles by Académie members and summaries of their research did regularly appear throughout the seventeenth century in the *Journal des Savants*, started privately in January 1665 by Denis Sallo

On March 6th, 1665, two months after the *Journal des Savants* first appeared, the Royal Academy launched the *Philosophical Transactions of the Royal Society*. As Fjällbrant (1997: 7) explains:

One of the aims of the Royal Society was to report on scientific work. Members of the society had seen and discussed a copy of the *Journal des Savants*. They decided that a similar but more philosophical type of serial publication was needed to publish accounts and experiments presented at meetings of the Society”

Unlike the *Journal des Savants*, the *Philosophical Transactions* were published monthly and included articles, evaluations of works, and a space for debates between scientists (Dwight, 1999; Gross et al., 2002). As the sole scientific outlet, its ties to a learned society were also stricter than the links established by the *Académie des Sciences* for the *Journal des Savants*, as the latter was only one of several publishing outlets for members of the *Académie*.

The regularly published scientific English periodical, *Philosophical Transactions*, had a tremendous intellectual impact (Dwight, 1999). It became a veritable model for many other academic journals, notably the Italian *Giornale de'Letterati*. It was also during this time period that the first peer-review system emerged. Initially, the president of the learned society (who was sometimes the former gatekeeper of epistolary networks) acted as secretary for the journal. With time, a reading committee was formed by *Philosophical Transactions*: our reading of the electronic archives dates its appearance to 26 March 1752.⁴ However, peer reviews predate the publication of academic journals. According to Biagioli (2002: 12) “a deeper excavation of the genealogy of peer review suggests that its origins may, significantly, lie in seventeenth-century

⁴ This article is based on all volumes of the *Journal des Savants* and the *Philosophical Transactions* available via Google Books™ and Wikisource (see e.g. http://en.wikisource.org/wiki/Philosophical_Transactions_of_the_Royal_Society)

academic book publishing, and the peer review of journal articles formed at a much later stage.”

Let us recall the specific context of the organizations that managed the journals, i.e., learned societies, and the political and legal context of the seventeenth and eighteenth centuries (Gross et al., 2002): peer review was inseparable from the royal licenses required to sell printed texts (Biagioli, 2002). Political authorities, particularly the aristocrats at the center of many learned societies, founded a peer-review system that unlike contemporary reviews, functioned more to censor works than to evaluate their quality (see Zukerman & Merton, 1971). Since its conception, the word “peer” presents semantic ambiguity: a “review by peers” may refer to one’s colleagues or to a royal “peer of the realm” (Zukerman & Merton, 1971; Biagioli, 2002).

Our examination of the first issues of these two seminal journals reveals that their content covers a diverse range of topics, with a great number of notes in epistolary format as well as revivals of previously published works. The authors of the first scientific articles freely based their style on two major literary predecessors – the book and the letter (Gross et al., 2002) – before realizing an autonomy and specificity of their own. However, at the beginning of the eighteenth century, the articles – and more broadly, research journals – took on three decisive qualities: a learned society familiar with the majority of current-day experiments guarantees and legitimizes the articles’ content and quality.⁵ The articles cost little to produce, and additionally, their distribution costs are minimal, especially compared to books.

What final form did these articles take at the end of the 18th century as they began to differentiate themselves from other styles and genres? Today, this question continues to bewilder researchers. For example, Figure 2 shows the first page of a 1740 issue, featuring a book review; such

⁵ This reduces ambiguity regarding the date and paternity of an idea (Kronick, 1976). Elsewhere, the numbers of articles/number of disputes ratio makes a long-term reversal to trend (Fjällbrant, 1997).

commentaries occurred frequently during the period. Figure 3 provides a typical example of a letter that describes the causes of rapid artillery breakdown and prevention methods.

INSERT FIGURE 2. Book review from a 1740 issue of *Journal des Savants*.

INSERT FIGURE 3. Letter describing a cannon's warming mechanism, taken from a 1710 issue of *Journal des Savants*.

A famous extract from *Philosophical Transactions* also illustrates the publication's characteristics during this period. It is a short note from Isaac Newton dated February 1672, pp. 3075-3076:

SIR,

To perform my late promise to you, I shall without further ceremony acquaint you, that in the beginning of the Year 1666 (at which time I applied my self to the grinding of Optic glasses of other figures than Spherical,) I procured me a Triangular glass-Prisme, to try therewith the celebrated Phænomena of Colours. And in order thereto having darkened my chamber, and made a small hole in my window-shuts, to let in a convenient quantity of the Suns light, I placed my Prisme at his entrance, that it might be thereby refracted to the opposite wall. It was at first a very pleasing divertissement, to view the vivid and intense colours produced thereby; but after a while applying my self to consider them more circumspectly, I became surprised to see them in an oblong form; which, according to the received laws of Refraction, I expected should have been circular.

Several points from these three extracts typify the first period of scientific publication. As Gross et al (2002) noted⁶, the highly personal, even emotional style of these writings is very striking: “we observe a prose style with many of the traditional elements of good story-telling: strong verbs in the active voice, first person narrative, imaginative language, minimal abstraction, little esoteric terminology (except for the many Latin verbs [sic] of plants), and few quantitative

⁶ Their summary is based on lexicometric and syntax analyses of scientific publications from the seventeenth through the end of the twentieth centuries.

expressions or theoretical explanations” (Gross et al., 2002: 229). Gross et al also analyzed formal characteristics specific to the 1774-1800 period, based on a sampling of French, English and German publications (see Table 1). At the end of the eighteenth century, journal articles remained rather unstructured: conclusions were rare, citations were not applied systematically, and the utilization of sections had just begun to emerge . Nonetheless, all of the major elements central to contemporary publications appear in these articles. The scientific “style” would later move to an almost entirely impersonal style, characterized by fewer personal pronouns, more passive than active verbs, and fewer literary expressions (e.g. verbs that express human rather than natural actions). In addition, complex noun phrases would persist over simple ones, and the authors would begin to use a smaller amount of verbs. Finally, as the style developed, a variety of substantive and formal elements began to appear (contextualizing introductions and conclusions, headings, figures, captions, numbering systems for citations and visuals, etc.) which bolstered readers’ comprehension by providing them structured information (Gross et al., 2002).

INSERT TABLE 1. Percentage of whole article with presentational features in France, England and Germany, 1774-1800

In conclusion, it is also important to recall several social and historical aspects of this early period. First, scholarly publications found their niche in an environment beyond the university (within learned societies), and sometimes even positioned themselves *against* the university and what it (the university) represented (i.e. Scholasticism; see Sère, 2007). Thus, scholarly journals were not university products in the historical sense; rather, they would emerge as such during the Enlightenment period, as the Scholastic approach to knowledge – which was very much based on

dialectical reasoning – began to wane (see Le Goff, 1957; Sère, 2007). Knowledge was increasingly rooted in observation and experimentation, which did not preclude theorizing.

The Expansion of Research Journals and the Subsequent Creation of Publishing Canons and Scientific Paradigms: 1800 to 1900

According to De Solla Price (1961), the growth in the number of publications can be described “by a logarithmic curve with a slope of more than 60 degrees: we start with two journals in 1665 and end with nearly 100,000 three hundred years later” (cited by Gross et al., 2002: 42). Fundamentally, the eighteenth and especially the nineteenth centuries marked a definitive break between literary and scientific writing (Richardson, 2000): personal pronouns, metaphors and poetic expressions gradually disappeared (see Table 2). Over the 19th century, and compared to the eighteenth century, scientific publications’ formal style moved from being a literary, unstructured exercise to a highly formatted and formalized practice. The eighteenth century was a clear turning point for this stylistic change (see Tables 2 and 3).

INSERT TABLE 2. Relative standard deviation for stylistic features across centuries, in France, England and Germany.

INSERT TABLE 3. Percentage of whole article with presentational features in France, England and Germany, 1800-1900.

As the sciences became professionalized, interactions grew between universities and learned societies. Universities backed some journals while others supported learned societies; sometimes, both would support a particular journal. The learned societies and their scholarly journals were central to the legitimization of scientific knowledge. Increasingly, they acted as gatekeepers for

ideas and information, while minimizing the appearance of doing so; they formed the core of an emerging market for publications and citations, deciding who was worthy of providing content. That being said, these individuals were able to carefully control authors' and inventors' appropriation of the societies' opinions. *Philosophical Transactions* furnishes a surprising warning against such use at the beginning of an 1836 issue, shown in Figure 4; the learned society claims absolute neutrality to protect its own reputation, cautioning that its reported reactions should not be used to promote or legitimize a text or invention, despite an author's or inventor's claims to the society's approbation.

INSERT FIGURE 4. *Philosophical Transactions* (1836), warning against appropriation of the Royal Society's opinion.

The events organized by the learned societies in the nineteenth century served in the dissemination of scientific reputations. Texts, their distribution (often serial, as ideas were built on through correspondence) and their presentation were generally inseparable. The shaping of ideas in scientific minds mattered more than the paper trail left by scientific writing. The scientific community's relatively small size likely facilitated this interchange.

Another major change took place during this period: fundamental research was separated from applied research (Gross et al., 2002). Henceforth, applied research had its own journal – in contrast to the *Journal des Savants* examples in Figures 3 and 4, it became unthinkable to publish both an applied, engineering-oriented article and a purely theoretical paper in the same journal. This evolution would be essential to the development of scientific journals, including management science journals, in the following period (from the late 19th century to present).

The Standardization of Publishing Canons and Scientific Paradigms, and the Emergence of Management Science: 1900 to Present

During the twentieth century, publishing practices were standardized into their currently accepted form: requisites include writing an abstract, demonstrating a clear structure, and providing a bibliography (Fjällbrant, 1997). Scholarly journals for the social sciences appeared, including the science of management – the earliest being at the end of the nineteenth century (*Revue d'Économie Politique*, 1887). In the United States, the Econometric Society first published *Econometrica* in 1933, and the American Sociological Association (founded 1905) created the *American Sociological Review* in 1936. The UK and France also saw many new journals: the *British Journal of Sociology* in 1950, the *Revue Francaise de Science Politiques* in 1951, *Sociologie du Travail* in 1959, the *Revue Française de Sociologie* in 1960, *Actes de la Recherche en Sciences Sociales* in 1975, and the *Revue d'Economie Industrielle* in 1977, among others.

Most of the primary management journals arose between the late 1940s and the early 1990s, primarily in the United States and Great Britain.⁷ The *Journal of Finance* appeared in 1946; the (American) Academy of Management (founded in 1936) created *Administrative Science Quarterly* for organization and management subjects in 1956; the *Journal of Management Studies* was first published in 1964; the *Journal of Management* in 1975⁸; *Management Information Systems Quarterly (MISQ)* launched in 1977 for IT systems management; the *Strategic Management Journal* appeared in 1980; and the *British Journal of Management* started

⁷ For a broader history of management, see Wren (1987) or Hatchuel and Glise (2003).

⁸ See Van Fleet et al (2006).

in 1990. The best of these journals essentially followed the scientific journal formats described by Gross et al (2002) and condensed in table 3.⁹

In a well-known essay, Van Maanen (1988) drew distinctions between three types of writing: (1) “realist” or impersonal, neutral, unimplicated; (2) “confessional,” i.e. behind-the-scenes views of research and the researcher’s inner thoughts, aiming to reinforce mastery of the topic; and (3) “impressionist,” focused on writing as a process, dissolving the border between science and literature. The realist style generally dominates the top-tier journals of the social sciences, particularly in the field of management science (Richardson, 2000; Forgues, 2001). The major management journals – ASQ, AMR, SMJ, MISQ – follow scientific formats, and extensively use quantitative techniques as well as quantification and qualitative material. How can one explain these journals’ adoption of this scientific mode of writing? Why did they chose modes of writings and evaluating research that are so closely aligned with those reported by Fjällbrant (1997) or Gross et al (2002), and whose epistemological specificities have often been highlighted (see, in particular, Martinet, 1990)?

The social, economic and cultural environment of scientific writing provides an initial answer. From a resource-dependence perspective (Pfeffer & Salancik, 1978) or a neo-institutionalist one (DiMaggio & Powell, 1991), obtaining the resources required to develop a new scientific field leads to both conflict and isomorphism. This is evident when one considers that the field’s “institutional entrepreneurs” and developers initially come from other fields whose codes they have espoused. It is also tempting to shed light on the choice of scientific writing for

⁹ This observation is based on our collection of the first issues of the Journal of Finance, ASQ, MISQ and the Strategic Management Journal. In the field of Management Information Systems, it also based on an historical analysis of both MISQ and the European Journal of Information Systems (de Vaujany, Walsh and Mitev, 2011).

management journals by means of the q-r theory (Ellison, 2002; Swanson, 2004). Lee et al summarize the key tenets of this theory:

Social norms develop over time regarding what is considered acceptable quality. Specifically, there will be a shift toward an emphasis on methodological rigor (r) instead of on a submission's contribution (q). The search for legitimacy and the accompanying debates over rigor and relevance can be seen as contributing to a trend of higher norms for what is considered acceptable r quality (Lee et al., 2007: xvi).

For resource gatekeepers¹⁰ (including learned societies and journals, whether or not they admit to this role), it is easier to evaluate (scientific) rigor than the pertinence of unfamiliar subjects. New management journals adopted the strictest standards of scientific rhetoric in order to legitimate themselves. Furthermore, the historic dichotomy between basic and applied-science journals (first seen in the seventeenth and eighteenth centuries) rapidly became problematic in a field expected to produce “actionable knowledge” (see Schön, 1983) that meets the social expectations of practitioners and management students. If the idea of separating basic and applied research makes sense in a field such as physics, it makes less sense in a field whose knowledge base is expected to be normative or actionable.

Beyond these contextual links, another explanation for management science's communication choices is worth mentioning: writing technology. Management science, like all sciences, has changed profoundly in the last forty years. Most significantly, a global information infrastructure has developed, contributing to standardized writing and the consolidation of scholarly

¹⁰ Once again, let us not forget that the gatekeepers came from other fields or only knew other fields – economics, sociology or the so-called “hard” sciences – whether they are university presidents, editors or public authorities.

communities¹¹ that had remained relatively unconnected in previous periods. In terms of writing technology, mechanical databases based on punch-cards and off-line computers, followed by networked computers and the Internet, facilitated and constrained writing modes; they have made it possible to index, compare, rank and treat (see Adler & Harzing, 2009) massive amounts of academic data, as long as certain formal constraints are followed (e.g. abstracts, keywords, titles, bibliography, academic affiliation, length, specific codes or document software, and so forth). The new citation indices – impact factors, h-index, g-index, etc. – are very much embedded in this infrastructure. As Chamayou observes, “If it is true that [the h-index] has become common currency, at least in North America and China, it is because commercial bibliometric databases have integrated it into their online platforms. The biggest one, ‘ISI Web of Science’ from Thomson-Reuters, is powerful enough to establish ‘personalized citation reports’ for any researcher in the world” (Chamayou, 2009: 147). This new techno-logic has had a very damaging side effect: it has led to the simultaneous individualization and commodification of both academics and journals, as well as to the understanding that both are assets, quotable by a global market.

Thus, management – like many other scholastic disciplines – has moved toward an increasingly integrated global platform (Whitworth & Friedman, 2009). Researchers meet physically or virtually across the globe, in sites such as the Academy of Management, the Strategic Management Society, and the International Conference on Information Systems. They submit their papers to globally-recognized journals whose evaluation and distribution are in turn deployed by global computerized systems. These information technologies make it easy to write and share scientific knowledge quickly and without any loss of quality (Fjällbrant, 1997). Thus, starting in the late twentieth century, new “sociomaterial practices” (Orlikowski, 2007)

¹¹ Both for the case of natural and social sciences.

developed in scientific writing. They combine new genres (aiming to reduce ambiguity in English as much as possible) with technical objects, such as word processing software (e.g. Microsoft Word), presentation tools (notably Microsoft PowerPoint), and the transmission of knowledge through new, increasingly open networks (e.g. Google Scholar). Typically, the line between technique (particularly with PowerPoint) and social activity (communicating results in conferences or journals) has been increasingly blurred.

Communication tools and their attendant bibliometrics are “invisible technologies” (Berry, 1983) that both facilitate and constrain scientific communication. More and more, these technologies influence scientific reputations, dependent on direct interactions in the eighteenth and nineteenth centuries, to merge with e-reputations. Electronically-followed citations continue to take on a crucial importance for researchers. Not only are they used systematically for all scholarly articles¹², but they are also central to a new, scientific form of management (Chamayou, 2009; Berry, 1983). Henceforth, the researcher’s performance is based on the performance of his or her citations in the electronic space. In just a few years, journal impact factors, h- or g-indexes, and electronic rankings (see Adler & Harzing, 2009; Gallivan, 2009) have become the new scientific metrics. These standards hold several undeniable advantages. For example, it is easier to perform scientific evaluations, since they can be programmed and consolidated. Further, assuming an open citation process, dynamic cumulative scoring occurs. A vast hypertext research platform is also built up, embodied notably by Scopus TM. All these factors promote the self-discipline of distinguishing between a paper’s past and current contributions. Stronger bibliometric analysis,

¹² “The number of articles with citations in the seventeenth and eighteenth centuries remains under one-half, in the nineteenth century this rises to about two-thirds; in the twentieth century, virtually every article contains citations – many of them. Scientists can no longer create a new argument without placing it overtly in the context of the past arguments of others” (Gross et al., 2002: 212-213).

can genuinely benefit the academic community¹³, as can selecting and institutionalizing precise formats to serve as proofs of rigor. Again, new modes of (e-)evaluation also promote individualization (community is not longer constituted by conflicting scientific paradigms, but by a set of individuals in competition with each other) or citation and co-citation that, as they are practiced in an increasingly reflexive manner, are less likely to contribute to the propagation of long-term paradigms. This danger is doubtlessly higher for management science than it is for other disciplines (e.g. physics or philosophy, which have more extensive histories and are more institutionalized).

However, by its increasing appropriation of bibliometric analyses and attendant writing formats in recent decades, management science runs the risk of trapping itself in several legitimization efforts. Some less than desirable outcomes include:

- Evaluators' over-reliance on bibliometric analysis and the growing exclusion of qualitative elements (Adler & Harzing, 2009; Berry, 2009). In a recent contribution,

Adler and Harzing suggest:

While no individual scholar can change the overall system, each of us can make a contribution by, at the minimum, starting to change the framing of our research conversations from vocabularies of individual success to vocabularies of contribution and significance. Rather than asking colleagues where something was published, we could ask how their research has made a difference and why they continue to be passionate about it. Perhaps at the next Academy meetings, we could describe a newly met colleague as 'a professor who has made a significant contribution by showing that. . . .' rather than repeating the often-used shorthand-of-success and referring to the person as "the professor who has an AMJ, two AMRs and an ASQ (Adler & Harzing, 2009: 92).

- Participant gaming: those writing and those being evaluated (who are in principle the same people) play the system to make the evaluation results as positive as possible

¹³ We are not criticizing bibliometrics and e-reputation evaluations so much as criticizing the way the academic community is beginning to appropriate them.

(Chamayou, 2009) by co-authoring, providing co-citations (Leydesdorff, 1993, 2003), targeting submissions to high-impact-factor journals that have the lowest selectivity rates (Gallivan, 2009), and so forth.

- Innovation through sections: certain journals develop new sections or columns to encourage innovative writing systems; however, these often end up resembling pre-existing ones and, in any event, are consolidated in managerial databases in the same manner as classic sections.
- The extrapolated aspect of “managerial implications”: classic scientific writing does not aim to “speak” to practitioners. Often, the solution is an empty rhetorical crutch; writers add a section in their articles on the “implications for managers.” In such a case, to whom were the preceding pages actually addressed? Were they just a purposeless story? What kind of knowledge is evoked by such an additional section? Is Schön’s “actionable knowledge” (1983) the simple extrapolation of ideas and empirical materials as detailed by scientific papers? In any case, can such action-oriented concerns be consigned to a scientific article? The growth of journals that are targeted at managers, such as the *Harvard Business Review* and *MISQ Executive*, stimulate a dichotomy that should, perhaps, be tolerated less in management science than in its other social science fields.
- The divide between literary and scientific narration is clear (as illustrated by a *long durée* analysis of science in general): in all but a few critical journals, such as *Organization*, and a handful of select articles (see, in particular, Grey & Sinclair, 2006; Grey & Willmott, 2005), scientific writing simply communicates research findings. Nonetheless, the revisions process (which for major journals may span many years) is more than a simple act of writing or communication; it is an intrinsic research element. When will journals themselves (in their electronic versions) make use of this valuable process and place different versions of a paper online so that it may be subject to reader’s/reviewers’ feedback at each stage? For the moment, scientific writing keeps its distance from literary narration; it thus remains more semantically uncomplicated, and lends itself more readily to bibliometric evaluation.

In summary, community size (in 2011, the AOM counts 19,470 members from 110 nations) has increased in parallel with the growth of its technological arsenal. This, when combined

with greater calculation by researchers, has encouraged a new relationship to scientific writing. Our next section will argue that this relationship may lead to two new scientific environments for managers and management scholars.

Two Possible Futures for Management Science Writing: Between Market and Meta-Text

The two possible future scenarios detailed in this section are based on the following dimensions: the nature of the incentives for research (which is more or less collective and paradigmatic), the types of routines and technologies used to produce and formalize academic knowledge, and the structure of the scientific community (scientific paradigm versus market).

In the first scenario (the Global Citation Market, or “GCM”), a true global citation market, with supply and demand for co-citations, or a market for cited researchers and those with citation potential (see Fig. 5), structures writing as a commodity like any other (see Ahmet, 2009). The conceptual fire, passion, and building of collaborative studies would give way to research designed exclusively as a series of projects (with a project manager and a team with specific skills), whose assemblages of technological, social, financial and material resources would prove available only to a limited few.

Figure 5. The first scenario: from personal interaction to a citation market

The *longue durée* perspective shows that early scientific writing was initially created among individuals with the help of gatekeepers. However, scientific writing gave way to a more communal, writing became focused on major canons and paradigms,. This development paved the way for citation-based writing to enter the global market of individual scholars. The heart of this market is formed by international scholars and a bilateral oligopoly consisting of major international universities – Harvard Business School, INSEAD, HEC, London Business School, China Europe International Business School, Fudan Business School, Tsinghua University

School of Economics and Management, Antai School of Management at Shanghai Jiao Tong University, etc. As we look towards the future, even the idea of “scientific paradigms” (Kuhn, 1962) could disappear, which could potentially lead to a complete fragmentation of the field.

Our own view is that building a reasonable number of paradigms requires a system of give-and-take. Such a system must extend far beyond short-term objectives in order to encompass individual and group aims. The GCM scenario’s structural elements are already visible, and the following converging factors are beginning to create a global market:

- Paradigmatic changes in standardized writing modes and media, as well as semantically contained content that allows for integration with a global information infrastructure (e.g. non-literary writing).
- Systems and platforms that animate the market and make it visible, such as the Journal of Citation Report, SCI, Scopus, Google Scholar, ISI Web of Knowledge, Harzing, and so forth. Callon and Muniesa (2005) have already detailed the mechanism in application to financial markets;
- Specific social networks that stimulate the market with recommendations, grey markets for draft versions, and global scholarly networks such as AOM, SMS, AIS, etc.
- Incentives (e.g. h or g-index) favoring individualization and commodification of research.

In this market, actors deploy highly reflexive strategies of writing and citation. Researchers co-cite colleagues from their own institutions or other locales in *quid pro quo* exchanges. They also post papers online and promote them via electronic social networks, or counter views in major articles via the “trolling” strategies described by Chamayou (2009).

While this first scenario has already started to manifest itself globally, we do not share the widespread pessimism held by many academics. For most researchers around the world, this “Global Citation Market” (GCM) is still a distant reality – or at best an espoused theory –

enacted by a dominant minority (Whitworth & Friedman, 2009; Özbilgin, 2009). Figure 6 illustrates the “concentric” relations implicit in this writing evaluation scenario:

INSERT FIGURE 6. Present-day relationships in the citation market

As seen, only the first circle is structured around a citation market. The further one goes toward the outer circles, the more distant the relationship with citations, and the more “theoretical” the notion of their global market becomes (in particular with regard to evaluation practices). At this point, it is fair to ask to what extent the symbolic, human, technical and social resources controlled by the first circle may result in a deadlock. Are institutions in the second and third circles prepared to play their hand in the “Global Citation Market”? Does this model fit with the local universities’ and firms’ teaching and research needs?¹⁴ Will it legitimize management as a discipline inside or outside of the social sciences?

The likelihood of the first scenario dominating management research depends primarily on one key parameter: simply stated, what is the ambition of the universities that belong to the second and third circles? The position taken by emerging powers in Asia and South America will be decisive, and reciprocally, these powers could contribute to the emergence of a second scenario.

¹⁴ The global logic of the GMC makes it difficult to produce locally-meaningful management research because management practice depends on local culture and context. Global research in basic sciences such as physics or chemistry makes more sense than global management research.

In the second scenario (the paradigmatic scenario), the preceding indices, rankings and other indicators will retain their positions of importance; however, they will be complemented by other qualitative and quantitative benchmarks that evaluate a researcher's impact on society, organizations and science, as well as his or her ability to create *collective* dynamics and transmit knowledge – especially pedagogic learning – through other activities. These required indicators cannot only be based on citations or co-citations. They should also include more collective and paradigmatic dimensions. Here, the evaluations of research groups, business schools and learned societies need to come to the forefront. Furthermore, a new set of qualitative and quantitative indicators needs to be implemented which highlights the co-development of federative concepts, the collective impact of management research on society and firms, and the contribution to business ethics (both at the level of research and teaching).

Diverse international communities – European, American, Asian, African – could explore the mentioned previously global market, and could thereby cultivate unifying concepts as well as a meta-text. Various scientific paradigms and canons for writing and for evaluating research would co-exist. Publications and citations would lay the groundwork for an increasingly collective scientific reputation – one not limited to the e-reputation of cyberspace. Key indicators would be balanced by simply rejecting the automated evaluations' systematized consequences. The natural sciences are likely to favor this trend, as numerous scientific publications have opened their platform to the collective web 2.0 modes of knowledge creation and evolution.¹⁵ This is an interesting “weak signal” for the second scenario; our

¹⁵ See for instance <http://www.geoscientific-model-development.net/> or <http://www.nature.com/nature/peerreview/debate/nature04988.html>).

longue durée vantage point proves the trap in which management is stuck to be legitimate. Perhaps, this process will result in the second (paradigmatic) scenario.

Conclusion: How Can We Escape the Trap of the “Global Citation Market”?

The increasing credibility given to indexed (individual) citations and publications, the overall infrastructure constituted by limited and standardized formats, and the bilateral oligopoly’s impetus all strongly contribute to the GCM scenario. The incoming generation’s attitude can also strengthen the tendency towards the GCM; the race for an e-reputation now motivates a generation born into the new socio-material environment. This generation is motivated to be or to stay in the first circle (see figure 5).

By contrast, the perspectives offered by other research appear to be far less motivating, as well as far less “international.” In a way, they are less “enchanted”¹⁶ or seductive for present and future generations of researchers, particularly Ph.D students. But the perverse effects of this system are obvious: journals will be tempted to accept articles with strong potential for citation by major institutional authors, solely on the grounds that the journals themselves are ranked through citations via impact factors. Researchers will be tempted to spend most of their energy (often in vain) striving for publication in A-list journals: many innovative ideas will remain invisible due to the lengthy revision process and likelihood of rejection. In addition, researchers will neglect to build genuine scientific thought in favor of opportunistic publishing events. The gap between the practitioner’s world and the collaborative

¹⁶ We increasingly believe that management science suffers from a lack of “enchantment.” Our work inspires fewer dreams, particularly for our Master’s students (potential doctoral candidates) but also for management practitioners. The question is: how to re-create true “prestige” for the field? Global Citation Market *does* address the issue. Alternative scenario need to be as convincing and produce an equivalent “enchantment”.

construction of knowledge will increase because it will be increasingly difficult to find a space for collaboration¹⁷.

Our work can inspire other ambitions. Instead of looking (exclusively) for citations of our work in scholarly journals, we should look more intently for mentions of our work in executive, managerial and/or broader public journals and communications. Additionally, instead of seeking co-authorship with academics from other institutions, we should seek co-authorship with researchers and practitioners from other fields (e.g. sociology or psychology). An “Executive Doctor of Business Administration” (EDBA) degree programme may be a way to achieve this, as academics could write papers with their practitioner-students.

In the same vein, the second scenario does not exclude a vision for citations. It would favor pluralism in management writing, as well as a style of evaluation of management writing that would arise through multiple informational infrastructures. From this perspective, the global infrastructure would be used to sustain various other global forums in a variety of languages, while utilizing different standards for reviewing and writing (see e.g. the provocative proposal of Whitworth & Friedman, 2009). New technologies, i.e. wikis, virtual worlds, podcasts, etc., can contribute to new genres of scientific communication that are more collective in their demeanor. So far, electronic journals have only reproduced and reinforced older genres; we have not significantly changed the main media that we use to exchange and modify scientific knowledge since the seventeenth century. Is this not shocking given the continuing emergence of new sciences, management in particular?

¹⁷ To get an idea of the deviations evaluations based on citations currently lead to, see in particular: <http://www.academicproductivity.com> and <http://www.timeshighereducation.co.uk/story.asp?storycode=411323>

Its benefits notwithstanding, there are also dangers inherent in the second scenario. New genres of scientific writing must avoid the “incommensurability” described by Kuhn (1962), i.e. the impossibility of understanding one paradigm through the conceptual framework and terminology of a rival one. New modes of communication must guarantee a certain degree of interoperability in order to facilitate the emergence of new paradigms. Indeed, the GCM relies on an infrastructure that is likely to sustain this interoperability. Perhaps, alternatives to the GCM should also be part of this emerging global infrastructure in order to enable and evaluate collective writing. This will allow for a number of cumulative developments within scientific paradigms. Specifically, it is this development that is a danger for the second scenario. From a geopolitical perspective, many researchers in emerging and European countries will likely favor the second scenario, as it would facilitate a greater diversity in scientific writing. This second scenario may also be the hope of those who are passionate about research and/or drawn to scholarship or academia, for this scenario may be the most effective promoter of new ways of “[making] sense of the world” (Özbilgin, 2009).

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FIGURES AND TABLES

Paradigm Change or Citation Market: A *Longue Durée* View of Management Writing

AUTHOR: François-Xavier de Vaujany

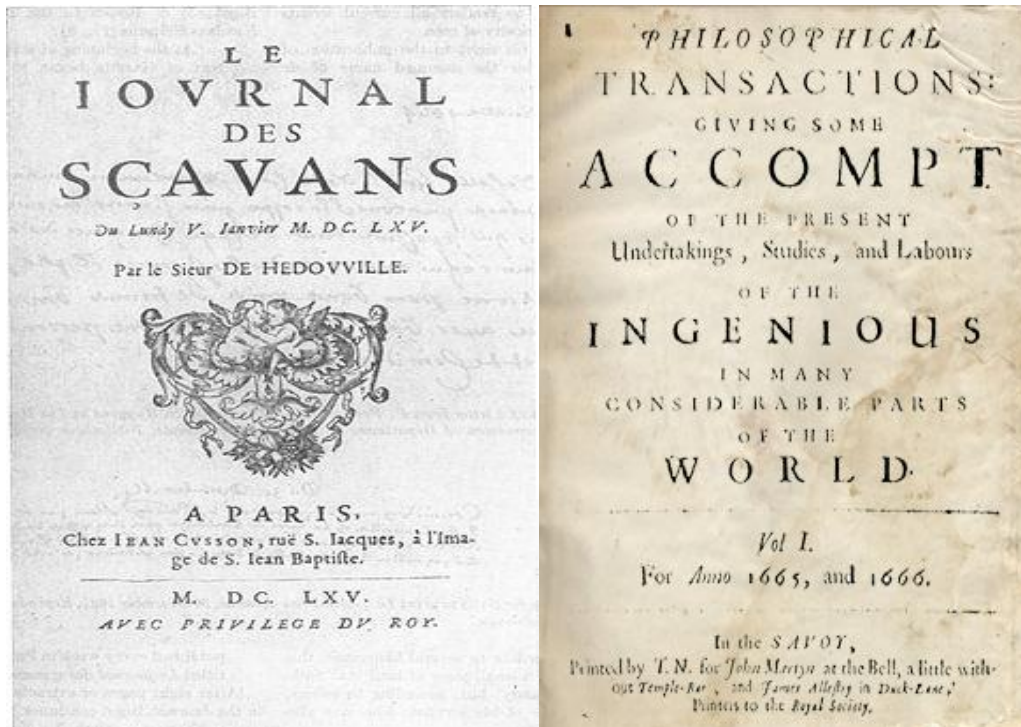


Figure 1. Covers of the *Journal des Savants* (left), first published in January 1665, and the *Philosophical Transactions of the Royal Society* (right), first published in March 1665.

Pag. 3

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S E P T E M B R E 1740.

Oeuvres Spirituelles de feu M. FRANÇOIS DE SALIGNAC DE LA MOTHE-FENELON, Précepteur de Messieurs les Enfans de France, & depuis Archevêque & Duc de Cambray, Prince du S. Empire, &c. Nouvelle Edition, revue & considérablement enrichie. Se vend à Paris, chez Jean-Baptiste Coignard, rue S. Jacq. 1740. in-12. 4. vol. Avec Approbation & Privilège du Roi.

NOUS avons rendu compte dans le Journal du mois d'Août dernier, du premier des quatre volumes qui composent ce Recueil, nous allons exposer en substance ce que renferment les trois autres.

Le second volume est divisé en quatre

Figure 2. Book review from a 1740 issue of *Journal des Savants*.

[Translation]

Journal des Savants

September 1740

Spiritual Works, by the late Mister François de Salignac de la Mothe-Fenelon, tutor to my lords the children of France, and from the Archbishop and Duke of Cambray, Prince of the Holy Empire. Much-augmented new edition. For sale in Paris at Baptiste Coignard, rue Saint Jacques, in December. Four volumes. Bears the King's approval and commendation.

In the journal last August, we reviewed the first of four volumes in this collection. We will here explore thoroughly the contents of the three others. The second volume is divided into four.....

Lettre de Mr. de MORALEC Commissaire ordinaire de l' Artillerie à un de ses Amis, contenant ses conjectures sur les causes qui mettent en si peu de tems les pièces d' Artillerie hors d'état de servir, & sur les moyens d'en augmenter considérablement la durée.

JE vous tiens un peu tard, Monsieur, la promesse que je vous ai faite, de vous envoyer mes conjectures, sur les causes qui mettent en si peu de tems les pièces d' Artillerie hors d'état de servir, & sur la maniere d'en augmenter considérablement la durée. Les occupations continuelles que j'ai eûes depuis que j'ai eu l'honneur de vous voir, m'ont absolument empêché de vous satisfaire plutôt, quelque envie que j'en aye eû. Vous connoissez mon inclination pour la Physique & à vous faire plaisir : c'en est assez pour me flatter que vous recevrez mon excuse, quand elle ne seroit pas aussi-bien fondée qu'elle l'est en effet.

Pour entrer en matiere, vous verrez par ce que j'aurai l'honneur de vous dire, que je ne prétens pas comme Mr... éterniser la durée d'une pièce de canon. L'expérience nous apprend que rien ne peut résister à la violence de la poudre,

ou
* Tiré du Journ. de Trevoux, Mars 1710. pag. 506.

Figure 3. Letter describing a cannon's warming mechanism, taken from a 1710 issue of *Journal des Savants*.

[Translation]

Journal des Savants

Letter from Mister Moralec, Field Artillery Captain, to one of his friends. The letter provides hypotheses about what causes artillery to breakdown so quickly and discusses ways to increase the time before it breaks down.

I am late in keeping the promise I made you, Sir, to send my hypotheses about what causes artillery to break down, and ways to considerably increase the time before it does so. I have been very busy recently, which prevented me from replying to you earlier, despite my fervent desire to do so. You know my love of physics, and beyond that, my desire to please you.

Please believe the sincerity of my words.

To get to the point, you will see that the words I have the honor of addressing to you do not aim, as some would have it, to extend the life of a cannon eternally. Experience has taught us nothing can resist gunpowder's violent effects...

*Extracted from the Journal of Trevoux, March 1710, page 506.

	English (n=44)	French (n=54)	German (n=28)
Formal features			
Headings	20%	56%	29%
Thematic titles	68	80	64
Citations	45	57	32
Substantive features			
Complete introductions	55	83	57
Complete conclusions	27	37	21
Visuals	41	37	25

Table 1. Percentage of whole article with presentational features in France, England and Germany, 1774-1800

Source: Gross et al., 2002: 125

	17th century (n=198)	18th century (n=482)	19th century (n=524)
Personal pronouns	87%*	82%	100%
Evaluative expressions	250	200	225
Deviant expressions	300	400	300
Suppressed-person passives	180	157	155
Objective passives	250	260	200
Dummy subject	190	160	175
Hedges	250	125	157
Quantitative expressions	320	155	180
Citations	700	300	300
Clausal density	57	62	71
Sentence length	55	60	59

Table 2. Relative standard deviation for stylistic features across centuries, in France, England and Germany.

Source: Gross et al., 2002: 125

*Ratio of the standard deviation divided by the mean multiplied by 100.

	1701-1750/1801-1850	1751-1800/1851-1900
	(n=50/53)	(n=76/51)
Formal features		
Headings	30/43	42/53
Thematic titles	76/87	70/84
Citations	48/58	48/67
Substantive features		
Complete introductions	60/91	72/80
Complete conclusions	22/21	36/24
Visuals	46/42	39/55

Table 3. Percentage of whole article with presentational features in France, England and Germany, 1800-1900.

Source: Gross et al., 2002: 128.

It is likewise necessary on this occasion to remark, that it is an established rule of the Society, to which they will always adhere, never to give their opinion, as a Body, upon any subject, either of Nature or Art, that comes before them. And therefore the thanks, which are frequently proposed from the Chair, to be given to the authors of such papers as are read at their accustomed meetings, or to the persons through whose hands they received them, are to be considered in no other light than as a matter of civility, in return for the respect shown to the Society by those communications. The like also is to be said with regard to the several projects, inventions, and curiosities of various kinds, which are often exhibited to the Society; the authors whereof, or those who exhibit them, frequently take the liberty to report and even to certify in the public newspapers, that they have met with the highest applause and approbation. And therefore it is hoped that no regard will hereafter be paid to such reports and public notices; which in some instances have been too lightly credited, to the dishonour of the Society.

Figure 5. *Philosophical Transactions* (1836), warning against appropriation of the Royal Society’s opinion.

Source: *Philosophical Transactions* part 1, 1836: 1-2.

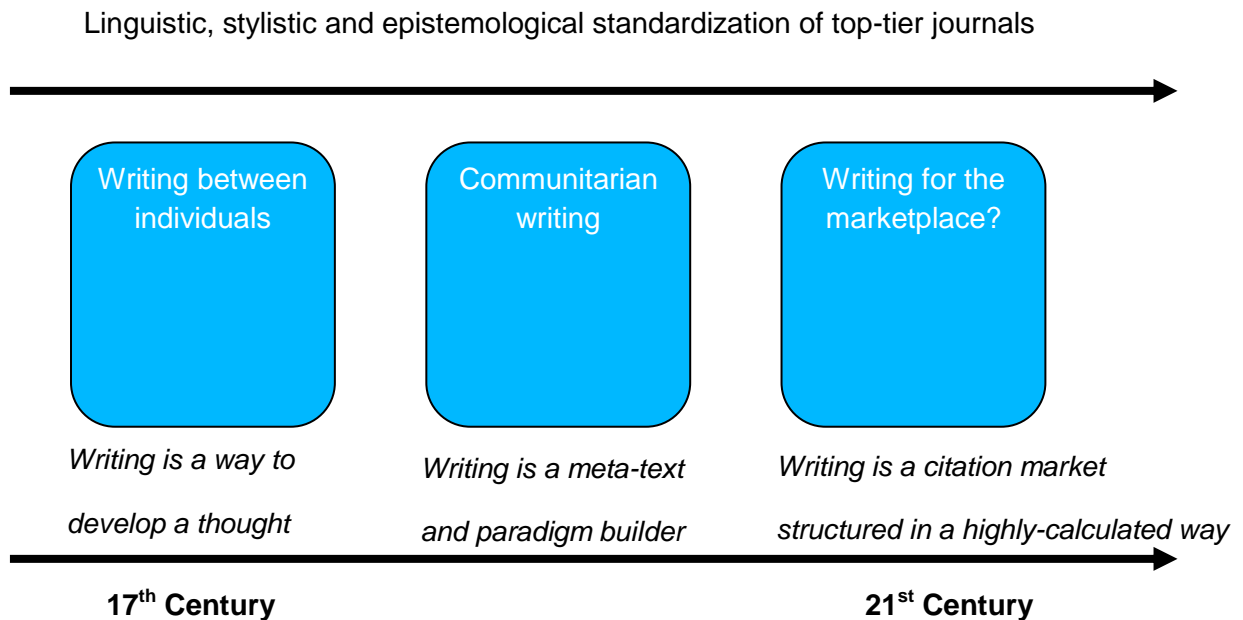


Figure 5. The first scenario: From individuals interacting to a citation market.

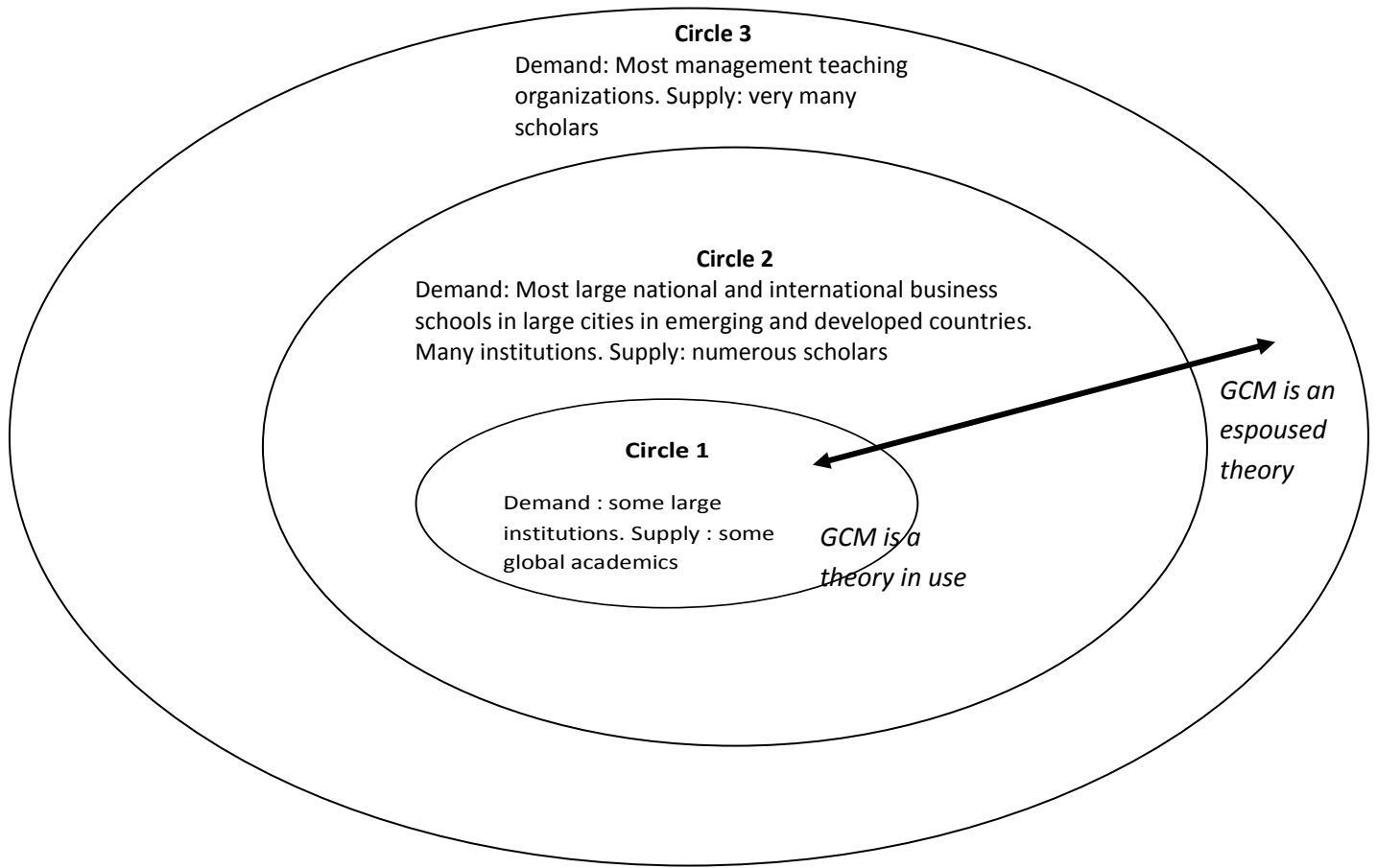


Figure 6. Current-day relationships in the citation market