An Historically-Grounded Critical Analysis of Research Articles in IS

Abstract:

In order to explore scientific writing in IS journals, we adopt a combination of historical and rhetorical approaches. We first investigate the history of universities, business schools, learned societies and scientific articles. This perspective allows us to capture the legacy of scientific writing standards which emerged in the 18th and 19th centuries. Then, we focus on two leading IS journals (EJIS and MISQ). An historical analysis of both outlets is carried out, based on data related to their creation, evolution of editorial statements, and key epistemological and methodological aspects. We also focus on argumentative strategies found in a sample of 436 abstracts from both journals. Three main logical anchorages (sometimes combined) are identified, and related to three argumentative strategies: 'deepening of knowledge', 'solving an enigma', and 'addressing a practical managerial issue'. We relate these writing norms to historical imprints of management and business studies, in particular: enigma-focused rhetorics, interest in institutionalized literature, neglect for managerially grounded rhetoric, and lack of reflexivity in scientific writing. We explain this relation as a quest for academic legitimacy. Lastly, some suggestions are offered to address the discrepancies between these writing norms and more recent epistemological and theoretical stances adopted by IS researchers.

Keywords: *Research Articles; History of Scientific Articles; Argumentative Strategies; Academic Writing; Academic Legitimacy; EJIS; MISQ*

Introduction: History and academic writing

Scientific articles are the main outlet for researchers in all scientific fields, including in Information Systems (IS: an explanation of all acronyms is provided in Appendix 1) research. But where does the practice of scientific writing come from? Are there some historical imprints in our scientific rhetoric? Revisiting the history of scientific writing helps realize how writing norms have become invisible. We argue that this secular legacy is made of subtle academic norms which have led to limited forms of rhetoric for IS journals and have created a 'legitimacy trap' whereby new fields such as IS become caricatures of established ones to gain scientific legitimacy.

Academic writing in social sciences and more specifically management science, is rarely explored (Muller Mirza, 2005; Forgues, 2001). In this article, we propose to investigate the design of research articles in the field of IS. The purpose is descriptive rather than normative. We do not provide a list of 'good' practices; instead we propose a critical reading of existing forms of writing.

In order to better understand the norms of contemporary writing, we first go back to the history of universities in Europe and the US. The emergence of business studies is investigated from the perspective of long-term academic history. We trace the emergence of scientific articles through the history of learned societies in Europe. This allows us to better understand the standards that started emerging in the 18th and 19th centuries.

Richardson (2000:923) recommends choosing journal articles that "exemplify the mainstream writing conventions of your discipline. How is the argument staged? Who is the presumed audience? How does the paper inscribe ideology?" Using this technique, we investigate research articles published in *Management Information Systems Quarterly* (MISQ) and the *European Journal of Information Systems* (EJIS). We complete an historical analysis of both outlets, before conducting a study of their scientific rhetoric. We thus identify three argumentative strategies ('deepening of knowledge', 'solving an enigma', 'addressing a practical issue'). We relate these strategies and their evolution to the norms of scientific writing, and to how management science and IS have sought academic legitimacy. Finally, we discuss attempts to go beyond these argumentative norms to start addressing possible discrepancies between these norms and epistemological stances researchers have developed more recently in management studies and IS.

1. The genealogy of research articles: universities, learned societies and peer-review systems

In this section, we revisit the history of universities, more specifically how business and management studies emerged within universities in two European countries (France and the UK, the two countries in which we have working experience, and in order to show variation across Europe) and in the US; we then focus on the history of European learned societies, the history of academic journals and of scientific writing.

1.1 From medieval to modern universities: the emergence of academic knowledge

There is a large amount of literature on the history of academic knowledge (Engwall & Zamagni, 1998) as well as the history of management science (Hatchuel & Glise, 2003; Bouilloud & Lécuyer, 1994).

Universities first appeared in Europe in the 11th and 12th centuries (Verger, 1973; Charles & Verger, 1994). The advent of university education marked a fracture. Knowledge which for a long time had remained with the clergy as trustee (Le Goff, 1957) left monasteries and cathedral schools to enter new communities which subsequently took the name of *universitas* (Verger, 1973). Teaching was then centred on scholasticism, the analysis and presentation of authorized texts in a phase of *lectio*, followed by a phase of debate *disputatio* (Sère, 2007:1):

> "The Master ends the debate by presenting an argumentation for a resolution, a process named *determinatio*. The essence of *disputatio* is of a dialogical training, even perhaps agnostic, within a determined knowledge framework with extremely codified rituals".

Academic knowledge increased during these very rhetorical and dialectical exercises (Le Goff, 1957) in theology, art and canon law, eventually joined by medicine.

Applied knowledge was kept away from European universities for a long time. This kind of knowledge was considered suspect. Economics and management were totally absent in the University of the Middle Ages. One should avoid any anachronism: managerial practices, as well as the words which designate them, came much later with the industrial revolution (Richardson, 1940). However there were traders and bankers from the early Middle Ages, and they were more and more influential in the expanding cities all over Europe. Commercial

techniques, accountancy, foreign languages had to be mastered. All three were seen as dissociated. The idea of a management syllabus which would eventually unite the three is very recent. These competencies could not be taught in noble places like universities. Bankers' and traders' children were being trained commercially in *scholae minores*, primary schools (Le Goff, 2001). European universities remained in the hands of the clergy for centuries. This left an enduring legacy in academic symbolism and vocabulary (e.g. chairs and ceremonial gowns).

In France, the fracture really appeared with the revolution and the dissolution of universities which took place in 1793 (Charles & Verger, 1994). The Convention favoured top tier vocational schools such as 'Ecole Polytechnique' created in 1794 in which knowledge focused on design and engineering practices. The positivist revolution of the 19th century and the evolution of pedagogical methods (with case studies introduced in law schools) were a first step towards some form of applied academic corpus. In England some features of the medieval university remained, despite partial reforms. In France the modern university was really born with the 1808 decree which founded the imperial university; secondary schools, high schools, universities structured the new pedagogical landscape. As the industrial revolution progressed, the first business school in Paris was created in 1819 (Maffre, 1984). Rapidly absorbed by the Chamber of Commerce, it first trained groups of business and industrial executives. Nevertheless, the teaching of management was still absent from the academic landscape while economics, following law, was progressively accepted in universities.

The end of WWl brought a reflection in terms of industrial management. Management courses were developed in French engineering schools (e.g. Ecole Centrale des Arts et Manufactures) in the 1930s. The first university-based schools of management were the Instituts d'Administration des Entreprises created in the 1950s. This led to the advent of academic courses in management (Gouadain & Louart, 1997). The content of courses was initially influenced by practices and knowledge developed in the US (Locke, 1989). One of the first actions of the Fondation Nationale pour l'Enseignement de la Gestion created in 1966 was to send students with scholarships to train in the US (Gouadain & Louart, 1997).

In contrast, the UK and other European countries followed a different trajectory, except for Germany whose "dual system", academic and vocational training, is a clear exception (see Kieser, 1989). Most business departments, which were private or hosted by universities, were

structured according to a pure academic logic, and appeared after WW2 (Feingold, 2008; Gouadain & Louart, 1997). Manchester and London Business Schools were created in the 60s, progressively followed by the creation of business schools in most major universities (e.g. Lancaster, Warwick, Bath, and Nottingham) in the 70s and 80s, and finally joined by Cambridge and Oxford Universities in the 90s.

Outside Europe, universities first appeared in the American colonies in the 16th century in Santo-Domingo, Lima and Mexico; they had a missionary role and taught mostly theology and canon law. In North America, local colleges first appeared in the 17th and 18th centuries starting with Harvard, Williamsburg and Yale (Charles & Verger, 2007). Before the Civil War (1861-1865), the US academic model remained close to the English model and trained limited elite. Unlike self-governed European universities, American universities remained dependent on political authorities, founding congregations or private bodies. Academics were first and foremost the transmission vectors of past knowledge; research was very marginal (Charles & Verger, 2007).

The environment in which the first US business schools were established was the development of practical education during the late 19th and early 20th centuries, influenced by the philosophical movement of pragmatism (Pierson, 1959). In the period 1860-1940, while academic education in Europe became essential for social promotion and national identity but still mostly concerned elites, the US aimed at mass education of the middle class (but kept away 'unwanted minorities'). Vocational education and courses which were still judged unacceptable in European universities were introduced e.g. finance and business; the Wharton School of Finance was opened in 1881 at the University of Pennsylvania and the Harvard Business School in 1908 (Charles & Verger, 2007).

In the UK, universities were not considered as an appropriate place for professional education (Sanderson, 1972) well into the 1960s. The predominant philosophy of education during the 19th century and the first half of the 20th century was that universities should provide a liberal education "to cultivate the mind and form the intelligence" (Sanderson, 1972:5). Some departments of commerce were created for instance at Birmingham and Manchester universities, the new 'civic' universities, in the early 1900s, under pressure from industrialists, but with limited success (Keeble, 1992).

The impetus came from the US. Locke (1996) argues that the 'mystique' of American management was that management was seen as the decisive factor both in US military success

in WW2 and post-war prosperity. In the context of the Cold War, "post-war business and government leaders [viewed] the reform of business education as a matter of national preparedness" (Gleeson & Schlossman, 1992:11). The transformation of US business schools from pre-war vocational to post-war academic institutions can be traced to the Ford Foundation Report and the Carnegie Corporation Report, both published in 1959. Both believed that, in order to support the capitalist system, the US domestic economy had to stand as an example of managerial success before the world (Cullen, 2006). To gain legitimacy, US business schools adopted a new model of business education which Locke describes as: "the application of science to the solution of managerial education" (Locke, 1989:1). The research model embraced was that of the sciences, and entails a strong publishing record in peer-reviewed journals, supported by the institutionalized tenure system, leading to academics tailoring their research to the requirements of these journals.

In the UK, a similar report entitled "British Business Schools" was published in 1963 (Franks, 1963) which incorporated advice from industrialists and academics, British and American. Franks recommended that they should be part of a university. This recommendation echoes that of Joseph Wharton when he chose the University of Pennsylvania as the home of the first US business school (Cullen, 2006; see also Tiratsoo, 2004). One purpose of business education was the transmission of skills and techniques, and Franks refers to operational research, linear programming, decision theory and computer science.

***** TABLE 1 ABOUT HERE *******

The origin of business schools is characterized by a conflict between business as an academic field seeking legitimacy from established academic fields by adopting their research methods and language (mathematics, economics); yet this move towards academic rigour alienates the business practitioners who provide the students and funding (Cullen, 2006). The emergence of French, UK and US academic systems and business studies is summarized in Table 1.

In the field of IS, teaching and academic courses started appearing in the late 1960s and early 1970s in the US and the UK. In France, Reix played a major role in the institutionalization of the IS field in the late 1970s as a specific discipline distinct from computer science (Reix & Rowe, 2002; Reix et al, 2002).

In the lapse of ten centuries, universities went from the teaching of abstract knowledge based on scholasticism (recursive development of knowledge) to more practically grounded and

linear knowledge (demonstrated to a legitimating audience, i.e. learned societies and academics). Debate became more technical, with variations depending on the discipline. The quest for knowledge, obtained through the search for generalization (hypothetico-deductive methodology) or through examples (case studies or action research), became commonplace in management science. Research articles, a communication medium which only emerged slowly, are related to the objective of demonstrating and spreading academic knowledge. Learned societies played a major role in their advent.

1.2 Development of learned societies and scientific publications: A European System

The writing of scientific articles emerged in the 17th century in Europe (Gross et al, 2002) primarily through learned societies (Kronik, 1976; Fjällbrant, 1997). Learned societies federated enlightened aristocrats, specialized scholars, academics, interested clergymen, and many non-scientists all over Europe. The Royal Academy was founded in London in 1660 and the French Académie des Sciences in 1666 with others soon following in Ireland, Sweden and Russia. In the US, these learned societies appeared much later, in the early 20th century, in particular with the American Council of Learned Societies for the Advancement of Humanities and Social Sciences set up in 1919.

As Fjällbrant (1997:5) explains: "these learned societies represented a move towards a co-operative organization for scientists, irrespective of political views or professional occupation". This centralization of experts gave them a real authority. This is intimately linked to the development of a system of evaluation by one's peers. Peer review long pre-dates scholary journals, the purpose of early peer review being related to censorship rather than quality control (Biagoli, 2002). As Zuckerman and Merton (1971:69) remind us:

> "It did not appear all at once as an integral part of the social institution of science. It evolved in response to the concrete problems encountered in working toward the developing goals of scientific enquiry and as a by-product of the emerging social organizations of scientists".

During the 17th century, there were many media for the spreading of scientific knowledge developed by learned societies' members and academics: anagrams, letters, scientific books, journals, and almanacs (Kronick, 1976; Fjällbrant, 1997). For anagrams, "a sentence

announcing a discovery was encrypted into an anagram which was then deposited with an official witness. If any competitor publicly claimed the same discovery, the original scientist could then refer to his witness to unscramble the anagram, and in this way establish his priority!" (Fjällbrant, 1997:5). One of the most famous examples is Galileo who in 1610, wrote to Kepler the following anagram: *smaismrmilmepoetalevmibunenugttaviras.* "Kepler was unable to solve the anagram and Galileo later told him that it stood for *altissimum planetam tergeminum observari* (I have observed the uppermost planet triple). This referred to the rings of Saturn which Galileo had observed for the first time. By this means he was able to gain time to check his observations before making a public official announcement" (ibid).

Letters were also exchanged between scientists (Kronick, 1976; Gross et al, 2002). This was a method used for transferring news about research carried out by individuals and groups. They were often sent to a person who acted as a 'gatekeeper' or a mailbox for transmitting news to other people (Fjällbrant, 1997:8). Academic books, journals, annotated calendars and almanacs completed the system. Books however represented a slow and costly diffusion of knowledge. Calendars and almanacs promoted a more anecdotal and pedagogical aspect of research.

Often supported by the learned societies, academic journals gradually supplanted other media. They combined three decisive qualities: the quality of the contributions was controlled by peers and was often linked to experiments carried out in front of members of learned societies; a very low cost compared to books and a more efficient diffusion in terms of rapidity and scale. Nonetheless, from the 17th to the late 18th century, they still relied heavily on epistolary conventions (Gross et al, 2002).

The first academic journal (in French), the 'Journal des Savants', was published on January 5th 1665 (Kronick, 1976; Fjällbrant, 1997; Gross et al, 2002; Cocheris, 1860). The contents were "details of experiments in physics and chemistry, discoveries in arts and in science, such as machines and the useful and curious inventions afforded by mathematics, astronomical and anatomical observations, legal and ecclesiastical judgements from all countries, as well as details of new books and obituaries" (McKie, 1948). The Royal Academy started its own publication, the 'Philosophical Transactions of the Royal Society' on March 6th 1665. As Fjällbrant (1997:7) explains:

> "One of the aims of the Royal Society, London, 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".

The Philosophical Transactions was a monthly publication including articles, an evaluation space for books' assessment and a space for debate between scientists (Dwight, 1999; Gross et al, 2002). It was in fact the first serial publication of a learned society. For the many other academic journals which appeared between the 17th and 19th century, it was at the same time a model and a stimulus (notably for the Italian journal 'Giornale de' Letterati'). Key aspects of academic journals founded in the 17th and the 18th centuries are summarized in Table 2.

******* TABLE 2 ABOUT HERE *******

This phenomenon of scientific journals led to a major stylistic fracture in that scientific writing broke away from literature. As Richardson explains (2000:925):

> "Since the 17th century, the world of writing has been divided into two separate kinds: literary and scientific. Literature, from the 17th century onwards, was associated with fiction, rhetoric, and subjectivity, whereas science was associated with fact, 'plain language' and objectivity".

In particular from the last quarter of the 18th century (Gross et al, 2002), the archetypal structure of scientific writing started to become standardized (writing of introductions and conclusions), hypothetico-deductive, neutral (use of passive voice and low occurrence of personal pronouns), and distinct from other modes of writing of the time. Richardson (2000:927) describes the structuring effects of these prescribed writing formats as follows: "how we are expected to write affects what we can write about". She uses the metaphor of building and architecture. The writer has to lean on solid foundations, use good scaffolding, and mobilize tested techniques and materials. These writing formats are rooted in clear rules, which discourage the abusive use of end of page notes and secondary arguments. Knowledge must be focused precisely, relying most often on hypotheses. Sometimes, even inductively built research is presented in a hypothetico-deductive format. From the 19th century, the argument progressively became summarised in an abstract of at least 150 words, a practice that generalized during the 20th century (Gross et al, 2002). A theoretical framework *ex ante* or *ex post* must now be present in an article.

However this standard did not impose itself spontaneously; it occurred through long-term evolutionary processes in scientific communication (Gross et al, 2002). In particular, the increasing number of litigations led more and more scientists to publish, in order to date and disseminate their discoveries. Academic articles imposed themselves as instruments to manage litigations (Kronick, 1976). Compared to anagrams, their advantage was obvious: the anagram was a rather vague principle, the promise of a discovery. As for scientific books, they described a discovery and its *modus operandi* in too lengthy and detailed a fashion.

There is an obvious link to the evolution of academic knowledge outlined in section 1.1. Breaking progressively away from scholasticism, academics communicated more and more in order to disseminate their research. The enrichment of authorized texts and of their writing (in the phases of *lectio* and of *disputatio*) gave way to an empirical and formal exercise in its modes of expression and validation**.** The resulting format of academic writing can be summarized as having four main objectives (Kaufer & Carley, 1993):

- To claim the paternity of an idea;
- To obtain social recognition for the author;
- To assert priority in a discovery;
- To establish an accredited community of authors and readers.

However, in the late 20th century, the link between scientific writing and literature became more complex (Van Maanen, 1988); in particular with the postmodernist stream of thought in social sciences which critiques the modernist scientific mentality of objectivity and progress associated with the Enlightenment. The frontier disappeared between 'facts' and 'fiction', indicating a new connection between literature and science, imagination and observation of facts. As E.L. Doctorow asserts in his famous quote: "there is no longer any such things as fiction or non-fiction, there is only narrative". The critical starting point is quite clear. As explained by Richardson (2000:924):

> **"**I was taught (…) not to write until I knew what I wanted to say, until my points were organized and outlined. (…) this static writing model coheres with mechanistic scientism and quantitative research. (…) The model has serious problems: it ignores the role of writing as a dynamic, creative process; it undermines the confidence of beginning qualitative researchers because their experience of research is inconsistent with the writing model; and it contributes to the flotilla of qualitative writing that is

simply not interesting to read because adherence to the model requires writers to silence their own voices and to view themselves as contaminant".

Van Maanen (1988:46) distinguishes three main styles of writing from scientific/modernist to postmodernist:

- The "realistic style": uninvolved, impersonal, worried about neutrality in the presentation of the narrative. Researchers claim some omniscience.
- The "confessional style": researchers show all difficulties pertaining to the field and the backstage of the research. They promote some perspective, but in the end yearn to take their distance.
- The "impressionistic style": the writing process is promoted. One faces a rather fragmented and raw narrative. Writing becomes a literary performance (Muller Mirza, 2005), promoting a dramaturgy very remote from academic norms.

One could add to this list 'thought experiments' which describe an unrealistic experiment aimed at testing the internal coherence of an argument, its plausibility or even its relevance (Brown, 1986; Introna & Whitley, 1997; de Vaujany, 2008). Physics, like social sciences, has also mobilized this type of writing which moves away from usual writing norms. However, these experiments have scarcely affected a consensus built over centuries. Journals remain a major medium for scientific writing, including in management science. The format remains short and the purpose is to share some knowledge with a hypothetico-deductive stance. The exercise of reflexivity through the process of writing is rare.

Academic journals have accumulated advantages which explain their enduring predominance (Fjällbrant, 1997:4):

- Capacity of diffusion to a high number of heterogeneous readers.
- Detailed information (methods, tables, graphs and results) easily transmitted.
- Easily mobilized printed documents which include easily verifiable information.
- Establishment of a precedence of the academic work and thus of the researcher's merits.

They have also imposed the positivism of 19th century Europe when the quest for facts was at the heart of scientific work. Postmodernist deconstruction or narratives as alternative ways of knowing and writing proposed in more recent critical management studies (e.g. Grey & Willmott, 2005; Czarniawska, 1999) have had limited impact, despite innovative attempts in

critical journals such as *Organization*. The epistemological stances of management research may have evolved, but it still uses writing norms which comply with scientific writing standards. The realistic style prevails. If for positivists, an article is only an exercise in communication independent from the researcher, phenomenological, postmodernist or critical academics consider writing as an intrinsic part of the research process, during which understandability and plausibility are built, and the researcher's reflexive process is outlined.

2. The main stages in the design of a research article: a reflexive process

In this section, we illustrate the legacy of learned societies and a possible long-term historical imprint by examining current writing practices in the field of IS. Firstly, we 'trace' the history of two major IS outlets: MISQ and EJIS. Then, we identify a small number of 'argumentative strategies' (based on the logical anchorage of argumentation) which predominate, discuss their limitations and finally suggest alternatives.

Researchers have already studied several dimensions of IS journal articles (Chen & Hirschheim, 2004; Paré et al, 2008; Introna & Whittaker, 2004). They have examined the distribution over time of positivist/quantitative vs. interpretivist/qualitative research in outlets such as MISQ and EJIS. In contrast, we focus below on the writing itself, the argumentative and rhetorical strategies as opposed to epistemological and methodological dimensions. Our aim is to put writing into perspective with the history of these journals and that of the broader history of the academic community.

2.1 Research approach: combination of historical and rhetorical analysis of MISQ and EJIS

Based on impact factors, MISQ is a top ranked journal in information systems and in management science. EJIS is a leading European-born journal. We were interested in contrasting the American MISQ and the European EJIS and possible differences in their historical imprint.

Our research method was twofold. Firstly, we carried out an historical analysis of both outlets**.** We identified the date and context of creation, editorial policy, and key aspects of editorial dynamics. We collected editorial statements, seminal issues, and other documents. All

documents used are detailed in Appendix 2. In addition, we carried out interviews with scholars who were involved in the creation of EJIS. Questions focused on the context of creation, people involved in the management of each journal, the competitive landscape and editorial policy.

Then, we focused on rhetoric**.** Rhetoric keeps attracting a wide audience in science in general (Gross, 2006) and management in particular (Hartelius & Browning, 2008; Bonet & Sauquet, 2010). Aristotle (quoted in Bonet & Sauquet, 2010) defined it as "an ability to see the available means of persuasion." Rhetorical practice has also been related to sensemaking, feelings and knowledge building (epistemology). Aristotle suggested three means of persuasion (Bonet & Sauquet, 2010:124): "*logos* or the argument on the subject under discussion that is presented by the speakers. *Ethos*, or the words of the speakers that show their good will, competence and reliability; ethos is a manifestation of the speaker's moral character. *Pathos* is the feeling that the words of the speakers produce in the audience."

For knowledge building, a *logos* is required. Rhetoric implies logic in the discourse aimed at creating knowledge. According to Carter and Jackson (2004:471),

> "the use of the term 'rhetoric' in the context of management knowledge seems to cover a number of implications and to range from the neutral to the pejorative and from the analytical to the throwaway. Sometimes, it is used simply as a synonym for language, sometimes, more disparagingly, to denote the particular types of language or 'networks' in linguistic terms. Sometimes it is used to imply argument and/or logic."

The logical interpretation of rhetoric is the one we chose here. In line with Carter and Jackson (2004)'s invitation for processual analysis of rhetoric in management research, we aimed at grasping the logical construction of a line of argument, the very process of rhetoric. This corresponds to a 'middle course vision' in which "argumentative composition (…) consider[s] rhetoric, in conformity with the philosophical view of Aristotle as an off-shoot from logic" and which concentrates on the "discovery of arguments and of their arrangements" (Whately, 1858:17-18).

Our sample includes all articles (except opinion papers) published in MISQ and EJIS between 2003 and 2009 (see Figure 1) where an abstract is provided. This period was chosen as we wanted to check the historical imprint against recent publications.

****** FIGURE 1 ABOUT HERE *********

We identified 'argumentative strategies', i.e. logical structures in the argumentation enacted in each article. Those correspond to what reviewers sometimes call the "core message of the paper", the "story" authors "intend to tell" or the "basic line of argument" (we use here expressions we found in reviews of papers we submitted in recent years). They are the "arrangements" of classic rhetoric, "the order of the components of the author's argument. Guided by this order, and the logical links among the different components, the readers infer the strength and uncover the weakness of the author's key claim" (Gross et al, 2002: 184).

The idea to investigate the rhetoric of scientific writing is not new, in particular in management studies (Hartelius & Browning, 2008; Bonet & Sauquet, 2010; Huff, 2002). Huff (2009) pointed out nine kinds of 'conversations' in management writing: speculation, assertion, clarification, reiteration, adjustment, negation, synthesis, redirection and rebuttal. Each corresponds to a possible relationship with the expected audience.

But where should we look for argumentative strategies? Most journals articles stick to standard structures (literature, methods, empirical results and discussion) which make it difficult to extrapolate the more subtle logical flow of the paper. The introduction may not be representative of the line of argument. The text itself may have some logical ruptures in the argument. What should be seen as the relevant span of the text? Are the introduction and the conclusion part of it? What about the discussion?

For the present research, we retained a different option. We assumed that argumentative strategies appear explicitly in the abstract. Research has shown the presence of detectable 'discourse-level' structures in academic empirical abstracts and has revealed major classes of arguments in theoretical abstracts (Liddy, 1991:79); abstracts components tend to conserve discourse rhetorical structures equivalent to the article (Manning, 1990; Stotesbury, 2003); and standards and guidelines for abstract writing recommend the inclusion of arguments presented in the text (ANSI/NISO, 1996). An abstract is thus supposed to be the mirror of the paper, as the paper should be the mirror of the research. Furthermore, there are examples of content analysis based on journal abstracts in order to examine changes of theoretical perspectives within a discipline (e.g. organization studies, see Usdiken, 2010) over several decades.

To make the development of our classification as explicit as possible and to support communication and reflexivity amongst the co-authors, the second author interviewed the first author (and main coder) early in the writing of this article. Questions concentrated on the initial ideas for this research and the process of data selection and data coding. The transcript of this interview was then provided to the third author, which lead to further discussions. The explanation below relies heavily on this reflexive and iterative process.

To analyze the argumentative strategies of MISQ and EJIS, we first applied 'sequential coding' (Bardin, 2007) to the abstracts. Sequential coding consists of identifying streams of sequences (S_1 to S_n) in the argumentation for each abstract. In order to differentiate between sequences, we used grammatical 'pivots' in the argumentative flow ("yet", "however", "then", "so", "therefore"…) and/or implicit changes in meaning. Our objective was to apply a 'dynamic thematic coding', i.e. not identifying occurrences of topics in abstracts, but making sense of the dynamic logical flow in the argumentation. The abstracts of 188 MISQ and 248 EJIS articles were processed in this way, dividing them into series of sequences (see Appendix 3). We then identified logical 'anchorages' in sequences along with streams of 'reasoning' sequences (RS_1 to RS_n), i.e. possible coherent logical combinations of sequences, most of the time, one or two sequences; sometimes (more rarely), sequences were split up to identify two reasoning sequences (which means that a single sequence could include two logical moves present in our typical reasoning sequences linked to our argumentative strategies ENIG, DEEP or PRACT). . A set of codes corresponding to the logical anchorage of each paper was used to give meaning to each abstract.

The set of logical anchorages (and the corresponding typical streams of reasoning sequences) was identified in an inductive way from a first sample of MISQ abstracts (year 2007) on which we applied our sequential coding. After several iterations to work out logical pivots for our coding, we identified three anchorages ('audience-based': PRACT, 'literature-based': DEEP or 'enigma-based': ENIG) which we linked to typical streams of reasoning sequences. The coding process then consisted of pattern recognition of these streams and their corresponding logical anchorages. When faced with a string of reasoning sequences, we wondered which was the closest typical stream of reasoning sequences (DEEP, ENIG, or PRACT) or combination of typical reasoning sequences (see Appendix 3). With the wisdom of hindsight (and thanks to the transcript of the interview of the first author by the second author), it is clear that our own experiences did help to identify the literature-based anchorage.

In particular the first author had just attended a conference workshop run by the Senior Editor (SE) of a major organization theory journal. At the end of the workshop (on how to publish in top tier journals), the SE mentioned what he considered a common expectation among reviewers: papers should adopt a logic in which the argument is based on the fulfilment of a gap in the literature, staged as follows: 'here is the current literature; there is a gap in it. My paper fills this gap'. This resulted in much questioning by the first author (that led to the current paper): was it the only argumentative strategy? Was it a dominant one? Were there other ones? How did this emerge over time? What we subsequently saw as the logical flow of the various argumentations was also driven by our own knowledge of the journals, the European context of all co-authors, our own experience as reviewers, and our own historical knowledge of scientific writing. Part of the process was therefore abductive.

We applied the resulting classification (and identification of typical reasoning sequences) to MISQ and later to EJIS. The mapping (based on what we saw as logical anchorages and their possible combinations) clearly 'made sense', i.e. it was helpful for both initial coder and cross-coder (see below) to identify the argumentative strategies in the abstracts. In addition to the coding of 436 abstracts, a random sample of 31 abstracts (14 MISQ and 17 EJIS) was double-coded by the second author. None of the articles were investigated *in extenso*. Sequential coding and identification of the argumentative strategy(ies) through the reasoning sequences were carried out independently by the two coders. We chose the sentence as unit of analysis. In the MISQ sample we obtained a 71.43 % agreement for argumentative strategies and 64.41% agreement in the sequential coding between the two coders. In the EJIS sample, we obtained respectively 84% and 62.5%. We used Miles and Huberman's (1994) formula to obtain these scores i.e. number of agreements divided by total number of agreements and disagreements. The few disagreements concerning argumentative strategies were not full disagreements but different interpretations of similar perceptions. These were cases where one coder identified the strategy as ENIG and the other as mixed ENIG/PRACT; and other cases identified as DEEP by one coder and mixed DEEP/PRACT by the other coder. These tended to imply corresponding discrepancies in the coding of sequences.

More importantly, and beyond the agreement level between the two coders, the second coder never faced an instance where the proposed logical anchorages (or combination of logical anchorages) did not apply.

2.2 Historical analysis of EJIS and MISQ

Beyond the argumentative strategies in MISQ and EJIS papers, it is interesting to say a few words about the history of IS academic outlets (see Appendix 2). The first (US) academic IS journal was Communications of the ACM created in 1958 (Galliers & Whitley, 2007). The Data Base for Advances in Information Systems (1970), MIS Quarterly (1977), JMIS (1984) and ISR (1990) were set up later. Most of these top tier journals were American. It took time before non-US major journals took shape. In Europe, Information & Management was set up in 1963, but most academic journals emerged in the early nineties, in particular JIT (1986), ISJ (1994), JSIS (1991) and EJIS (1991). In Germany (Wirtschaftsinformatik), Scandinavian countries (Scandinavian Journal of IS) and France (Systèmes d'Information et Management), journals appeared in the late 90s (Mylonopoulos & Theoharakis, 2001 and interviews conducted for the present research, named hereafter 'our interviews').

MISQ was founded in 1977 (Ives, 1992; Galliers & Whitley, 2007). In 1976, the Society for Management Information Systems and the University of Minnesota's IS Research Center created a partnership around a shared vision. Its sponsors, editors-in-chief and board members were and still are mainly American (see editors and authors' statistics in Appendix 2). In the editorial statement of the first issue, Dickson (1977) suggested the following objective: "our major goals are to be managerially oriented and to offer something of benefit to the practitioner. At the same time, we intend to provide a vehicle for researchers working in the IS field to communicate with each other and with practitioners". But the managerial objective assigned to MISQ was not really reached (Ives, 1992). Introna and Whittaker (2004:110) found that it became steadily more academic in its focus under MacFarlan (1986-88); MISQ Executive was in fact created in 2002 specifically for practitioners.

EJIS was set up in 1991 by the Operational Research Society (UK) which had realised the growing need for a European journal in MIS. The founding editor (Paul) and first co-editors (Liebenau and Smithson), as well as Whitley (involved in the creation in 1993 of the European Conference on IS) were at the London School of Economics and these initiatives strengthened the institutional identity of its Department of Information Systems (as opposed to Operations Research). Similarly, ISJ emerged from Southampton University (Computer Science), and JSIS from Warwick University (Business School), but with little coordination

between them (our interviews). EJIS was expected to be a forum for European IS research, defending a plurality of theoretical, epistemological and methodological approaches. In their first editorial in 1991 (see Table 3), Liebenau and Smithson proposed to "challenge the models developed and applied in US business schools and companies" and "demonstrate the fallacies of much of what is frequently preached". According to Galliers and Whitley (2007): "EJIS has steadily risen in reputation among IS journals". It was listed in the highest position for a non-US journal by Peffers and Tang (2003). Clearly, MISQ and EJIS have followed distinctive historical trajectories which are summarized in Table 3.

****** TABLE 3 ABOUT HERE **********

Chen and Hirschheim (2004) examined EJIS and MISQ in terms of epistemological and methodological approaches from 1991 to 2001 and found that there was a dominance of positivist research, with quantitative and cross-sectional methods the most common in MISQ and survey methods in EJIS. Paré et al (2008) found that 91% of the studies in MISQ, ISR and EJIS focused on deterministic theories and variance models.

Nonetheless, according to De Vries (2004:3; see also Walsham, 1995), European IS journals "show more openness to non-traditional approaches. These journals tend to publish more interpretive studies than the American ones and the interpretive studies seem to be more open to other sciences and take more often a philosophical approach." His study shows no difference between papers published in European and US journals in the application of positivist case study research.

For Choudrie and Dwivedi (2005), there are also some subtle differences between American and European journals, in particular EJIS and MISQ. They focused their study on research about IT adoption and showed that two main research methods were used, survey and case study methods. 74% of the articles employed surveys. This is similar to previous findings (Farhoomand, 1992; Mingers, 2001; Orlikowski & Baroudi, 1991). The remaining 26% of the research used case studies. No other methods were employed. Like Mingers (2001), Choudrie and Dwivedi (2005) found that: "ISR published research that employed survey methods, while ISJ tended to publish case studies. MISQ and EJIS published articles that utilised both surveys and case studies" (see Figure 2).

Introna and Whittaker (2004:112-114) analysed MISQ editorial statements from 1977 to 2004 and found that quantitative, positivist research started dominating the journal with Benbasat as Editor-in-Chief; the theory focus grew with Zmud and Lee; and Weber aimed to establish the core of the discipline. De Vaujany et al (2008) analysed editorial statements of IS journals from 1997 to 2007 (including MISQ and EJIS). They noticed a surprising stability, both from a lexicometric and a thematic point of view in the topics covered. There was no European specificity in their sample. All these elements reflect a search for academic credibility and point to a search for legitimacy by IS researchers.

****** FIGURE 2 ABOUT HERE ******

It can be argued that, surprisingly, both for MISQ and EJIS, the pattern of post-19th century academic journals (see Gross et al, 2002) has remained constant:

- Affiliation to a learned society, with an academic focus;
- Use of a classic peer-reviewed system;
- Use of common categories: book reviews, research notes and essays;
- Linear modes of writing;
- Domination of replication-oriented work (even for case-study oriented research). Nonetheless, the use of interpretive case-study research is more common in EJIS;
- Rigour is more present than innovation. To establish itself (in particular compared to computer science or economics), IS has chosen the 'hard way';
- Low use of personal pronouns and active voice;
- High use of citations;
- A call for managerial implications and practitioner-oriented research, but the readership remains highly academic and influenced by academic objectives (tenure, promotion, network-building around a model or set of questions).

The historical imprint is evident. Both MISQ and EJIS follow a long-term historical imprint, which they contribute to reinforce by reproducing and exhibiting scientific models. Lee et al (2007:xv) have suggested that "a plausible explanation for the current situation is that the IS discipline has acted with the zeal of a neophyte (…) and might have tried too hard in its

pursuit of legitimacy." They used the q-r theory (quality-rigour) elaborated by Ellison (2002) and Swanson (2004):

> "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).

Combined with an increased focus on methodological rigour, this has led to a situation where the IS field appears to "eat its young" (Robey 2003:355). Lyytinen & King (2004:222) evoke an "anxiety" leading to the view that, in order to survive, the IS field had to draw on a model of research attributed to the natural sciences. This is very similar to business studies seeking academic legitimacy (see Section 1.1); in fact IS as a management sub-discipline may also be anxious to establish itself within business and management studies. The historical perspective offered by our research (based on scientific writing rather than scientific practice itself) can be seen as a confirmation and deeper explanation for this. We explore below rhetorical and writing strategies in MISQ and EJIS and try to relate them to this historical imprint.

2.3 Rhetorical analysis of EJIS and MISQ

After several iterations of coding abstracts, one of the co-authors developed a coding scheme based on the search for the logical anchorage of argumentations. The key question we tried to answer was the following: What was the root of the sequence of themes identified by the sequential coding? We suggested three core possibilities and three possible intermediary combinations (see Figure 3).

****** FIGURE 3 ABOUT HERE ******

Each core possibility corresponds to an argumentative strategy: 'deepening of knowledge' (DEEP), 'solving an enigma' (ENIG), and 'addressing a practical issue' (PRACT) (see Table

4). In each case, the logical anchorage and ensuing line of argument are different (see Appendix 3 for examples of each argumentative strategy).

****** TABLE 4 ABOUT HERE ******

For ‘deepening of knowledge’, the pivot is a model, a specific stream of literature, a method or epistemological stance. It aims at overcoming some incoherence or gap in past knowledge; it is a classical strategy which supports cumulative progress in scientific production. A contribution is justified either through the import of another concept or theoretical framework or through an empirical approach. In the latter, fieldwork allows the construction or reconstruction of the missing concept and/or give coherence to the model. Much research about the Technology Acceptance Model (Davis, 1989) uses this argumentative logic, while adding new variables (Gefen et al, 2003; Venkatesh et al, 2003).

For ‘solving an enigma’, the logical anchorage is an institutionalized research question. It is more rupture-oriented than the previous logical structure. This strategy addresses a scientific enigma (which can be theoretical, methodological or epistemological) and proposes alternative theories or concepts. It starts from a recurring and institutionalized research question, described as an enigma or a paradox (e.g. the “productivity paradox”). This enigma is characterized by an absence of consensus as to its solution. The strategy attempts to show a weakness in the literature. But the difference with the first strategy is that the target is an unsolved problem rather than an intrinsic discrepancy in a model. A literature review is then fundamental to justify and assess the proposed alternative. We also found some papers which developed an Enigma argumentative strategy focused on an emerging research question. In that case, the paper aimed both at shedding light on the importance of the new research question (which could be combined with PRACT) and criticizing potential theoretical alternatives. For ‘addressing a practical issue’, the logical anchorage is an audience of practitioners and a (recent) managerial issue. If strategies 1 and 2 can also be found in other social sciences (economics, sociology…) the last strategy is more specific to management science and its aspiration to ‘actionability’ (Schön, 1983). One of the difficulties is to show that the practical question is academically legitimate. Another difficulty is to achieve the development of knowledge, framework, or concept which is actually actionable. Top-ranked journals do not always facilitate this task. Some journals are explicitly orientated towards

practitioners, e.g. MISQE. Though these journals are more liberal about argumentative structures, they are not as valued by academics. This is emblematic of the ongoing tension between the academic and vocational models which Cullen (2006) argues has existed from the beginning of business schools. The business school requires its faculty to possess academic legitimacy through traditional academic scholarship. Yet it risks alienating its second audience, the practitioners. There may also be epistemological problems e.g. incompatibilities between textuality and actionability and questions around the formalization of actionable knowledge and its applicability.

Our analysis of MISQ and EJIS (see Figure 4) shows that some articles combine argumentative strategies. We identified three combinations: ENIG-PRACT, DEEP-PRACT, and DEEP-ENIG (see an example in Appendix 3).

We did not find any paper which straddled the three streams (DEEP, ENIG and PRACT). We believe it unlikely that a single paper can be of practical relevance, as well as explore alternative theories to solve an institutionalized research question and also extend a model or literature. The combination of two argumentations is difficult enough. A twofold rhetoric is logically problematic (how can one extend existing theories and develop alternative theories at the same time? how can one satisfy both academic and practitioners audiences?). The integration of all streams into a single rhetoric is even more difficult, if achievable. It could be due to the difficulty of combining three temporalities: contemporary (short-term) managerial issues (PRACT), medium-term academic issues (extending current theories with DEEP) and long-term academic issues (regenerating theories with ENIG). It could also be due to a search for parsimony, from a rhetorical (elaborate a clear line of argument) or a scientific (have a well focused research design) point of view.

****** FIGURE 4 ABOUT HERE ******

The total number of articles is different in each journal (see Figure 1). Percentages in Figure 4 show that the vast majority of articles in MISQ and EJIS from 2003 to 2009 were found to mobilize the DEEP or ENIG argumentative strategies. The percentage of articles with a PRACT strategy, as well as with the mixed category DEEP-PRACT, is higher in EJIS.

We then correlated these patterns to changes of Editors-in-Chief. The results are summarized in Figures 5 and 6. As Figure 5 shows, there is a clear shift from the DEEP to the ENIG argumentative strategy in MISQ from 2005. The same trend applies to the two mixed strategies DEEP-PRACT and ENIG-PRACT. One may interpret this as resulting from editorial changes. Articles treating 'blue ocean' issues (see Straub, 2008) have been openly sought after by editors-in-chief in recent years and this can be classified as an ENIG strategy. However senior editors for the relevant periods would have to be consulted to confirm this. In contrast, EJIS seems to be oriented towards DEEP rather than ENIG strategies. The results for EJIS (Figure 6) show a more constant pattern. However, they also show a clear decrease (by half) of the ENIG strategy compensated by ENIG-PRACT.

****** FIGURES 5 AND 6 ABOUT HERE *******

For both journals, the historical imprint is obvious. Both MISQ and EJIS publish mainly pure rhetorical articles, targeting institutionalized research questions or literature. The number of papers targeting practical issues is very low. This does not mean that managerial issues do not appear in other argumentative strategies. It just means that they are in the background or implied. Papers rarely consist of a pure managerial contribution pointing at a problem of legitimacy. The very expression "managerial implications" is indeed clear. If in 20 pages, the terms "managerial implications" only appear on page 15, who was the expected audience? What was the expected contribution? How is the nature of managerial knowledge understood?

It is also clear that there is very little 'recursive' rhetoric, probably because of the peer-review system. We found very few discussions of, or responses to previous articles, this does not stimulate debate and controversy. Most of the time authors are absent (no "I" nor "we"), passive voices and nominal (versus verbal) expressions are heavily present in the abstracts (see also Gross et al, 2002).

This exploratory work has, of course, several limitations. It is centred on two specific journals and a wider range would allow a more refined analysis. Including other US and European (and French) journals may reveal different argumentative strategies, perhaps away from seeking scientific legitimacy. Previous work (Desq et al, 2007), using data from the two national journals *Technology, Information et Société* and *Systèmes d'Information et Management* from 1987 to 2001, has already shown that French IS research has had a less technical, more

societal and interpretivist perspective than American journals (represented by MISQ and ICIS) over that period. This is despite having established itself in the late 1980s, ten years later than American IS research.

We were surprised not to find more marked differences between EJIS and MISQ. Perhaps this is due to editorial changes: more recently MISQ has welcomed a broader range of approaches than in the past, especially interpretivist and qualitative ones; and DEEP strategies are surprisingly dominant in EJIS. Perhaps the assumed difference between US and European approaches is more complex than it seems. Instead of being geographical, it could well be political, i.e. about the construction of centres and margins in the management field (Grey, 2010:678, 681, 683):

> "The US journals now position themselves as 'global', whilst institutional changes in business schools [tenure, global rankings] (…) make for an increasingly unitary scale of intellectual and reputational value. (…) The effect of this hierarchy is to render European journals [more conformist] (…) Rather than a continental convergence/divergence, there is a 'centre' encompassing much US research and some European research and a 'margin' encompassing much European and some North American research",

This may well be the case for European journals such as EJIS (what about ISJ, TIS, SIM or SJIS?), which are aiming at increasing their global ranking. The danger is that the globalising claim to universality neglects cultural specificities and is inimical to intellectual innovation.

Another limitation of our paper is that we have reconstructed argumentative logics from where it is supposed to be expressed the most clearly: the abstract. One may obviously question its degree of representativeness. It may be difficult to fully apprehend the argumentative strategy if one concentrates on the often highly standardized plan in the abstract (see Section 2.1); on the other hand, the logic may be too diffuse if one follows the sequence of the arguments in the text itself. The abstract allows access to an explicit 'meta' representation of the argumentation in the article.

2.4 Discussion: How can we move beyond the three argumentative strategies and current norms of writing?

Management researchers, and IS scholars in particular, have sought legitimacy in reaching the standards of other reference academic disciplines and imitating the scientific procedures of more prestigious fields (Lee et al, 2007). Standards expected in peer-reviewed scientific journals, the type of writing required, and in particular the logical designs explored here, result from a long history that is difficult to dissociate from the history of universities, learned societies and academic journals (Gross et al, 2002). However, pursuing academic knowledge can be envisaged through rigorous as well as literary writing, as shown in the field of organisation theory: "for better or for worse, the strength of organization theory lies not in the rigor of its prose but in the tenacity of its poetry" (Basboll & Graham, 2006:197).

Academic writing is accompanied by an evaluation process which contributes to its validation and its convergence towards a format, legitimized by learned and academic communities. Whether one aims at deepening the understanding of a variable, looks for a better solution to an institutionalized issue or a model, or articulates the development of an answer to a managerial or societal issue, the research article respects the same canonic rules in both quantitative and qualitative research. The canon rests on objectivity and unengaged writing, starting with a methodological and/or theoretical literature review, followed by a presentation of results and a discussion. Scientific writing must not resemble literary writing styles. The case of IS journals is typical. The writing is unreflexive and the writing process is not reconstructed in the article itself. The discussion concerns the technical process of the research rather than the modalities of its restitution. Based on a study of social sciences in general, Richardson (2000) reaches similar conclusions:

> "I consider writing as a method of inquiry, a way of finding out about yourself and your topic. Although we usually think about writing as a mode of 'telling' about the social world, writing is not just a popping-up activity at the end of a research project. Writing is also a way of knowing – a method of discovery and analysis. By writing in different ways, we discover new aspects of our topic and our relationship to it" (Richardson, 2000:923).

With these objectives in mind, how can we fit them into the argumentative strategies exposed through our analysis? Richardson (2000:942) offers suggestions of writing experiments in social sciences (see Table 5). Globally, they are about giving some visibility to the researcher's reflexivity in order to stimulate it. They are also about encouraging the selection of literary techniques for qualitative research.

Huff (2009) suggests seeing scientific writing as a conversation, which could break the linearity of the argumentative strategies we brought to light. She emphasizes the importance of rhetoric in managerial writing, and offers possible rhetorical archetypes. She remarks (Huff, 2009:287) that "the positivist tradition was an important part of many journal editors' training. They may think they are rebelling, but they still continue to demand theoretic contributions in the classical sense (…) law-like statements independent of historical or situational context".

New forms of academic writing have been proposed and practiced in organisation studies from which IS researchers could gain inspiration in order to imagine new forms of argumentative strategies. This is strongly related to organisation theorists having engaged with the postmodern 'linguistic turn' (Alvesson & Kärreman, 2000). Postmodernism binds language, subjectivity, reflexivity, culture, social organization and power. It values the reflexive self and the co-production of social science. There is a "reflexive deficit regarding language"; "language is seen naively as a mirror of an external social reality"; therefore the rationale is to conceive the writing of journal articles as "speech acts oriented to reproduce wider social conventions in language usage" (Alvesson & Kärreman, 2000:140, 143).

New writing practices have emerged as a result of postmodernism: "performance pieces", "readers' theatre", "museum displays", "choreographed research findings", "fine-arts representations", "hypertexts", "stories", "fictional ethnography" (see Banks & Banks, 1998), "poetic representations", "ethnographic dramaturgy", and "auto-ethnographic texts" in which authors write their lived experiences relating the personal to the cultural. Management authors such as Alvesson and Sköldberg (2009) suggest various forms of writing: "grounded fictionalism" (playfulness and imagination over rigour and empirical detail, creative ideas indicating multiple realities); "metaphoric data construction" (space made for bold interpretations of social phenomena); "literary data construction" (genres of writing and rhetorical devices guide the use of empirical material); "discursive pragmatism" (capture the richness of social realities through selective construction of practices, meanings and talk). Anthropology and literary criticism have also been drawn upon to highlight the use of rhetoric

(Golden-Biddle & Locke, 1993) bringing notions of criticality, reflexivity and focus on differences to enable readers imagine new possibilities. Some examples are Geertz (1988)'s use of highly personalized styles, and E.E. Evans-Pritchard's highly visual 'slide show' style of writing.

Interesting examples in management studies include Linstead and Grafton-Small (1992)'s exploration of reading organizational cultures; Calás and Smircich (1991)'s elaboration on writing organizations; Czarniawska (1997)'s dissection of organizational narratives; Jeffcut (1993)'s reflexive analysis of genres of writing on organizations; Rosen (1985)'s dramaturgy (see also Geelan & Taylor, 2001). Grey and Sinclair (2006:449)'s writing on organizations suggests different forms of writing to address aesthetic, moral and political concerns; they provide several illustrations of reflexive and 'fantasy' writing intended to question the writing itself: "what are our texts doing? What are our ways of writing accomplishing in political terms? How is authority claimed and what assumptions made the writing possible?" Czarniawska-Joerges and Guillet de Monthoux (1994) use fiction as a point of entry as it opens up the possibility of new insights in a way business case studies may not. Knights and Willmott (1999) suggest the use of lived experiences, which is a way to come back to 17th century observational articles (see Gross et al, 2002). Jackson (2000) uses fantasy theme analysis, dramatic building blocks of the rhetorical vision of the learning organisation. Experiments in critical management education could also be drawn upon. Sinclair (2000) uses a range of experiences that do not normally enter the business school, specifically about gender and leadership. Focusing on students' working experiences offers another approach, which is "so resolutely written out of standard management textbooks" (Grey, 2002:508) and very much out of journal articles.

These suggestions are quite remote from current articles in management science in general and in IS in particular. Writing is still seen as a means of dissemination rather than a research technique in itself. Electronic journals could offer a more dynamic environment for supporting alternative writing practices (King, 1980; Hendler, 2007; Hovav and Gray, 2004). The Journal of the AIS and Communications of the AIS have longer word limits closer to traditional monographs; this is useful for writing complex in-depth intensive case studies which are not easily publishable in journals; they also support innovative writing such as insertion of active hyperlinks enabling a less linear reading. IS electronic journals could support new argumentative strategies, based on direct interactions and collaborations between

academics and practitioners. The legitimate research questions, research topics and managerial issues could emerge during the (co)-elaboration of papers. Scientific writing would then look more like an open, never-ending process, with argumentative strategies such as: proposal of an issue by practitioners; reinterpretation based on empirical material and theories by academics; reinterpretation by practitioners and use of further empirical material; discussion of a relevant research question etc. This type of process might lead to fruitful 'conversations' (Huff, 2002) between practitioners and researchers. Like the old 'scholastic', the final product could be more circular (based on hypertext, virtual and wiki technologies) supporting exchanges between and across practitioners and academics (Bainbridge, 2008). It could bring more visible layers in the writing and would be more process than results oriented. But electronic publications have still not brought much change (Fjällbrant, 1997; Hook, 1999; Bainbridge, 2008), partly because of issues of standardization, access, copyright, plagiarism and intellectual property.

Academics are increasingly driven by journal rankings; the French Agence pour l'Evaluation de la Recherche et de l'Enseignement Supérieur or the US AISWorld rank the rare electronic journals as B or C. Rankings are becoming more and more important for academic recruitment and promotion worldwide; so is the power of top-ranked US journals to define legitimacy in management and IS studies, together with a tendency to exclude or ignore incursions of non-positivist analysis. This is still congruent with the dominance of the quantitative science-based model of US business research established in the 1950s. Norms in writing are stronger than ever, and there is a clear hegemony of English-speaking journals (Meriläinen et al, 2008). Management academics "are encouraged to write the sort of papers and perform the sort of research these journals favour" (Macdonald & Kam, 2007:647) leading to homogeneous research that "can impose a deadening uniformity" (Harley & Lee, 1997:1434). The more competition there is, the more peer reviewers "represent the primary stakeholders of the status quo" (Lyytinen et al, 2007:321). Furthermore, some competence and an inclination to explore different writing styles would help, but management researchers' current training is probably not appropriate.

We do not question the legitimacy of major IS journals, however we would suggest to be open to other types of outlets and writing that are in the making and to support their growth. Concerning IS journals, one could envisage the following possibilities:

- The addition of an "innovative writing" section. If local competences are insufficient, researchers from other fields could be called upon to work with IS reviewers;
- After articles are accepted and printed in paper format, enable authors to open up the "conversation" (Huff, 2009) with the full research community on an exchange research platform leading to some kind of "research 2.0", co-constructed between fellow researchers, authors and readers alike (see for instance http://www.geoscientific-model-development.net/or http://www.nature.com/nature/peerreview/debate/nature04988.html) ;
- For some papers, make available online authors' original submissions, as well as the AE-reviewers-authors' exchanges during the reviewing process, that lead to the published article. This might help illuminate the writing and reflecting processes that were at play.

These are only some suggestions that may certainly be enriched and built upon.

We opted to write this paper using a standard format and argumentative strategy focused on an ENIG rhetoric: we revisit an institutionalized research question (how to write an IS article? How to communicate IS research?) and try to develop an alternative (rhetorico-historical) perspective. We could have chosen to write this piece reflectively and stayed closer to the research writing dynamics grounded in the academic background and experience of the first and third authors (de Vaujany, 2008; Mitev and Venters, 2009). We could then have explained that our motivation was due to much frustration in reading what we thought were mainly DEEP argumentative strategies in top journal papers (a domination which is not confirmed by this research, to our surprise particularly for MISQ); and by what we see sometimes as rather unexciting papers in major IS journals (in fact, as witnessed through discussions with colleagues, many have given up reading regularly some of these journals). We could have written this piece as a conversation between the co-authors aimed at elaborating the argument of this paper, but we did not. Our choice of a standard format and argumentative strategy was no doubt motivated by what we thought would be a higher probability of satisfying reviewers and getting published.

Whether in terms of the underlying metaphors of writing formats, historical publishing practices or institutional pressures, a vast undertaking remains. There have been calls for changes in IS editorial policies to "recognise the value of innovative theory building, practical relevance, and methodological plurality in IS research which would permit European scholars

to become more productive" (Lyytinen et al, 2007:325). This should be accompanied by the development of legitimate writing formats and argumentative strategies which support the community dimension of research, address the issue of cumulativeness as well as relevance. A last but complex issue surrounding the use of literary and scientific writing which needs further research is the balance between rigour and coherence with respect to paradigms and epistemological stances.

This research emphasised an historical imprint of management and business studies on IS scientific writing. In congruence with the scientific standards that emerged from the 17th to the 19th century, current rhetoric is still heavily enigma-focused or based on an institutionalized literature; it neglects managerially grounded rhetoric, and suffers from a lack of reflexivity. We relate this to a quest for academic legitimacy. How can we break this tendency? We offered some answers and raised other questions that will likely lead to new debates. What are the stakes? Perhaps first and foremost defining and claiming *our* own field with its own specificities and priorities.

REFERENCES

ALVESSON M and KÄRREMAN, D (2000) Taking the linguistic turn in organizational research, *Journal of Applied Behavioural Science,* **36**, 136-158.

ALVESSON M and SKÖLDBERG, K (2009) *Reflexive methodology: new vistas for qualitative research*, 2nd edition, Sage.

ANSI/NISO (1996) *Guidelines for abstracts*, National Information Standards Organization, American National Standards Institute (ANSI/NISO Z39.14-1997), NISO Press, Bethesda, Maryland.

ARNOLD V, CLARK N, COLLIER PA, LEECH, SA and SUTTON, SG. (2006). The differential use and effect of knowledge-based system explanations in novice and expert judgement decisions, *Management Information Systems Quarterly,* **30(1)**, 79-97.

BAINBRIDGE WS (2007) The scientific research potential of virtual worlds. *Science,* **317 (5837)**, 472 – 476.

BANKS A and BANKS SP (eds) (1998) *Fiction and social research: by ice or fire*, Walnut creek, CA: Altamira.

BARDIN L (2007) *L'analyse de contenu*. Paris: Presses Universitaires de France.

BASBOLL T and GRAHAM H (2006) Substitutes for strategy research: notes on the source of Karl Weick's anecdote of the young lieutenant and the map of the Pyrénées, *Ephemera*, **6(2)**, 194-204.

BIAGIOLI M (2002) From book censorship to academic peer review. *Journal for the Study of Media & Composite Cultures*, **12(1)**, 11-45.

BONET E and SAUQUET S (2010) Rhetoric in management and management research. *Journal of Organizational Change Management.* **23(2)**, 120-133.

BOUILLOUD JP and LECUYER BP (2004) *L'invention de la gestion, histoire et pratiques*, Paris : L'Harmattan (Série Logiques de Gestion).

BROWN JR (1986) Thought experiments since the scientific revolution. *International Studies in the Philosophy of Science.* **1(1)**, 1-15.

BUTLER BS and GRAY PH (2006) Reliability, mindfulness, and information systems. *MIS Quarterly*, **30(2)**, 211-224.

CALÁS M and SMIRCICH L (1991) Voicing seduction to silence leadership, *Organization Studies*, **12**, 567-601.

CARTER P and JACKSON N (2004) For the sake of argument: towards an understanding of rhetoric as a process, *Journal of Management Studies*, **41(3)**, 469-491.

CHARLES C and VERGER J (1994) *Histoire des universités*. Paris: PUF. (2nd edition, 2007).

CHEN W and HIRSCHHEIM R (2004) A paradigmatic and methodological examination of information systems research from 1991 to 2001, *Information Systems Journal*, **14(3)**, 197-235.

CHOUDRIE J and DWIVEDI Y K (2005) Investigating the research approaches for examining technology adoption issues, *Journal of Research Practice*, **1(1)**, Article D1.

CLOUGH PT (1992) *The end(s) of ethnography: from realism to social criticism.* Newbury Park, CA: Sage.

COCHERIS H (1860) *Histoire du journal des savants depuis sa fondation jusqu'à nos jours*. Paris: A. Durand.

CULLEN P (2006) *Conflicting logics in the business school field: academia, practice and identity*, Unpublished PhD thesis, University of Cambridge.

CZARNIAWSKA B (1997) *Narrating the organization: dramas of institutional identities*, University of Chicago Press.

CZARNIAWSKA B (1999) *Writing management: organization theory as a literary genre*. Oxford: Oxford University Press.

CZARNIAWSKA-JOERGES B and GUILLET DE MONTHOUX P (eds.) (1994) *Good novels, better management*. Chur, Switzerland; Harwood Academic.

DAVIS F D (1989) Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, **13(3)**, 319-339.

DE VAUJANY FX (2008) Strategic alignment: What else? A practice based view of IS value, *International Conference on Information Systems, 2008 Proceedings*. Paris, France, Paper 4.

DE VAUJANY FX, LESCA N, FOMIN VV and LOEBBECKE C (2008) The Espoused theories of IS: A study of general editorial statements. *Information Conference on Information Systems, 2008 Proceedings*. Paris, France, Paper 10.

DE VAUJANY FX (2010) A new perspective on the genealogy of collective action through the history of religious organizations. *Management and Organizational History*. **5(1),** 1-14.

DE VRIES EJ (2005) Epistemology and methodology in case research: a comparison between European and American IS journals, *13th European Conference on Information Systems*, May 2005, Regensburg, Germany, paper 145.

DESQ S, FALLERY B, REIX R and RODHAIN F (2007) La spécificité de la recherche francophone en systèmes d'information, *Revue Française de Gestion*, **176**, 63-79.

DICKSON G (1977) Editor's comment. *MIS Quarterly*, **1(1),** 2-3.

DWIGHT A (1999) *Scientific discourse in socio-historical context: the Philosophical Transactions of the Royal Society of London, 1675-1975*. Mahwah, NJ: Lawrence Erlbaum Associates.

ELLISON G (2002) Evolving standards for academic publishing: A q-r theory, *Journal of Political Economics*, **110(5)**, 994-1034.

ENGWALL L and ZAMAGNI V (eds) (1998) *Management education in historical perspective*, Manchester: Manchester University Press.

FARHOOMAND A F (1992). Scientific progress of management information systems. In R D Galliers (ed.), *Information systems research: Issues, methods and practical guidelines* (p. 93). Oxford: Blackwell Scientific.

FEINGOLD DM (ed) (2008) *History of universities*. Oxford: Oxford University Press.

FITZPATRICK K (2009) *Planned obsolescence: publishing, technology and the future of the academy*, New York University Press.

FJÄLLBRANT N (1997) Scholarly communication: historical development and new possibilities. *Proceedings of the International Association of Scientific and Technological University Libraries (IATUL),* 18th conference, 30th June, Trondheim, Norway.

FORGUES B (2001) Writing up the research, in R-A Thietart (ed.) *Doing management research: A comprehensive guide*. Thousand Oaks, CA: Sage, 375-388.

FRANKS BO (1963) *British business schools,* London: British Institute of Management.

GALLIERS RD and WHITLEY EA (2007) Vive les differences? Developing a profile of European information systems research as a basis for international comparisons. *European Journal of Information Systems*. **16**, 20-35.

GEELAN DR and TAYLOR PC (2001) Writing our lived experience: Beyond the (pale) hermeneutic? *Electronic Journal of Science Education*. 5, 4, http://wolfweb.unr.edu/homepage/crowther/ejse/geelanetal.html

GEERTZ C (1988) *Works and lives: the anthropologist as author*, Stanford University Press.

GEFEN D, KARAHANNA E, and STRAUB DW (2003) Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, **27(1)**, 51-90.

GLEESON RE and S SCHLOSSMAN (1992) The many faces of the new look: The University of Virginia, Carnegie Tech, and the reform of management education in the postwar era, Part I, *Selections*, Winter 1992, 9-27.

GOLDEN-BIDDLE K and LOCKE K (1993) Appealing work: an investigation of how ethnographic texts convince, *Organization Science*, **4(4)**, 595-616.

GOUADAIN D and LOUART P (1997) Les enseignements de gestion dans les universités avant et après la création des IAE. *Entreprises et Histoire*. **14**, 89-95.

GRELON A (1997) Ecoles de commerce et formations d'ingénieurs jusqu'en 1914. *Entreprises et Histoire*. 14. 29-45.

GREY C (2002) What are business schools for? On silence and voice in management education, *Journal of Management Education*, **26(5)**, 496-511.

GREY C (2010) Organizing studies: publications, politics and polemic, *Organization* Studies, June, **31(6)**, 677-694.

GREY C and SINCLAIR A (2006) Writing differently. *Organization*, **13(3)**, 443-453.

GREY C and WILLMOTT H (eds) (2005). *Critical management studies*. Oxford: Oxford University Press.

GROSS AG, HARMON, JE and REIDY MS (2002) *Communicating science: The scientific article from the 17th Century to the present*. Oxford: Oxford University Press.

GROSS A G (2006) *Starring the text: The place of rhetoric in science studies*. Carbondale: Southern Illinois University Press.

HARLEY S and LEE F (1997) Research selectivity, managerialism and the academic labour process: the future of nonmainstream economics in UK universities, *Human Relations*, **50**, 1427-1460.

HARTELIUS EJ and BROWNING LD (2008) The application of rhetorical theory in managerial research: A literature review. *Management Communication Quarterly*. **22 (1)**, 13-39.

HATCHUEL H and GLISE H (2003) Rebuilding management: a historical perspective, in N Adler (ed.) *Collaborative research in organisations: foundations for learning, change and theoretical development*. Thousand Oaks, USA: Sage Publications.

HENDLER, J. (2007). Reinventing academic publishing — Part 1, *IEEE Intelligent Systems*, **22(5)**, 2–3.

HOOK O (1999) Scientific communications: history, electronic journals and impact factors. *Scandinavian Journal of Rehabilitation Medicine*, **31(1)**, 3-7.

HOVAY, A. & GRAY, P. (2004). Managing academic e–journals, *Communications of the ACM*, **47(4)**, 79–82.

HUFF AS (2002) Learning to be a successful writer, in D Partington (ed.), *Essential skills for management research*. Sage.

HUFF AS (2009) *Designing research for publication*. Sage Publications, Inc.

INTRONA LD and WHITLEY, EA (1997) Imagine: Thought experiments in information systems research. In AS Lee, Liebenau, J and Degross, JI (eds), *Information systems and qualitative research.* London: Chapman and Hall, 481-496.

INTRONA LD and WHITTAKER L (2004) Truth, Journals, and Politics: The Case of the MIS Quarterly, in *Relevant theory and informed practice? Looking forward from a 20-year perspective on IS research*, edited by B Kaplan, D Truex III, D Wastell, A T Wood-Harper and J I DeGross, IFIP Working Group 8.2 Conference, Manchester, UK, 15-17 July 2004, Kluwer Academic Publishers, Boston, 103-120.

IVES B (1992) Editor's comments: Bridging research and practice, *MIS Quarterly*, **16**, 1, 2-3.

JACKSON BG (2000) A fantasy theme analysis of Peter Senge's learning organization, *Journal of Applied Behavioural Science*, **36(2)**, 193-208.

JEFFCUT P (1993) From interpretation to representation in organizational analysis. In J. Hassard and M. Parker, (eds) *Postmodernism and organizations*, London, Sage.

KAUFER DS and CARLEY KM (1993) *The influence of print on sociocultural organization and change.* Hillsdale N.J: LEA.

KEEBLE S (1992) *The ability to manage. A study of British management, 1890-1990*. Manchester, UK: Manchester University Press.

KIESER A (1989) Organizational, institutional, and societal evolution: Medieval craft guilds and the genesis of formal organizations. *Administrative Science Quarterly*, **34**, 540-564.

KING DW (1980) Electronic alternatives to paper-based publishing in science and technology. in Hills, P (eds) *The future of the printed world: the impact and the implications of the new communication technology*, Westport, CT, Greenwood, 99-110.

KNIGHTS D and WILLMOTT H (1999) *Management lives*, London: Sage.

KRONICK DA (1976) *A history of scientific and technical periodicals. The origins and development of the scientific and technical press, 1665-1790,* 2nd edition, Metchuan, NJ.

LEE A, SRINIVASAN, A, VALACICH, J and WEBER, R (2007) Increasing the number of A+ published papers in the Information Systems discipline: Improving the journal review process. *MIS Quarterly*, **31(3)**. xv-xviii.

LE GOFF J (1957) *Les intellectuels au Moyen Age*. Paris: Edition du Seuil.

LE GOFF J (2001) *Marchands et banquiers au Moyen Age*. Paris: Editions Que Sais-Je?

LIDDY ED (1991) The discourse-level structure of empirical abstracts, *Information Processing and Management*, **27(1)**, 55-81.

LIEBENAU J and SMITHSON S (1991) Editorial. *European Journal of Information Systems*. **1(1)**, 1-2.

LINSTEAD S and GRAFTON-SMALL, R (1992) On reading organizational culture, *Organization Studies*, **13**, 331-355.

LOCKE RR (1989) *Management and higher education since 1940. The influence of America and Japan on West Germany, Great-Britain and France*. Cambridge: Cambridge University Press.

LOCKE R (1996) *The collapse of the American management mystique,* Oxford: Oxford University Press.

LYYTINEN K, BASKERVILLE R, IVARI J and TE'ENI D (2007) Why the old world cannot publish? Overcoming challenges in publishing high-impact IS research, *European Journal of Information Systems,* 16, 317-326.

LYYTINEN K and KING JL (2004) Nothing at the center? Academic legitimacy in the information systems field, *Journal of the Association for Information Systems*, **5(6)**, 220-246.

MACDONALD S and KAM J (2007) Ring a ring o' roses: quality journals and gamesmanship in management studies, *Journal of Management Studies*, **44(4)**, 640-655.

MCKIE D (1948) The scientific periodical from 1665 to 1798. *Philosophical Magazine,* Commemoration issue, 122-132.

MAFFRE P 1984. *Les origines de l'enseignement commercial supérieur en France au XIXème siècle, thèse pour le doctorat de troisième cycle en histoire*, Université de Paris I – Sorbonne.

MANGEMATIN V and BADEN-FULLER CWF (2007) Global contests In the production of business knowledge: The research rankings of business schools, *Long Range Planning*, **41(1),** 1-30.

MANNING AD (1990) Abstracts in relation to larger and smaller discourse structures, *Journal of Technical Writing and Communication*, **20(4)**, 1990, 369-390.

MERILÄINEN S, TIENARI J, THOMAS R, and DAVIES A (2008) Hegemonic academic practices: Experiences of publishing from the periphery. *Organization*, **15(4),** 584-597.

MILES MB and HUBERMAN M (1994) *Qualitative analysis: an expanded sourcebook*, 2nd edition, Sage.

MINGERS J (2001) Combining IS research methods: towards a pluralist methodology, *Information Systems Research*, **12(3)**, 240-259.

MITEV N and VENTERS W (2009) Reflexive evaluation of an academic-industry research collaboration: can Mode 2 management research be achieved? *Journal of Management Studies*, 733-754.

MULLER MIRZA N (2005) Literary writing as a research tool. In L. Allal & J. Dolz (Eds.), *Proceedings Writing 2004*, Adcom Productions.

MYLONOPOULOS NA and THEOHARAKIS V (2001) Perceptions of information systems journals: a worldwide view. *Communications of the ACM* **44(9)**, 29–33.

ORLIKOWSKI W and BAROUDI JJ (1991) Studying Information Technology in organizations: Research approaches and assumptions, *Information Systems Research* **2(1)**, 1-28.

PARÉ G, BOURDEAU S, MARSAN J, NACH H and SHURAIDA S (2008) Re-examining the causal structure of information technology impact research, *European Journal of Information Systems*, **17**, 403-416.

PEFFERS K and TANG Y (2003) Identifying and evaluating the universe of outlets for information systems research: Ranking the journals *The Journal of Information Technology Theory and Application,* **5(1)**, 63-84.

PIERSON FC (1959) *The education of American businessmen*, New York: John Wiley

REIX R and ROWE F (2002) La recherche en systèmes d'information : de l'histoire au concept. in Reix and Rowe (eds) *Faire de la recherche en systèmes d'information*, Paris: Vuibert, 1-17,

REIX R, DESQ S, FALLERY B and RHODAIN F (2002) Vingt-cinq ans de recherche en Systèmes d'Information. *Systèmes d'information et Management*, **7(3)**, 10-17.

RICHARDSON HG (1940) Business training in medieval Oxford. *American History Review*, **XLIV**, I940-I, 259-280.

RICHARDSON L (1997) *Field of plays: constructing an academic life,* New Brunswick, NJ: Rutgers University Press.

RICHARDSON L (2000) Writing: a method of enquiry. in Denzin, N.K. and Lincoln, Y.S. (eds), *Handbook of qualitative research*, second edition, London, Sage publications.

ROBEY D (2003) Identity, legitimacy and the dominant research paradigm: An alternative

prescription for the IS discipline: A response to Benbasat and Zmud's call for returning to the IT artifact, *Journal of the AIS*, **4(1)**, Article 15.

ROSEN M (1985) Breakfast at Spiro's: dramaturgy and dominance, *Journal of Management*, 11, 31-48.

SANDERSON M (1972) *The universities and British industry, 1850-1970*, Routledge and Kegan Paul.

SCHÖN DA (1983) *The reflective practitioner: How professionals think in action*. London: Temple Smith.

SERE B (2007) La disputatio dans l'université médiévale, esquisse d'un usage public du raisonnement? *Papier de recherche du LAMOP*, http://lamop.univ-paris1.fr/W3/espacepublic/sere.pdf

SINCLAIR A (2000) Teaching managers about masculinities: are you kidding? *Management Learning*, **31**, 83-102.

STOTESBURY H (2003) Evaluation in research article abstracts in the narrative and hard sciences, *Journal of English for Academic Purposes*, **2(4)**, 327-341.

STRAUB, D (2008) Editor's comment. Type II Reviewing errors and the search for exciting Papers. *MIS Quarterly*, **32(2)**, v-x.

SWANSON E P (2004) Publishing in the majors: A comparison of accounting, finance, management, and marketing, *Contemporary Accounting Research* **21(1)**, 223-255.

THIETART RA (ed.) (2007) *Faire de la recherche en management stratégique*, Dunod, In English: *Doing Management Research: A Comprehensive Guide*. NY: Sage.

TIRATSOO N (2004) The "Americanization" of management education in Britain, *Journal of Management Inquiry*, **13(2)**, 118-126.

USDIKEN B (2010) Between contending perspectives and logics: organizational studies in Europe, *Organization Studies*, **31(6)**, 715-735.

VAN MAANEN J (1988) *Tales of the field: on writing ethnography*. Chicago: the University of Chicago Press.

VENKATESH V, MORRIS MG, DAVIS G and DAVIS FD (2003) User acceptance of information technology: Toward a unified view. *MIS Quarterly*, **27(3)**, 425-478.

VERGER J (1973) *Les universités au Moyen Age*. Paris: Presses Universitaires de France.

WALSHAM G (1995) Interpretive case studies in IS research: nature and method. *European Journal of Information Systems*. **4**, 74-81.

WEITZEL T, BEIMBORN D and KÖNIG W (2006) A unified economic model of standard diffusion: The impact of standardization cost, network effects, and network topology. *MIS Quarterly*, **30** (Special Issue), 489-514.

WHATELY DD (1858) *Elements of rhetoric*. Louisville: Morton & Griswold, Publishers.

WHITLEY, E.A. and HOSEIN, I.R. (2008) Doing the politics of technological decision making: due process and the debate about identity cards in the UK. *European journal of information systems*, **17**, 6, 668-677.

ZUCKERMAN H and MERTON RK (1971) Patterns of evaluation in science: institutionalism, structure and functions of referee system. *Minerva*, **9**, 66-100.

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APPENDICES

Appendix 1 List of acronyms

CAIS	Communication for the Association of Information Systems
EJIS	European Journal of Information Systems
ESC	Ecole Supérieure de Commerce
ESSEC	Ecole Supérieure des Sciences Economiques et Commerciales
ESCP	Ecole Supérieure de Commerce de Paris
HEC	Ecole des Hautes Etudes Commerciales
IAE	Institut d'Administration des Entreprises
I&M	Information and Management
ICIS	International Conference on Information Systems
IS	Information Systems
ISJ	Information Systems Journal
ISR	Information Systems Research
JAIS	Journal of the Association for Information Systems
JIT	Journal of Information Technology
JSIS	Journal of Strategic Information Systems
JMIS	Journal of Management Information Systems
MIS	Management Information Systems
MISQ	Management Information Systems Quarterly
MISQE	Management Information Systems Quarterly Executive
SIM	Systèmes d'Information et Management
SJIS	Scandinavian Journal of Information Systems
TIS	Technologie, Information et Société

Appendix 2 List of documents used for MISQ and EJIS historical analysis

1) MISQ

Reference of document	Description
Editorial statements from 1992 to 2010 http://www.misq.org/archivist/edstates.html	Each editorial statement written by Editors in Chief or Senior Editor. Those were extremely useful to trace the editorial policy and its evolution. We found particularly interesting Blake Ives' 1992 editorial.
Authors statistics http://www.misq.org/roadmap/Author%20Statistics.pdf	In particular distributions of authors per geographical area.
Prolific authors http://www.misq.org/roadmap/Prolific%20Authors.pdf	Highest Publishers in MISQ.
MISQ authors statistics http://www.misq.org/roadmap/Author%20Statistics%20Graphs.pdf	New authors statistics. Publication per geographical area.
MISQ editorial board http://www.misq.org/archivist/editor.html	Details of Senior Editors and Associate Editors.
Information for authors http://www.misq.org/roadmap/standards.html	Information for authors, with description of missions.
Official website of the AIS (Association for Information Systems) http://home.aisnet.org/associations/7499/files/Index_Markup.cfm http://home.aisnet.org/displaycommon.cfm?an=1&subarticlenbr=345	Description of all affiliated journals. Ranking of IS journals.
EBSCO (|Business Source Premier)	EBSCO was used to find some articles and editorials.
Chen and Hirschheim (2004) Introna and Whittaker (2004) De Vaujany et al (2008)	Epistemological and methodological approaches in MISQ 1991-2001. Both papers carry out longitudinal research about the evolution of editorial statements (including EJIS and MISQ) over a number of years.

2) EJIS

Reference of document	Description
Official website of EJIS http://www.palgrave-journals.com/ejis/	Archives, editorial statements and description of the editorial board (Associate Editors and Senior Editors)
Information for authors http://www.palgrave-journals.com/ejis/author_instructions.html	Information for authors, with description of missions.
Official website of the AIS (Association for Information Systems) http://home.aisnet.org/associations/7499/files/Index_Markup.cfm http://home.aisnet.org/displaycommon.cfm?an=1&subarticlenbr=345	Description of all affiliated journals. Ranking of IS journals.
EBSCO (Business Source Premier)	EBSCO was also used to find some articles or editorials
Chen and Hirschheim (2004) De Vaujany et al (2008)	Epistemological and methodological approaches in EJIS 1991-2001. Longitudinal research about the evolution of editorial statements from 1997 to 2007 (including EJIS and MISQ).

Appendix 3 Examples of the main argumentative strategies and their typical reasoning sequence

1. DEEP: Example of first argumentative strategy ('deepening of knowledge')

An example of this rhetoric may be found in Arnold et al (2006)'s abstract below, in which we show our sequential coding into several sequences S1 to Sn:

[Explanation facilities are considered essential in facilitating user interaction with knowledge-based systems (KBS). Research on explanation provision and the impact on KBS users has shown that the domain expertise affects the type of explanations selected by the user and the basis for seeking such explanations.] **S1**

[The prior literature has been limited, however, by the use of simulated KBS that generally provide only feedback explanations (i.e., ex post to the recommendation of the KBS being presented to the user).] **S2**

[The purpose of this study is to examine the way users with varying levels of expertise use alternative types of KBS explanations and the impact of that use on decision making.] **S3**

[A total of 64 partner/manager-level and 82 senior/staff-level insolvency professionals participated in an experiment involving the use of a fully functioning KBS to complete a complex judgment task. In addition to feedback explanations, the KBS also provided feedforward explanations (i.e., general explanations during user input about the relationships between information cues in the KBS) and included definition type explanations (i.e., declarative-level knowledge).] **S4**

[The results show that users were more likely to adhere to recommendations of the KBS when an explanation facility was available. Choice patterns in using explanations indicated that novices used feedforward explanations more than experts did, while experts were more likely than novices to use feedback explanations. Novices also used more declarative knowledge and initial problem solving type explanations, while experts used more procedural knowledge explanations. Finally, use of feedback explanations led to greater adherence to the KBS recommendation by experts—a condition that was even more prevalent as the use of feedback explanations increased. The results have several implications for the design and use of KBS in a professional decision-making environment.] **S5**

Its reasoning sequence is:

- RS1 (**S1**): There is a consequent literature about knowledge-based systems, the explanation provision and end-users.

- RS2 (**S2**): Nonetheless, the "use of simulated KBS" has limited potential contributions (a weakness is identified)

- RS3 (**S3 and S4**): A specific research is designed to fill this gap. It aims at identifying the way "users with varying levels of expertise use alternative types of KBS explanations and the

impact of that use on decision making". It relies on 64 partner/ manager-level and 82 senior/staff-level insolvency professionals all involved in an experiment.

- RS4 (**S5**): With this original approach, new contributions are put forward: "The results show that users were more likely to adhere to recommendations of the KBS when an explanation facility was available. Choice patterns in using explanations indicated that novices used feedforward explanations more than experts did (…)." Current state-of-the-art research is extended by this work.

This string of reasoning sequences is very close to that describing the DEEP category. The logical anchorage is the literature (which is extended by this work about KBS).

2. ENIG: Second example of argumentative strategies ('solving an enigma')

An example of this rhetoric may be found in Weitzel et al.'s (2006) abstract below in which we show our sequential coding into several sequences S1 to Sn:

[This paper is motivated by the following question: What drives the diffusion of a communication standard and what diffusion results can we expect?] **S1**

[Past literature provides many instructive but mostly unrelated answers. Findings relate to startup problems, penguin effects [reluctance to move first for fear of failure], and tendencies toward monopoly, but substantial problems in applying the models to concrete standardization problems reveal that the dynamics are probably more complex. A single standard attracting a critical number of users does not ultimately guarantee adoption by a network. Not all diffusion results are complete nor do they provide standardization.] **S2**

[The conditions of specific diffusion behaviors are addressed by developing a formal standardization model that captures all fragmented phenomena in a unified approach. Drawing upon findings from other research, we incorporate the structure of the underlying user network as an important determinant for diffusion behaviors.] **S3**

[The approach allows us to disclose varying conditions that generate frequently observed standardization behaviors as special parameter constellations of the model. Using equilibrium analysis and computer simulations, we identify a standardization gap that reveals the magnitude of available standardization gains for individuals and the network as a whole. The analysis shows that network topology and density have a strong impact on diffusion of standards and that the tendency toward monopoly is far less common than thought.] **S4**

[We also report how the model can be used to solve corporate standardization problems.] **S5**

Its reasoning sequence is:

- RS1 (**S1**): In the literature, there is still an obscure unexplained point: what encourages the diffusion of a standard, with what effects?

- RS2 (**S2**): Past literature brought some (fragmented and desultory) answers.

- RS3 (**S3**): An evaluation of existing models underlines simplistic dynamics.

- RS4 (**S4 and S5**): A unified formal approach is proposed. It is elaborated with the help of a meta-analysis of results. The model is tested through a numerical simulation. The effect of the network topology is isolated.

The focus of the sequence is anchored in an institutionalized research question. The work aims at going beyond the fragmented literature dealing with the issue of communication standards' diffusion and addresses an enigma.

Other abstracts we also coded as enigma either developed radical alternatives or suggested the institutionalisation of a new research question (more relevant than previous ones).

3. PRACT: Third example of argumentative strategies ('practical issue')

An example of this rhetoric may be found in Butler and Gray's (2006) abstract below in which we show our sequential coding into several sequences S1 to Sn:

[In a world where information technology is both important and imperfect, organizations and individuals are faced with the ongoing challenge of determining how to use complex, fragile systems in dynamic contexts to achieve reliable outcomes.] **S1**

[While reliability is a central concern of information systems practitioners at many levels, there has been limited consideration in information systems scholarship of how firms and individuals create, manage, and use technology to attain reliability.] **S2**

[We propose that examining how individuals and organizations use information systems to reliably perform work will increase both the richness and relevance of IS research.] **S3**

[Drawing from studies of individual and organizational cognition, we examine the concept of mindfulness as a theoretical foundation for explaining efforts to achieve individual and organizational reliability in the face of complex technologies and surprising environments.] **S4**

[We then consider a variety of implications of mindfulness theories of reliability in the form of alternative interpretations of existing knowledge and new directions for inquiry in the areas of IS operations, design, and management.] **S5**

Its reasoning sequence is:

- RS1 (**S1**): The issue of IS reliability is essential for IS practitioners.
- RS2 (combines **S2 and S3**): This issue is congruent with academic literature.
- RS3 (**S4**): The authors propose to use the concept of 'mindfulness' in order to shed light on the studied phenomenon (through a literature review on cognition).
- RS 4 (**S5**): Implications for IS design and management.

This string of reasoning sequences is very close to that describing the PRACT category. The logical anchorage is a practitioner's concern (or at least what is perceived as a practitioner's concern) about IS reliability. Implications are drawn for IS design and management.

4. Example of a hybrid logic: fourth example of argumentative strategy DEEP-PRACT

An example of this rhetoric may be found in Whitley and Hosein's (2008) abstract below in which we show our sequential coding into several sequences S1 to Sn:

[The U.K. Government, in presenting its proposals for biometric identity cards, made strong claims about the technology and science underlying the proposed National Identity Scheme.] **S1**

[In this paper, we use insights from science and technology studies (STS), particularly Latour's 'Politics of Nature' argument, to analyse the parliamentary debates about the technological and scientific aspects of the proposals.] **S2**

[The authors were part of a team that produced a report that raised a series of perplexities about the Scheme in an attempt to counter the short-circuiting of discussion of these perplexities in the parliamentary debate.] **S3**

[The paper analyses the government's attempts at short-circuiting in light of Latour's argument and the introduction of perplexities by our report. It demonstrates the extent to which this form of STS can enhance political debate about technological decisions.] **S4**

RS1 (**S1**): The UK government has developed a policy about biometric identity cards with some underlying assumptions about science and technology. There is a gap, something missing in our knowledge about the national identity scheme (NIS);

RS2 (**S2**): Based on STS, these underlying assumptions are illuminated;

RS3 (**S3**): Authors have been involved as actors in the debate, and use this experience to push further analysis and its implications;

RS4 (**S4**): This work of deconstruction is used to demonstrate "the extent to which this form of STS can enhance political debate about technological decisions". This practical experience is used to stimulate reflexivity.

In this paper, two logical anchorages can be identified: practitioners (public managers or politicians) and the literature (interested in extending our knowledge of the NIS and also the applicability of a theoretical framework). Here, the authors of the abstract (and the paper) appear to adopt both rhetorical approaches and corresponding argumentative strategies. On the one hand, the authors were "part of a team that produced a report", they participated in the public debate, they insist on their action-oriented stance. On the other hand, they analyze their action (and the difficulties of this action) and suggest that their work show "the extent to which this form of STS can enhance political debate about technological decisions". The move from S2 to S4 thus epitomizes a hybrid reasoning sequence (combining two logical anchorages).

Table 1: Comparison of three academic systems

	FRANCE	UK	USA
Birth and dynamics of universities	From the 12th century with Sorbonne university.	From the 12th century with Oxford university.	From the 17th century with Harvard, Williamsburg and Yale.
Birth of business studies	Mainly in the 19th century. First business school (affiliated to a chamber of commerce): Ecole Supérieure de Commerce de Paris in 1819. First business department in universities in 1955 (Instituts d'Administration des Entreprises).	Mainly in post WWII period. Major UK universities set up business department in late 20th century.	From the early 20th century.
Nature of knowledge taught	From scholastic to more grounded knowledge.	Grounded knowledge.	Grounded knowledge. Influenced by philosophical movement of pragmatism.
Leading Management institutions	HEC, ESSEC, ESCP Europe (related to chambers of commerce), various ESC, IAE.	Saïd Business School (Oxford university), Judge Business School (Cambridge university), London Business School, Warwick Business School, etc.	Harvard Business School, Wharton Business School, Sloan School of Management, Stanford Graduate School of Business, Columbia Business School, etc.

Table 2: Description of learned societies and academic journals in the 17th and 18th centuries (adapted from Gross et al, 2002)

Dimensions	Description
Nature of learned societies	Circle of knowledgeable people (aristocrats, clergymen, academics…). Places to share and visually validate knowledge.
Nature of the process of validation of knowledge	Firstly based on observation and more and more, on experimentation. Replication and visibility of the research protocol are highly valued. Knowledge has to be demonstrated in front of learned societies' members. Emergence of the first peer-reviewed journals. A community of peers validates knowledge.
Structure of journals	Collection of articles (more and more impersonal, in particular from the last quarter of the 18th century). 17th century and early 18th century publications follow epistolary conventions (Gross et al, 2002) Focus on research articles, essays and book reviews. Publications can be replications of other published articles or extracts of books.

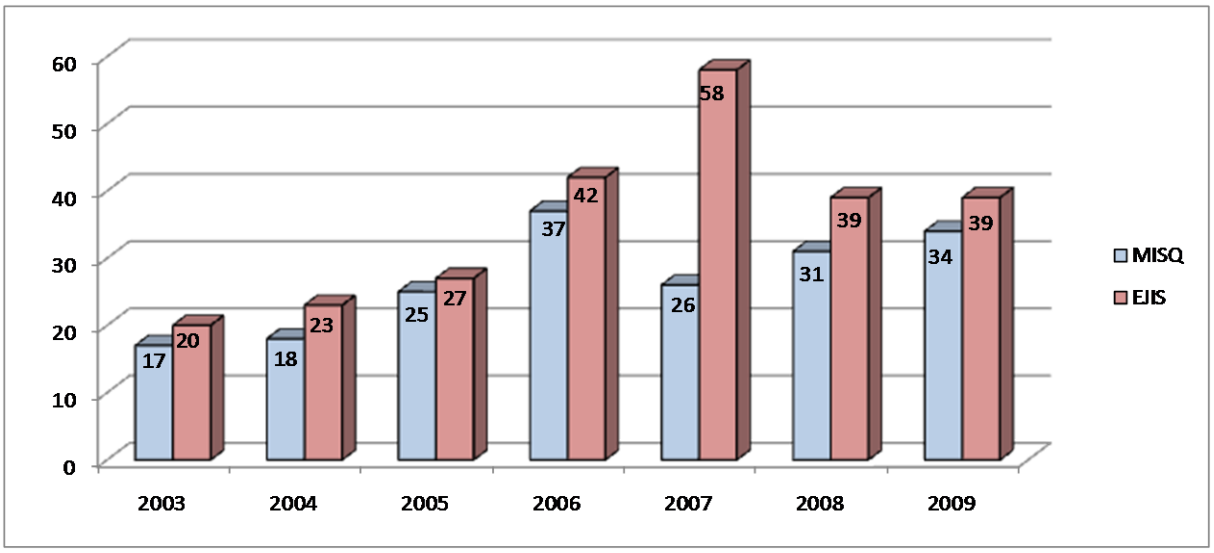

Figure 1: Number of investigated articles per annum in each journal

NB The annual variations are mostly explained by the special issues.

Table 3: A comparison between MISQ and EJIS

	MISQ	EJIS
Date of creation	1977	1991
Editors in chief and editors	Gary Dickson (1977-1982), William R. King (1983-1985), W Mc Farlan (1986-1988), J Emery (1989-1991); B Ives (1992-1994), R Zmud (1995-1998), A Lee (1999-2001), R Weber (2001-2004), C Saunders (2005-2007). Current EC: Detmar Straub (2008 till 2012)	Chief editors: Ray Paul (1991-2007) and Richard Baskerville (2008-). Co-editors: J. Liebenau and S Smithson (1991-2000), B. O Keefe (2000-2004), R. Baskerville (2004-2008), H. van der Heijden (2004-2010), and F Rowe (2010-2015)
Key aspects of the initial editorial statements	Management and practitioners –oriented. Dickson (1977) stated in the first editorial: "Our major goals are to be managerially oriented and to offer something of benefit to the practitioner. At the same time, we intend to provide a vehicle for researchers working in the information systems field to communicate with each other and with practitioners." But increasing tensions between theory and practice, and much debate about rigour and relevance. Overall dominance of positivist/quantitative research. US focus (American board and American sponsorship).	European focus. Joint project with ECIS. Affiliated to OR society. London School of Economics scholars involved in the project (not a business or computer science body). "Wide ranging debate incorporating the economic, technical, organizational and social aspects; from the role of the labour process in systems development to the ICT policies in European countries; applying European traditions of research to both theoretical and practical problems; challenge the models developed and applied in US business schools and companies; demonstrates the fallacies of much of what is frequently preached". (First editorial, Liebenau & Smithson, 1991).
Key aspects of 2010 editorial statement	"The editorial objective of MISQ is the enhancement and communication of knowledge concerning the development of IT-based services, the management of IT resources, and the use, impact, and economics of IT with managerial, organizational, and societal implications. Professional issues affecting the IS field as a whole are also in the purview of the journal."(http://www.misq.org). More global focus (but US remains very present, both with regards to the nationality of board members and sponsorship).	EJIS is "an interdisciplinary scientific journal, which wants to offer a distinctive European perspective on the theory and practice of information systems". Still a European focus. But openness towards non-European affiliations (see composition of the board). Nonetheless, the diversity of epistemological stances and the elaboration of a European perspective on IS is still very modest.
Categories of papers for year 2010	Research articles, research notes, issues and opinions, Theory review.	Regular articles and opinion articles.
Impact factor	IF for 2008:4.978, which is the highest of all peer reviewed academic journals in the field of Business in 1992–2005 (Mangematin & Baden-Fuller, 2007).	IF for year 2008: 1.202, ranking it 46 out of 99 journals in the field of Computer Science, Information Systems.

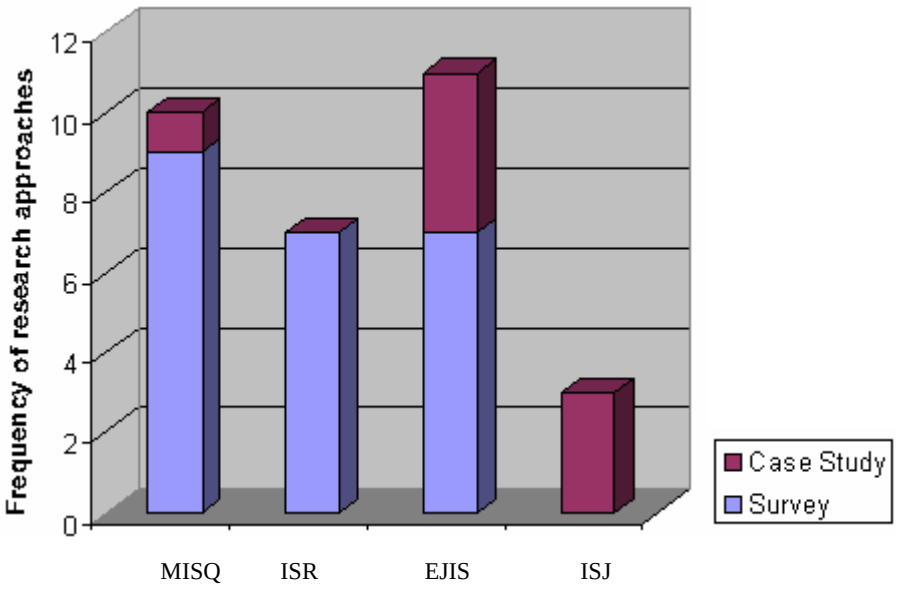

Figure 2. Distribution of research methods in articles about IT adoption (Choudrie & Dwivedi, 2005).

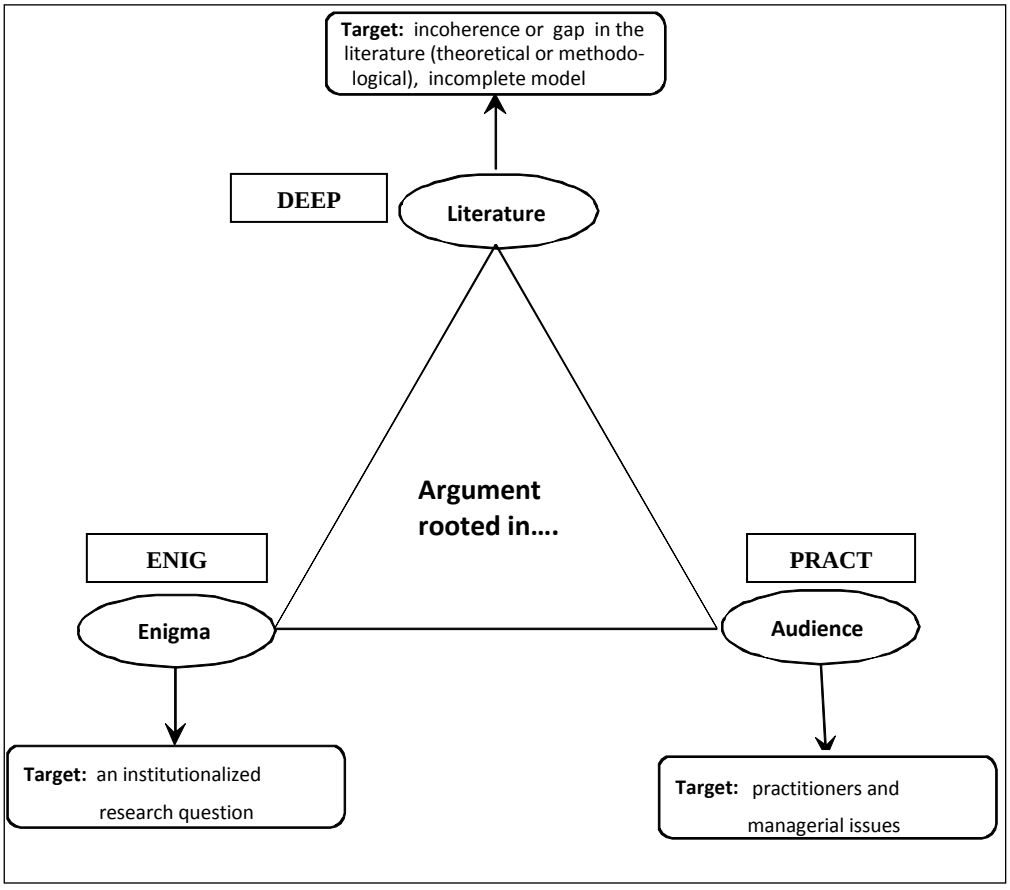

Figure 3 : Three logical anchorages for argumentative strategies

Table 4: Summary of the three typical argumentative strategies

Argumentative strategy	Reasoning sequence 1	Reasoning sequence 2	Reasoning sequence 3	Reasoning sequence 4
DEEP Deepening of knowledge	Here is the literature	There is incoherence, weakness or a gap in the literature ("However", "Yet", "Nonetheless"…). One or several models is/are incomplete	I prove it	Here is my proposal, which I justify, to fill this gap
ENIG Solving an enigma	Here is an enigma. a paradox (a research question institutionalized by a community of researchers)	There is no satisfactory answer in the literature	I prove it	Here is my proposal, which I justify, to solve the enigma
PRACT Addressing a practical issue	Here is a problem which leads to difficulties for practitioners or society	I show that this problem makes sense with respect to the academic literature	I present a device (e.g. model, framework of analysis, etc.) in order to supply some elements of answers which are more or less actionable	Setting up of the device (survey, case study, action research, intervention research, meta analysis…) and amendments

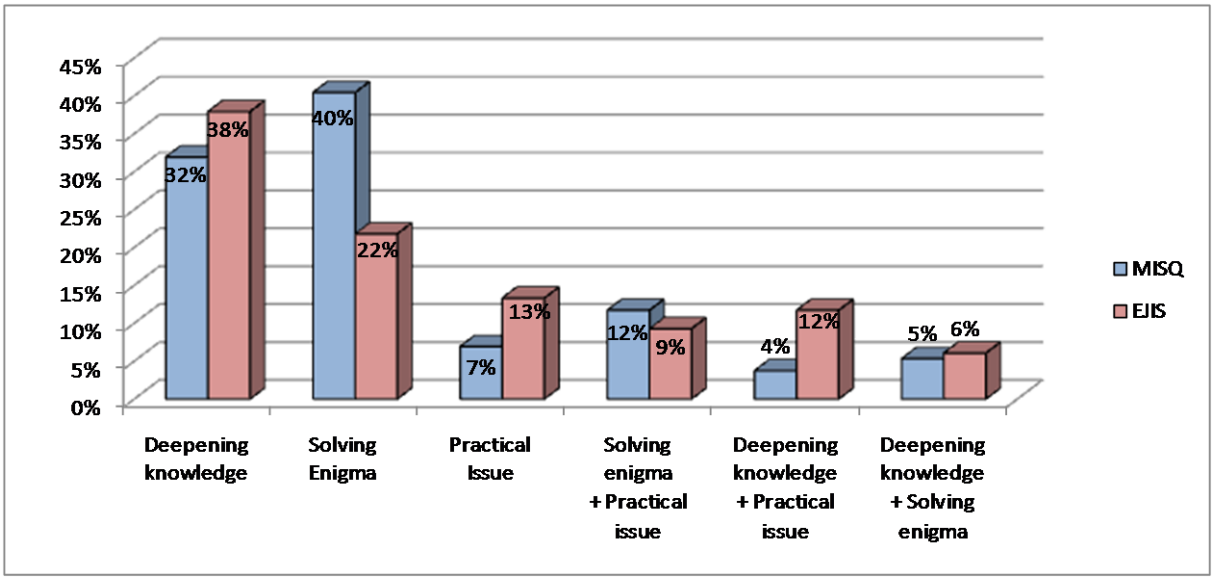

Figure 4: Percentage of articles per argumentative strategy
In both journals over the period 2003-2009

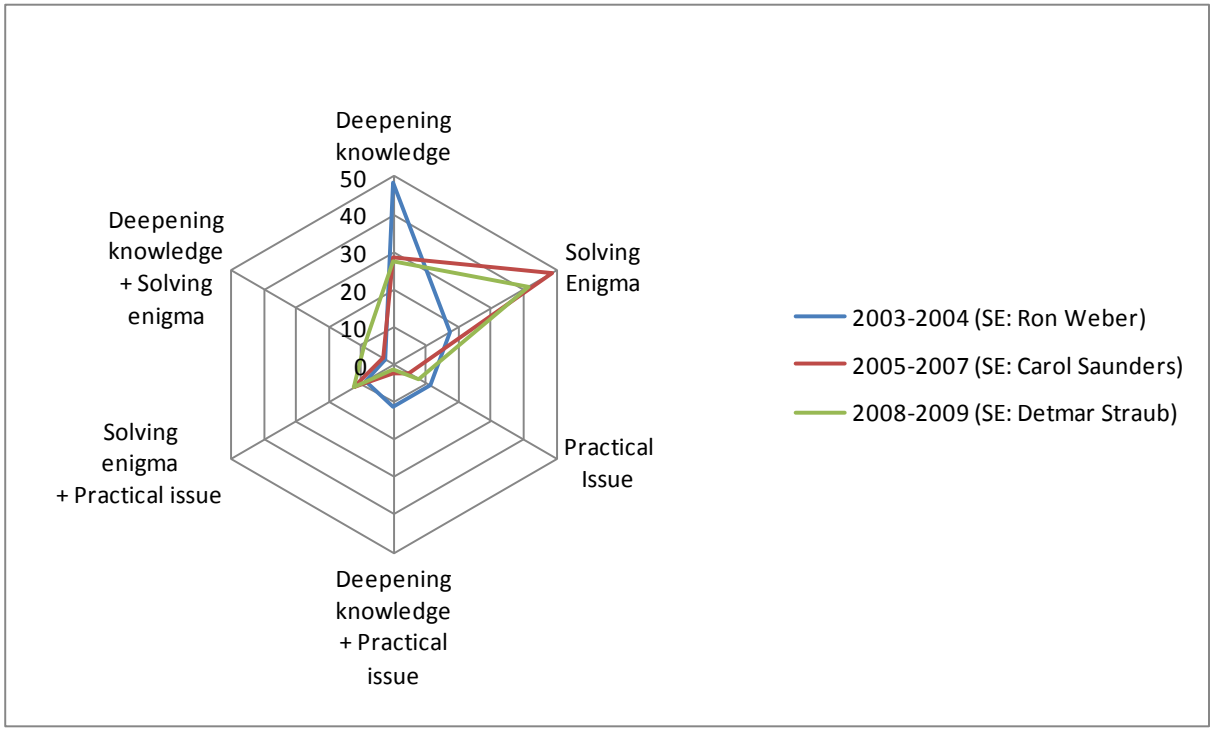

Figure 5: Percentage of each argumentative strategy during periods of editorial stability For MISQ

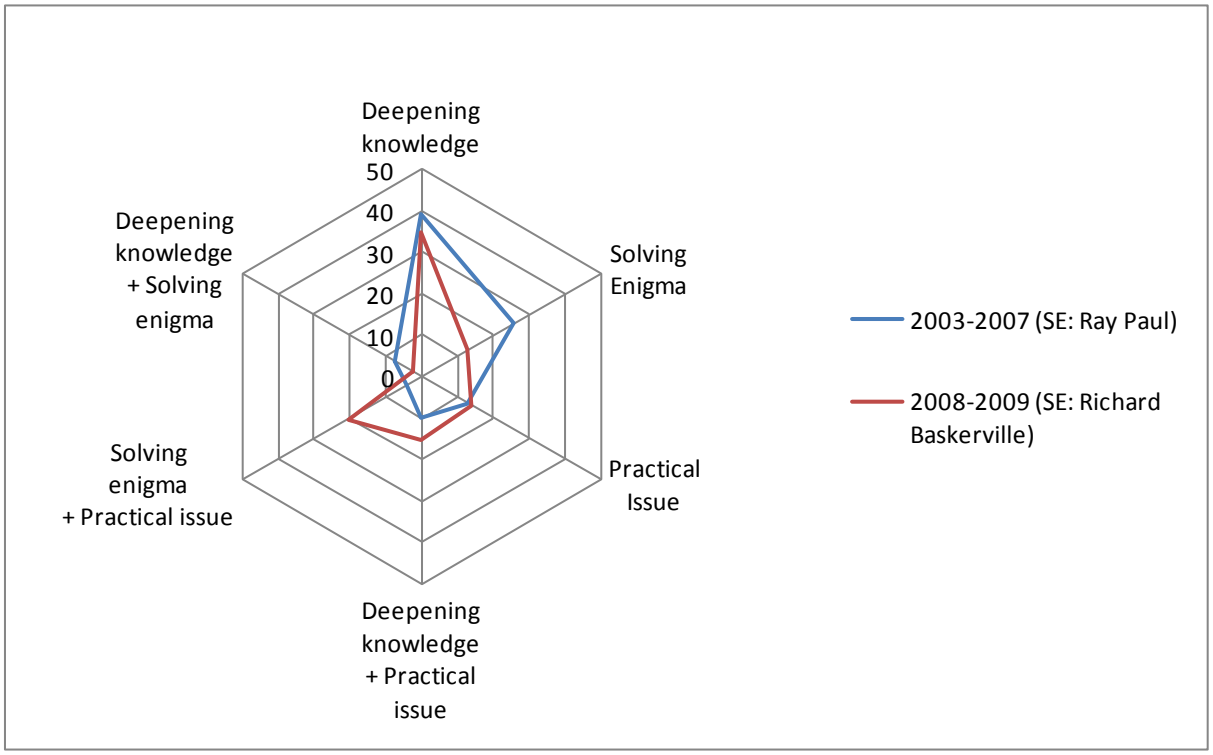

Figure 6: Percentage of each argumentative strategy during periods of editorial stability for EJIS

RICHARDSON' S SUGGESTIONS TO ENCOURAGE THE DEVELOPMENT OF NEW WRITING FORMATS
Join or start a writing group
Work through a creative writing guide-book
Enrol in a creative writing workshop or class
Use writing up of your field-notes to expand your writing vocabulary, habits of thought, and attentiveness to your senses, and as a bulwark against the censorious voice of science
Keep a journal
Write a writing autobiography
Use drama
Experiment with writing narratives of the self
Try writing a text using different type faces, font sizes and textual placement
Write a layered text
Try some other strategy for writing new ethnography for social scientific publications
Consider a fieldwork setting. Consider the various subject positions you have or have had within it
Consider a paper you have written (or your field notes)
Write your data in three ways, for example, as a narrative account, as a poetic representation, and as readers' theatre
Write a narrative of the self from your point of view
Collaborative writing is a way to see beyond one's own naturalism of style and attitude
Memory work is another collaborative research and writing strategy
Consider a part of your life outside of or before academia with which you have deeply resonated
Different forms of writing are appropriate for different audiences and different occasions
Write stories or reflexive accounts of how you happened to write pieces you have written

Table 5: Experimenting with writing (Richardson, 2000:942).