LSP Journal

Vol.1, No.2 (2010)

Language for Special Purposes
Professional Communication
Knowledge Management
Cognition

LSP Professional Communication Knowledge Management Cognition

Vol. 1 No. 2 (2010)

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Editorial

The first issue of the LSP Journal has been well received, and apparently the transition to electronic publishing has not raised any protests, although you may argue that those who would have protested may not been aware of the journal's existence and therefore have not made themselves heard.
The articles in the second issue reflect the importance of an in-depth understanding of the relation between language skills, cognition and professional communication which is far beyond what Global English offers to its speakers in the form of everyday communication about fuzzy matters. Nothing is wrong with Global English as long as the speakers realize that not everyone masters the English language and respect that specialists must assist when it comes to professional communication. This is often forgotten by non-English speakers who overestimate their own language skills. It is equally important to remember that although English serves as lingua franca in a lot of situations, it can never replace other languages.

A recent symposium on Approaches to the Lexicon at the Copenhagen Business School had tracks on Lexical Semantics, Word Formation, Lexical Acquisition and Terminology and Ontologies and included many papers of interest to readers of this Journal. The program may be consulted here: https://conference.cbs.dk/index.php/lexicon/lexicon/schedConf/program.

The lexical semantics track of the symposium addressed a wide range of foundational problems involving the question of what lexical items mean, the representation of lexical knowledge, he theory of the generative lexicon and, not least, the lexical sources of the interpretation of phrases and full sentences.

The lexical formation track dealt with various aspects of the morphology-syntax interface. Questions addressed in this track were: How are compounds formed and how are they distinguished from phrases? What are the formal and semantic constraints? How do language types differ in lexical formation patterns? How is reference assigned to compounds?

The lexical acquisition track concerned research in lexical acquisition, use and pedagogy particularly within the field of second language acquisition research. An increasing number of vocabulary studies have widened the perception of language learning, and it has been empirically documented that lexical competence is a strong predictor of language learners' proficiency in second or foreign language.

The fourth track on terminology and ontologies was attended by a lively group of participants who discussed concept clarification and knowledge organization, the importance of precise definitions and a common understanding of concepts as well as similarities and differences between different kinds of ontologies. The track addressed principles and methods for building ontologies, including methods for automatic extraction of information about concepts. Knowledge organization and concept clarification build on knowledge modelling by means of ontologies. Dynamic and automatic or semi-automatic construction of ontologies

play a key role in the development of a number of different applications, and may contribute to creating solutions far more efficient than the results of cumbersome manual labour.

The symposium was a fruitful meeting point of experts who were not used to meeting each other but who benefited from getting views from neighbouring disciplines on their specialties. The lexicon side and the ontology side may have come a little bit nearer a common understanding.

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Methods of concept analysis – Towards systematic concept analysis

Part 2 of 3

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Keywords: *concept analysis, terminology work, research methods*

Abstract

This article is the second one in a series of three articles which focus on comparison and development of concept analysis methods as an academic research method. In the first article, terminological analysis methods – originally developed for practical terminology work – were contrasted with selected concept analysis methods developed in business studies and nursing science. Based on the comparison, the second article discusses a further development of terminological methods towards what is here called 'systematic concept analysis', and outlines steps that can be taken when analysing concepts for various purposes. The systematic concept analysis method is based on terminological methods and thus lays emphasis on clarifying the relations between concepts and locating concepts in concept systems – also in the case where a single concept is taken as a research object. The third article will describe concept analysis tools in more detail.

1 Introduction

In the first part of this series of articles (Nuopponen 2010), a comparison of selected methods for analysing concepts from terminology science (Picht & Draskau 1985; Nuopponen 1994, 1996; Skuce & Meyer 1990; Suonuuti 1999), business studies (Näsi 1980; Takala & Lämsä 2001) and nursing science (Walker & Avant 1994). Concept analysis was defined as an activity where concepts belonging to a whole, their characteristics and the relations that they hold within systems of concepts are clarified and described.

In all types of studies, it is necessary to sort out and clarify concepts and terms, and there is a need for more accurate tools for doing it than than those offered by the general research method literature. In this article, results of the comparison are discussed while outlining a method for systematic concept analysis, which could be applied as a research method in its own right or as part of any other type of study let it be qualitative or quantitative.

The terminological literature accounts for detailed procedures and methods to break down concepts into their characteristics, to structure concept systems, and to write well formed definitions. The theory of terminology seems to have the most accomplished set of theoretical

tools for analysing special field concepts[1]. Whereas terminological methods are geared towards practical terminology work, descriptions of concept analysis in the other disciplines contribute with some aspects of scholarly research. This article makes an effort to integrate these approaches into the analysis of concepts and to describe more or less concrete steps for concept analysis.

2 Systematic concept analysis

Systematic concept analysis as it is presented here is a further modification of the terminological analysis method presented by Heribert Picht in his various writings (e.g. in Arntz & Picht 1982; Picht & Draskau 1985), which has had a major influence in the Nordic terminology research and terminology work. Here, elements from other, more research oriented, concept analysis methods are combined with elements of terminological analysis. The main modification made here is that only the core concept analysis is taken into account, and the orientation towards terminology work is treated as one of the purposes for which systematic concept analysis may be used.

When systematic concept analysis takes the major role as the sole research method in a study, it covers the phases 1–6 in Figure 1. Alternatively, it may form a part of a wider overall research process, and that is why Figure 1 also includes references to an eventual overall research framework and its various phases preceding the actual concept analysis, and references to further possible research steps where the results of the concept analysis are utilized.

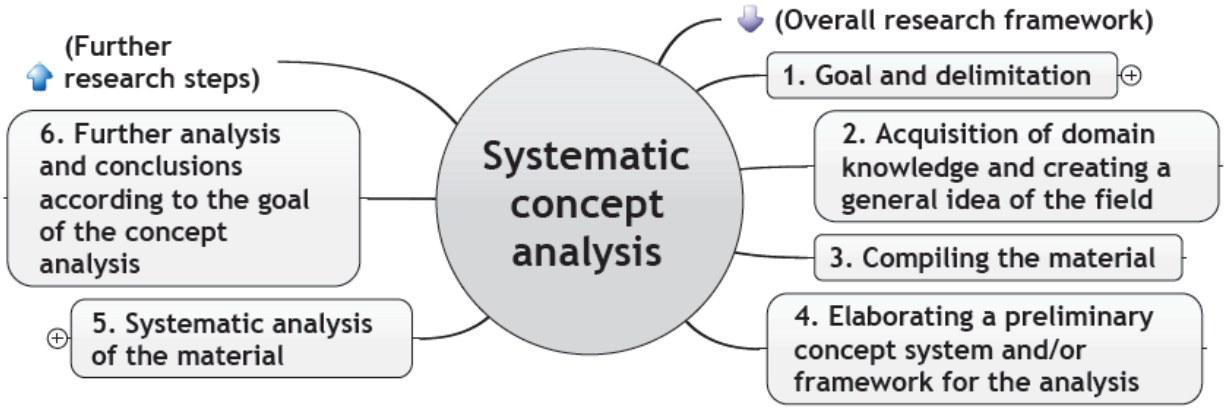

Figure 1. An outline for systematic concept analysis

The steps listed in Figure 1 are not always following each other in a linear way – after all, a research process "is not a clear-cut sequence of procedures following a neat pattern but a messy interaction between the conceptual and the empirical world, deduction and induction occurring at the same time" as Bechhofer (1974: 73) expresses it. In practice, the steps are overlapping and interwoven with each other as also Näsi and Takala & Lämsä emphasize. In the following, the steps are discussed and exemplified with the analysis of the concept of

[1] These theoretical tools will be described in more detail in the third part of the article series.

concept analysis itself, which was performed for Nuopponen 2010 in order to be able to compare the methods and further develop them.

2.1 Purpose and delimitation of concept analysis

The first step is to define a purpose for the analysis and delimit its scope, i.e. the domain and the number of concepts to be dealt with. The purpose of the whole study may be to clarify concepts and concept systems in a domain, in which case concept analysis plays a major role in the whole research process. For instance, concepts in a new field of knowledge may still be in a quite chaotic or undeveloped state, and need clarification. Concept analysis may be integrated in the framework of a wider investigation in order to find an answer to one or more research questions, e.g. to establish a clarified conceptual foundation for further research.

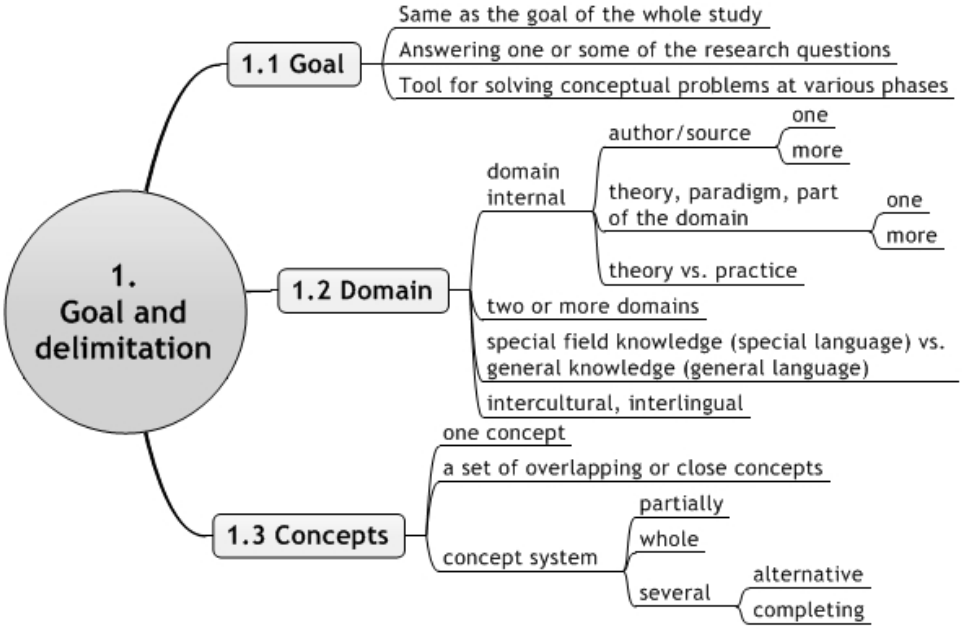

Figure 2. Purposes and delimitations of concept analysis

Furthermore, throughout the whole research process, concepts have to be sorted out, ordered, and defined, e.g. when doing a literature survey or looking for information on the object of the study. Concept analysis is often performed "in the background", and not all concept analysis activities are necessarily described as such nor discussed in the research report. Only the findings may be discussed and summarized. Concept analysis may thus work as an auxiliary tool to create conceptual clarity at various stages of the research work.

A study may have as a purpose to clarify one or more concepts inside a certain domain or compare concepts over domain borders. The comparison inside a domain may restrict to one author or one theory, or cover more authors or theories. E.g. in Nuopponen 2010, similar concepts from three different domains were compared with each other.

In terminological analysis, the special field under scrutiny is taken as a delimiting factor and material is selected only from that field. In practical terminology work, there is only a limited amount of resources and time available and hence a strict delimitation is well motivated. This

should apply to many academic studies, too. However, Walker and Avant's method (1994: 40–41) explicitly sends the analyst to explore all the usages of the term for the concept under scrutiny in all fields and in both LSP and general language. As seems to be usual in nursing science studies, concept and its linguistic representation are somehow mixed with each other. They treat both scientific and ordinary uses of the linguistic expression as equally relevant. These are all to be collected even though they would be used for totally unrelated concepts (cf. ibid.; Nuopponen 2010). This kind of "semantic inventory" is something that could be done prior to the concept analysis when trying to narrow down to those terms and concepts, which are relevant for the study. For instance, when looking for information on the concept, library systems and online searches require search terms. Polysems and homonyms are revealed in this phase. As soon as the research object is delimited, there is, however, hardly any need to follow up on polysemic or homonymic naming functions of the linguistic expression, provided this is not motivated by the overall purpose of the study. Terminological concept analysis takes into account that there may be alternative terms (synonyms) for the same concept, which is not so apparent in Walker and Avant's method. For terminology work or terminological research, a wider analysis of term elements becomes relevant when evaluating the opacity of terms as linguistic expressions and their motivation various other naming tasks of the same linguistic form.

Terminological studies normally concentrate on larger conceptual fields and whole concept systems or their components at a time. Therefore, a challenge is posed by the fact that in scholarly research, e.g. in nursing science, a certain concept may be selected as the study object. The same goes for a set of concepts that rather than form a concept system, overlap each other and could be illustrated with overlapping circles instead of a clear-cut boxes or tree diagrams. They may not even have any common immediate superordinate concept. In multidisciplinary research, this kind of problems arise, when different but rather similar concepts which belong to various concept systems come together and have to be discussed and somehow agreed upon. This is the case in this series of articles comparing various concept analysis models. In Nuopponen 2010, similar concepts from the selected disciplines were contrasted, but concept analysis methods as well as meanings of the term 'concept analysis' in other disciplines and special fields were left out of the study. The purpose of the overall study, however, will include concept analysis methods from more disciplines. In order to develop the method, existing concept analysis methods needed to be explored at first. The findings are utilized to further develop the method.

2.2 Acquisition of domain knowledge and creating a general idea of the field

If the researcher is not familiar with the domain(s) or special field(s), where the concept(s) to be analyzed belong to, it is necessary to acquire a general idea of the field in order locate where the concept(s) belong(s). Together with the next phase this could be called 'creating a knowledge foundation'. It is done simultaneously with compilation of material (cf. 2.3) for the analysis and while going through it.

This phase may reveal that some sources are using different terms for the concept to be analyzed. For instance, in this study, the quest was to search for disciplines that are interested in concept analysis methods and have developed these. The term 'concept analysis' and its Finnish equivalent gave as search results texts on terminological research and terminology work, studies from business, nursing science and educational studies as well as formal concept analysis (cf. Figure 3).

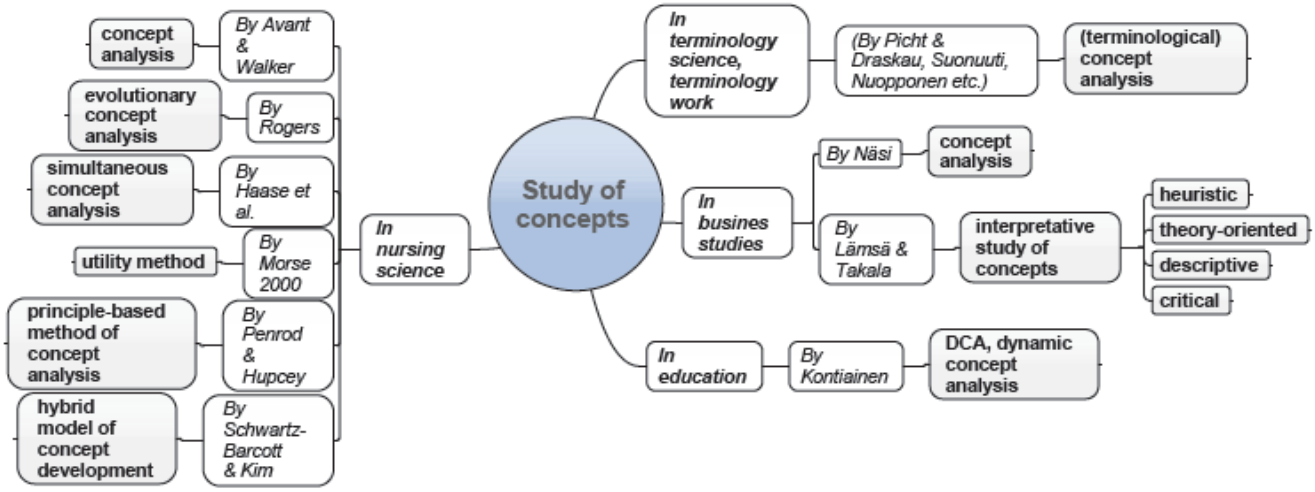

Figure 3. Various types of concept analysis methods

When reading the sources, also methods that were close to concept analysis methods even though they were not called 'concept analysis' were taken into account. Thus, various types of methods used to analyse concepts were included in the study – unlike Walker and Avant, who look for the "true meaning of the word" (cf. Figure 3; Nuopponen 2010).

2.3 Compiling the material

Compilation of sources and material is started already in the previous phases, or even prior to them. When looking for information and sources, an overall picture starts to appear and it will become easier to single out relevant texts, definitions, classifications etc. In the case with the concept *concept analysis*, key researchers and their key articles and works were found quite early on, cf. Figure 3 above.

The overall research design has an influence on the material selection criteria and a more serious compilation can be done only when the purposes and delimitations have been decided upon. The material may be various types of information on one or more concepts according to the purpose and delimitation. Furthermore, it may be collected from one or more special fields, theories, authors, languages, countries, etc. (cf. Figure 2).

If the purpose is to cover all the concepts of the selected domain, i.e. the analysis is "domain-restricted", a final and a more accurate material compilation is best done after the following phase (cf. 2.4), i.e. after a preliminary creation of a concept system or another type of framework for the study. The analysis may also be "source restricted", i.e. the purpose is to analyse one or more concepts as seen in a certain predefined source or certain sources (e.g. Nuopponen 2010; Figure 3 above). In the domain-restricted analysis, the number of sources is not limited in the same way as in the second case.

In terminology work, information on concepts and terms is recorded on electronic forms or in a data base for further analysis while a researcher often tries to manage various concept information details from different sources in his/her memory, especially when writing a literature review and comparing concepts described by different authors. A more systematic

approach and an appropriate software to record concept related data to be analysed would give more accurate and reliable results in the concept analysis.

2.4 Elaborating a preliminary concept system and/or framework for the analysis

Elaborating a concept system starts actually at the very beginning of the research process. The observations at various phases lead to establishing a preliminary concept system or another type of framework for the analysis. A general outline of the concept system(s) of the domain is needed before analysing the material systematically (Picht & Draskau 1985: 171). Näsi's model also includes preliminary ordering of different views. Walker & Avant's model (1994) does not have anything that could be compared with this step. An overview of various attributes or characteristics of the concept in focus is acquired after analysing various concepts with the same linguistic designation from different fields. (Ibid; see also the discussion in Nuopponen 2010).

When working with several languages, theories, disciplines, or sources with different views on the subject matter, it is necessary to establish a preliminary ordering of the concepts for each of them separately. In this way, a proper understanding of the differences and similarities is secured. Terminologists have also learned a lesson from the practical terminology work, namely that even if certain special fields appear to have a common international concept system, the reality is not always that idealistic. Picht and Draskau (1985: 171) warn, "One should cherish no illusions, however, nor should one take the international character of system of concepts for granted". However, in order to facilitate a later comparison of the concept systems, they recommend establishing general classifying criteria for the concept systems (Picht & Draskau 1985: 171). With classifying criteria they refer to those characteristics of concepts that may "determine the configuration of the system of concepts" in generative concept systems, or to other, empirically based criteria for ontological concept systems (e.g. partitive concept systems) (ibid. p. 63).

At this point, the question raised above about the analysis of only a single concept or a set of overlapping concepts becomes of importance. Picht and Draskau (1985: 62) emphasize that "the concept may not be viewed as an isolated unit in terminology" and it should always be evaluated and elaborated "with the conceptual context, which is in turn closely related to a special subject field or a discipline". They regard construction of a concept system "as the representation of the conceptual structure inherent to the special field". Thus, systematic analysis is needed because concepts do not exist and cannot be defined in isolation. Even if a single concept is taken as the object of the analysis, there are always other concepts involved: one or more superordinate concepts, subordinate concepts and coordinate concepts.

In addition to generic concept system, concepts may have their location e.g. in partitive or causal concept systems. Thus, also other types of concepts may also be involved in clarifying and delimiting the content of the concept, e.g. those referring to a cause or a result. In Walker & Avant's model (1994: 45) causal relations are analysed even though they do not discuss these as concept relations but e.g. as "antecedents and consequences of the concept". This shows that even though one concept would be initially taken as the research object, other concepts will be involved and eventually need to be analysed, too. As to overlapping concepts, each of them needs its own analysis as to which concept systems they belong. Establishing the intension and extension of a concept depends on this. Generic concept systems and other types of concept systems or models that may provide a basis for systematic analysis will be discussed in the next part of this article (see also Nuopponen 1994; 2005).

When analysing various concepts of *concept analysis*, at first the compiled texts were read, especially focusing on information on the analysis methods, their definitions, and classifications. Based on this raw material, preliminary satellite models (i.e. mindmap-like presentations) were outlined for each discipline separately. In this analysis, generic concept systems (super/sub- and coordinated concepts) could be found as well as temporal concept systems (e.g. overall process, part-process, co-ordinate process, overlapping process concepts). This inventory gave also as a result that the information on concepts could be compared with the help of a concept system model of activity (see e.g. Nuopponen 1994; 2006), which involves questions like: *Who analyses? Which material is used? Why is the analysis done? How is the analysis performed? With which material? What is the end product?* In order to clarify further the question *"How concept analysis is performed"*, the research methods were analyzed with the help of a temporal concept system model, where sequential, parallel, merging, alternative and optional phases in a process can be distinguished.

2.5 Systematic analysis of the material

Analogously with Picht's and Draskau's model, the next step is to go through the accumulated data according to the preliminary concept system or other conceptual framework. This is done again separately language by language, field by field etc. in order to avoid domination by one of them. For instance, when analysing *concept analysis*, the concept analysis methods were first analysed in their own context before comparing them with other related methods.

The phases in Figure 4 are by no means successive. They are rather various types of activities that are performed when the material is processed systematically. The systematic analysis of the material includes further elaboration of one or more concept systems based on the preliminary one (5.1). Various types of relations between concepts are sorted out (5.2). Larger concept systems are analysed part by part. If the preliminary concept system presentation includes various types of concept relations (e.g. generic, partitive, or temporal relations), its component systems are analysed individually concept by concept. Refining the concept systems runs through the whole analysis side by side with the contents analysis of the concepts (5.3), determining synonymy etc (5.4). The concept system or systems become more and more exact during the analysis (5.5).

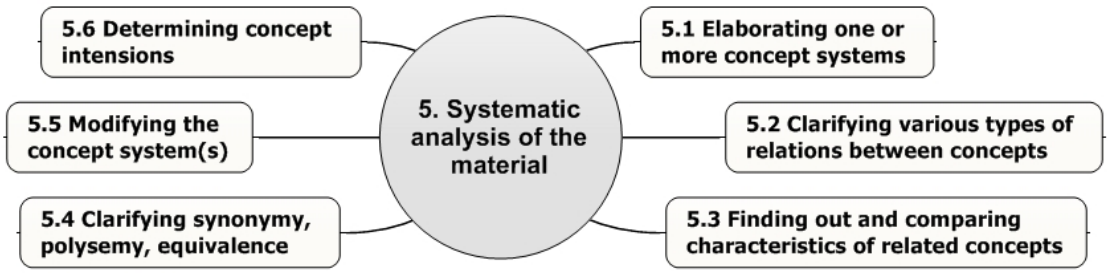

Figure 4. Systematic analysis of the material (cf. item 5 on Figure 1)

Another activity that runs through the whole analysis is clarifying the contents of the concepts, i.e. their characteristics. Based on the steps 1-4, the analyzer already has a certain notion of

the concepts, but now this notion is being refined (5.3). Characteristics of related concepts have to be clarified and compared especially when it concerns generic concept systems (5.5). This leads to more clearly delimited concepts and makes it easier to confirm existing synonymy, polysemy and equivalence (5.4). After the concept systems have been finalized, the contents of the concepts should be more or less clear cut - depending on the depth of the analysis and selected material (5.6). This phase is the core element in any concept analysis undertaking and will therefore be discussed in a separate article.

3 Further analysis and conclusions according to the purpose

The last step of the concept analysis proper is the summarization of the activities implied by the purpose of the concept analysis. In the previous phases (1–5 in Figure 1), concepts and their intension, concept systems, etc. from different domains, languages, countries, sources etc. were analysed separately. In this phase, the results of these analyses are brought together and compared. Similarities and differences between concepts, concept systems are commented as well as synonymy, polysemy, and equivalence of terms etc. In the case of *concept analysis*, during this phase, the individual analyses were compiled in tables in order to make the comparison of the characteristics easier. Various types of concept system diagrams can also be utilized in order to show the similarities, differences and overlappings.

4 Overall research framework and further research steps

If the concept analysis is part of a wider study, the researcher continues according to the research design to the next phase (cf. the box to the right in Figure 5). In all the method descriptions that were discussed in Nuopponen 2010, two elements could be observed more or less explicitly: concept analysis proper and application of its results to certain purposes. In this paper, the overall purpose of a research is distinguished from the purposes of the systematic concept analysis as described in section 4. At least the following types of purposes could be found for an overall research framework and thus for the further research, where the results of the concept analysis can be used: descriptive, interpretative, descriptive, contrastive, constructive, and normative.

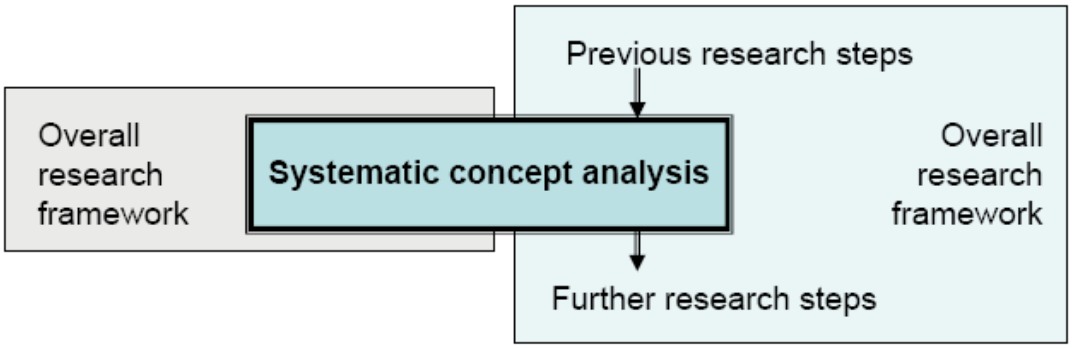

Figure 5. The location of systematic concept analysis in the research process

A descriptive analysis describes the state of the concepts and their use as such. The basic purpose of a concept analysis can be seen as descriptive and in this case, the overall research framework may overlap the concept analysis (cf. the box to the left in Figure 5). However, a descriptive concept analysis may be included in a wider research framework, too, e.g. a study of the special language of a certain field. **Contrastive** analysis explores and clarifies similarities and differences of similar concepts in different fields, theories, paradigms,

languages, and cultures. Also this could be a purpose of the concept analysis (see section 4), but e.g. in translation studies, finding out similarities and differences between concepts may just be a start of a wider study discussing translation equivalents. **Interpretative** analysis describes the concepts and their use, but also tries to find out the reasoning behind the conceptual structures of the field. Takala's and Lämsä's (2001) interpretative research aims to enhance and to understand a concept. Their method focus on interpreting definitions that are given in different sources and relating the concepts to each other. The result, they say, could be a fruitful interpretation from a new unexplored angle. An interpretative analysis goes deeper into the concepts than a descriptive analysis.

A constructive analysis aims at developing concepts and concept systems for the field. As stated in Nuopponen 2010, business studies and nursing science authors utilize concept analysis as part of developing their own discipline. For Näsi (1980), the aim of the concept analysis is to create new concepts or even whole new concept systems. Also in nursing science, concept analysis is discussed as a concept development method and seen as a part of the discipline development producing operational definitions as the end product. The nursing scientists Walker and Avant (1994: 38) regard concept analysis as "an excellent way to begin examining information in preparation for research or theory construction".

The methods of these disciplines seem also to have **normative** purposes similar to terminology work and standardization when aiming at harmonized or unified concepts and concept systems. In terminology work, concept analysis is a part of the whole process and its results create a foundation for writing unambiguous definitions for concepts, evaluating and agreeing upon terms for to be recommended and equivalence between concepts and terms in different languages etc. A researcher faces also this kind of tasks when establishing unambiguous concept systems and terminology for his/her study. As for the analysis of *concept analysis*, it could be characterized as descriptive, contrastive and interpretative, while the overall purpose of the research is constructive: constructing and modifying an analysis method.

5 Conclusions

In this article, a theoretical model for systematic concept analysis was outlined based on the previous phase of the study, the results of which were discussed in Nuopponen 2010. The purpose of this model is to serve many fields and disciplines where concept analysis is needed. In this article, terminological concept analysis served as the point of departure, while the challenges brought by scholarly research were in special focus.

In a scholarly research process, there is a need for analysing and clarifying concepts in all phases. Some of these analyses are very restricted and are performed in the background, while others cover larger areas and may get a decisive role in the whole research process. In the beginning, the key concepts of the study are researched while identifying and developing the topic, choosing and focusing on it. When searching, finding and evaluating information and planning research design and creating a theoretical framework, it is necessary to discuss and decide upon concepts and concept systems that the study will be based on. Various types of classifications, concept systems and conceptual models are devised for material and data collection and especially for analysing the collected data and synthesizing the results and drawing conclusions. Also when writing a research report and preparing the presentation of the research, concept analysis tools and visualisation is needed, e.g. tables of characteristics,

concept system diagrams, glossaries, discussions of appropriate term selection, and methods for compiling definitions etc.

The model for systematic concept analysis will be discussed in more detail in forthcoming articles. The third part of the paper will concentrate on the theoretical tools of concept analysis, especially various types of concept system models. A separate paper will take a look more specifically at the phase, during which collected material is analysed systematically.

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IT terminology and translation: Cultural, lexicographic and linguistic problems

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Keywords: *IT, terminology, culture, linguistics*

Abstract

The research tackles the computer linguistic terminology used wrongly or vaguely by Arab computer users in academic institutions and by English Arabic translators. To serve the purpose of this research, we inserted and/or contextualized a number of computer linguistic terms in texts or contexts. The terms were heavily used in word processors or statistical packages. Five translators were requested to translate those texts. Simultaneously, we reviewed the computer books taught in two Arab countries which are Jordan and the UAE because these countries have witnessed good educational developments. After filtering out the translators' products from English into Arabic and after investigating the computer terminologies, we found that many computer terms are problematic. We classified the types of problematic vocabulary items and then tabulated them under four categories. Those were the vague, inaccurate, unchangeable and statistical ones. We also found that those problematic words were difficult to translate because of the Arabic culture or the inefficiency of English Arabic Bilingual dictionaries. The research ends up with a number of research and practical recommendations.

Introduction

This research deals with the cultural and linguistic problems faced by the Arab students studying translation in particular and the Arab translators in the field of modern IT texts translated from English into Arabic in general. Due to the relative wealth of the Middle East countries, computers are ubiquitous there and are used in all aspects of life through the medium of English though the first language in the Middle East in particular and the Arab world in general is Arabic; the mother tongue of 23 Arab countries, and the religious language of dozens of Islamic countries like Iran, Pakistan, Turkey, etc. It is worth mentioning that most of the Arabs who use computers started to mix Arabic with English. Therefore, in one sentence, Arabic and English words are used. The blend of Arabic and English poses problems for translators. Because of this blend, we will deal with two problems. The first problem is associated with bilingual dictionaries in terms of their meanings and connotations. The other type is those problems which are related to the Arab culture. At this stage, we need to know that the Arab World in general, and Jordan and the UAE in particular are big

importers of western technology processed through the medium of English. Simultaneously, the first language used in the Arab World is Arabic, while English is used either as a second or a foreign language. Whether English is a foreign or a second language is not a big issue because English is still the language of science and technology in the Arab world and even worldwide.

Literature Remarks

Today, Arabic is one of the official languages of the United Nations and, at the same time, the English Language is not restricted to the English People anymore. Swales argues that:

> We can now see Arab professional communities (in both public and private sectors) as prime users of English as the main language of wider international communication, and nowhere more obviously in the Arab and Japanese businessmen conducting their business through the medium of English (1984: 11).

On top of that Swales (ibid.) maintains that the Arab World is a large consumer of science and technology due to the richness of the geographical area of the Arab World. Of course, computer technology is an essential part of science and technology needed everywhere due to globalization as the whole world has become a small village.

Modern computer technology and international technological information transfer have become a basic demand of life in both developed and developing countries and in all academic and non-academic aspects of life: in schools, universities, home, companies, etc. It is because of these new circumstances that a translator, beginner or advanced, needs to be highly educated and qualified to cope with these conditions (Redwi 1999). Whether the translator accept it or not, he will find himself working with information technology including translating instructional manuals or booklets written in English, translating computer technical terms or even translating for big companies through the internet. For example, all computer packages, devices and machines manuals are usually printed and/or published in English. The issue of translation in the field of computer is really very serious because the concept of computer use is relatively new. Simultaneously, translation itself is a new concept which means that no record of computer terms has been well-developed. Bassnett states that:

> In the late 1970s a new academic discipline was born: Translation Studies. We could not read literature in translation, it was argued, without asking ourselves if linguistics and cultural phenomena really were "translatable" and exploring in some depth the concept of "equivalence" (2004:1).

The Arabic language is one of the most difficult languages in the translation of technical material, and so for several reasons like the weakness of finding equivalents in Arabic for the English computer terms on top the extremely limited number of translators. Another reason is the lack of Arabic translation references related to the field of computer (Khuwaileh 1998). Khuwaileh argues that there are no computer packages or research that deal with linguistic checking for achieving accuracy which is another source of difficulty for Arab translators. Finally, all these conditions have made translation from English into Arabic shaky because it does not follow a sound theory to apply when it comes to translation, particularly the connotations of each term in question. Dickins addresses this issue:

> The major conceptual problems…are the differentiation in practical analysis of different kinds of connotative meaning, and, in certain cases, the distinction between connotative meaning and denotative meaning (2004:51).

Although big computer companies are many in the Arab World, browsing and navigating in the internet reveal that these companies use only English when they tackle information technology or announcements which in turn regrettably give the impression that these companies are not capable of expressing themselves in Arabic or not capable of even announcing in Arabic. Renner (1998) in his article *Beyond Borders* argues that Arabic is not coping with new linguistic developments necessary for processing computer advancement and creating electronic computer repertoire of technical and semi-technical vocabulary. It follows from these circumstances that Arabic has become imbalanced when it comes to technical texts rendered from modern languages like English into Arabic. Consequently, rendering technical texts from English into Arabic will become extremely difficult because doing so requires not only cultural similarities between the source language and the target language, but also the two languages must be equally served in terms of technical vocabulary and structures. In short, this argument reveals that English is a technically served language, but Arabic is not (Khuwaileh 2000: 97-100). Arabic is not served very well by good dictionaries like English. In other words, Arabic dictionaries are not renewed on the one hand, and limited in number on the other hand. Consequently, Arab translators do not sometime find Arabic equivalents for the English terms they translate from English into Arabic.

Methodology

Our research has been supported and fuelled with two types of data. First, browsing through the problematic computer words, we picked 25 difficult computer words which have no equivalents in Arabic. The common and heavily used computer terminologies were contextualized and given to five translators to translate from English into Arabic. The translators' translated versions were quoted, investigated and analyzed in terms of their semantic meanings or connotations. Second, in order to gather more information on the translation of computer vocabulary, we reviewed the series of computer books published in Arabic and taught in the schools and universities of Jordan and the UAE. Then we investigated the quality of translation proposed by the Ministries of Education in Jordan and the UAE. The heavily used words were categorized under four types of problematic words, namely:

1. Vague expressions.
2. Inadequate IT nominative units
3. Terms which have not been changed and simultaneously used in the Arabic language exactly as they are in English (similarity of pronunciation).
4. Expressions relating to the knowledge of inferential statistics.

Those four categories were tabulated including what the five translators used, what the school and university books suggested for the computer terminologies and what we think of the meaning of each term as we will see below.

Discussion

As mentioned above, the four problematic vocabulary types are the focus of this research. These four types will guide our discussion, one after the other. The **vague expressions** and

terminologies will be our first category to discuss. Browsing in English Arabic bilingual dictionaries, we notice that these dictionaries propose some vague equivalents in Arabic for certain new English computer terminologies. For example, as shown in the table below (item 1), the words "calculate" and "compute" are translated in dictionaries as having similar or identical meanings which is "to count", while the exact meaning of the word "compute " is: "calculate using the computer". Obviously, the five translators followed the dictionary suggested meaning in Arabic. However, the exact meaning of the word "calculate" is "to calculate using other means" like the use of fingers or numbers or any other tools. For example elementary school teachers use apples or pencils to teach pupils how to calculate. These examples clarify the ambiguous interpretation of these words as proposed by English Arabic Dictionaries like the most important bilingual dictionary called *AL-Mawrid*. The theory of ambiguous dictionary meanings can be applied to the given meanings of the words "management" and "administration" as shown below (item 2). We all know that these words are different words in English, but their meanings given in the same dictionary mentioned above are the same.

Area	**No.**	**Computer English Terms**	**User's Arabic Terms**	**Dictionary Meaning**	**Suggested Practical M.**
Ambiguity	1	Calculate Compute	يحسب يحسب	يحسب أو يعد بالأرقام	يحسب إما بالحاسوب أيدويا أو بالآلة الحاسبة
	2	Management Administration	إدارة	إدارة	تدبير +إدارة رعاية أو إدارة تنفيذية
	3	Blind copy	عمياء	أعمى ضرير كفيف. بدون منافذ أو فتحات	نسخة سرية(ملحقة) أو مخفية
	4	Preview	نظرة سابقة أو مطالعة أولية	عرض خاص أو رؤيا مقدمة	معاينة (من أجل التصحيح أو الاستمرار)
Inadequate IT Nominative Units	5	Web	شبكة أو موقع	شبكة،نسيج خيوط أو نسيج عنكبوت أو النسيج ألعنكبوتي	الشبكة المعلوماتية
	6	Internet	النت أو الإنترنت	الشبكة البينية	شبكة المعلومات الدولية
	7	SILICON CHIPS	تشبسات السيلكون	قطعة أو رقاقة أو شظية	رقائق السيلكون
	8	Effects	تأثيرات	أثر أو نتيجة تأثير، يؤثر	مؤثرات
	9	Drop down menu	القائمة المنسدلة	القائمة المسدلة	القائمة المتدرجة أو المنحدرة

	10	Auto content Wizard	معالج المحتوى الأوتوماتيكي	ساحر	معالج المحتوى الذاتي / التلقائي
Similarity of pronunciation	11	Template	تيمبليت	قالب أو صفيحة أو طبعة	قالب أو شعار أو طلب
	12	Browsers	براوزرز	الماشية التي ترعى العشب ومجازا يتصفح	يتجول أو يتصفح أو يبحر في الشبكة العنكبوتية
	13	Icons	أيكونات أو أيقونة	تمثال أو صورة دينية أو أيقونة	شيفرة أو رمز
	14	Junk mail	البريد غير الضروري	عديم القيمة أو نفاية	بريد غير لازم أو غيرمطلوب
الخيارات	15	Mouse	الفأرة أو المؤشرة	الفأرة أو الفأر	مؤشر الشاشة أو مؤشر الخيارات
	16	Windows	الوندوز	نظام التشغيل أو الشبابيك	شباك الشاشة
	17	PowerPoint	ا لبور بوينت	السوكة الكهربائية (socket)	البرنامج القوي لعرض ربا المعلومات
	18	Laptop	لاب توب	الكمبيوتر المحمول	حاسوب الحضن
	19	Server	السيرفر	؟؟؟؟؟؟	مكان تخزين البريد الإلكتروني
	20	Scanner	السكانر	آلة المسح في الطب	الناسخ الضوئي سكانر
	21	Hypermedia	الهايبر ميديا	وسائل الإعلام العالية الجودة	نظام جمع الصوت و و النص و الصورة معا في آن واحد
	22	Home page	الصفحة الرئيسية	؟؟؟؟؟؟؟؟	صفحة بداية الموقع
	23	Tipex Corrector	كوريكتر أو مزيل	؟؟؟؟؟؟؟	حبر طمس أو حبر مسح
	24	Key board	الكي بورد	لوحة المفاتيح	لوحة المفاتيح
Statistical Field	25	Standard Deviation	الانحراف المعياري	الانحراف المعياري	الانحراف المقياسي
	26	Significant Correlation Coefficient	معامل ارتباط هام	معامل ارتباط هام	معامل الارتباط ذو الدلالة الإحصائية
	27	Critical value	القيمة الحرجة	القيمة الحرجة	القيمة الإحصائية الضابطة أو المؤشرة
	28	Regression Analysis	التحليل الانحساري	التحليل الانحساري أو ألنكوصي	التحليل الارتدادي أو العكسي

We also looked up the word "Idarah" in the *Oxford English Arabic dictionary* which also cites the word "Idarah" (management) for both words: "management" and "administration". Here again the five translators followed the dictionary meaning. Nevertheless, the semantic connotation of the word "management" includes an element of perhaps saving or exerting effort to achieve something. While this is the case of the word "management", the story is different in the case of the word: "administration" because it includes an element of an executive process. For example, the administrator is usually over what he wants to achieve, but to manage something could mean to try to do something which might be a failure of a success. For example, the sentence "The exam was difficult, but we managed to answer some of the questions" proves what we believe.

The computer term "blind copy" (item 3 of the same table) is translated into Arabic by the two dictionaries mentioned above as "blind" or "something which has no holes". Here again, what has been suggested by the dictionaries is not helpful because these two meanings are far from the computer connotation of that expression. All computer or definitely e-mail users use this expression to mean in actual computer life "a secret copy of a certain e-mail" because the e-mail receiver does not know whether another copy of the same e-mail was sent to somebody else or not. This gives this expression a meaning spectrum of secrecy. Due to the limitation of space, it would be enough to say that what has been mentioned above is also applicable on the word "preview" (item 4) which means "view or show beforehand". However, all the translators used in the Arabic word "brevyou" as Arabic does not have the English consonant /p/, therefore, /b/ in Arabic replaces both /p/ in English.

The second category of computer terminologies which seem to pose problems in translation is **the inadequate IT nominative units** which are many and even countless because the development and advancement in computer fields are very fast. Considering item 9 of the table, the term "drop down menu" was inadequately translated as first, "Al-ga'mah alnaselah" and the back translation is: "the down list" and other translators (3 out of 5) translated it into Arabic as "Al-ga'mah almunhaderah" and the back translation is: "descent menu". School and university textbooks translated it as "Alga'mah Al-munsadelah". The source of inaccuracy is the meaning of the word "down". We propose an accurate translation as "the gradual list" because our translation implies that there is a list of items and the computer user might choose x, y or z. The lack of accuracy becomes very evident when we consider the translation of the word "auto content wizard" which was translated as "saher alnas" (back translation: text magician). Here again, the lack of accuracy is easily noticeable when we consider the word "magician" in this context. Although one entry of the word "wizard" in the dictionary is "magician", the intended meaning has nothing to do with magic. We suggest the word: "mu'alej" back translation: (processor). The lack of precision also applies on the words: "silicon chips" and "effect" (items 7 & 8) where their generated translations were inaccurate.

The third source of computer translation problems is the **similarity of pronunciation** in both English and Arabic. Our survey showed that all the translators used in Arabic texts the same pronunciation used in English. The number of these words is very big as the table above shows. Taking into account items 11-24 as a case in point, we can safely assume that the lack of Arabic equivalents for the new computer English terminology is the driving force behind the source of this problem. For example, the words "template" (used in Arabic as: temblate), "browsers" (Arabic: browzer), "icon" (aygonah), "mouse" (mous), "window" (windows), "PowerPoint" (bwerboyant), "labtop" (laptop), "server" (serfer: Arabic has no /v/), "scanner" (skanar), etc. are all English words which have no equivalents in Arabic due to three reasons.

First, the Arab world is a large importer and consumer of computer devices and new packages due to the rapid development witnessed in the Arab word. Jordan and the UAE, where the data for this research were obtained are two of these countries. Second, Arabic Academies responsible for finding new equivalents are not as active as they might be. These academies do not cope with the new terminologies invading Arab computer markets. Third, some of the computer terminologies are culturally bound to the extent that Arab translators or users have no idea about certain English words used in the field of computer. For example, the word "icon" is a purely Christian English word which has religious and, therefore, cultural connotation not understood in the Arab Muslim world.

The final category of computer terminologies relates to **the computer package SPSS** (Statistical Package for Social Sciences) which is heavily used in academic institutions for research purposes. The package can generate a group of descriptive statistical words like the mean, average, numbers, percentages, etc. and, simultaneously, it can generate another group of **inferential statistical words** like: correlation coefficient, t-test, regression analysis, etc. The latter group is the one which poses problems in translation. For example, the school and university textbooks taught in the UAE and Jordan included translations which were not appropriate. The inferential expression "significant correlation coefficient" (item 26 of the same table) was translated as "mu'amil irtibat ham" back translation "an important correlation coefficient". The problematic word here is the word "ham" (back translation: important) as this word is very general because readers might ask: Why is it an important correlation coefficient? Thus, translating "significant" as: "al-dalalah al-'has'ya" (back translation: strong statistical indication) would be more revealing as this translation is not general and, at the same time, it covers all the spectrums of the meanings of the word: "significant".

Considering the expression: "critical value" (item 27) of the statistical group, the five translators as well as the academic books translated it as: "Algymah alharejah" (back translation: the sensitive value). Here again, the translation of "critical" in English as "sensitive" in Arabic is problematic because "sensitive" in this context is general. We propose "thabitah" back translation (controlling) in Arabic for the English word: "critical" because the componential analysis of "control" implies that:

*there is something which is a standard
*the standard is used for measuring purposes
*the standard is fixed and unchangeable, etc.
*the standard can control or reveal the levels of changes

Conclusion

The purpose of this research paper was to investigate in general whether modern computer terminologies generated in English and used in Arabic were translated properly or not on the basis of textbooks used by academic institutions in Jordan and the UAE and by translators. This study shows clearly the failure of school and university textbooks, translators and dictionaries, to find all the equivalents in Arabic necessary for modern computer terminologies generated in English. This becomes evident when we know that the translators of Jordan and the UAE use vague and inaccurate expressions. On top of that, the formal textbooks which are used the academic institutions of Jordan and the UAE include inappropriate translations as we stated above. Due to the individual differences among Arab translators and academic books authors, the difference and contrast in proposing equivalents

in Arabic can be apparently noticed, ranging from using the same English word in Arabic to proposing strange and perhaps inaccurate equivalents.

The problem of not finding Arabic equivalents for modern computer terminologies indicates that Arabic academies in Cairo, Amman and Damascus are not performing their roles properly and at the right time. In addition, Bilingual Arabic dictionaries are not helpful because they are limited in numbers on the one hand, and not updated on the other hand because when they are updated, they add literal translations for the new terms, and simultaneously some of them are updated only in terms of the date of publication. That is to say, nothing new is added to them except that the date of publication is changed for selling and financial purposes.

Finally, we strongly believe in involving the private sectors in finding equivalents for the bombarding English terminologies because the public sector like in the case of Arabic academies is slow and not efficient. Moreover, companies are the firms which import computer devices and accessories. Therefore, these companies should be encouraged to propose Arabic equivalents for the English terminologies.

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Métaphore, changement de paradigme et expérimentation : le cas de la gestion des entreprises

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Keywords: metaphor, megametaphors, paradigm shift, corporate management, diachrony

Abstract

This paper investigates the field of corporate management – where experimentation is vital – in order to examine the role of metaphors in paradigm shifts. Metaphor and science are not mutually exclusive and both theorists and managers resort to metaphorical thinking to envisage new theories and practices. The basic hypothesis is that, by stimulating heuristic thinking and opening new vistas, new metaphors can trigger paradigm shifts and reflect them as well. Several approaches are tested in an attempt to detect paradigm shifts through metaphors: a diachronic perspective is adopted to review the major management concepts and their authors from this perspective. It appears that neither initial training and nationality, nor historical benchmarks can be used as reliable bases. Nor are schools of thought telling enough. Metaphorical veins do offer a more accurate basis for analysis, though detecting paradigm shifts in the Kuhnian sense seems to be very challenging. Ultimately, the chaos theory and the notions of open, non-linear, complex systems are likely to offer new insight into the current changes in management viewpoints, which could point at a potential paradigm shift. Systematically tracking emerging metaphors in the field will be required to confirm the trend.

Introduction

Après avoir démontré par ailleurs l'intérêt qu'il y a, pour un linguiste non spécialiste d'économie au départ, à prendre en compte les métaphores constitutives de la théorie pour mieux comprendre l'histoire des idées qui ont forgé la science économique (Resche 2008), nous souhaiterions vérifier s'il en va de même pour une branche de l'économie davantage tournée vers l'expérimentation des idées nouvelles : le domaine de la gestion et de l'organisation des entreprises.

Nous nous intéresserons essentiellement aux métaphores qui servent de support à la théorie de la gestion dans le monde anglo-saxon. Nous émettons l'hypothèse que la métaphore, qui favorise une démarche heuristique, peut se faire moteur, vecteur et témoin de changements de paradigme. En ouvrant de nouvelles perspectives, elle encourage l'innovation et l'expérimentation. Elle aide le théoricien ou le dirigeant, d'abord au niveau de la phase exploratoire de la réflexion, puis lors de la communication et du partage des idées nouvelles et enfin lors de la mise à l'épreuve d'un nouveau modèle.

Nous nous attacherons dans un premier temps à exposer notre position théorique en rappelant que métaphore et scientificité ne sont pas incompatibles ; nous préciserons les notions de paradigme et de changement de paradigme en science et, plus particulièrement, dans le domaine de la gestion. Nous passerons ensuite en revue, en testant plusieurs grilles de lecture, les grandes idées qui ont laissé leur empreinte sur la théorie de la gestion des entreprises depuis la fin du XIX^{ème} siècle et ont marqué la pratique, pour mettre en lumière les souches métaphoriques. Enfin, nous nous intéresserons à la métaphore du chaos, et à son effet sur la conception de la gestion des entreprises, afin de déterminer si l'on peut véritablement parler de changement de paradigme.

1 Positionnement théorique par rapport aux termes clés du sujet

1.1 Métaphore et scientificité

Notre démarche est fondée sur une approche constructiviste de la métaphore (Ortony 1979), qui doit toutefois être nuancée ; si nous défendons l'idée que science et métaphore sont compatibles, nous ne prétendons pas que seules les métaphores peuvent inspirer les grandes théories, ni que le discours scientifique ne peut pas être littéral. Simplement, nous pensons que la métaphore favorise une démarche heuristique pendant la phase d'élaboration d'une théorie, permettant d'envisager de nouvelles perspectives (Cassirer 1946, Black 1979). Nous avons conscience des arguments développés par les critiques de la métaphore, qui n'y voient qu'un miroir déformant, voire un fard trompeur, pour tout autre domaine que la poésie. Effectivement, si le choix d'une métaphore donnée ouvre une voie nouvelle, il ferme inévitablement d'autres voies possibles. En outre, puisque toute métaphore implique une sélection de sèmes communs à deux domaines différents pour permettre le transfert et faciliter la compréhension de l'inconnu par le biais du connu, le risque est réel de laisser dans l'ombre d'autres sèmes, volontairement ou non, et d'influencer ou de manipuler l'autre, en donnant une fausse idée de la réalité. Nous maintenons cependant que les métaphores qui ont contribué à forger une science constituent un outil précieux pour tout observateur, curieux de connaître l'histoire des idées et d'en comprendre l'évolution.

Quelle que soit la position adoptée, nul ne peut nier la présence de termes métaphoriques dans le domaine scientifique. Nous avons montré que la métaphore la plus citée en économie, la Main invisible d'Adam Smith, a permis à son auteur à la fois de donner corps à une intuition, de servir de catachrèse, de résumer en peu de mots un mécanisme complexe et de l'expliquer à autrui (Resche 2005a). Les termes métaphoriques qui sont désormais lexicalisés relèvent de souches métaphoriques qui peuvent être considérées comme l'expression de paradigmes, c'est-à-dire de façons de voir le monde et d'envisager un positionnement par rapport à une science donnée. Nous reviendrons plus en détail sur la définition de paradigme, et la notion de changement de paradigme, mais notre hypothèse est qu'un changement de métaphore peut signaler un changement de paradigme ; une perspective diachronique permettrait alors de « lire » l'évolution de la gestion des entreprises au travers des métaphores qui ont inspiré les grandes idées au fil du temps depuis le XIX^{ème} siècle. L'idée d'expérimentation est inhérente à la démarche heuristique offerte par la métaphore. Outre ce type d'expérimentation mentale, purement virtuelle, il existe, dans l'histoire de la science de gestion des entreprises, des exemples de véritables expériences devenues célèbres et qui ont retenu notre attention, sans parler de l'expérimentation plus générale de nouveaux outils de gestion ou de nouvelles techniques. Les termes de notre titre sont donc liés ; il reste toutefois à déterminer si tout changement de paradigme passe obligatoirement par une métaphore explicite et s'il est soudain ou progressif.

1.2 Paradigme et changement de paradigme en science et dans le domaine de la gestion des entreprises

En termes simples, un paradigme est un ensemble de notions, de valeurs, de croyances permettant de disposer d'une grille d'analyse de la réalité. Dans le domaine scientifique, la notion de paradigme, immanquablement associée à Kuhn (1962), évoque un modèle théorique de pensée qui oriente la recherche et la réflexion scientifiques. On pourrait aussi parler de matrice disciplinaire, de courant de pensée ou encore de modèle théorique. Pour Kuhn, physicien de formation, puis historien des sciences, le développement scientifique ne relève pas d'une évolution mais d'une succession de révolutions ou changements de paradigme. On peut évoquer de grandes révolutions (Copernic, Newton, Darwin, Lavoisier ou Einstein) mais il faut aussi concevoir que certaines révolutions puissent être moins visibles, surtout aux yeux des non-initiés à une science particulière. Un changement de paradigme répond à une impossibilité d'expliquer un phénomène ou de résoudre un problème en ayant recours aux modes de raisonnement habituels ou aux outils classiques. Il correspond à une remise en cause des schémas et modèles en vigueur, d'où son caractère révolutionnaire.

Appliqué au domaine de la gestion des entreprises, ce type de changement est étroitement lié à l'innovation. On s'en doute, dans la mesure où il remet en cause le *statu quo*, les modes de pensée (*mental models*) ou les habitudes, il peut rencontrer une certaine résistance. De la même manière qu'un paradigme scientifique peut constituer un carcan pour une école de pensée qui reste campée sur ses positions, un mode de pensée « maison » bien établi dans une entreprise peut emprisonner l'imagination et entrainer une certaine sclérose, empêchant ainsi toute ouverture au changement. Foster & Kaplan (2001 : 44-45) résument ainsi le problème de ce qu'ils appellent « l'architecture invisible » de l'entreprise:

> Why does cultural lock-in occur? The heart of the problem is the formation of hidden sets of rules, or mental models, that once formed are extremely difficult to change. [...] Mental models are invisible in the corporation. They are neither explicit nor examined, but they are pervasive. […] But once constructed, mental models become self-reinforcing, self-sustaining, and self-limiting. And when mental models are out of sync with reality, they cause management to make forecasting errors and poor decisions.

À propos des nouvelles technologies qui « dérangent » les habitudes des entreprises et les forcent à repenser leurs modes opératoires, ne serait-ce que pour faire face à la concurrence, Christensen (1997 : 210) décrit le conflit entre les modèles établis et les nouveaux modèles proposés comme suit :

> Perhaps the most powerful protection that small entrant firms enjoy as they build the emerging markets for disruptive technologies is that they are doing something that it simply does not make sense for the established leaders to do. […] Successful companies populated by good managers have a genuinely hard time doing what does not fit their model for how to make money.

On peut alors envisager plus clairement les liens entre changement de paradigme, mode de pensée et métaphore, en relisant ce que Kuhn (1962 : 122 ; 111) lui-même écrit à propos des scientifiques qui adoptent un nouveau paradigme :

> […] the scientist who embraces a new paradigm is like the man wearing inverting lenses. […] It is rather as if the professional community has been suddenly transported to another planet where familiar objects are seen in a different light and are joined by unfamiliar ones as well.

Que fait la métaphore sinon relier le familier et le nouveau et offrir la possibilité d'entrevoir de nouvelles perspectives ? La « destruction créatrice », évoquée par Foster & Kaplan dans le titre de leur ouvrage (2001), en référence à Schumpeter, s'applique également à la métaphore, qui balaie les points de vue existants et fournit une nouvelle grille d'interprétation pour concevoir autrement la réalité. Comme le paradigme, la métaphore peut soit constituer un obstacle au changement, soit se transformer en moteur du changement : vieillie et affaiblie, elle risque de figer les attitudes et les idées ; novatrice et forte, elle peut inspirer un changement de paradigme. Quand elle se substitue à une autre vision des choses pour ouvrir un nouvel espace mental, elle se fait alors pionnière. Elle permet de combattre la tendance à l'« *active inertia* », c'est-à-dire la propension qu'ont certains dirigeants, en période de bouleversements critiques et dérangeants, à maintenir les pratiques qui ont réussi par le passé, plutôt que de revoir leur position pour se tenir prêts à répondre à l'incertain en pratiquant ce que l'on appelle « *active waiting* » (Hindle 2008 : 7).

2 Les grandes idées en matière de gestion et leur expérimentation : perspective diachronique

Pour analyser les grandes idées, et les métaphores qui ont inspiré divers modèles de gestion, il nous est apparu judicieux de distinguer les idées profondes des modes passagères. Nous avons résolument écarté les classements des « meilleures idées » établis par bon nombre d'organismes aux critères de sélection souvent flous ; en outre, le nombre croissant de publications sur la gestion des entreprises jette légitimement un doute quant à la valeur de certaines des idées brassées, au succès parfois éphémère. La portée scientifique ou sociale d'une idée ne saurait se mesurer au succès commercial d'un ouvrage. Nous avons donc préféré nous référer aux penseurs qui ont exercé une influence certaine sur les idées et pratiques au fil du temps et aux chercheurs actuels. Pour ce faire, nous nous sommes fondée sur un ouvrage qui a adopté une perspective historique (Kleimer 2008), et qui couvre plus particulièrement la période allant de 1945 à nos jours. En tant que linguiste, nous nous sommes intéressée aux concepts phares et aux hommes et femmes qui les ont portés ou fait connaître. Nous avons complété notre investigation par la lecture croisée de revues de renom dans le domaine de la gestion (*Sloan Management Review*, *Harvard Business Review*, *Journal of Management Studies*, *Academy of Management Review*), afin de nous appuyer sur des analyses fiables. Nous avons choisi d'allonger notre perspective historique en remontant le temps jusqu'au XIX^{ème} siècle, avec les approches d'Owen, de Taylor et de Fayol. La liste en annexe 1 ne prétend pas être exhaustive, mais elle nous servira de point d'appui dans nos diverses grilles d'analyse. Bon nombre des idées désormais considérées comme acquises en matière de gestion des entreprises ont pu être taxées d'hérésies à leur origine. Il ne faut donc pas oublier les pionniers qui ont contribué à les faire passer, ce qui justifie l'inclusion de noms peut-être moins connus comme Lewin, Lippitt, Bradford, Mulder, Newland, Trist ou Sullivan.

Il était évidemment illusoire d'espérer que chaque décennie nous offrirait une ou deux idées marquantes, relevant chacune d'une métaphore bien précise. Non seulement les grandes idées ne se succèdent pas à intervalles réguliers, mais leur expérimentation et leur adoption éventuelle ne sont pas toujours immédiates (annexe 2). Dans les années d'après guerre, Deming et Juran réfléchirent à la manière d'améliorer la qualité de la fabrication, mais leurs idées ne furent testées que dans les années 60, d'abord chez Toyota, au Japon, avec le succès que l'on sait, puis ailleurs dans les années 1980. Certaines idées sont aussi parfois retravaillées, adaptées, affinées, soit par leur géniteur, soit par d'autres. Un paradigme peut

donc passer au second plan, puis évoluer en coulisse et reprendre de la vigueur ; à une même époque, deux courants de pensée peuvent même être en concurrence.

De ce fait, la lecture des tableaux ne permet pas de faire ressortir des « points de rupture » très nets. En outre, chaque idée n'est pas exprimée par une métaphore. Toutefois, dans la mesure où la formation initiale des personnalités retenues est assez diversifiée, il est permis de penser que des emprunts d'une science à une autre ont enrichi leur réflexion et que les transferts d'un domaine dans un autre relèvent d'une pensée métaphorique, même si cette dernière n'a pas toujours laissé de trace tangible. Par exemple, Ansoff ([1979] 2007), initialement formé pour être ingénieur en mécanique et en physique, reconnaît explicitement les emprunts à d'autres disciplines:

> I begged, borrowed and stole concepts from psychology, sociology and political science. And I attempted to integrate them into a holistic explanation of strategic behavior. (préface de *Strategic Management*, cité par Hindle 2008 : 215)

On citera également Kets de Vries qui s'intéresse à l'interface entre le management international, la psychanalyse, et la psychothérapie pour étudier le phénomène de « *leadership* » et les relations interculturelles en entreprise.

Le tableau 1 témoigne d'une grande diversité dans les formations initiales : études d'ingénieurs (électricité, aérospatial ou nucléaire, physique, chimie, informatique ou statistique), d'histoire, de science politique, de psychologie, de sociologie ou même de journalisme. Une minorité seulement étudia au départ l'économie, la finance ou les affaires. Pour autant, la formation initiale, l'appartenance à telle génération, ou encore un même secteur d'activités ne sont pas des critères fiables pour déterminer des paradigmes, pas plus que ne l'est la nationalité, d'autant que les allers et retours entre pays d'origine et étranger ont été ou sont fréquents pour beaucoup. C'est donc en croisant les grilles d'analyse que l'on peut espérer voir émerger les courants de pensée, et les changements qui ont marqué le domaine au fil du temps. Intéressons-nous d'abord au contexte historique pour mieux comprendre certains positionnements.

2.1 L'histoire génératrice de paradigmes ?

La perspective historique permet de repérer quatre temps forts qui ont pu transformer la vision de l'entreprise et de sa gestion et donner naissance à de nouveaux paradigmes.

Le premier temps fort remonte au tournant du XIX^{ème} siècle et du XX^{ème} siècle, marqué par le besoin des grandes usines de fabriquer à plus grande échelle. La nécessité de gérer cette masse nouvelle d'ouvriers non qualifiés et de les rendre plus efficaces aboutit au système de « *command-and-control* » qui a longtemps prévalu. Dans une recherche sans fin d'amélioration de la productivité, Taylor développa sa méthode scientifique et se préoccupa uniquement de chiffres et de cadences ; l'homme comptait alors bien peu dans les préoccupations des dirigeants. La culture des chiffres et des mesures s'installa alors.

Le deuxième temps fort est lié à la deuxième guerre mondiale qui joua un rôle de catalyseur pour les sciences sociales aux Etats-Unis, favorisant des rencontres et des échanges enrichissants entre chercheurs d'horizons divers (sociologues, psychologues, mathématiciens, ou ingénieurs), appelés à répondre à certains besoins : maintien du moral des troupes, préparation d'opérations stratégiques, organisation et coordination de l'effort de guerre demandé aux citoyens. Après la guerre, le retour massif des *GIs* et une industrie de guerre

inévitablement moins florissante furent source de problèmes d'ordre communautaire. Un socio-psychologue, Lewin, rompu à la dynamique de groupe et la résolution de conflits, fut appelé à l'aide. Avec un autre psychologue, Lippitt, et un spécialiste de l'éducation, Bradford, il créa à Bethel (Maine) des ateliers (*Training Groups*) qui eurent un franc succès. L'expérience se poursuivit jusque dans les années 1960 au sein des *National Training Laboratories for Group Dynamics* (*NTLs*). Les *NTLs* attirèrent de plus en plus de « stagiaires » venant du monde des entreprises et leurs organisateurs devinrent progressivement des conseillers en développement personnel.

Une troisième évolution accompagna la contre-culture des années 1960 : les mouvements pour les droits civiques, pour la cause féministe ou contre la guerre du Vietnam, la contestation estudiantine, l'activisme de Nader donnèrent lieu à un bouillonnement d'idées, et la remise en cause du *statu quo* n'épargna pas le monde des entreprises. Des responsables de Dow Chemical, dans le cadre d'un mouvement anti-napalm, désavouèrent la participation de leur entreprise à l'effort de guerre contre le Vietnam ; United Aircraft fut critiquée pour fabriquer des avions de guerre ; Bank of America subit des pressions pour fermer ses succursales à Saigon. La discrimination à l'embauche contre les noirs fut condamnée : on citera les efforts menés par Mulder et Alinsky chez Kodak à Rochester pour faire embaucher une plus grande proportion de noirs. Plus tard Sullivan exhorta General Motors à ne pas s'installer en Afrique du Sud pour ne pas cautionner l'apartheid. Chacun à leur manière, ces hommes œuvrèrent pour une plus grande démocratie participative, telle qu'elle fut souhaitée sa vie durant par Trist, annonçant ce qui devait devenir quelques décennies plus tard la responsabilité sociale des entreprises.

Enfin, les années 1980, avec la révolution des nouvelles technologies, bousculèrent les notions de temps et d'espace, et les pratiques face aux questions de concurrence, de production décentralisée, de stratégie d'entreprise. On abandonna alors la notion de *kaizen* (changement lent et amélioration continue des pratiques), inspirée par le modèle japonais de Toyota, pour l'idée d'un changement rapide et révolutionnaire (*kakushin*). On peut aisément lire dans le tableau 2 les effets récents de l'informatisation sur les nouvelles tendances dans les pratiques : importance des données concernant les « clients », gestion de la chaine d'approvisionnement, statistiques sur la qualité des produits et services, tâches plus créatives confiées aux employés. La notion de capital humain prit alors une autre valeur pour l'entreprise. Aussi paradoxal que cela puisse paraître, grâce à la technologie qui facilita le suivi des résultats, la conception humaniste de l'entreprise revint au premier plan, avec la nécessité ressentie de répondre aux attentes des employés, que ce soit en termes de pouvoir d'achat, ou d'accomplissement et d'image de soi.

Les quatre temps forts historiques passés en revue ont indéniablement joué un rôle, mais pouvons-nous affirmer pour autant que des changements de paradigme leur correspondent de manière nette ? Certes, l'apport des psychologues et sociologues à l'époque de la seconde guerre mondiale a été décisif pour l'intérêt porté à l'élément humain ; néanmoins, cette même époque donna un nouvel élan à une approche plus scientifique et rigoureuse de la gestion des entreprises, puisque les connaissances acquises en matière de planification stratégique complexe furent transférées au monde des entreprises. Un même contexte historique peut donc engendrer diverses évolutions ; il convient donc de tester une autre piste, celle des grandes lignées de penseurs.

2.2 L'héritage intellectuel et culturel, révélateur de paradigmes ?

S'il est possible d'identifier les « pères » de certaines lignées, il convient de préciser que les membres d'une même famille peuvent évoluer ou hésiter entre divers points de vue. L'origine de chaque famille ne correspond pas non plus aux quatre temps forts historiques identifiés ci-dessus.

Commençons par la lignée de Taylor, souvent présenté comme le père du management scientifique. On peut sans aucun doute lui associer Gilbreth, son contemporain, lui aussi attaché à mesurer les gestes des ouvriers. La culture des mesures et des chiffres évolua ensuite au fil du temps pour se décliner de diverses manières. Dans les années 1920, Donaldson Brown, travailla à la notion de retour sur investissement, dont la formule fut affinée par Sloan[1]. Dans les années 1950, toutes les grandes entreprises avaient adopté ce mode de calcul. Ce fil conducteur nous mène dans les années 1990 à Kaplan avec son « *balanced scorecard* »[2], annonçant la notion de « *triple bottom line* »[3]. Enfin, à la même époque, on évoquera Hammer et son souci d'améliorer la performance des entreprises en les restructurant (*business process reengineering* ou *BPR*). Même Drucker, qui trouve légitimement sa place dans une autre « famille », incarne certains aspects de l'héritage de Taylor[4].

La seconde lignée, celle de Ansoff, le père de la stratégie moderne, comprend des penseurs, comme Chandler, Mintzberg, Hamel ou encore Rumelt, entre autres. Elle se subdivise en deux branches, liées à l'évolution dans les positions de Ansoff : dans les années 1960, une approche plus rigide quant à l'allocation des ressources, soucieuse des résultats chiffrés, et une tendance à une certaine flexibilité introduite ensuite dans son modèle. Ainsi, Porter, qui incarne la première approche, est à la fois l'héritier de Ansoff et de l'approche scientifique de Taylor quand il s'intéresse à la manière dont une entreprise peut conserver un avantage concurrentiel. En revanche, quelqu'un comme Doz est résolument du côté de la plus grande souplesse et de l'adaptabilité de la stratégie à chaque forme d'entreprise (*strategic agility*). Vers la fin des années 1980, l'intérêt pour la planification stratégique des entreprises déclina. Dès 1983, Welsh décidait de se séparer des quelque 200 cadres attachés à la division « stratégie » chez General Electric pour privilégier les considérations plus visionnaires permettant de débusquer des marchés potentiels. Pour faire face aux défis futurs et se préparer à gérer l'incertain, Wack et Newland portèrent une attention accrue à la notion de scénarios, qui fit ses preuves chez Royal Dutch Shell. Dans cette lignée, on citera Ghemawat et Ohmae, qui associent stratégie et globalisation. Toutefois, vers le milieu des années 1990, avec les nouvelles possibilités offertes par l'informatique et le commerce électronique, l'intérêt pour la stratégie revint au premier plan : repensée par Hamel, elle est associée à une innovation en constante évolution.

La troisième grande lignée prend sa source au début du XIX^{ème} siècle, avec Robert Owen et son souci de stimuler différemment l'homme derrière la machine. Owen n'était pourtant pas psychologue de formation, mais en 1816, il écrivait déjà :

[1] La formule permit à DuPont de Nemours et General Motors de comparer la valeur relative des investissements à court et à long termes dans leurs différentes divisions.

[2] Cette dénomination métaphorique aurait été inspirée à son auteur alors qu'il jouait au golf et consultait son score.

[3] Il s'agit de produire trois bilans différents (People, Profit, Planet), prenant respectivement en compte l'aspect social, les bénéfices, et la responsabilité environnementale de l'entreprise.

[4] Sa préoccupation pour le « *management by objectives* », opposée au « *management by control* », a fait le succès de Hewlett-Packard ; par certains côtés, elle pourrait faire classer son auteur dans la catégorie des penseurs intéressés par les chiffres.

> If due care as to the state of your inanimate machines can produce such beneficial results, what may not be expected if you devote equal attention to your vital machines, which are far more wonderfully constructed (Davies 1907 : 31).

Pour autant, Owen ne saurait être présenté comme le père d'une lignée de penseurs ou managers humanistes, même si sa position était éminemment moderne pour son époque. On peut, en revanche, affirmer que la prise en compte de l'homme et son développement ressurgit avec force grâce à Lewin, Lippitt et Bradford, avec leur expérience des *T-groups* et l'aventure des *NTLs*. Dans la lignée de ces représentants du courant humaniste du management, on peut citer Mayo, avec les expériences qu'il mena dans une usine de Western Electric à Hawthorne, près de Chicago. McGregor, pionnier de la gestion participative et connu à travers sa théorie Y[5], laquelle présente des parallèles avec la « hiérarchie des besoins » décrite par Maslow[6], joua un grand rôle dans la transformation des pratiques du groupe Procter and Gamble dans les années 1960[7]. Krone, pour sa part, emprunta des idées aux *NTLs*, à Trist[8], et à McGregor, mais aussi à la mystique tibétaine, pour pousser davantage l'expérimentation, prenant en compte les aspects psychologiques et émotionnels[9]. Sa « *flowering organisation* », illustrée par un dessin évocateur, traduisait l'idée que le pouvoir était détenu non pas en haut mais au centre, d'où il irriguait l'ensemble[10]. On citera ici également Drucker, et son idée de l'entreprise comme institution sociale. De son côté, Moss Kanter, auteur du concept d'*empowerment*, œuvra pour la décentralisation des décisions et la reconnaissance de la capacité de chacun à contribuer à l'amélioration de l'ensemble. Il convient aussi de rappeler les expériences menées au Japon chez Toyota par Ohno et Ohmae, qui responsabilisaient grandement les équipes, consultées pour améliorer la qualité et affiner le processus de production. On pense également à l'apport de Ulrich et sa conception nouvelle des ressources humaines.

A ce stade, il faut se rendre à l'évidence : une même idée initiale peut engendrer de nombreux embranchements et même les lignées repérées en fonction d'un certain héritage intellectuel ne permettent pas d'identifier des paradigmes clairement établis. Peut-être convient-il alors d'examiner les veines métaphoriques qui sous-tendent les visions de l'entreprise et de la gestion pour mieux repérer les paradigmes et le passage éventuel d'un paradigme à un autre.

3 Métaphore et paradigme

Un retour à l'étymologie du terme organisation est assez révélateur : « *organon* » en grec, devenu « *organum* » en latin faisait référence soit à un outil (instrument chirurgical ou machine de guerre), un instrument de musique (orgue / *organ*), un instrument naturel (la voix), ou un ensemble d'éléments cellulaires capables de remplir une fonction déterminée (les

[5] Selon la théorie Y les employés ne sont pas naturellement enclins à fuir le travail, pourvu qu'on leur permette de s'impliquer et de s'accomplir dans leur travail.

[6] Cette hiérarchie des besoins est à comprendre en relation avec ce qui motive les hommes sur le plan physiologique (se nourrir, dormir, etc.), sécuritaire (sécurité de l'emploi, protection contre le risque, etc.), social (famille, affection, amitié), personnel (respect de soi, estime des autres), accomplissement personnel (vocation).

[7] Abandon des quotas de production, des distinctions entre postes ; tous les ouvriers devinrent des « *technicians* » capables d'effectuer toutes les tâches nécessaires au sein d'une équipe.

[8] Pour Trist, une entreprise était une communauté, un système ouvert où les *managers* n'auraient qu'à assurer la coordination entre les équipes.

[9] À l'usine de Lima (Ohio), n'importe quel ouvrier pouvait proposer une idée novatrice. Les équipes géraient leur emploi du temps, et avaient une vue d'ensemble sur ce qui se faisait dans les autres équipes.

[10] On évoquera aussi Dulworth, dont l'expérience conduite à Topeka (Ohio), dans une usine-laboratoire spécialement construite par General Foods, visa à donner une plus grande autonomie aux équipes.

organes du corps humain). La subdivision des dénominations entre « organisme /*organism*» et « organisation/*organisation* » est intervenue plus tard ; une organisation évoque désormais en premier lieu une structure organisée, et renvoie aux notions de gestion, de plan et d'ordre, alors qu'un organisme a pour première référence la biologie. Il est intéressant de garder ces deux dérivés de « *organon* » à l'esprit pour ce qui suit

3.1 Souches métaphoriques, paramètres majeurs pour la conception de la gestion, et leurs interprétations

Le domaine de la gestion des entreprises, nous l'avons vu, a été influencé aussi bien par des ingénieurs que des psychologues et sociologues. Il s'avère que, comme la science économique en général, la science de la gestion s'est construite selon deux grands courants : une conception mécaniste et une conception humaniste. En d'autres termes, pour certains la gestion est une affaire d'organisation scientifique, alors que pour d'autres elle est une affaire d'hommes et de groupe social. Nous retrouvons pratiquement les deux sens dérivés de « *organon* » qui, traduits en termes de souches métaphoriques, équivalent à L'ENTREPRISE EST UNE MACHINE, d'une part, et L'ENTREPRISE EST UN ORGANISME, d'autre part. Ces deux mega-métaphores auxquels s'articuleraient des embranchements secondaires, seraient l'expression de deux grands paradigmes.

La métaphore de la machine peut se décliner de nombreuses manières, en fonction des sèmes qui sont activés. Dès les débuts de l'industrialisation, les formes d'organisation ont dû s'adapter et tenir compte de la place prépondérante des machines (Morgan 2006). Le modèle classique d'organisation a longtemps été inspiré par la manière dont les ingénieurs construisent une machine : parties fonctionnant selon des lignes définies et un ordre prédéterminé, mécanismes bien pensés, rouages bien huilés. Très tôt, le sociologue Max Weber souligna les parallèles entre mécanisation et bureaucratisation croissante en termes de précision, régularité, efficacité et ordre[11]. On conçoit alors aisément que la métaphore de l'entreprise-machine ait inspiré la théorie classique du management, représentée par Fayol : diriger une entreprise revenait à planifier, organiser, commander, coordonner et contrôler. L'entreprise était logiquement fondée sur une notion de hiérarchie, symbolisée par une structure pyramidale et une discipline quasi-militaire y régnait. Les ouvriers étaient considérés comme des parties de cette machine, aisément remplaçables, tels des pièces détachées défectueuses. La langue traduit d'ailleurs cette vision : par le biais de la métonymie, les ouvriers étaient réduits au fruit de leur travail (*labour*), ou à une partie de leur corps (*hands*). Et si, toutefois, pour Owen, par exemple, il s'avérait nécessaire de trouver un certain équilibre entre les aspects techniques et humains, c'était surtout pour mieux incorporer les hommes aux rouages de la mécanique qu'est l'entreprise.

Ce paradigme de l'entreprise-machine se retrouve encore dans les structures pyramidales actuelles de bon nombre d'entreprises. Dans les années 1990, les réductions d'effectifs étaient encore pensées en fonction de l'entreprise conçue comme une sorte de mécano : il suffisait alors de supprimer certaines strates (*delayering*), de reprendre le plan de montage de la « machine » et de repenser la structure d'ensemble (*reengineering*). Un oxymore récent « *flat hierarchy* », qui traduit un effort vers une plus grande autonomie, garde en référence la structure hiérarchique initiale. La codification des tâches appliquée aux *McJobs* par McDonald est inspirée de l'étude scientifique des déplacements et des gestes requis pour

[11] Weber dénonça d'ailleurs les dangers de la bureaucratie, de la routine et des automatismes qui risquaient d'endormir les esprits et d'entraver toute créativité.

chaque poste qui réduisait l'homme à un robot. La robotisation de certaines chaînes de montage résulta également de l'application de ces principes.

Si la vision de l'entreprise comme une machine a pu réussir à certaines entreprises, elle montre ses limites lorsqu'il s'agit de s'adapter et d'innover. Une trop grande compartimentation des responsabilités et des tâches aliène les esprits et induit une certaine apathie, un manque d'intérêt pour le travail effectué et pour le but général poursuivi. Il a bien fallu envisager un autre point de vue.

La métaphore de l'organisme trouve son inspiration dans les emprunts à la biologie et les sciences de la nature. Dans le monde de l'entreprise, les individus sont des molécules, les groupes ou équipes des cellules (*cellular manufacturing*), les différentes catégories à l'intérieur de l'entreprise des espèces, et l'environnement social de l'entreprise s'apparente à l'écologie. Puisque les organismes biologiques sont plus efficaces quand leurs besoins sont pris en compte, on peut penser que les travailleurs et employés s'investiront davantage dans leurs tâches s'ils se sentent mieux reconnus en tant qu'êtres humains. La vision de l'entreprise-organisme ne signifie évidemment pas qu'il y a une parfaite adéquation entre une entreprise et un organisme : en matière de survie, par exemple, un organisme est soumis à un environnement naturel qu'il ne peut pas changer, alors que l'organisation a le pouvoir de choisir son système, ses collaborateurs, son implantation géographique. En outre, toutes les composantes d'un organisme œuvrent normalement en harmonie pour sa survie ; il est moins certain que les composantes d'une entreprise travaillent dans un seul et même but. C'est précisément pour se rapprocher du modèle naturel, et dans l'espoir de rassembler tous leurs membres autour d'une culture d'entreprise commune (Resche 2005b), que les entreprises se sont attachées à formuler clairement leur vision et leur mission.

L'entreprise-organisme emprunte également à la biologie la notion de système ouvert sur son environnement, ce qui a donné lieu à des changements divers en interne comme à l'extérieur : fin de la compartimentation entre départements étanches, prise de conscience de l'interdépendance des parties prenantes (fournisseurs, livreurs, détaillants, clients, actionnaires, gouvernements, syndicats, etc.) ; nécessité de s'adapter, d'innover, de se transformer face aux concurrents, en fonction du marché et de la société. Une nouvelle vision du rôle de l'entreprise est née, celle d'une « entreprise citoyenne » (Resche 2007b), qui a une responsabilité sociale et doit respecter l'environnement humain et naturel.

N'oublions pas que dans *corporation*, il y a *corpus*, le corps. La métaphore de l'organisme conduit aussi à concevoir l'entreprise comme un être vivant, avec son cycle de vie, puis, par extension, un être humain. Nous citerons des métaphores telles que *corporate DNA*, *birth*, *teething problems*, *maturity*, *death* ; même le recyclage des produits a été traduit en termes métaphoriques, d'abord pour le système *cradle to grave*[12] qui a évolué en *cradle to cradle*[13]. Pour être efficace, une entreprise doit être en bonne santé, éviter toute surcharge pondérale, et rester souple (*the agile enterprise*[14]). Mais les pratiques de *slimming* et *downsizing*, qui visent

[12] Cette métaphore soulignait que la pollution commençait dès la fabrication et continuait tout au long de la vie du produit.
[13] Le produit doit être recyclé autant que possible ; il ne meurt pas mais est transformé et renaît sous la forme d'autres produits.
[14] Welsh, avec son Programme *Work Out*, redressa la situation chez General Electric qui devint une entreprise « agile », où les idées circulaient librement.

à réduire le personnel jugé superflu peuvent conduire à des effets pervers (*corporate anorexia*).

De la même façon que la métaphore de l'entreprise-machine avait eu pour effet d'assimiler les hommes à des machines, la métaphore de l'entreprise-organisme, ou l'entreprise-être humain a conduit à porter un autre regard sur les hommes. Détenteurs d'un savoir et d'un savoir-faire, les hommes sont devenus les détenteurs d'un capital humain précieux (Resche 2007a) et ont cessé d'être interchangeables. Drucker les a baptisés « *knowledge workers* ». Hamel et Prahalad ont cherché à développer les « *core competences* » de l'entreprise et Nonaka a considéré le « *knowledge development* » comme créateur de richesse.

Une autre des branches de cette vision de l'entreprise-organisme, portée par Argyris, le père de la « *learning organisation* » et Senge, permet de voir l'entreprise par le biais de la métaphore d'un organe, en l'occurrence le cerveau; elle devient alors un organe pensant capable d'apprendre, d'être un lieu de formation, un incubateur d'idées. L'informatique permet de gérer les informations, facilite leur flux, repère les points faibles, sources d'enseignements. L'entreprise-cerveau a pris conscience qu'elle avait deux hémisphères : le gauche, apte à raisonner et analyser les informations, et le droit, siège de l'intuition.
Ces idées ont ouvert la voie à une vision des choses radicalement différente : un système de pensée non-linéaire. Peut-on envisager une telle évolution par rapport aux autres ramifications de la souche organiciste comme un nouveau paradigme ? Intéressons-nous à la métaphore de la complexité et du chaos pour répondre à notre question.

3.2 La non-linéarité et la métaphore de la complexité et du chaos, nouveau paradigme ?
Trois notions demandent à être précisées pour comprendre le changement de point de vue évoqué : la notion de circularité, celle de complexité et celle de chaos.

Notre culture occidentale nous a habitués à penser de manière analytique et rationnelle, en termes de causes et d'effets. Nous représentons le temps comme une ligne avec une flèche vers la droite pour matérialiser le sens de l'évolution ; nous traduisons aussi les relations de cause à effet de manière linéaire par une chaîne de type A => B => C. Or, pour Forrester, ingénieur de formation, intéressé par la dynamique industrielle, la thermodynamique et la cybernétique, les causes et les effets ne suivent pas un schéma linéaire mais ont tendance à s'influencer et se nourrir mutuellement ; ceci oblige à penser en termes de circularité et de « boucles de rétroaction » ou « *feedback loops* ». La pensée linéaire ne peut offrir que des solutions linéaires à un problème ; or, si l'on considère autrement les relations entre diverses causes et effets, on peut envisager d'autres choix et identifier à quel niveau il est possible d'intervenir pour renforcer l'effet positif ou contrer l'effet négatif de ces boucles de rétroaction (Senge 1994). La pensée non-linéaire est donc nécessaire pour concevoir les entreprises comme des systèmes ouverts, dynamiques, adaptables, et complexes, donc eux-mêmes non-linéaires. Dans son dernier ouvrage, l'économiste Hayek (1988) rappelait combien il s'était senti seul dans sa recherche à ses débuts, lorsqu'il s'intéressait déjà à une approche évolutionniste de l'économie et aux systèmes d'auto-organisation. Puis, les préoccupations avaient évolué, et il n'arrivait plus à suivre le rythme des publications sur les questions suivantes « *autopoiesis, cybernetics, homeostasis, spontaneous order, self-organization, synergetics, systems theories, and so on* » (1988 : 9). Il insistait: (1988: 146): « [...] *the analysis of self-ordering processes must be the chief task of any science of the market order* ».

L'entreprise est un système complexe à plusieurs titres : composée d'éléments humains qui interagissent sans cesse, elle doit compter avec des partenaires extérieurs pour fonctionner. Elle est donc en constante interaction avec le reste de la société et du monde actuellement, ce qui augmente le nombre de réseaux dans lesquels elle est impliquée. La particularité des systèmes complexes est de présenter des processus d'auto-organisation d'où émergent des schémas cohérents. La notion de complexité implique d'autres questions comme l'imprévisibilité, la difficulté de prendre en compte une multiplicité de paramètres, l'interdépendance, la nécessité d'une approche holistique.

Cette nouvelle conception de l'entreprise marque un changement radical par rapport à la vision traditionnelle, instrumentaliste, du management. Le verbe « to manage » est d'ailleurs porteur de cette instrumentalisation, étymologiquement. L'*Oxford English Dictionary* (1989) nous rappelle qu'il fut emprunté à l'italien « *managgio* » par le français « manège », puis transformé ensuite en « *manage* » par l'anglais. Le terme faisait référence au fait de dompter un cheval pour lui imposer différentes cadences. Par extension, appliqué à d'autres domaines, il a conservé l'idée de mener, de diriger, pour atteindre un but prédéterminé, même dans les manuels de gestion actuels. Or, pour Hench (1999) la définition qui correspond à la nouvelle vision de l'entreprise dynamique, complexe et ouverte est la suivante : « *A continuous learning process for creating meaning and value through service with and for others* ». Dans cet ordre d'idée, le « *management* » ne consiste plus à planifier, diriger, organiser et contrôler, mais, bien au contraire, à expérimenter, servir, stimuler la capacité à s'auto-organiser et faciliter l'enrichissement de la connaissance ; « *the learning enterprise* » est l'émanation de cette vision. Passer de la planification à l'expérimentation est riche de sens, car planifier sous-entend que l'on connaît déjà le but recherché, alors qu'expérimenter implique la curiosité de découvrir. Selon la nouvelle vision, le management consiste à accompagner, faciliter, coordonner, donc agir « avec » ou « pour » et non pas « sur » quelque chose ou quelqu'un.

Il nous reste à préciser le sens de chaos ici. Si le dictionnaire *Collins* définit de manière générale le terme « *chaos* » comme « *complete disorder and confusion* », le sens qui s'applique aux organisations est lié à la notion d'« émergence » d'un schéma (Stacey 1993 : 228]) : *« order (a pattern) within disorder (random behaviour) »*. Pour illustrer cette émergence d'un ordre, on évoque couramment une colonie de fourmis ou une ruche, connues pour leur efficacité, mais qui donnent l'impression de désordre ou de chaos. La notion de chaos est à opposer à celle d'équilibre dans le contexte d'une entreprise qui, ayant de bons résultats, n'aurait pour préoccupation que le maintien du *statu quo*. Or, dans un monde en constante mutation, une telle attitude rend l'entreprise vulnérable : elle n'est pas prête à relever des défis qu'elle n'a même pas envisagés. À partir de la notion de chaos, est donc apparue l'idée qu'une entreprise ne devrait pas craindre de se trouver « au bord du chaos » Pascale *et al* (2000). Bien au contraire, elle devrait pouvoir réussir grâce à cela. C'est l'idée développée par Peters dans son ouvrage *Thriving on Chaos*. Pascale incite les entreprises à affûter leurs sens pour pouvoir se réinventer (Webber 2007) :

> […] When the world around you changes, maintaining your equilibrium is a threat to your future existence. That's when you need a new kind of agility that enables you to reinvent yourself. Very simply, prolonged equilibrium dulls an organism's senses and saps its ability to arouse itself appropriately in the face of danger. Survival favors heightened adrenaline levels, wariness, and experimentation.

C'est dans ce contexte qu'il faut concevoir, au niveau de l'innovation, la différence entre ce que Christensen (1997) appelle « *sustaining technologies* » qui ne font qu'améliorer des

produits existants, et « *disruptive technologies* », qui changent complètement la nature d'un marché ou le paysage d'un secteur d'activités. Pour résister à une onde de choc, il faut l'avoir prévue et se tenir prêt. Et il faut, pour cela, que les responsables d'entreprises comprennent bien le sens que donne Pascale lui-même à la notion « *edge of chaos* »:

> If you tell most executives that they need to move their company to the edge of chaos, they will immediately think of a place -- a precarious spot. The image is one of taking your canoe to the edge of a waterfall. In fact, the edge of chaos is a condition, not a location: For an executive, that means operating your company in such a way that it experiences the maximum and most productive levels of mutation.

Adopter ce point de vue signifie donc créer un environnement de travail propice à l'inventivité et la remise en cause des idées reçues pour mieux préparer l'avenir. C'est empêcher que telle ou telle équipe ne retombe dans la routine apparemment confortable mais dangereuse. C'est faire passer le message en frappant les esprits par des images fortes, y compris en ayant recours à la métaphore. Morgan (2006) a créé le néologisme « *imaginisation* » pour faire référence à cette nouvelle façon de concevoir l'organisation des entreprises inventives et dynamiques, en faisant appel à d'autres formes de pensée, dont la pensée métaphorique.

Il faudra sans doute attendre d'avoir un certain recul pour mesurer la véritable portée de ce changement. Il est certain qu'il s'agirait alors, si ce mode de raisonnement était généralisé, d'une véritable révolution dans l'approche des problèmes, qui correspondrait bien à un nouveau paradigme, au sens Kuhnien du terme.

4 Conclusion

Au terme de cette étude, nous pouvons donc réaffirmer l'intérêt que présente l'étude des métaphores souches pour découvrir la façon dont s'est construit un domaine scientifique. Nous avons vu que deux méga-métaphores permettent de comprendre comment la théorie de la gestion et la vision de l'entreprise ont évolué. La perspective diachronique nous a aidée à prendre conscience de la difficulté de conclure à une correspondance exacte entre les moments importants de l'histoire et les changements de paradigme. Il ne nous semble d'ailleurs pas possible de parler de réel changement de paradigme qui sous-entendrait l'abandon d'une vision pour une autre. Il y a bien eu introduction de nouveaux paradigmes, mais pas de substitution radicale d'une vision par une autre. Il n'y a donc pas eu de points de rupture tranchés, mais plutôt des orientations nouvelles, et des avancées progressives. Il est certain qu'on ne peut imposer un nouveau paradigme, comme le souligne l'expérience peu concluante menée par Bennis à l'Université de Cincinatti qu'il dirigeait selon les principes des *T-groups* et de la théorie Y : en l'occurrence, les esprits n'étaient pas encore prêts à prendre des initiatives ou à participer activement aux décisions, trop habitués qu'ils étaient à suivre des directives. Quoi qu'il en soit, ces expériences ont été utiles et les idées expérimentées ont mûri pour être adoptées plus tard de manière plus large. C'est sans doute parce que nous sommes en présence d'un domaine qui allie théorie et pratique de manière très étroite que nous ne pouvons pas avancer l'idée de révolution soudaine, contrairement à ce que Kuhn affirmait. C'est sans doute avec la période la plus récente que l'introduction de l'idée de la non-linéarité et de la métaphore du chaos peut permettre d'entrevoir un changement plus spectaculaire, à condition qu'il soit confirmé. Pour mesurer la portée de cette nouvelle approche, il nous faudra sans doute maintenant nous attacher à étudier les métaphores de surface utilisées par les dirigeants de ces entreprises ouvertes pour communiquer à l'ensemble de leur personnel leur vision de ces systèmes complexes et dynamiques.

La métaphore remplit en effet des rôles divers de moteur et vecteur de changement ; elle agit en médiatrice lorsqu'elle aide à faire passer d'un mode de pensée à un autre. Elle peut certes être considérée comme révolutionnaire quand elle introduit un changement catégorique dans la vision qu'elle sous-tend. Il convient donc d'envisager une veille métaphorique afin de détecter les mutations importantes à l'intérieur d'un même domaine scientifique. La métaphore du chaos, inspirée de la théorie éponyme, nous conduit à penser qu'une veille métaphorique transdisciplinaire permettrait d'avoir une idée plus juste des courants majeurs de pensée qui peuvent marquer les idées et donc la société à une époque donnée.

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10 Annexes

Annexe 1. Tableau des noms influents (par ordre alphabétique)

Noms, dates, (Nationalité), *formation initiale*	Centres d'intérêt ; idée majeure (*avec connotation métaphorique*)
ALINSKY Saul 1909-1972 (American) *Sociology*	Community organizing
ANSOFF Igor 1918-2002 (Russian American) *Mechanical engineering/physics*	The father of modern strategic thinking
ARGYRIS Chris 1923 --- (American) *Business*	The father of the learning organization Double-loop learning
BENNIS Warren 1925 --- (American) *Business*	Leadership
BRADFORD Leland 1905--- *Education*	Self-directed learning; NTLs
CHRISTENSEN Clayton 1952 --- (American); *Business*	Innovation « Disruptive technology »
COLLINS Jim 1958 --- (American), *Business*	Corporate vision/mission
COVEY Stephen 1932 --- (American) *Business*	Organizational behavior; Leadership
DEMING W. Edwards 1900-1993 (American); *Physics & statistics*	quality circle (Deming circle) Management by walking about (MBWA)
DONALDSON BROWN Franck 1885-1965 (American); *Engineering*	Flexible budgeting standard financial ratios (Return on investment; return on equity)
DOZ Yves 1947--- (French); *Management*	Strategic management of MNCs *Strategic agility*
DRUCKER Peter 1909-2005 (Austrian American); *Journalism*	Management by objectives; *Knowledge workers*
DULWORTH Edward (American)	High performance team system The Topeka experiment
FAYOL Henri 1841-1925 *Engineering* (French)	One worker, one boss
FORRESTER Jay. W. 1918--- (American) *Engineering*	*Industrial dynamics*
GHEMAWAT Pankaj 1960 --- (Indian) *Business economics*	"Globalony" The global aspect of corporate behavior
GHOSHAL Sumantra 1948-2004 (Indian) *Physics*	*Corporate DNA;* *The left brain of the organization*
GILBRETH Frank 1868-1924 (American) *Bricklaying*	Time and motion studies
GILBRETH Lillian 1878-1972 (American) *Psychology*	The psychology of management
HAMEL Gary 1954 ---(American) *Administration*	Strategic innovation; Core competencies
HAMMER Michael 1946 --- (American) *Computer science*	*Re-engineering;* Process improvement; Process innovation BPR
HANDY Charles 1932 ---(Irish) *Technical engineering*	Change management; Knowledge management Portfolio working *; The shamrock organization*
HOFSTEDE Geert 1928 --- (Dutch) *Psychology*	Corporate culture
JURAN Joseph 1904 ---(American) *Electrical engineering*	Quality
KAPLAN Robert 1940 --- (American) *Electrical engineering*	« What you measure is what you get » *The balanced scorecard*

KETS DE VRIES Manfred 1942 --- (Dutch) *Economics, Management and Psychoanalysis*	leadership development, organizational change, cross-cultural management.
KRONE Charles 1929 --- (American) *Engineering*	*The flowering organization* The Lima (Ohio) experiment
LEWIN Kurt 1890-1947 (American) *Social psychology*	Group dynamics; The father of NTLs
LEVITT Theodore 1925-2006 (American) *Economics*	The Globalization of Markets
LIPPITT Ronald 1914-1986 (American) *Psychology*	Group Dynamics; NTLs
MARCH James 1928 ---(American)	The behavioral theory of organizations *The garbage can*
MASLOW Abraham 1908-1970 (American) *Psychology*	Anthropology; Hierarchy of needs
MAYO Elton 1880-1949 (Australian) *Psychology*	The humanistic school of management The Hawthorne experiments
McGREGOR Douglas 1906-1964 (American) *Social Psychology*	Theories X and Y
MINTZBERG Henry 1939 --- (Canadian) *Engineering*	Organizational structures
MOSS KANTER Rosabeth 1943 --- (American) *Sociology*	Change management; Empowerment
MULDER John J. (American)	The Kodak experiment in Rochester (in the late 60s)
NEWLAND Theodore (American), contemporain de P. Wack	scenario planning; Speculative thinking
NONAKA Ikujiro 1935 --- Japanese *Business*	The Knowledge-Creating Company
OHMAE Kenichi 1943 ---(Japanese) *Nuclear science*	Strategy
OHNO Taiichi 1912-1990 (Japanese) *Industrial engineering*	The Toyota Production System ; Just-In-Time *Lean manufacturing*
OWEN Robert 1771-1858 (British) Owner of a textile factory at the age of 19	The silent monitor system Interest for workers
PASCALE Richard 1938 --- (American)	Organizational behavior; The Seven Ss *Organizational agility*
PETER Laurence 1919-1990 (Canadian) *Education*	The Peter Principle
PETERS Tom 1942 ---(American) *Civil engineering*	Excellence; Managing in continuous change
PORTER Michael 1947 ---(American) *Engineering*	Competitive advantage; Clustering; Corporate Social Responsibility (CSR) *Value Chain; Porter's diamond*
PRAHALAD C.K. 1943 ---(Indian) *Physics*	Core competencies; *The Bottom of the Pyramid*
RUMELT Richard 1942 ---(American) *Electrical engineering*	Corporate strategy
SENGE Peter 1947 ---(American) *Aerospace engineering*	*The learning organization*
SIMON Herbert 1916-2001 (American) *Economics*	The theory of bounded rationality
SLOAN Alfred 1875-1966 (American) *Electrical engineering*	Strategic Planning; "federal decentralization"

SULLIVAN Leon H. 1922-2001. A Baptist minister at the age of 18	Corporate change; Self-help principle
TAYLOR Frederick W. 1856-1915 (American) *Engineering*	Scientific management; Time and motion studies; Piece work
TOFFLER Alvin 1928--- (American) a futurologist	"Future Shock"; The "prosumer"
TRIST Eric 1903-1993 (American) *English literature, psychology*	"Industrial democracy"; "open systems"; "sociotechnical systems"; The Tavistock group
ULRICH Dave 1954 ---(American)	Human resources; The Ulrich model
WACK Pierre 1922-1997 (French) *Political Science*	*Scenario planning; Delta scheme*
WEBER Max 1864-1920 (German) *Sociology*	Organizational development; Ethics; Leadership;
WELSH Jack 1935--- (American) *Chemical engineering*	GE's Work-Out program
WHYTE William 1917-1999 (American) *Sociology*	The Organization Man

Annexe 2. Tableaux des idées novatrices par décennie

1900-1920	- Mass production - Scientific management (Taylor)	1960-1970	- the Topeka experiment (General Foods) -Management by objectives -MacGregor's Theory Y (P&G) -1965 : Ansoff's strategic thinking -Hierarchy of needs experimented -*Scenario planning* -Kodak's Rochester episode
1920-1930	- The *halo effect* (1st mentioned in the Army) - The Hawthorne experiments	1970-1980	-JIT; kaizen in Japan -late 70s: the Seven Ss -*cellular manufacturing* (Volvo)
1930-1940	- The human relations movement - Tavistock (GB)	1980-1990	- Quality circles & Kaizen experimented in the West - 1985 : Porter's *value chain* & competitive advantage - *downsizing* - Six sigma (Motorola,1987) -1988 knowledge management (Drucker) - MBWA (management by walking around)
1940-1950	- late 40s : Lewin's T-groups - National Training Labs (Bradford, Lippitt) -1943 : Maslow's hierarchy of needs - Post-war focus on quality in Japan (Deming & Juran)	1990-2000	- pay-for-performance - Strategic planning - BPR, TQM ,CRM, SCM, CSR[15] - *the balanced scorecard* - *lean production* - genchi, genbutsu - HR transformation - Core competences - benchmarking - mission and vision statements

[15] BPR = Business Process Reengineering ; TQM = Total Quality Management; CRM= Customer Relationship Management; SCM = Supply Chain Management; CSR = Corporate Social Responsibility

1950-1960	-Toyota production System in Japan	2000-2010	- ERP[16] - *flexibilty* - offshoring / nearshoring/bestshoring/ - customer segmentation - knowledge management - scenario planning - *coaching*

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[16] ERP = Enterprise Resource Planning

The Woolf reform of civil procedure: a possible end to legalese?

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Keywords: *legalese, legal terminology,Woolf reform, litigation, procedure*

Abstract

The word « legalese » first appeared a hundred years ago to describe what was seen as the unintelligibility and verbosity of the English jargon used by lawyers. Under the influence of the Plain Language Movement, an effort was made to make legal words and writing more accessible to lay people, which culminated in the implementation ten years ago of the Woolf Reform in England and Wales. This movement is twofold i.e. aims at simplifying legal words or expressions as well as the drafting of sentences itself. Words such as "writ", "garnishee order" and "ex parte" are now respectively known as "claim form", "third party debt order" and "without notice". Legal writing itself has become more grammatically correct. Through the etymological study of a corpus of litigation related vocabulary and pleadings excerpts, we will try to demonstrate that the legal language and writing is very much influenced by its historical context, the cultural evolution of the legal profession and the development of legislation. Legal vocabulary and writing is not static and the current move towards legal precision and clarity should pursue its evolution in the future.

1 Introduction

In his play King Henry VI (Part II, IV, ii 86-87), Shakespeare got one of his characters, Dick the Butcher, to say: "The first thing we do, let's kill all the lawyers". Lawyers have always been long suffering targets of criticisms for the complexity or unintelligibility of the legal jargon they use. Bentham talked about "lawyers' cant" (1827: 296). Others refer to "legalese", a word which appeared in 1914 to describe the complicated language of legal documents. In our study we will focus on its evolution in England and Wales in the specific field of litigation. Litigation (a word which bears Latin origins) means the fact of trying to resolve a dispute in court.

We chose to consider the changes affecting the language of litigation for one reason. A major procedural reform - named after its main drafter Lord Woolf - came into force on 26th April 1999 which substantially changed the legal language used in England and Wales for centuries. If the various steps leading to the reform gave rise to a lot of publications prior to the implementation of the reform, its post-linguistic aspects have hardly been commented upon. However for those teaching legal English or English law at University the effects of the reform are substantial: as well as a fundamental change of procedural rules, the vocabulary of

law was extensively changed and judges and lawyers alike were prompted to write plainer legal documents.

After considering the origins of legalese and the ways in which it can be restricted we will discuss the main changes brought to litigation by the Woolf reform. Through the study of the wording of pre- and post-reform pleadings extracts (pleadings or statements of case being the documents filed by the parties with a court), we will consider whether the unintelligibility of legal language is on the wane.

2 Historical and cultural evolution leading to legalese

Cutts describes "plain language" as opposed to "legalese" as follows: "The writing and setting out of essential information in a way that gives a cooperative, motivated person a good chance of understanding the document at the first reading, and in the same sense that the writer meant it to be understood" (1995: 3). There is however some logic in the way the legal language of England and Wales developed into a legal jargon.

2.1 Emergence of a legal jargon

Pre-1999 legal language was a melting pot of foreign languages. In "the Nature of Legal language" Tiersma recalls that: "The English language can be said to have begun around 450 A.D., when boatloads of Angles, Jutes, Saxons and Frisians arrived from the Continent. These Germanic invaders spoke closely related languages, which came to form what we call Anglo-Saxon or Old English. Although the Anglo-Saxons seem to have had no distinct legal profession, they did develop a type of legal language, remnants of which have survived until today". For Hitchings "English (is) 'promiscuous', a whore among languages" (2008: 5) and for Butt and Castle legal English is "larded with law Latin and Norman French" (2006: 1). The word "law" has Scandinavian origins (Burchfield, 1995: 12). As well as the impact of foreign words in legal English the Anglo-Saxon influence gave rise to many alliterations (Kurzon, 1994: 7) such as "to have and to hold" and "each and every" and tautologies are frequently found in legal documents.

On top of its foreign influences various actors take part in the making of legal language. There is a common law tradition whereby law evolves through court "precedents" also known under the Latin expression "stare decisis". In Gulliver's Travels, Swift commented: "[Stare decisis] is a maxim among lawyers, that whatever has been done before may legally be done again" (1959: 249). Hart and Blanchard say that this is "the doctrine of standing by, or adhering to, decided cases […]" (2007: 21 & 22) . Therefore judges take part in the creation of legalese.
.
The legislator's role in the development of legal jargon is limited but not negligeable. Wording used by the legislator has to be interpreted and enforced in court. Of course legal practitioners (by which we refer to solicitors and barristers) contribute to legalese. They still address each other in court as "my learned friend". "Latin that was the lingua franca of the learned" (Bennion, 2008: 316). Bentham, a proponent of the "conspiracy theory" believed that legal language serves "as a cover and as a bond of union" between lawyers who are conservatives (vol. 4, 1827: 296). Melinkoff shared this opinion: " What better way of preserving a professional monopoly than by locking up your trade secrets in the safe of an unknown tongue?" (2004: 28). For Stark lawyers are mercenary: "jargon helps professionals to convince the world of their occupational importance, which leads to payment for service" (1984: 97).

2.2 Persistence of a legal jargon: attempts to reform

Little by little the legislator, judges, legal practitioners as well as more recently various organisations pointed out the inadequacy of retaining an over complex legal jargon and the need to adopt a more modern approach to legal language and writing.

The authorities encouraged the use of English in litigation. The Mayor of London passed an order to that effect in 1356 (Baugh & Cable, 2002: 149). In the Nature of Legal Language Tiersma recalls that the 1362 Statute of Pleading (strangely enough passed in French) required litigation to be carried out in English. According to the Acts and Ordinances of the Interregnum further similar statutes were passed in 1650 (in. Firth & Rait). But for Pollock and Maitland these attempts at reform occurred too late: "It could not break the Westminster lawyers of their settled habit of thinking about law and writing about law in French […]" (Vol. 1, 1898: 85).

Language (and its foreign influences) was one problem, verbose phraseology was another one. In 1982 the British government issued a White Paper ordering departments to make their forms and documents easier to understand (Cutts, 1995: 6). In 1984, 1989 and 1990 the National Consumer Council respectively published booklets called "Plain English for lawyers", "making Good Solicitors" and "Plain Language – Plain Law" (in. Asprey, 2003: 62).

An effort from judges and lawyers was necessary. For Hart and Blanchard: "the law is not inflexible. A court may overrule its own decisions" (2007:22). This was the wish expressed by the famous House of Lords judge Lord Denning who was against too strict an application of precedents (1979: 314). The Law Society and the Bar Council which are the respective professional bodies of solicitors and barristers have taken part in the fight against legalese, sometimes with other associations or organisations part of the Plain Language Movement often attributed to Chase who complained about "gobbledygook" in official texts (1954: 17).

3 The Woolf reform of civil litigation and its application 10 years on

A famous exchange once took place between a judge and a person who was criminally charged: "Judge: The charge here is theft of frozen chickens. Are you the defendant? Defendant: No, sir, I'm the guy who stole the chickens". This shows how complex legal language appears to the lay person. In the introduction to his June 1995 interim report Lord Woolf set himself an "overriding objective" which was " to improve access to justice". He believed that: "The key problems facing civil justice today are cost, delay and complexity" (1995: 7).

For Harrison: "The civil procedure reforms were culturally part of the New Labour project" … although they were initiated by the Conservative government in 1995. Lord Woolf, and behind him, the government, wanted: "a change of culture throughout the stem..." (1996: 31). The scope of the reform far exceeds that of our study so we will only focus on the aspects of the reform which relate to legalese. We will see that the Civil Procedure Rules aimed at making access to justice easier which implies plainer legal language. In order to give our opinion on this issue we will examine a number of terms and sentences from pre- and post-1999 litigation.

3.1 Layout and limits of the reform

Dyer described the Woolf reform as "the biggest package of reforms to the civil justice system for 100 years [...] in an attempt to make litigation cheaper, speedier and more user-friendly".

Being a keen admirer of the French civil procedural code, Lord Woolf was inspired by the French inquisitorial system in which the judge runs the litigation as opposed to the parties (1995: 7). According to the 1996 Woolf final report: "Litigation must be conducted not for the convenience of the lawyers, but for the convenience of the parties" (1996: 10).

An "overriding" objective is set out in Rule 1 of the Civil Procedure Rules whereby the courts must "deal with cases justly" which involves "ensuring that the parties are on an equal footing". As well as the over-complexity of procedural rules, Lord Woolf (as quoted by the Civil Justice report commissioned by the Hong Kong government) saw the "sometimes archaic and impenetrable language" used in litigation as a "major barrier to legal access". He blamed the "use of specialist terms and an over-elaborate style of language" in the former Rules. He believes that their "complexity [...] lies in their sheer length and the number of words used" (2001: notes 95 & 96 – par. 127 & 128).

The post-1999 Rules imposed a change of vocabulary and advocated the use of simpler and shorter sentences. Plainer words making sense in England should also be used. Rome was not built in a day and Adamyk reports that Lord Woolf himself acting as a judge in the 2002 House of Lords case Ashworth Hospital Authority v. MGN Ltd., forgot his wish to see plainer legal language employed. He used the Latin expression "inter alia" in his judgment (2006: 13). But conservatism may come from the litigants themselves. Bennion believes that in divorce law but not exclusively, lawyers and litigants have found it difficult to adapt to new vocabulary. Indeed some of the former terms (such as "decree nisi" and "decree absolute") are "embedded in our culture".

Whilst reflecting on 10 years of the Woolf reforms, Zander, an emeritus Professor at the London School of Economics and also a Queen's Counsel, commented that Lord Woolf's general vision of the new litigation landscape did "more harm than good" save "in regard to the adversary culture". Focusing on the legalese issue Harrison notes: "Revision of language is more easily implemented than reform of substantive laws and improvement in the provision of court services. It ticks boxes, shows that action has been taken […]". This is rather negative. In a nutshell these critics say that behind a mere change of vocabulary the reform would not have achieved much. But let us have a look at some practical examples to see what linguistic benefits – if any – the Woolf reform had.

3.2 Practical examples

The reader will find two annexes below. Annex n°1 is an extract of a document we have compiled setting out a number of words used pre-1999, their etymological roots, their post-1999 counterpart and their modern meaning. Annex n°2 consists in two sets of extracts from two litigation documents. The first one is a 1991 Writ endorsed with a Statement of Claim. The second one is a 2010 Claim with separate Particulars of Claim. Each document emanates from a Plaintiff (pre-1999) or Claimant (post-1999). Documents n°1 and 3 are extracts of court forms which are usually completed by the Plaintiff/Claimant and set out the grounds on which he relies in support of his claim against a Defendant. Documents n°2 and 4 were both drafted by the same reputable barrister who has 30 years' experience. For obvious reasons the names of the litigants are not disclosed.

Annex n°1: glossary and etymology

Used in Rules of the Supreme Court (pre-1999)	**Etymology and initial meaning (from www.etymonline.com)**	**Used in Civil Procedure Rules (post-1999)**	**Meaning (from Blacks Law Dictionary)**
Action	Old French: fighting	Claim	proceedings in a court of law'
Plaintiff	Anglo-French: complaining	Claimant	party who complains or sues in a personal action
Writ	Old-English: something written, piece of writing	Claim form	precept in writing, couched in the form of a letter (...) issuing from a court of justice, and sealed with its seal, addressed (…) to the person whose action the court desires to command (…) as a commencement of a suit
Pleadings	Old French: agreement, discussion, lawsuit	Statement of case	formal allegations by the parties of their respective claims and defenses, for the judgment of the court
Statement of claim		Particulars of claim	written or printed statement by the plaintiff in an action (…) in court, showing the facts on which he relies to support his claim against the defendant, and the relief hich he claims"
Subpoena	Medieval Latin: under penalty	Witness summons	Blacks: "the process by which the attendance of a witness at court is being required (…). It is a writ or order directed to a person, and requiring his attendance at a particular place and time to testify as a witness'

Affidavit	Medieval latin: he has stated on oath	Witness statement	written or printed statement or declaration of facts, made voluntarily, and confirmed by the oath or affirmation of the party making it, taken before an officer having authority to administer such oath
Decree nisi	Decree: old French: to pronounce a decision Nisi: latin: unless	Conditional order	one which will definitely conclude the defendant's rights unless, within the prescribed time, he shows cause to set it aside or successfully appeals
Decree absolute	Decree: see above Absolute: medieval French: to set free, make separate	Final order	when a rule nisi is finally confirmed, for the defendant's failure to show cause against it, it is said to be 'made absolute

Upon considering Annex n°1 we cannot help sharing Bennion's view that the litigant may not have been favorably impressed by the replacement of "Plaintiff" by "Claimant", "Writ" by "Statement of case" and so on. Regarding this change of vocabulary Harrison wondered "whether the language being replaced is really outdated; whether the replacements do indeed reflect the way people think and whether their introduction will make it easier to follow what is happening in court".

Annex n°2

Document n°1: extract from 1991 Writ	**Document n°2: extract from a 2010 Claim**
This writ of summons has been issued against you by the above-named Plaintiffs in respect of the claim set out herein. Within 14 days after the service of this writ on you, counting the day of service, you must either satisfy the claim or return to the Court Office mentioned below the accompanying if Acknowledgment of Service stating therein whether you intend to contest these proceedings. If you fail to satisfy the claim or to return the Acknowledgment within the time stated, or if you return the Acknowledgment is without stating therein an intention to contest the	'Brief details of claim (...) Value The Claimants expect to recover more than £250,000.0l. Defendants ' name and address: ... Amount claimed (details) Court Fee (details) Solicitor's costs (details) Total amount (details) Does, or will, your claim include any issues under the Human Rights Act ‘l998'? x Yes x No Particulars of Claim (attached) Statement of Truth

proceedings, the Plaintiffs may proceed with the action and judgment may be entered against you forthwith without further notice. Issued from the Central Office this ... day of ... 1991. Note: This Writ may not be served later than 4 calendar months (or if leave is required to effect service out of the jurisdiction, 6 months) beginning with that date unless renewed by order of the Court. Important: Directions for Acknowledgment of Service are given with the accompanying form.	The Claimant believes) that the facts stated in these particulars of claim are true. l * l am duly authorised by the Claimant to sign this statement Full name Name of Claimant's solicitors firm signed by ... position or office held: Solicitor C|aimant's or Claimant's solicitor's address to which documents or payments should be sent if different from overleaf including (if appropriate) details of DX, fax or e·mail".

Our conclusions drawn on the study of documents n°1 and 2

The 2010 Claim form is easier to complete. The legal language used in document n°2 is more straightforward. Document n°1 contains words such as 'writ', 'issue', 'service', 'to satisfy the claim' etc., which are not easy to understand by the lay litigant. The only difficulties in document n°2 are to differentiate between Claimant (who must fill in the form or instruct a solicitor to do so) and Defendant (i.e. his opponent) and to know whether the Claim raises any Human Rights issues.

Document n°3: 1991 Statement of claim	**Document n°4: 2010 Particulars of claim**
In additional furtherance of the aforesaid authority issued by the Seventh Defendant acting as aforesaid the said Mr Smith on (date) 1991 telephoned the first-named P1aintiff's wife in an attempt to ascertain the first-named Plaintiff‘s movements and shortly thereafter trespassed upon the first- named Plaintiff‘s home premises for the purpose of removing the said vehicles retained by the first-named Plaintiff in the circumstances aforesaid when he well knew that if the true purpose of his visit had been made known to the first- named P1aintiff‘s wife she would have forbidden him to enter the said premises and whilst there wrongfully intimidated her and improperly alleged that it was a criminal offence to withhold information from him concerning the whereabouts of the said vehicle and in so acting (in particular following upon the incident described in Paragraph (number) above) and by his unauthorised presence on the said premises placed her in fear for her own safety and that of her family and thereby assaulted her.	1. The First Defendant is the developer of a site at (address) ('the Development"). 2. The Second Defendant was and is a firm of solicitors practising from (address). 3. The Claimants named above and listed in the Schedule attached exchanged contracts on or about (date) 2007 to purchase flats to be constructed as part of the Development. Further particulars are set out in the Schedule. 4. The Second Defendant acted tor the First Defendant in the said conveyancing transaction. 5. Clause (number) of the respective Contracts of Sale provided (…). (...) 14. The First Defendant has neglected and/or refused to return the deposits, moneys claimed and interest due by the deadline imposed (4 p.m. On (date) 2009) or at all. 15. Further or in the alternative, the Second Defendants' act of releasing the deposits held to the First Defendants mortgagees prior to Clause 5.3 of the Conditions of Sale being complied with constituted a breach of the duties owed by the Second Defendant as stakeholder to the Claimants such as to make the Second

	Defendant liable to account to the Claimants for any loss sustained by them as a result of the First Defendant's inability to repay the deposits and accrued interest (...).

Our conclusions drawn on the study of documents n°3 and 4

The 1991 extract is one single convoluted sentence. It is unintelligible by the lay litigant and would even require concentration from the trained lawyer. The concentration of 'furtherance', 'aforesaid', 'thereafter', 'said' and 'thereby' is a perfect example of pre-1999 legal jargon. Conversely sentences in document n°4 are much shorter and therefore more striking. The words used are simpler. However we may still denounce a number of alliterations ('was and is', 'and/or') or tautologies which may put off the lay litigant.

4 Conclusion

Mark Twain is alleged to have said: "I'm sorry this letter is so long, but I did not have time to make it shorter". This is often ironically used in relation to the legal profession (in. Cox, 2007). Another perception of lawyer talk is that: "It's not the obviously technical terms, which can be a pain to understand. It's the less obvious terms, the ones which have developed everyday senses (...) like 'cause', 'answer', 'process', 'title' (…)" (Crystal. 2002: 116).

Even though the Woolf reform of 1999 (initiated by the Conservative government) might be construed as a publicity stunt from the New Labour government which aimed at showing its will to make justice easier of access for lay people, our study (which is the first one carried out post-Woolf on the linguistic aspect of the reform since its implementation) tends to show that at least from a language approach, this purpose was partly reached although there is still room for improvement. All the actors to the reform have shown that they are not as set in their ways as one could expect and it looks like legalese is on the wane. For those studying legal English (and those teaching it) this represents a major improvement as finally legal documents in England and Wales might become more approachable and easier to understand.

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Medicina convencional y alternativa: un estudio sociopragmático del paratexto de los «agradecimientos»

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Keywords: *conventional medicine, alternative medicine, acknowledgements, socio-cognitive/socio-technical networks*
Palabras clave: *medicina convencional, medicina alternativa, agradecimientos, redes sociocognitivas y sociotécnicas*

Abstract

We here report the findings of a content analysis of acknowledgments in 50 English-language medical research papers published in the period 2004-2005 in conventional and alternative medicine journals. Our results show a series of differences between the articles included in both types of biomedicine, related not only to the number of authors per article and their nationality, the number of acknowledgments, their type and length, but also to the number of funding sources and the kind of funds received to conduct the research. These differences would reveal that in the field of alternative medicine research tends to be less collaborative and interdependent than in the field of conventional medicine, thus underlining the recency of this type of research and, consequently, of its socio-technical and socio-cognitive networks.

Resumen

En esta comunicación, presentamos los resultados de un análisis de los agradecimientos incluidos en 50 artículos de investigación escritos en inglés y publicados en el periodo 2004-2005 en revistas de medicina convencional y alternativa. Nuestro estudio ha puesto de relieve una serie de diferencias entre los artículos pertenecientes a ambos tipos de biomedicina, relacionados no sólo con el

número de autores por artículo y su nacionalidad, el número de agradecimientos, su tipo y su longitud, sino también con el número de fuentes de financiación y la clase de ayuda financiera recibida para llevar a cabo la investigación. Estas diferencias serían testigo de que en el ámbito de la medicina alternativa, la investigación tiende a ser menos colaborativa y menos interdependiente que en el campo de la medicina convencional, lo que subrayaría el carácter reciente de este tipo de investigación biomédica y, en consecuencia, de sus redes sociotécnicas y sociocognitivas.

1 Introducción

El paratexto de los «agradecimientos» es una práctica muy común en el universo académico, de ahí que se haya analizado su presencia en numerosas disciplinas. Recordemos los estudios de Verner (1993) en astronomía, Heffner (1981) y Laband y cols. (2002) en biología, Giles y Councill (2004) en ciencias computacionales, Cronin y cols. (1992), Cronin (1995), Giles y Councill (2004) o Cronin y Franks (2006) en ciencias de la información. De esta faceta del repertorio retórico también se han ocupado Heffner (1981) y Cronin (1995) en ciencias políticas, Cronin y cols. (1993) en ciencias sociales, Laband y Tollison (2000) y Laband y cols. (2002) en economía, Cronin (1995) en filosofía o McCain (1991) en genética. Y no se deben dejar de lado los trabajos realizados sobre este mismo tema por Giannoni (1998, 2002, 2005) en lingüística, Cronin y cols. (2004) en química, Heffner (1981) y Cronin (1995) en psicología o Patel (1973) y Cronin (1995) en sociología.

De los agradecimientos, no ya en los artículos de investigación sino en las memorias de licenciatura y tesis doctorales en numerosas disciplinas, han versado asimismo algunos trabajos de Hyland (2003, 2004) y Hyland y Tse (2004). De hecho, tan grande es el valor que la comunicación académica anglosajona actual le atribuye a este apartado, que se ha incluso sugerido que debería formar parte de un *reward triangle* junto con las secciones de autoría y citación (Cronin 2005: 176).

2 Objetivo/muestra

Nuestro objetivo en este trabajo ha consistido en analizar, desde un punto de vista sociopragmático, el paratexto de los agradecimientos incluidos en una muestra de 50 artículos de investigación, escritos en inglés y publicados en los años 2004 y 2005 en revistas pertenecientes a dos campos biomédicos diferentes, medicina convencional y medicina alternativa, para averiguar si existen diferencias o similitudes entre ambos tipos de biomedicina con respecto al tema de investigación abordado. Los artículos con los que hemos trabajado han sido extraídos de las revistas *The New England Journal of Medicine* y de *The Lancet* (25 artículos) y *The Journal of Complementary and Alternative Medicine* y de *Bio Med Central* (25 artículos).

3 Metodología

Hemos desarrollado nuestra labor investigadora en dos etapas. En la primera, hemos analizado las variables siguientes:

- Autoría de la muestra objeto de estudio (Tabla 1)
- Presencia de agradecimientos (Tabla 2)
- Financiación de las investigaciones (Tabla 3)

En la segunda etapa, hemos procedido a la clasificación de los diferentes tipos de agradecimientos (Tabla 4) y de los organismos financiadores (Tabla 5). La ordenación de los agradecimientos se ha realizado siguiendo una versión modificada de la tipología basada en siete categorías propuesta por Cronin (1995), Hyland (2003) y Giles y Councill (2004):

1) apoyo moral (agradecer a alguien su entusiasmo, ánimo y consejos).
2) apoyo instrumental/técnico (suministro de equipos, infraestructura y muestras, ayuda en la recolección de datos y en la preparación de muestras).
3) apoyo financiero (dinero recibido).
4) apoyo conceptual, también denominado «académico» (Hyland 2003) o *peer-interactive communication* (PIC) (McCain 1991: 512) (comentarios sobre el manuscrito, sugerencias, opiniones críticas).
5) apoyo de secretariado/oficina (pasar a limpio el trabajo realizado, hacer fotocopias).
6) apoyo editorial/lingüístico (revisión de pruebas, corrección del manuscrito).
7) apoyo sin clasificar cuando, por su ambigüedad o ausencia de pistas contextuales, los agradecimientos no se ajustaban a ninguna de las categorías anteriores.

4 Resultados

Con respecto a la autoría de la muestra objeto de estudio, la Tabla 1 indica que la media de autores por artículo en la medicina convencional es de 9,12 frente a 4,8 en la medicina alternativa, es decir, prácticamente la doble en la primera muestra que en la segunda. El corpus de medicina convencional incluye 13 artículos firmados por investigadores de origen anglófono (Australia, Canadá en su zona británica, Estados Unidos de Norteamérica, Nueva Zelanda y Reino Unido). En el corpus de medicina alternativa figuran 11 artículos escritos por autores pertenecientes al ámbito anglosajón, por lo que no existen diferencias dignas de resaltar en este apartado. Donde si se aprecia una diferencia considerable entre las dos modalidades de biomedicina es en el número de artículos con autoría anglófona y el número de artículos procedentes de otros países europeos y asiáticos. Así, la muestra de medicina convencional contiene ocho artículos escritos por autores anglófonos y de otras nacionalidades, principalmente europeas, como Alemania, Chequia, China, Dinamarca, España, Francia, Georgia, Grecia, Italia, Noruega, Países Bajos, Polonia, Rumanía, Rusia, Suecia, Suiza y Vietnam. Por el contrario, en medicina alternativa, sólo dos artículos están firmados conjuntamente por autores de China, Estados Unidos de Norteamérica y Trinidad/Tobago, es decir, en esta segunda muestra el número total de artículos con un componente autorial anglosajón asciende a 13 frente a los 21 artículos de la medicina convencional.

En cuanto a los artículos firmados sólo por autores europeos procedentes de países no anglófonos (Alemania, Dinamarca, Francia y Países Bajos), su presencia es muy similar en las dos muestras: cuatro artículos en medicina convencional y tres artículos en medicina alternativa. En el corpus de medicina alternativa, se incluyen también un artículo escrito por autores nigerianos y ocho artículos obra de autores asiáticos (China, India, Irán, Tailandia, Taiwán y Vietnam), por lo que el total de artículos escritos por autores con un origen no anglófono asciende a 12 artículos en esta muestra y a cuatro en la de medicina convencional.

Autores	Med. convencional	Med. alternativa
Media de autores por artículo	9,12	4,8
Artículos escritos por autores anglófonos	13	11
Artículos escritos por autores anglófonos y de otras nacionalidades europeas y asiáticas	8	2
Total de artículos con un componente autorial anglófono	21	13
Artículos escritos por autores europeos no anglófonos	4	3
Artículos escritos por autores africanos	----	1
Artículos escritos por autores asiáticos	----	8
Total de artículos escritos por autores no anglófonos	4	12

Tabla 1: Autoría de la muestra objeto de estudio

Con referencia a los agradecimientos, en la Tabla 2 se puede ver que están incluidos en los 25 artículos de la muestra de medicina convencional, mientras que sólo aparecen en 22 artículos de la muestra de medicina alternativa. El número total de actos de agradecimientos en este segundo tipo de medicina es de 66 frente a 125 en la muestra de medicina convencional. La media de palabras del paratexto de los agradecimientos es de 82,59 en la categoría de medicina convencional y de 54,22 en la de medicina alternativa. El número de personas identificadas por su apellido a las que se agradece su colaboración es de 119 en la medicina convencional y de 46 en la medicina alternativa, con una media de 5,6 y 1,8 de personas agradecidas, respectivamente.

Agradecimientos	Med. convencional	Med. Alternativa
Artículos con agradecimientos	25	22
Actos de agradecimientos	125	66
Media de palabras de los agradecimientos	82,59	54,22
Personas agradecidas identificadas	119	46
Media de personas agradecidas identificadas	5,6	1,8

Tabla 2: Presencia de agradecimientos

Los destinatarios de los agradecimientos no identificados por su apellido son a grandes rasgos idénticos en ambos grupos de artículos: equipos de enfermeras y paramédicos, médicos residentes, voluntarios, pacientes y sus familiares, instalaciones, hospitales, centros de salud, universidades, etc. Digno de resaltar por su originalidad es un artículo de medicina alternativa en el cual se agradece la colaboración de caballos en terapias ecuestres con discapacitados.

En la Tabla 3 se indica que el número de artículos financiados asciende a 24, con un porcentaje de 96, en la muestra de medicina convencional, y a 15, con un porcentaje de 60, en la de medicina alternativa. 28 son los organismos financiadores en este segundo tipo de medicina frente a 74 en el corpus de medicina convencional, lo que hace una media de 3 organismos que han aportado fondos para las investigaciones en esta categoría de biomedicina, y de 1,8 en la de medicina alternativa. La muestra de medicina convencional incluye cuatro artículos en los que los patrocinadores han colaborado de forma directa en el estudio (diseño, revisión de la versión final, etc.), hecho que no se da en el corpus de medicina alternativa. En cuanto a la mención de un conflicto de intereses, es decir, que uno o varios de los autores del artículo trabaja para una o varias de las compañías que han financiado la investigación, aparece en seis artículos de la muestra de medicina convencional y sólo en un artículo del corpus de medicina alternativa.

Financiación	Med. convencional	Med. alternativa
Artículos financiados	24 (96%)	15 (60%)
Organismos financiadores	74	28
Media de organismos financiadores por artículo	3,0	1,8
Artículos con participación personal de patrocinadores	4	----
Artículos con conflicto de intereses	6	1

Tabla 3: Financiación de las investigaciones

La Tabla 4 recoge la clasificación por categoría del número total de agradecimientos presentes en la muestra objeto de estudio. Así, se puede comprobar que, aunque la frecuencia de cada una de las siete categorías de financiación difiere de un tipo de medicina a otra, sigue básicamente el mismo patrón. Las dos primeras posiciones en la escala de frecuencia las ocupan los apoyos de tipo financiero: 74 actos de agradecimientos con un porcentaje de 59,2 en la muestra de medicina convencional y 28 actos de agradecimientos con un porcentaje de 42,4 en la muestra de medicina alternativa. A continuación figura el apoyo de índole instrumental/técnica: 30 paratextos de agradecimientos y 24% en medicina convencional frente a 19 actos de agradecimientos y 28,8% en medicina alternativa. En tercer lugar aparece la ayuda conceptual/académica: 12 secciones de agradecimientos y 9,6% en los artículos de medicina convencional, y nueves secciones de agradecimientos y 13,6% en los artículos de medicina alternativa. Estos tres tipos de apoyo suman ya, ellos solos, el 92,8% en medicina convencional y el 84,8% en medicina alternativa de toda la ayuda recibida.

En las siguientes posiciones, por orden consecutivo y ya bastante alejados en la escala de frecuencias, figuran las ayudas de índole moral (tres actos de agradecimientos y 2,4%, tanto en medicina convencional como alternativa), las de tipo editorial/lingüístico (dos secciones de agradecimientos con un porcentaje de 1,6 en medicina convencional y tres secciones de agradecimientos con un porcentaje de 4,5 en medicina alternativa) y las colaboraciones sin clasificar (dos actos de agradecimientos con 1,6% en medicina convencional y tres actos de

agradecimientos con 4,5% en medicina convencional). En último lugar figura el apoyo relacionado con labores de secretariado y oficina: dos secciones de agradecimientos con 1,6% en medicina convencional y una sección de agradecimientos con 1,5% en medicina alternativa.

Tipos de agradecimientos	Med. convencional	Med. alternativa
Financiero	74 (59,2%)	28 (42,4%)
Instrumental/técnico	30 (24%)	19 (28,8%)
Conceptual/académico	12 (9,6%)	9 (13,6%)
Total parcial	92,8%	84,8%
Moral	3 (2,4%)	3 (4,5%)
Editorial/lingüístico	2 (1,6%)	3 (4,5%)
Sin clasificar	2 (1,6%)	3 (4,5%)
Labores de secretariado/oficina	2 (1,6%)	1 (1,5%)
Total de actos de agradecimientos	125 (100%)	66 (100%)

Tabla 4: Tipos de agradecimientos

Con respecto a los organismos financiadores, la tabla 5 señala que los fondos aportados a la medicina convencional proceden de 46 institutos de investigación (61,2%), seguidos de 21 laboratorios farmacéuticos (28,5%) y siete instituciones educativas (9,4%). En cuanto a los organismos que han financiado la investigación en la medicina alternativa, están compuestos por 23 institutos de investigación (82,1%), es decir, la mitad que en el campo de la medicina convencional, y cinco instituciones educativas (17,8%). Digna de resaltar es la ausencia de los laboratorios farmacéuticos en la lista de organismos financiadores en la medicina alternativa.

Organismos financiadores	Med. convencional	Med. alternativa
Institutos de investigación	46 (61,2%)	23 (82,1%)
Laboratorios farmacéuticos	21 (28,5%)	----
Instituciones educativas	7 (9,4%)	5 (17,8%)
Total de organismos financiadores	74 (100%)	28 (100%)

Tabla 5: Tipos de organismos financiadores

5 Discusión

De acuerdo con nuestra investigación, en la medicina convencional del contexto biomédico anglosajón actual predominan los artículos escritos por autores anglófonos. Por el contrario, en la medicina alternativa el predominio corresponde a autores de otras nacionalidades, principalmente asiáticos.

La inclusión de paratextos de agradecimientos en nuestra muestra de biomedicina viene también a corroborar los resultados de otros estudios realizados en los diversos campos científicos aludidos anteriormente en la introducción de esta comunicación (filosofía, genética, lingüística, química, psicología, sociología, etc.). No obstante, los actos de agradecimientos relacionados con la ayuda de índole conceptual/académica tienen una frecuencia muy baja en ambos campos biomédicos en comparación con otras disciplinas como la astronomía, las ciencias computacionales, las ciencias de la información, la filosofía, la historia, la psicología o la sociología (Cronin 1995, Cronin y cols. 2003) y con las memorias de licenciatura y tesis doctorales en numerosas disciplinas (Hyland 2003). Además, los actos de agradecimientos más frecuentes en los dos tipos de medicina analizados son los de índole financiera e instrumental/técnica, lo que reflejaría, por un lado, la importancia de la ayuda económica aportada por los patrocinadores y, por otro, el carácter colaborativo de la investigación en el aludido contexto que, al igual que la de otros ámbitos científicos, implica la interdependencia de sus miembros que trabajan en equipo y se intercambian materiales con frecuencia.

Sin embargo, los datos cuantitativos aportados en este estudio sugieren que la labor investigadora realizada en el ámbito de la medicina alternativa, aun siendo colaborativa, lo es en menor grado que la llevada a cabo en el campo de la medicina convencional, pues los artículos los firman menos autores (media de autores por artículo: 4,8 vs. 9,12) y menos variada es su procedencia. Asimismo, menor es también el número de actos de agradecimientos (66 vs. 125), de los destinatarios de dichos agradecimientos (46 vs. 119) y de los organismos financiadores (28 vs. 74), entre los que, por cierto, no se incluyen los laboratorios farmacéuticos. En consecuencia, más reducido es el espacio ocupado por dichos agradecimientos (media de palabras: 54,22 vs. 82,59).

El hecho de que la industria farmacéutica esté ausente de la lista de patrocinadores no es de extrañar, pues probablemente no estará particularmente interesada en los tratamientos herbales, la acupuntura o la homeopatía, por citar sólo algunas de las técnicas utilizadas en medicina alternativa. Todo ello pone de manifiesto los hechos siguientes: 1) el entramado de la medicina alternativa no está tan establecido como el de la medicina convencional; 2) su carácter es más reciente –la mayoría de las revistas de medicina alternativa hicieron su aparición en la década de los años setenta (Brodin y Danell 2004)–; 3) sus redes sociotécnicas y sociocognitivas están menos desarrolladas que las de la medicina convencional. De este menor desarrollo es también testigo el hecho de que la ayuda financiera sólo alcance al 60% de los artículos derivados de dicha investigación frente al 96% de los incluidos en el corpus de medicina convencional, lo que indicaría que este tipo de apoyo es crucial para las actividades biomédicas actuales, independientemente del parámetro en el que se encuadren, ya sea medicina convencional o medicina alternativa.

6 Conclusiones

Los resultados alcanzados en nuestro estudio son testigos de que el paratexto de los agradecimientos es un fiel reflejo de las deudas interpersonales en las que se apoya la ciencia para su construcción y avance. Las razones de dichos agradecimientos son similares en los dos campos de investigación biomédica analizada, la convencional y la alternativa, siendo las más frecuentes las de tipo financiero seguidas de las de índole instrumental/técnica y conceptual/académica. Sin embargo, el menor número de autores por artículo y sus orígenes menos variados, la menor cantidad de agradecimientos, de sus destinatarios y de fuentes de

financiación y, en consecuencia, el espacio más reducido ocupado por los actos de agradecimientos en la medicina alternativa en comparación la medicina convencional, también ponen de relieve las diferencias existentes entre las dos modalidades de medicina, además de subrayar el reciente carácter investigador de la primera. Estas diferencias observadas son en cierto modo lógicas, ya que se trata de dos clases de investigación médica, aunque las similitudes encontradas indicarían que la medicina alternativa se está acercando a la medicina convencional y que está recurriendo cada vez más a métodos de investigación más modernos y oficialmente reconocidos como válidos en el mundo occidental.

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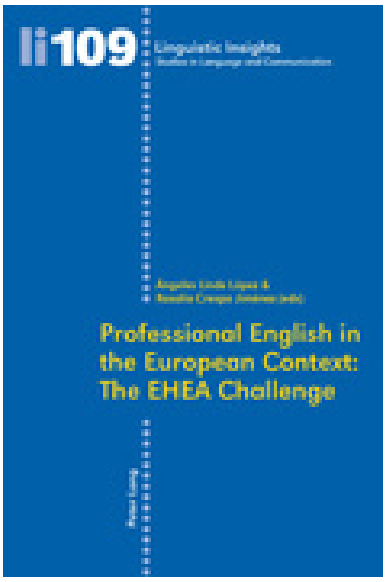
Book Review



Professional English in the European Context: The EHEA Challenge

Ángeles Linde López & Rosalía Crespo Jiménez (eds.)

In the series Linguistic Insights, Studies in Language and Communication, Vol. 109.

Peter Lang AG., Switzerland (2009), 374 p.

ISBN: 978-3-0343-0088-9 pb.

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The volume addresses a number of significant issues for professional English education in the European Higher Education Area (EHEA) at the beginning of the 21st century, and in the introduction to the volume, López appropriately points out the five main challenges that tertiary education in general and EPP in particular will be faced with at this point: expansion and diversification, fiscal pressure, orientation of the market, accountability, and quality and efficiency. These five challenges are addressed as vital to the positioning of EPP in the EHEA framework for the years ahead.

The volume is organized into three main sections, focusing on issues in English for Professional Purposes (EPP) approaches, examples of specialized language analyses, and EPP students' perceptions, attitudes and motivation.

The four contributions in the EPP approaches section takes two relevant foci into consideration, firstly the usefulness of ICT in the study, teaching and learning of EPP (and

beyond), and secondly a more education policy-oriented view of the situation and possible future directions for EPP in the EHEA. The four contributions in this section contain interesting, relevant and instructional examples of the issues addressed and attempt to point a direction ahead for the EPP area in a European context with the challenges and possibilities held there.

The specialized language analyses section contains six very different contributions to the study of EPP genres and registers; the section addresses as diverse examples as textile English, maritime English, legal English (two contributions), science English and aero English – here the relevance of looking to the five main challenges, particularly those of market orientation, accountability and quality and efficiency becomes especially pertinent, and the contributions are significant towards positioning EPP in the consciousness of the tertiary education sector and its customers.

The third section explores different perspectives on students' perceptions, attitudes and motivation towards both learning and using EPP in connection with their studies and upon graduation. This reviewer finds this section particularly interesting since it reflects the growing realization among tertiary education sector teachers that first of all tertiary education teaching and learning should be seen as a process that takes place in collaboration among students as well as between students and teachers, and secondly it ties in well with the fact that especially ICT tools have been proving themselves in recent years as tools that do indeed support this collaboration process.

In the opinion of this reviewer, the current volume is well worth reading, since it provides a solid and updated 'snapshot' of the current situation of the field of EPP in EHEA and points to interesting and relevant ways ahead for a further development of and within the field; my only small regret is that the volume reflects very little of what goes on in the field in Northern or Eastern Europe – the contributions demonstrate clearly that the researchers of the field in the southern part of Europe are doing high-quality, cutting-edge work in the area, which is highly important, and I can only hope that a possible future follow-up volume would show that the research going on in other parts of Europe is equally relevant and contributing to a pan-European development in the field.

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Book Review

Terminología y Sociedad del conocimiento

Amparo Alcina, Esperanza Valero & Elena Rambla (eds.)

Peter Lang AG., Switzerland (2009), 408 p.

ISBN: 978-3-03911-593-8

www.peterlang.com

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As pointed out by the main editor in her introductory chapter, the idea of this book developed during the running of two summer courses ('Terminología y Sociedad del Conocimiento' and 'Terminología e Ingeniería Lingüística'), both of them held at the Universidad Jaume I of Castellón (Spain) in 2004 and 2006 respectively. The aim of those activities was to present the progress in language technologies that could have an impact on terminology. And it is in fact to this idea that we can ascribe the main virtues and the inevitable limitations of the edition.

Among the virtues, we should single out a good selection of authors from the world of Spanish research, as most of them are leading researchers in the fields of their respective contributions. Some of the authors offer panoramic reviews of the state of research in their field: Ricardo Baeza-Yates, from Yahoo Research, on information retrieval; Celia Rico, from Universidad Europea de Madrid, on automatic translation; Antonio Moreno, from Universidad Autónoma de Madrid, on linguistic engineering; Jordi Porta, of the Real

Academia Española, on quantitative techniques of corpus exploitation; Rosa Estopà and Jorge Vivaldi, of the Institut Universitari de Lingüística Aplicada at Universitat Pompeu Fabra, Barcelona, on automatic extraction of terminology; Horacio Rodríguez, from Universitat Politècnica de Catalunya, Barcelona, together with the group made up of Guadalupe Aguado, Inmaculada Álvarez and Antonio Pareja, from Universidad Politécnica de Madrid, on semantic annotation for the processing of natural language.

Other contributions, even preserving the tone of panoramic presentations typical of the teaching framework for which they have been created, focus on the development of specific linguistic resources, or on the use of specific computing tools: Carlos Subirats of the Universitat Autònoma de Barcelona introduces the FrameNet Español project; Pamela Faber of the Universidad de Granada, and Ismael Sanz and Ernesto Jiménez-Ruiz of the Universidad Jaume I of Castellón, illustrate the edition of ontologies through their respective research experiences; Rosa Castro explores the use of the Pathfinder Network terminology tool, developed for the indexation of publications; Amparo Alcina of the Universidad Jaume I of Castellón and Clara Inés López-Rodríguez of the Universidad de Granada focus in their respective chapters on the use of various combined techniques for the extraction of knowledge – Alcina in her Ontodic project, and López-Rodríguez in her Onco Term and Ingeniería de Puertos y Costas projects, of the group co-ordinated by Pamela Faber.

Differently from the two groups of contributions above is that of Purificación Fernández Nistal of the Universidad de Valladolid. If the previous contributions focus on the development of technologies and of use for terminological work, she carries out a critical reflection on the competencies on the training of translators, and shows its concern that translation studies and staff focus exclusively on technological skills and leave aside the necessary acquisition of expert knowledge for a specialised quality translation.

Once the theme review of the contributions by the various authors has been done, it must be pointed out that one of the limitations of the edition is the non existence of a unitary conception for the book. If the editors sought to elaborate a manual for students, the selection of the first block of contributions could have been extended to other aspects of terminology related to the non-attended technology – terminology data banks, automatic classification of documents, follow-up of terminological implementation, and so on. If the editors, on the other hand, had sought to elaborate a monographic work on specific advances in the binomial terminology and language technologies – what some have come to call terminotics – the second group of contributions would have become insufficient, as there is a mixture of presentations about own developments with experiences of use of commercial tools. In summary, it would be two books in one – a university manual and a monographic piece of research. And both would have resulted a little too short.

The second limitation of the book, which cannot be attributed to the authors nor probably to the editors either, is the period of time that has taken place between the summer courses (2004 and 2006) that evolved into the elaboration of the final version of the texts by the authors, and the publication of the book (2009). In the first case, five years is too long a period of time in the field of technology, and evidently the book lacks an up-to-date bibliography, as could not be otherwise. When publications suffer such delays, it would be advisable that those responsible for the edition should fill this gap by providing a list of additional references.

The third weak point of the edition is the reduced level of interweaving between terminology and language technologies in some of the chapters. Terminology is missing in some of the contributions. Amparo Alcina, the main editor, already warns us in the introduction that the approach is a multidisciplinary and not an interdisciplinary one, but the reader cannot help asking herself how do they relate or how could some technological developments in terminology have an impact, as such is the main objective of the book. If in addition we take into account to whom the edition is addressed, basically postgraduate university students, it would not seem acceptable to think that those same readers should be the ones asked to fill the gaps of relevancy or of the applicability of the language technologies to the terminological activity. Thus a certain coming closer to the needs of terminology is missing in the chapters dealing with information retrieval (Baeza-Yates), linguistic engineering (Moreno) or semantic annotation of corpus (Rodríguez), to name but three of the more generalist chapters.

After this review of the least successful aspects of the edition, we should retake the positive elements that are obviously there. The selection of authors, as stated at the beginning, has been handled with care and appropriateness. Not all the important ones are there, but they constitute a representative sample of the leading points of research activity in terminology and in language technologies in Spain, and above all, in Spanish.

Some authors given excellent accounts on the state of the art, from which stem out proposals of future work. Ricardo Baeza-Yates talks about the use of the processing of natural language for the so-called systems for the retrieval of the future – prediction of future news. Celia Rico calls for the need to integrate advances in terminotics – formalised resources and management tools – in automatic and assisted translation systems. Antonio Moreno, despite championing automatic translation of spontaneous speech as one of the priority items of the future, also states that there is a comeback of the theoretical models towards the symbolic orientation versus statistics, and that the applications of the future will be multi-modal and should incorporate more languages, as both are challenges of the future of a great interest to terminology. Rosa Estopà, for her part, introduces as challenges of the future for automatic extraction of terminology the reduction of silence (non-retrieved pertinent units) through additional strategies and the adaptation of extractors to the needs of the different professionals that use them.

Some contributions can be considered to be fairly complete monographic works, as they offer the reader a clear synthesis of the techniques used in certain applications. We should single out here the contribution of Jordi Porta on the methods of quantitative analysis and the chapter on semantic annotation systems by Guadalupe Aguado, Inmaculada Álvarez and Antonio Pareja.

We have left for the end a reference to the introductory chapter by the main editor, Amparo Alcina. As may have been noticed, we have not in this review used the label of Knowledge Society to refer to the subjects dealt with in this book, as we consider that the selection of authors and of subject matters bring us closer to linguistic technologies exclusively, and they would only in part cover the so-called Knowledge Society. If we exclude this minor dissension, we would like on a closing note to acknowledge the valour shown by the editors in carrying out an edition of such characteristics, with content geared towards the training of young researchers.

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Colophon

The Journal is hosted by:

Department of International Culture and Communication Studies (IKK)
& Department of International Language Studies and Computational Linguistics (ISV)
Copenhagen Business School (CBS), Denmark

Web access to the electronic journal: **http://lsp.cbs.dk**

ISSN 1904-4135

Indexed in:

MLA International Bibliography – www.mla.org
Cambridge Scientific Abstracts (Linguistics and Language Behavior) – www.csa.com
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