English for Professional and Academic Purposes

Edited by
Miguel F. Ruiz-Garrido
Juan C. Palmer-Silveira
Inmaculada Fortanet-Gómez

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Section III. EPAP pedagogy

Current trends in
English for Professional and Academic Purposes

Miguel F. Ruiz-Garrido, Juan C. Palmer-Silveira and
Inmaculada Fortanet-Gómez

1   Introduction

Specialised languages usually refer to the specific discourse used by professionals and specialists to communicate and transfer information and knowledge. There are as many specialised languages as there are professions. This is what has usually been known as Languages for Specific Purposes or, when applied to English, English for Specific Purposes (ESP), i.e., the special discourse used in specific settings by people sharing common purposes. It is not our aim to define the term or to carry out a historical review of the topic, as many authors have already done so in the last 50 years (e.g., Gunnarson, 1994; Dudley-Evans and St John, 1998; Engberg, 2006). Neither do we want to get involved in the debate over whether English for Academic Purposes (EAP) should be considered a subfield of ESP or if they are now two different areas of teaching and research within Applied Linguistics. That is the reason why we are continuing with the term English for Professional and Academic Purposes (EPAP) introduced by Alcaraz-Varó (2000) (the original term in Spanish being *Inglés Profesional y Académico* (*IPA*)), one of the most prestigious and prolific scholars in Spain. He rested his view on the opinion of Widdowson (1998: 4), who stated that "All language use is specific in a sense", so that language serves a specific purpose wherever it is used. Therefore, we agree with Alcaraz-Varó (2000) in the sense that the term EPAP is much clearer and more specific to cover the domain we are dealing with here.

The relevance of English in academic and professional settings began some decades ago, in the 1960s, and it has not decreased. Orr (2002: 1) said that ESP "is an exciting movement in English language education that is opening up rich opportunities for English teachers and researchers in new professional domains". The spread of science and technology all over the world, together with the globalisation of the economy and the fact that the university world is becoming more international, has all helped to make the English language the current lingua franca of international communication. Despite the research carried out so far in the field, we still believe that much more ought to be conducted. As Orr (2002: 3) also points out:

> If systematic attention to actual needs continues to be its hallmark, ESP will clearly advance further in its study of specialized English discourse and in its development of effective methodologies to teach it.

From the title of the book it can easily be inferred that our volume is concerned with two main areas: Academic Purposes and Professional Purposes. Following Ypsilandis and Kantaridou (2007: 69), EAP "refers mainly to the academic needs of students and of future professionals who would seek a career in the academic environment" and English for Professional Purposes (EPP) refers to "the actual needs of (future) professionals at work". As this distinction is currently widely accepted by many scholars, it is also true that those two broad fields or categories also involve many different areas and fields of interest and research.

EPAP can cover hundreds of research topics as well as put them into practice in hundreds of academic and professional settings. For example, Hewings (2002) showed that EAP, including EST (English for Science and Technology), was the most common field of research in the *ESP Journal* and, at the same time, he found that text and discourse analysis was the most common topic scholars wrote about in the period of time observed. Hewings (2002) concluded by highlighting some new trends for the future, such as geographical internationalisation of authorship, analysis of more specific contexts, continued influence of genre analysis or corpus analysis, and the effect of English as an international language. A few years later, in an editorial of the ESPj, Paltridge (2009: 1) stated that:

> ESP research is clearly not the property of the English-speaking world, nor is it taking place solely in English-speaking countries. In ESP, English is the property of its users, native and non-native speakers alike, something that was called for some years ago by Larry Smith (1987) in his discussions of the use of English as an international language.

The present volume is a clear example of this international language and the geographical variation of authorship. Contributors are currently based in Europe, America and Asia, and they are a mixture of native and non-native speakers of English (if we can still maintain such a difference).

Some years earlier, Dudley-Evans and St John (1998: 19) said that "ESP is essentially a materials- and teaching-led movement" closely interlinked with Applied Linguistics and English Language Teaching. When looking deeper into the research trends or approaches in ESP, they refer especially to register analysis, rhetorical and discourse analysis, analysis of study skills, and analysis of learning needs. Similarly, and complementing Dudley-Evans and St John's ideas, Ferguson (2007: 9) pointed out that:

> a key motif in ESP/EAP research has been "difference": difference between academic disciplines, between professions, between genres and registers, between discursive practices; differences that, quite justifiably, have been explored in ever finer detail

drawing on ethnography, corpora and well as more traditional techniques of discourse analysis.

Many of the approaches used in the research and teaching of EPAP are illustrated in the present volume. Although certain approaches, such as genre analysis (Swales, 1990; Swales and Feak, 1994) or contrastive rhetoric (Connor, 1996), are shown as relevant in the volume, other aspects such as corpus linguistics, textual analysis, rhetorical analysis, interculturality/cross-culturality or the use of ethnographic tools are not neglected.

As for the fields of study, the contents of this book illustrate research on discourse and the teaching/learning process in different academic genres (research articles, acknowledgements or essays), and in some professional areas, such as business, health science, or science and engineering.

Concerning the pedagogical implications and applications of the research, we have devoted one section to this issue, apart from the specific references to the teaching/learning ideas included in most of the articles in the book. Some authors state that the application of research findings to teaching seems to be relatively limited (Poncini, 2006; Bocanegra et al., 2007), so we considered it necessary to include some articles dealing exclusively with teaching and learning the language. This section includes suggestions and tips on how to create materials, how to teach the writing of abstracts or essays better, different genres in discipline-specific writing, or the description of successful practices and a programme on English for Science and Engineering.

The group of researchers who lead the present project belong to the research group GRAPE (Group for Research on Academic and Professional English) and have been working on different EPAP projects for more than fifteen years. The selected contributors have different geographical origins, but all of them have proved to have an unquestionable level of scholarship in the ESP academic world. The aim of this book is to offer an overview of several topics within the domain of discourse analysis applied to English for professional and academic purposes. This volume is not intended to cover all the issues within ESP but to show current trends in the research being carried out on the field and to offer new ideas for the future. The chapters included in the present volume show diverse perspectives in specific English language research, from topical points of view (abstract writing, essay writing, health discourse, etc.) or from methodological standpoints (cross-cultural studies, contrastive rhetoric, corpus linguistics, etc.). English is an international language and is considered the language of communication in the academic and professional worlds, and our volume supports that idea by offering diverse cross-cultural and international perspectives on the topic. Therefore, the general aim of this volume is to show how the English language is analysed as both the discourse of and for effective communication in academic and professional settings. At the same time, it also seeks to find out

ways of applying the research to the teaching and learning of the English language.

We hope this new manuscript about the research and teaching of EPAP will be helpful for those involved or interested in the field. It is our aim that the contributions compiled in this book not only reflect different fields of current research but also disclose possible lines of work for the short-term future.

2   Contents

The first section of the volume is devoted to some topics of written academic English, from very specific language features to more generic studies based on academic genres. The second section deals with discourse in professional settings and how it may help professionals to improve their communicative skills. In the final section, we move into a more pedagogical standpoint of ESP, with examples of applications of research to the teaching of English.

In the first part of the book, four chapters present an overview of academic writing as an outcome of the work of international researchers. The authors of these chapters are mainly concerned with the difficulties users of English as a lingua franca may have when competing for publication with native speakers of that language.

The first chapter on EAP comes from Asia, from Sri Lanka, and deals with one of the most relevant topics at the moment in that part of the world, namely, the identification of peculiar characteristics of their own variety of English. In this chapter, Dushyanthi Mendis compares the use of phrasal verbs in academic and non-academic writing in Sri Lankan and British English. In order to frame her research, Mendis provides data from a survey in which most of the speakers of Sri Lankan English identify their language as a different variety to the one spoken in other parts of the world, though they still see British English – the colonial language – as the target language to be taught in schools. Mendis's results suggest that there is a different use of phrasal verbs in non-academic writing in Sri Lankan and British English. However, no relevant differences can be found when academic written discourse is compared. For this author, this indicates that although Sri Lankan English has evolved into a differentiated variety of English in more informal written genres, the hegemony of the British and American varieties of English in academic writing remains unchallenged for the moment.

The second chapter, by Carmen Pérez-Llantada, is a contrastive analysis of the use of epistemic lexical verbs by NS and NNS writers of research articles in English. She hypothesises that NNS may be at a disadvantage because they do not have a good mastery of frequency, functional and pragmatic intentions in the use of epistemic lexical verbs and this may have an influence on their acceptance rate for publication in an English-only research world. However, her results seem to prove that academic English is no longer so standardised

but is subject to culture-specific variability, which is not an obstacle for publication, since the articles analysed were published by Spanish researchers in prestigious biomedical journals.

In the third chapter, Françoise Salager-Meyer, María Angeles Alcaraz Ariza and Maryelis Pabón Berbesí present an article dealing with the acknowledgment sections of medicine research articles in four research publication contexts: Venezuela, Spain, France and USA. They argue the importance of these sections in medicine articles and analyse the differences that can be found when comparing the four contexts. However, acknowledgements are much less frequent and much shorter in non-English-medium journals and this seems to be due to cultural factors rather than to academic conventions.

The fourth chapter in this section deals with a contrastive analysis of academic writing. Ana I. Moreno claims the need to study the differences between the rhetoric habits of efficient Spanish and English writers, which should be observed, described and explained in a comparative way. This study should be complemented by questionnaires or interviews, which would shed light on the reasons why authors choose certain rhetorical expressions in their own language and not others. The results of this research can be very useful for teachers of English for research purposes, whose aim is to provide researchers with the necessary skills to produce efficient samples of research writing.

The second part of the book, devoted to Discourse Analysis within a professional framework, pays attention to the different genre repertoires that anyone can see when fulfilling their everyday professional duties. Thus, the most important aspect of this section is that all the contributors have based their efforts on the study of the English language that arises naturally within the professional settings analysed. In the four chapters forming this second section of the volume, the authors pay attention to different types of discourse observed in professional settings.

To start with, Philip Shaw observes how Swedish industrial doctoral students manage with writing, and how they improve their ability to do so when they are able to pay attention to its production conditions, as well as to their prospective audience. Technical reports, due to their high level of complexity, are discussed in detail by students in semi-structured interviews, in order to observe the fine nuances that take part in their creation. Shaw also pays attention to the main structural differences with classroom reports, which students are also compelled to write, thus creating an interesting writing repertoire.

The concept of audience is a recurrent theme when observing the contribution by Ulla M. Connor, Elizabeth M. Goering, Marianne S. Matthias and Robert Mac Neill, as they try to observe how patients manage when receiving information on the type of medicines they have to use. The type of

information (both oral and written) offered to these patients is analysed. The importance of this type of research goes without saying, as patients will only use certain specific medicines if they can trust the person (or laboratory) advising them to use them. The authors have observed that patients tend to rely most heavily on their physicians, whereas other sources of information are not so successful.

The importance of health discourse is also the focus in Inger Askehave and Karen K. Zethsen's contribution, where they observe that, within the professional discourse framework, this could be one of the most important areas, as it includes the analysis of rather diverse genres, from a very specific basis, i.e. physical and mental well-being. Genres within health discourse tend to be based, in the authors' opinion, on the intended target groups, which in turn rely on the communicative purpose that authors try to enclose within the message. In any case, legislation also plays a predominant role in order to show what can (or cannot) be said in this type of texts.

Whereas health discourse tends to focus on the person, corporate discourse focuses mainly on corporate identity, as Pilar Garcés-Conejos Blitvich points out. The use of "we" as an indicator of who the company is has been studied furthering greater detail in her chapter. The way that companies tend to identify themselves through the use of identity markers such as "we" implies many different ideas, and Garcés-Conejos Blitvich analyses the use of this pronoun in fifteen webpages, with a view to ascertaining how corporations construct their corporate identity by mixing human and social values with economic interests.

The final section focuses on the teaching of EPAP. ESP has always had a strong pedagogical bias, which justifies at least one section devoted to teaching perspectives. This section contains five chapters, three dealing with academic discourse teaching, and the other two with professional English tuition.

The first one is related to the teaching of professional English in an academic context, but it deals especially with a general topic which can be applied to the following articles: the creation of materials. Ana Bocanegra-Valle undertakes a thorough analysis of ESP materials, describing and evaluating existing ones as well as shedding some light on material design. She complements her description by adding the role that the teacher plays in the design, development and usage of the material (adapted, self-designed or of any other kind). She finishes by illustrating her previous explanations with some material she successfully uses in her classes of English for maritime purposes.

The second chapter deals with an academic discourse genre (the abstract) and how to teach it based on a recently published book (Swales and Feak, 2009). John M. Swales and Christine B. Feak explain several tasks, their purpose and suggestions about how to develop them. They show them as illustrations

of how to deal with the issue of writing abstracts, which may be of interest to scholars, researchers and students who are not specialists in English and regardless of their geographical origin. The main purpose of the tasks is to raise rhetorical awareness about the role of research article abstracts.

Also in an academic context, Ruth Breeze presents a study which compares two pedagogical approaches (textual analysis and rhetorical analysis) to teaching essay writing in English to undergraduates at a Spanish university. Results show that students in both groups improved, but the rhetorical analysis group made greater progress over the course of the programme, and wrote better final essays. The final outcome illustrates the complexity of teaching genre, and the author concludes that teachers in an EFL context should bring together the linguistic and textual aspects of writing and the rhetorical dimensions of the writing task, which are arguably more important for the overall quality of the written product.

In the fourth one, Julio Gimenez examines the teaching of writing on a discipline-specific academic course. He examines the nature and dynamics of this academic writing in three disciplines: nursing, midwifery and social work. He reports on the results of a survey completed by students from each discipline and the analysis of samples of authentic writing and interviews with some students and lecturers. His chapter ends with an examination of the implications for teaching discipline-specific writing that have resulted from the study.

In the final chapter of this section, Thomas Orr focuses on English for science and engineering. He begins by describing in specific detail the kind of English and supporting skills that ought to be taught at universities to students majoring in science and engineering. He also describes and illustrates how this kind of English can be taught, which leads him to the in-depth description of the exemplary programme he directs in Japan. Finally, he concludes with some recommendations on how the previous information can be successfully applied in other contexts.

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Section I

Discourse analysis of
English for academic purposes

Formality in academic writing: The use/non-use of phrasal verbs in two varieties of English

Dushyanthi Mendis

Phrasal verbs are characteristic of colloquial or informal language and tend to occur more in conversational speech genres than in academic discourse. Using a single Latinate verb instead of a phrasal verb is recommended by some EAP practitioners in the West in order to achieve a more formal tone in academic writing. How universal is this prescriptive notion? Does it apply to varieties of English that have developed their 'own', semantically unique, phrasal verbs? The distribution of phrasal verbs in a corpus of Sri Lankan English writing is investigated and compared to a similar corpus of British English in order to answer this question.

1   Introduction

English for Academic Purposes (EAP) is now accepted as a broad term that covers many types of academic communicative practices in pre-tertiary, undergraduate and postgraduate teaching, from designing materials and constructing classroom tasks to participating in classroom interactions including teacher feedback, tutorials, and seminar discussions, also writing journal articles, conference papers and grant proposals, as well as student essays, examination answers, and graduate theses (Hyland, 2006: 1). Of these, the texts that are subject to the closest scrutiny and evaluation are those that are written, not only because it is through such public discourses that disciplines "authenticate knowledge, establish their hierarchies and reward systems, and maintain their cultural authority" (Hyland, 2000: 1), but also because unpublished texts such as examination answers, undergraduate and postgraduate theses and dissertations are a rite of passage for gaining membership in different hierarchical levels of the academy. In addition, written texts have more permanency than their spoken counterparts (e.g., a lecture or a theses defense) as part of the growing corpus of academic discourse around the world.

The results of such scrutiny and evaluation can be seen in several areas, one of which is the identification of several common generic conventions in different types of academic writing. This has helped to develop new directions and more effective methodologies in EAP pedagogy, as evidenced by several textbooks aimed at developing and improving academic writing skills. (See, for instance, Swales and Feak, 2000, 2004; Bailey, 2003; etc.). However, this scrutiny has also served to reinforce and establish as standard the norms, conventions and rhetorical practices of certain academic discourse communities, especially those situated in the UK and the US. This in turn has served to disadvantage writers who do not belong to these 'privileged'

communities, and helped to marginalize their disciplinary contributions if seen as not maintaining the established standards mentioned above. This situation has not escaped the notice of EAP theorists and practitioners. Hyland (2006), for instance, quoting Gosden (1992) and Flowerdew (2001) draws attention to the challenges faced by academics who are not native speakers/users of British or American English, and whose contributions are vetted by editors, referees and other gatekeepers who frequently reject non-standard varieties of English (as they see them to be).

While such gatekeeping mechanisms might have gone unchallenged in the past, several developments in research, scholarship and the academy, as we know it, now demand a rethinking of these standards and practices, and most of all, of the hegemony of British and American English as the universal language varieties of research and publishing. There are several reasons for this. On the one hand, graduate student populations in the West are becoming increasingly diverse, with economic constraints pushing many universities and other research institutions to actively canvass and recruit international students who are required to pay higher tuition fees than their local counterparts. On the other hand, increasing competitiveness among the more prestigious research universities of the West and a perceived need for diversity in both critical thinking and scholarship has resulted in the recruitment of teaching and research staff who are not necessarily from contexts where English is used as a first or dominant language. Thus, as observed by Swales and Feak, "the traditional distinction between native and non-native speakers of English is becoming less and less clear-cut. In the research world, in particular, there are today increasing numbers of 'expert users' of English who are not traditional native speakers of that language" (2004: introduction). In addition, other varieties of English such as Indian English and Sri Lankan English have gained increased recognition and legitimacy through the field of study and research centered on World Englishes, and it can be argued that there is no reason why such varieties should be excluded from consideration in EAP.

This brings us to the central question of this paper: will we see a change in the traditional written discourse practices of the academy as a result of the infusion of 'new' and diverse voices and discourses, or will these voices accommodate to established traditions and rhetorical practices in fear of marginalisation? After all, as Swales (1997) observes in an article provocatively titled "Lingua franca or *Tyrannosaurus Rex*?", "there is a well-attested tendency of off-center scholars to try and publish their 'best in the West'" (cited in Hyland, 2006: 126), probably because they are all too aware that English is acknowledged as the world's predominant language of research and scholarship, and that the most prestigious and cited journals are published in English. Therefore, if the only way to succeed in gaining recognition of their work at an international level is to adhere to the rhetorical

practices and language use demanded by the gatekeepers of Western academic publishing, scholars and academics are faced with no choice but to do so.

Proponents of World Englishes would argue for the promotion of and development of other varieties of English, and for the acceptance and legitimization of creative new structures emerging from such varieties. However, a scholarly movement or discipline which advocates equality and recognizes more than one variety of English as legitimate may not be sufficient to initiate a paradigm shift in the traditional norms and conventions of academic writing, or a change in the ideology underlying the gatekeeping mechanisms mentioned by Swales (1997). For such a paradigm shift to occur, writers – whether junior or senior researchers or academics, or graduate or undergraduate students – must be willing to take a risk in using localized varieties and forms of English and to continue to do so even in the face of possible rejection.

2   EAP in Sri Lanka

This paper will focus on an analysis of academic writing in Sri Lanka, a country where English was introduced in the early nineteenth century as a result of British colonisation. Although the input variety was British English, the English used in Sri Lanka today, referred to as Lankan English (Kandiah, 1981) or Sri Lankan English (SLE), has features distinct from British English in terms of grammar, syntax and lexis as several descriptive as well as corpus-based studies have argued (Kandiah, 1981; Fernando, 2003; Meyler, 2007; Mendis and Rambukwelle, 2010). This is not surprising, given that English has been used as a vehicle of creative expression in Sri Lanka for many years, as demonstrated by a substantial body of literature in English produced by Sri Lankan authors from the beginning of the twentieth century; English is also the vehicle for research and scholarship in a variety of disciplines, with several academic journals of repute being published in English within Sri Lanka. The question, however, is what type or style of English is used for academic writing. Does the fact that Sri Lanka does provide opportunities for publishing in English (albeit not on the scale of India, Malaysia, etc.) empower writers to use a localized variety (i.e., SLE), or do they feel the need to avoid localized forms and adopt a medium of expression that is perceived as more 'international' or 'standardized', and which approximates the prescriptive norms of EAP?

This question will be investigated by focusing on a lexico-grammatical feature which according to Celce-Murcia and Larsen-Freeman (1999) is ubiquitous in informal registers of English, but which, according to Swales and Feak (2004: 18) is not very frequently found in academic writing as it is seen as a marker of informality:

> English often has two (or more) choices to express an action or occurrence. The choice is often between a phrasal verb (verb + particle) or a single verb, the latter with Latinate origins. Often in lectures or other instances of everyday spoken language, the verb + particle is used. However, in written academic style, there is a tendency for academic writers to use a single verb whenever possible. This is one of the most dramatic stylistic shifts from informal to formal style.

Phrasal verbs are, as indicated in the excerpt above, two or three-part structures which consist of a verb followed by what looks like a preposition, but which is commonly described as a 'particle', as it cannot be separated from the main verb. A unique semantic feature of phrasal verbs is that the verb + particle combination creates a meaning that is often non-compositional – i.e., it is not the meaning that would be derived by taking the individual meanings of the two parts and putting them together. This has led to the argument that phrasal verbs are metaphorical in nature, and are similar to other idiomatic formulaic expressions in English.

Phrasal verbs are interesting to this study for another reason: as is the case of other varieties of English, they are ubiquitous in SLE as well, especially in informal and colloquial registers. However, in addition to those that are readily recognizable, SLE also has several phrasal verbs which in British English have a metaphorical meaning not found in SLE, as well as a number of phrasal verbs which in British English would occur not as a phrasal verb but as a single verb without a particle (Meyler, 2007). A recently published dictionary of Sri Lankan English illustrates these two cases by means of the following examples. The first one is the SLE phrasal verb *put on* meaning 'to gain weight', and the second case is the phrasal verb *bring down*, used with the meaning 'to obtain' or 'to import' in SLE, which in British English would simply be 'bring' (Meyler, 2007: xvii):

[1] You've *put on* quite a bit since I last saw you!

[2] They're planning to *bring down* a specialist from the UK.

The existence of such localized or language-variety specific phrasal verbs in SLE has caused concern among some EAP practitioners and teachers of English as a second language who have noticed their infusion in some written academic genres. For instance, the following excerpts, taken from student responses to a question asked in an MA in English Language Teaching end-of-semester examination conducted by a tertiary level institution in Sri Lanka show the use of phrasal verb-type structures which would be labeled 'non-standard' or too informal for academic English from a prescriptive point of view.

[3] It does not mean that the teacher should not give the opportunity to the young children to *come out with* their problems, but adolescents may preffere (sic) more if the teacher gives opportunity to *come out with* their problems in a friendly manner.

[4] Task Based Language Teaching is one of the contemporary teaching methods that *draws up* the attention of the linguists and teaching practitioners at present.

The phrasal verb in excerpt [3] above (*come out with*) is recognizable as a structure found in SLE, but if one adheres to Bailey (2003), Swales and Feak (2004), etc., it should be avoided in academic writing because it has more formal equivalents – i.e., 'express' or 'articulate'. Excerpt 4 contains a phrasal verb (*draws up*) which in British English would simply be expressed by 'draws' to convey the intended meaning, and even in SLE would be considered non-standard.

3   Method: Research corpus

These data beg the question: does Sri Lankan academic writing in English flout certain generic and stylistic conventions in terms of the use of phrasal verbs, or is this use confined to unpublished academic genres written/composed with minimal preparation (e.g., student examination answers/essays) and which may perhaps be considered to be products of novice or non-expert writers? To investigate this question further, data from a pilot corpus of contemporary written SLE, compiled as part of the International Corpus of English (ICE) project, was analysed. Referred to as ICE-SL (International Corpus of English – Sri Lanka), the corpus will consist of 400,000 words of written SLE and 600,000 words of spoken SLE when completed. At present, six of the eight categories in the written component are available for analysis, totaling 300,000 words. These categories, with the number of words in each, appear in Table 1 below[1]. The categories not yet completed are non-professional writing and correspondence, which are not within the scope of this study.

ICE-SL Text category	Words
W2A – Academic writing	80,000
W2B – Non-academic writing (popular)	80,000
W2C – Reportage (news reports)	40,000
W2D – Instructional writing (for hobbies and skills)	40,000
W2E – Persuasive writing (press editorials)	20,000
W2F – Creative writing (novels and short stories)	40,000
Total	300,000

Table 1. Research sub-corpora

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[1] As reported for ICE-GB, and which is followed by all subsequently compiled ICE corpora. See http://www.ucl.ac.uk/english-usage/projects/ice-gb/design.htm

Of the published texts, W2A is the most formal written genre in the corpus, as it contains texts taken from academic journals covering the four areas of humanities, social sciences, natural sciences and technology. Texts in W2B are somewhat less formal in tone and style although similar in content. These texts are taken from magazines, newsletters and monthly publications with titles like *Business Today*. W2C and W2E are journalistic texts extracted from daily and weekly newspapers; W2D contains texts of an instructional nature, on how to learn a skill or adopt a new hobby. The final category, W2F, represents creative writing, and includes excerpts from Sri Lankan novels and short stories. All texts in the corpus are published after 1990.

For the purpose of this study, only the published texts were considered. Thus the primary research sub-corpus for this study is the texts in the categories W2A, W2B, W2C, W2D, W2E and W2F. In addition, the same text categories in ICE-GB, a corpus of contemporary British English, were searched for purposes of comparison with another variety of English. ICE-GB, which was released in 1998, is one of the earliest completed ICE corpora. It contains one million words of written and spoken British English, recorded between 1990 and 1993.

4   Results

The first step of analysis was to search the corpus for phrasal verbs using AntConc (version 3.2.1w). Since the number of phrasal verbs in English is considerable, some means had to be devised to construct an initial list for the search. This was done in two ways. First, a list was culled from Swales and Feak (2004), who identify phrasal verbs that have semantic equivalents which are single verbs, often of Latinate origin. Swales and Feak recommend that these single verbs are more suited to academic writing as they convey a more formal tone. This list appears in Table 2 below along with their frequencies of occurrence in the ICE-SL research sub-corpus. Seven phrasal verbs mentioned by Swales and Feak were not found in ICE-SL. These are *bring on* (to cause), *figure out* (to determine), *go down* (to decrease), *keep up* (to maintain), *look over* (to review), *run into* (to encounter) and *show up* (to appear).

Phrasal verb	Single-verb equivalent	Freq/1000	ICE-SL text file/s
look at[2]	consider	0.04 (14)[3]	W2A.012, W2B.001, W2B.012 (5), W2C.004 (2), W2C.007 (2), W2E.010, W2B.031, W2F.010
go up	increase	0.03 (8)	W2B.012, W2B.031, W2C.004, W2C.013 (3), W2E.006, W2E.007
look into	investigate	0.013 (4)	W2C.014, W2D.002, W2E.005 (2)
make up	constitute	0.007 (2)	W2C.018, W2E.009
get rid of	eliminate	0.007 (2)	W2D.013, W2F.013
find out	discover/investigate	0.007 (2)	W2B.031, W2F.010

Table 2. Frequencies of phrasal verbs listed by Swales and Feak (2004**)**

Secondly, a further list of phrasal verbs was culled from *A Dictionary of Sri Lankan English* (Meyler, 2007). Some of these phrasal verbs are distinctive to SLE in terms of structure (e.g., *cope up with*) while others are distinctive in terms of meaning (e.g., *make out*). The meaning of each phrasal verb as conveyed by their use in SLE, corroborated by Meyler (2007) as well as by corpus concordance data, is provided in the table below. Once again, seven phrasal verbs mentioned by Meyler as being distinctive to SLE were not found in the research sub-corpus. These were *bring down* (meaning to import), *bear up* (to endure), *finish up* (to complete), *fall onto* (to join), *go behind* (to chase after someone) and *go down* (to lose weight).

Phrasal verb	Meaning in SLE	Freq/1000	ICE-SL text file/s
put on	gain weight	0.007 (2)	W2D.015, W2F.017
cope up with	endure	0.007 (2)	W2B.031, W2E.008
caught up	involved in	0.007 (2)	W2C.009, W2D.002
come out with	express/articulate	0.007 (2)	W2C.019, W2C.020
get back	return	0.007 (2)	W2F.008, W2F.016
pass out	graduate	0.003 (1)	W2C.015

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[2] A wild card search was done to ensure that all lemmas such as *looks at*/*looking at* etc. would be counted. Phrasal verbs with irregular past tense forms (e.g., *brought on*/*went up*) that would have escaped a wild card search were searched for individually.
[3] Number of occurrences is given in brackets

make out	pretend	0.003 (1)	W2F.013
catch up	reach a target/improve	0.003 (1)	W2F.016
go through	read/examine/peruse	0.003 (1)	W2B.012

Table 3. Frequencies of phrasal verbs listed by Meyler (2007)

4.1   Analysis

Overall, the phrasal verbs in Tables 2 and 3 above have very low frequencies of occurrence in ICE-SL, except for *look at* and *go up*. The low frequencies may be due to the number of words in the research sub-corpus, which is admittedly small. Another possibility is that SLE phrasal verbs are more frequently found in genres of speech rather than in genres of writing; an assumption which cannot be corroborated at the present moment due to a lack of comparable corpus speech data.

Next, since the corpora of the ICE project are specifically designed to offer the possibility of comparing lexico-grammatical features across language varieties, an equivalent sub-corpus of British English (ICE-GB) was searched for occurrences of all the phrasal verbs considered in this study. The purpose of this search was to discover if the patterns of use found for phrasal verbs in written texts of ICE-SL are in any way similar to patterns in ICE-GB, since British English is the input variety of SLE, and also a variety which is considered an international standard for academic writing, along with American English. The results of searching the text categories W2A, W2B, W2C, W2D, W2E and W2F in ICE-GB are given below.

It will be noticed that the list of phrasal verbs in Table 4 is slightly different from the lists in Tables 2 and 3. This is because a total of 28 phrasal verbs were searched for in ICE-SL, culled from Swales and Feak (2000) and Meyler (2007). Of these, 13 were not found in ICE-SL and therefore do not appear in Table 2. Similarly, six of the phrasal verbs culled from Meyler were not found in ICE-SL, and thus do not appear in Table 3. To maintain consistency in the comparison, ICE-GB was also searched for the original list of 28 phrasal verbs. At this point, four that do not occur in ICE-SL were found to occur in ICE-GB. Thus Table 4 includes *keep up*, *show up*, *bring on* and *run into*, which do not appear in Tables 2 and 3.

Phrasal verb	Freq/1000 ICE-GB	Freq/1000 ICE-SL
look at	0.07 (21)	0.04 (12)
find out	0.0666 (20)	0.007 (2)
make up	0.023 (7)	0.007 (2)
keep up	0.023 (7)	0.00

get back	0.023 (7)	0.007 (2)
get rid of	0.0166 (5)	0.007 (2)
look into	0.013 (4)	0.013 (4)
go up	0.01 (3)	0.03 (8)
show up	0.01 (3)	0.00
bring on	0.0066 (2)	0.00
run into	0.0066 (2)	0.00
come out with	0.0066 (2)	0.007 (2)
put on	0.0033 (1)	0.007 (2)
catch up	0.0033 (1)	0.003 (1)

Table 4. Frequencies of occurrence of phrasal verbs in ICE-GB and ICE-SL

The only similarity in the data is that *look at*, meaning "to consider", is the most frequently occurring phrasal verb in both ICE-GB and ICE-SL. Beyond this, the frequency patterns are quite different. *Find out* (discover/investigate) has a much higher frequency of occurrence in ICE-GB (0.07/1000) when compared to ICE-SL (0.01/1000). *Make up* (constitute), *keep up* (maintain) and *get back* (return) are also more frequently found in ICE-GB than in ICE-SL. Overall, almost twice as many (84) tokens of phrasal verbs were found in the ICE-GB research sub-corpus as in ICE-SL (44). While this search is by no means exhaustive or complete, it seems safe to conclude at this point that phrasal verbs appear to have a higher frequency of use in contemporary British English than in contemporary SLE, as represented by the texts in ICE-GB and ICE-SL.

Since the focus of the present study is academic writing, a further tabulation was done of the distribution of phrasal verbs in each of the six text categories of ICE-SL considered here, so that the number of tokens in category W2A could be compared with the number of tokens in each of the other written categories. The results appear in Table 5 below.

Text category	ICE-SL	ICE-GB
W2A	1	10
W2B	17	29
W2C	14	14
W2D	4	13
W2E	7	3
W2F	7	15
Total	**44**	**84**

Table 5. Distribution of phrasal verbs (tokens) in ICE-SL and ICE-GB

The most significant finding here is that only one phrasal verb from those searched for occurs in the category W2A in ICE-SL, while 10 tokens were found in the same category of ICE-GB. The texts included in W2A are extracts from journal articles or book chapters and contain specialized vocabulary and terminology. Some of these texts present results of experimental research, and make references to diagrams and figures. Some contain citations, which are a distinctive feature of many types of academic discourse. Thus, an initial conclusion that can be drawn is that there is an avoidance of phrasal verb use in Sri Lankan academic writing in English, as represented by the texts in ICE-SL and the phrasal verbs searched for in this study. In ICE-GB, however, the picture is not so clear. Ten phrasal verbs were found in the category W2A, indicating that in British English, there appear to be less strictures on the use of phrasal verbs in academic writing.

Looking at some of the other corpus categories, the texts with the highest frequencies of phrasal verbs in both corpora are those of category W2B. This category contains informational texts of a popular nature – i.e., written for a non-expert audience. Because W2A and W2B share the same type of texts in relation to content – i.e., from the areas of humanities, social sciences, natural sciences and technology – the higher frequencies of phrasal verb use in W2B can be attributed to a difference in audience or readership. While the writers of W2A texts (especially in ICE-SL) seem to be more conscious of the necessity of maintaining a formal tone and therefore avoid the use of phrasal verbs, the writers of W2B type texts allow themselves a greater degree of informality as evidenced by their more frequent use of phrasal verbs. One might even argue that writers of popular informational texts are aware of the informality inherent in the use of phrasal verbs (even if this awareness does not operate at a conscious level) and therefore make a deliberate choice to use them rather than a more formal single verb which is semantically equivalent.

4.2   SLE phrasal verbs

Some of the phrasal verbs indicated by Meyler (2007) as either being unique to SLE or having a different meaning or structure to a similar phrasal verb in British English also show interesting patterns of distribution in ICE-SL. Given that these verbs (listed in Table 3) are those of the localized variety of English used in Sri Lanka, it is reasonable to expect that they would occur fairly frequently in the corpus – even, perhaps, more frequently than some of the phrasal verbs mentioned by Swales and Feak (2004). However, not a single phrasal verb listed in Meyler (2007) appears more than twice in the ICE-SL corpus.

This finding leads to interesting questions about the variety or varieties of English used in different genres of writing in Sri Lanka. Stylistically and lexically, in so far as phrasal verbs are concerned, extracts from academic

genres, whether books or journal articles, appear to approximate similar genres as they are described by EAP specialists or discourse analysts and seem to draw on an international variety of English. However, a stronger local flavour can be found in other, more informal genres of writing, as evidenced by the use of SLE phrasal verbs, some of which would be considered errors or examples of non-standard use by ELT and EAP practitioners. A few examples of these are given below.

[5] BSc degree, he later entered the Law College and *passed out* as an Attorney-at-Law. W2C-015

[6] As men, women and children began *putting on* weight, incidence of obesity, heart disease, canc   W2D-015

[7] unai, Hambantota, Monaragala find it difficult to *cope up with* the hardships they have to endure as litigan   W2E-008

The discussion so far and the findings of this study point to patterns of language use that can be related to the global norms and conventions associated with academic writing and EAP. First, prescriptive practices that dictate the avoidance of phrasal verbs to achieve or maintain a stylistic shift towards formality seem to be operating in the Sri Lankan context as well. Second, even though SLE has its own localized variety of English which has given birth to phrasal verbs unique in both meaning and structure, these phrasal verbs seem to be confined to genres of writing not considered 'academic'. This second point is perhaps not very surprising, in the light of the findings of a recent attitudinal study reported by Künstler et al. (2009) on the use of and awareness of SLE in Sri Lanka.

Künstler et al. draw their conclusions from a questionnaire survey conducted in late 2007 and early 2008 in Sri Lanka. Questionnaires were distributed at academic institutions in and around Colombo. In total, 122 Sri Lankan speakers of English, all from an academic background (e.g., lecturers and students at universities, teachers at secondary schools), participated in the survey. When asked what type of English is spoken in Sri Lanka today, Künstler et al. (2009) report that 62% of the respondents indicated "Other variety of English" which was an option provided in the questionnaire along with Received Pronunciation (RP)/Standard British English and General American English. Additionally, 30% of the respondents provided the label Sri Lankan English (SLE) for "Other variety of English" which reinforces their awareness of its existence[4].

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[4] Künstler et al. (2009) report that the informants also used the following terms to refer to a variety of Sri Lankan English: Standard Sri Lankan English (StdSLE), Sri Lankan Standard English (SLSE) and Lankan English (LE).

However, although 62% of the respondents of Künstler et al.'s survey seem to be aware of a localised variety of English, not all of them reported that Sri Lankan English is also their production goal. In fact, half of the informants surveyed named RP as their preferred target model. Even more significant to the focus of this paper are the answers received to the question "What kind of English do you think should be taught in Sri Lankan schools?": RP was the choice of half the respondents, with "Other variety of English" listed by only 38% of the respondents (Künstler et al., 2009). These responses echo the results of the corpus findings of the present study on the use of English for academic purposes. In spite of an awareness of the existence of SLE, there is still a tendency to reject it as a target model in teaching, and as a production goal for certain genres of writing.

It appears then, that the concerns expressed by Mauranen (1993), Swales (1997), Hyland (2006) and others in relation to the hegemonic nature of certain Western rhetorical practices in academic discourses as well as the 'standard' or "Inner Circle" variety of Englishes are justified. In fact, it seems as if the gatekeeping mechanisms mentioned by Gosden (1992), Swales (1997) and Flowerdew (2001) are not confined to Western academia but can also be found operating in multilingual contexts where an input variety of English co-exists with a localized variety. In fact, the comparison between W2A type texts in ICE-GB and ICE-SL in terms of phrasal verb use indicates that academic writing in SLE is more formal in tone and more rigid in terms of rhetorical practices than academic writing in British English. The question to ask here is if this is a result of Sri Lankan researchers and scholars being exposed to pedagogical practices in EAP of an overly prescriptive nature during undergraduate or graduate training in countries such as the UK or the US; or if there are certain features of written academic discourse that are accepted as universal – for instance, formality of tone. The first possibility points to adopted or learned academic practices inculcated to an extent where little or no deviance is allowed in the discourse that is produced, while the second points to a more intuitive understanding of a written genre, acquired through several years of immersion in its discursive practices.

5   Conclusion

With the development of varieties of World Englishes into more flexible, sophisticated and recognized codes not simply in their own local contexts but in a wider international linguistic space, it remains to be seen if any of these varieties will achieve a degree of legitimacy that will enable its acceptance and inclusion in academic writing. This will, of course, require a paradigm shift not only on the part of the gatekeepers, but also on the part of users as indicated by the discussion above. If what appears to be happening in Sri Lanka at present – i.e., a maintaining of a generic division between academic

discourse and more popular informational discourses continues to exist in terms of the disallowing of lexico-grammatical constructions of SLE, it would seem reasonable to conclude that, in spite of the diversification of the stakeholders of EAP, the hegemony exercised by varieties of British and American English as the world's predominant languages of research and scholarship – and perhaps the attendant pedagogical practices of EAP based on these varieties – remains unchallenged for the moment.

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The 'dialectics of change' as a facet of globalisation: Epistemic modality in academic writing[1]

Carmen Pérez-Llantada

This paper uses a section-coded corpus of research articles written in English by scholars from two cultural contexts (North American-based and Spanish-based) and articles written in Spanish by Spanish scholars to conduct an intercultural and interlinguistic comparison of epistemic lexical verbs as rhetorical mechanisms that help writers convey varying degrees of commitment towards new knowledge claims. Adhering to Giddens's postulates (1990) on the 'dialectics of change' produced by globalisation, results indicate that the expression of epistemic modality in the texts written in English by the Spanish scholars instantiates such dialectics. This can be seen by the fact that the texts tend to display a hybrid discourse in which textual features of academic Spanish seep into the scholars' use of normative academic English.

1   Introduction

Conceived of as one of the fundamental consequences of modernity, globalisation has been described as a socio-political, economic and cultural phenomenon that connects individuals "to large-scale systems as part of complex dialectics of change at both local and global poles" (Giddens, 1990: 177) (cf. also Crystal, 1997; Mair, 2006; Pennycook, 2007). Giddens's claims may also hold true for the use of academic English as the predominant *lingua franca* that guarantees uniformity of language to connect individual scholars to international large-scale research networks. Amidst this landscape, it has been argued that the predominance of English is gradually generating a 'dialectics of change' at the local pole as it encourages non-native English scholars to adopt the normative academic writing conventions of 'English-only' (Belcher, 2007) international publications. Even if it seems to be for the sake of knowledge sharing and international recognition, such dialectics is taking place at the expense of gradually losing the scholars' culture-specific rhetorical preferences (Curry and Lillis, 2004; Ammon, 2007; Ferguson, 2007; Flowerdew, 2007).

Among the various linguistic resources analysed by the EAP literature, the expression of epistemic modality has proved to be a highly routinised phenomenon in academic writing, yet rhetorically variable across cultural contexts. The intercultural rhetoric field has argued that, while native-English scholars tend to establish solidarity relationships with their readership, non-

native English scholars modalise their discourse more than the Anglophones do, hence showing deferential attitudes towards readers when negotiating claims (cf. Fløttum et al., 2006; Burgess and Martín-Martín, 2008; Pérez-Llantada, forthcoming).

Epistemic lexical verbs (hereinafter ELVs) are one of the textual realisations of epistemic modality and essential rhetorical devices related with writers' manifestation of pragmatic politeness and hedging. Following Hyland's (1998) proposed taxonomy of judgemental (either speculative or deductive) and evidential ELVs, these epistemic markers show the writers' positioning regarding the judgement or evidence of propositional contents. With speculative EVLs (*assume*, *believe*, *consider*, *know*, *predict*, *propose*, *speculate*, *think*, *suggest*, *suspect*), writers express opinions and mark the mode of knowing through confidence or degree of commitment. Deductive ELVs like *calculate*, *conclude*, *demonstrate*, *estimate*, *imply*, *indicate* or *infer* convey writers' degree of commitment based on inference from known facts. Evidential ELVs, on the other hand, indicate writers' commitment on the basis of evidence or perceptions of unproven facts (*note*, *quote*, *report*, *appear*, *exhibit*, *notice*, *seem*, *show*, *argue*, *attempt*, *claim*, *seek*, *admit*, *observe*).

This paper first compares the frequencies and discourse functions of the thirty-one epistemic lexical verbs quoted above in research articles published in English international journals by scholars from a non-Anglophone (Spanish-based) context. Results are compared to those obtained from a corpus of texts published in English international journals by scholars from an Anglophone (North American-based) context and with articles written by Spanish scholars and published in local Spanish journals. The purpose is to track cross-cultural and cross-linguistic variability in the expression of epistemic meanings through ELVs.

In line with recent findings (cf. Bennet, 2007; Giannoni, 2008; Mauranen et al., 2010), we initially hypothesised that the texts written in English by the Spanish scholars would display a hybrid nature, resulting from the mixing of the scholars' culture-specific textual preferences and their adoption of the normative standard academic English rules. To validate this hypothesis, this paper also explores textual patterning (i.e., phraseology) to observe whether ELV variation across rhetorical sections involves different textual preferences and therefore different ways of constructing arguments in the two cultural contexts and in the two languages. Following Bakhtin's (1981: 346) assertion that "[e]very discourse presupposes a special conception of the listener, of his apperceptive background and the degree of his responsiveness; it presupposes a specific distance", we will argue that the similarities and differences found in the texts from the two cultural contexts and in the two languages contribute to establishing either proximity or distance towards the readership. Because of this hypothesised hybrid nature, the texts written in

English by the Spanish scholars would instantiate 'changing' discoursal practices and, more specifically, varying degrees of proximity/distance when addressing the international expert audience.

2   Corpus and methodology

For the present study, we selected the biomedical subcorpus of the *Spanish-English Research Article Corpus* (SERAC), which comprises 144 co-authored scholarly articles: 48 written in English by Spanish scholars and published in international journals (SPENG subcorpus), 48 written in English by Anglophone scholars and published in the same international journals as the SPENG texts (ENG subcorpus) and 48 written in Spanish by Spanish scholars and published in national journals (SP subcorpus). The biomedical section was selected since scholarly journals in the field of medicine have well-defined standardised conventions in research article writing (i.e., the *Uniform Requirements for Manuscripts Submitted to Biomedical Journals* http://www.icmje.org/). Therefore, the comparison across corpora was expected to guarantee homogenisation of discourse in terms of "specific elements of editing and writing". These shared procedures would thus facilitate the identification of intercultural and interlinguistic variation. To guarantee comparability between SPENG and ENG, we also ensured that the SPENG texts had not gone through translation or revision processes and that they were all manuscripts originally written by the scholars (cf. Pérez-Llantada, 2008).

Biber et al. (2007) contend that analysing linguistic items in relation to discourse moves and sections may provide more accurate interpretations of their functional work in the discourse. Adhering to this proposal, the corpus used in this study was coded into rhetorical sections following the Introduction-Methods-Results-Discussion (IMRaD) pattern established for experimental research articles (Swales, 2004) (see Table 1).

	Introductions	Methods	Results	Discussions	Totals
SPENG	21,005	45,718	43,821	48,961	159,505
ENG	20,214	42,458	57,284	51,008	170,964
SP	19,598	26,804	36,302	58,525	141,229
TOTALS	60,817	114,980	137,407	158,494	471,698

Table 1. Number of words in the biomedical component of SERAC

Average frequencies of ELVs were retrieved using *Wordsmith Tools* 5.0 (Scott, 1999) and were normalised per 1,000 words. Since quantitative data

showed both similarities and divergences across subcorpora, we deemed it necessary to conduct an analysis of text patterns with embedded ELVs by means of the clusters (i.e., patterns of repeated phraseology) and patterns (i.e., words adjacent to the search word) computed by *Wordsmith Tools*. It was this textual patterning that provided further insights into the 'dialectics of change' of the texts written in English by the Spanish scholars and into the hybridised features of these texts.

3   Results

Writers' expression of epistemic modality through ELVs varied across cultural contexts and languages. Across the IMRaD sections (see Fig. 1), the presence of ELVs scored highest in SPENG and ENG Discussions. This was followed by the Results sections, which again scored relatively similar frequencies in SPENG and ENG, and lower frequencies in SP. In Introductions, the SPENG texts displayed a higher frequency of ELVs compared to ENG and SP. Finally, Methods scored the lowest frequencies in the three subcorpora.
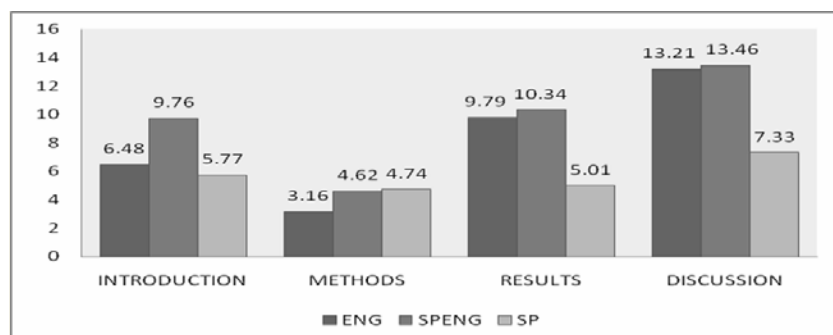
Figure 1. Overall frequencies of ELVs across IMRaD sections

Figure 2 below shows how the three groups of writers commit themselves to propositions by strategically combining judgement and evidence ELVs in each section. As signalled in Figure 2, the frequency of judgement verbs in SPENG always lies between those of ENG and SP in the four rhetorical sections. On the other hand, the frequencies of evidence ELVs in SPENG are consistently higher across all the sections than those of ENG and much higher than those of SP.

INTRODUCTIONS   METHODS   RESULTS   DISCUSSIONS

6.08
5.39
4.00
3.17   3.17
3.11
2.07   2.30   2.04

4.60
4.39
3.84

8.07
8.03
7.14
6.69
5.76
3.31
1.08   1.44
2.93
2.73
1.38
0.90

ENG   SPENG   SP   ENG   SPENG   SP

Judgemental ELVs   Evidential ELVs

Figure 2. Distribution of ELV categories across RA sections

In Introductions, the SPENG writers seem to prefer evidence to judgement ELVs, the ENG writers keep a balance between judgement and evidence, and the SP writers show a preference for judgement verbs. In Methods, the frequency of judgement ELVs is higher than that of evidence in the three subcorpora. In Results, the SPENG and ENG writers mostly rely on factual evidence to present new knowledge claims. This, again, does not seem to be the case in the SP texts, where average frequencies of judgement and evidence ELVs are similar and much lower than those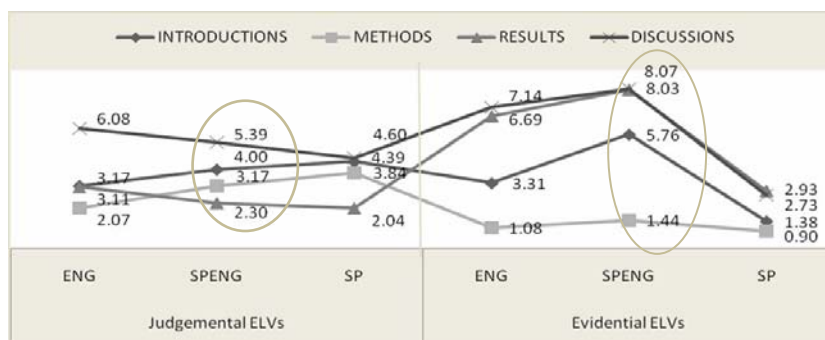 of the English subcorpora. A fairly similar trend is observed in Discussions. The SPENG and ENG texts show the highest frequencies of judgement and evidence across rhetorical sections, evidential ELVs being more frequent in both subcorpora. Conversely, SP scores higher in judgement than in evidence ELVs. In sum, writers' decisions as to whether to provide more evidence than judgement or *vice versa* seem to be crucial in the SPENG texts, displaying a wide range of evidence frequencies (from a low of 1.44 in Methods to a high of 8.07 and 8.03 in Discussions and Results respectively). Similarly, the range of evidence is significant in the ENG texts (from a low of 1.08 in Methods to a high of 6.69 and 7.14 in Results and Discussions respectively). In contrast, narrower ranges across sections appear in SP (2.04-4.60 for judgement and 0.90-2.93 for evidence).

A look at the textual patterning with embedded ELVs provides further details about the actual preferences of the SPENG writers. The comparison of clusters and patterns confirms SPENG's close resemblance to ENG, again suggesting that both groups of writers tend to express epistemicity similarly when constructing arguments and negotiating new knowledge claims. As described below, the analysis of text patterns also shows slight variations between SPENG and ENG and indicates that the SPENG texts retain some linguistic preferences of their L1 textual conventions.

In Introductions, epistemic modality is conveyed in SPENG and ENG through evidence and, to a lesser extent, judgement ELVs. The SPENG writers use the evidential clusters *been shown to/has been shown/studies have shown/has been reported* to refer to aspects of the problem that have already been approached in previous studies (e.g., *has already been shown to have high sensitivity* (SPENG29)). The clusters *been shown to* and *have been shown* perform similarly in ENG (e.g., *have been shown to have several mechanisms* (ENG24)). SPENG and ENG writers also express epistemic meanings through the patterns *(has) been shown (to)/reported (that)/we show (that)* (e.g., *It has recently been reported that elimination [...]* (SPENG8); *a prevalence of 22% for urological malignancies was reported [9]* (ENG33)). Conversely, the SP authors prefer judgement to evidence, with no textual patterning occurring in this section.

Once the context or 'research territory' (cf. Swales 1990) has been established, the SPENG and ENG writers specifically address the nature of the problem and its significance. To do so, they validate previous research by taking cautious stances that are linguistically realised through the evidential patterns *appears to* (in ENG and SPENG) and *seems to* (in SPENG). In SP, writers use the equivalent verb in Spanish (*parecer*) to convey evaluation through construct reason-result arguments:

> IL-12 production by DC seems to be the key event at regulating NK (SPENG13)

> Activation of FLT3, either through FL binding or mutation, appears to play a significant role in leukemogenesis (ENG16)

> Varios estudios parecen indicar que los trastornos neuropsicológicos vistos en UDVPs seropositivos parecen deberse más a [...] (SP4)

In the 'occupying the research niche' move of Introductions (cf. Swales 1990), the SPENG and ENG writers use evidence ELVs. The patterns *we show (that)* in SPENG and *we show (that)/we report (the)* in ENG state the purpose of the study and, in the case of ENG, are sometimes accompanied by evaluative lexis that boosts propositional meanings (e.g., *we report our success* (ENG46)). The two groups of writers combine self-mentions and abstract rhetors with these patterns to explicitly claim the possibility or necessity of the new findings (e.g., *In the present study we show that this type of non-apoptotic Fas signalling during the process of T cell blast generation is needed* (SPENG6); *we show that FcgRIIA transgenic mouse platelets as well as human platelets are able to* (ENG17)). No evidential patterns are found in SP, where statements of purpose are mainly introduced by the cluster el *objetivo de (este estudio)* [*the aim of this study*] followed by a copula and a dependent infinitive clause.

Judgement, very rare in Introductions, is conveyed through speculation verbs in SPENG and ENG, whereas the SP writers seem to prefer deduction ELVs.

Through the speculative pattern *considered*, the SPENG and ENG scholars refer to current studies in the field when establishing the research territory (e.g., *Endoscopic injection with bulking agents has been considered the surgical choice in patients with VUR [1–4]* (SPENG38); *is also being considered in the treatment of chronic lymphocyctic leukaemia (Gandhi et al2)* (ENG1)). In SP, the speculation pattern *se considera* introduces references to current knowledge, but writers seem to rely on deduction through the passive pattern *demostrado* to express overt evaluation in a detached way (e.g., *La rehabilitación mediante biofeedback se ha demostrado la más eficaz* (SP24)). Other speculative patterns (*suggested (that)/suggesting* in SPENG and *suggested (that)/suggest* in ENG) introduce aspects of the problem already studied by other researchers. The SPENG and ENG writers combine these patterns with probability hedges to make tentative judgements about the validity of previous studies (e.g., *most reports suggest that CYFRA 21.1 may be a promising [...]* (SPENG27); *Korman et al [10] suggested that sparing the distal portion of the SVs at RP may be justified* (ENG25)). No ELV patterns conveying evaluation of previous work appear in the SP Introductions.

In Methods, judgement ELVs play a more prominent role than evidence verbs, although their presence is very low compared to the remaining rhetorical sections. This may be due to the rhetorical constraints of the section, as writers are expected to provide accurate information on the methodological procedures and protocols of their study and the reasons for using them. Comparative frequencies of judgement versus evidence score almost similarly in SPENG and ENG (68.72% vs. 32.28% and 65.67% vs. 34.33% respectively). In SP, the presence of judgement ELVs is much higher than that of evidential verbs (81.10% vs. 18.90%), which show no patterns or clusters.

The speculative clusters *was considered as/considered to be* in SPENG and *were considered* in ENG are used to justify the methodological criteria and procedural parameters of the study. The SP texts include parallel passive ELV patterns (*se consideró/se consideraron*). Noticeably, similar grammaticalisations are used in the three subcorpora (passive ELV cluster in main clause + time dependent clause) (e.g., *Changes in protein function were considered to be induced by a mutation only when they were present* (SPENG26); *mixed chimerism was considered to be present when more than 5% of host cells were detected* (ENG10); *Se consideró la existencia de significación estadística cuando la p fue menor* (SP42)). The deductive passive cluster *was calculated as* in SPENG also conveys judgement when describing the protocols of the study. As illustrated below, ENG writers prefer to use the pattern *calculate* as a non-finite form to explain how the study was conducted:

The enrichment of mono and oligonucleosomes released by cells <u>was calculated as</u> the ratio of the absorbance of treated cells […] (SPENG1)

DU spectrophotometer (Beckman Coulter, Fullerton, CA), was used <u>to calculate</u> cation content (millimoles) per kilogram of hemoglobin. (ENG12)

las diferencias de medias entre las variables cuantitativas se <u>calcularon</u> con la prueba de t-Student. (SP5)

Interestingly, textual phraseology shows that the SPENG writers' practices resemble those employed by the authors of the ENG texts in that they use the deduction pattern *as indicated* metadiscursively (e.g., *immunoblots were performed <u>as indicated</u> below* (SPENG6); *The RBC were washed and labeled <u>as indicated</u> above*. (ENG19)). With a meagre presence, the evidential clusters *shown in table/are shown in/data not shown* in SPENG and ENG are also used metadiscursively to refer to visual aids (e.g., *Primary antibodies and their optimal dilutions <u>are shown in</u> Table 2* (SPENG32); *The mobilization schema <u>is shown in</u> Figure 1* (ENG10)), thereby revealing reader-friendly writers. Conversely, the SP writers do not signpost readers through the reading process in order to facilitate understanding of the text.

Through the evidential pattern *reported*, the SPENG and ENG writers introduce detailed accounts of protocols in order to allow replication of the study, as explicitly stated in the Uniform Requirements (e.g., *media and cytokines were replenished every 2 days according to <u>previously reported</u> protocols [37]* (SPENG13); *[x] were submitted according to a standard protocol and map, as previously described and <u>reported</u>.12* (ENG47)). Similarly, the SPENG and ENG writers rely on evidentiality through the passive pattern *were observed* to report research procedures (e.g., *Bone marrow samples were stained with May-Grünwald-Giemsa and <u>observed</u> with a light microscope (Nikon)* (SPENG14); *Cells <u>were observed</u> with a Leica DM IL inverted contrasting microscope* (ENG7)). The SP texts showed no similar clusters or patterns.

In Results sections, evidential ELVs are far more frequent than judgement verbs in both SPENG and ENG (77.70% vs. 22.30% and 68.27% vs. 31.73% respectively). In the SP texts, the contrast between evidential and judgemental ELVs is not so sharp (59.34% vs. 40.66%). The SPENG writers resort to twelve different clusters to provide evidence of the most significant findings. The ENG texts display ten evidential clusters, eight of them also shared by SPENG, while only two clusters occur in SP. The judgement cluster *results indicate that* occurs in SPENG, but no judgement clusters occur in ENG and SP.

With the evidential clusters *as shown in/data not shown/shown in fig/are shown in/shown in table/is shown in* SPENG and ENG writers report significant findings by referring to sources of evidence, namely, the results themselves, which in this section are usually presented in the form of visuals.

At times, the SPENG writers' stance seeps into the discourse and these descriptive comments are accompanied by stance markers inviting readers to share similar lines of thought (e.g., *x is shown in Fig 3. Interestingly, CD34+/ CD38+BM myeloid HPC showed* (SPENG22): *the epitope was not conserved among species (data not shown). Remarkably, an immunoprecipitation [...]* (SPENG14)). *Show* clusters in ENG and similar patterns in SP (*se muestra/muestran/mostraron*) strictly refer to the source of evidence (e.g., *As shown in Figure 3A, OCI-Ly19 cell proliferation was significantly reduced* (ENG24); *En la tabla II se muestra la concentración* (SP8)).

The evidential passive clusters *was observed in/observed in the/were observed in/differences were observed* in SPENG and *observed in the* in ENG convey detachment when reporting research outcomes by referring to sources of evidence. In SP, the clusters and patterns *se observaron diferencias/no se observaron/se observa/se observan/observamos* perform similar discourse functions:

No significant differences were <u>observed in the</u> number of total CD3D cells/kg infused between RIC-SCT and MA-S. (SPENG10)

Fibrin clot formation, albeit delayed, was also <u>observed in</u> samples without FIX. (ENG3)

En los genotipos 2 y 3 tampoco <u>se observaron diferencias</u> estadísticamente significativas (tabla 6). (SP22)

Showing tentativeness and hence detachment from claims, SPENG and ENG writers use the deduction ELV clusters and patterns *results indicate that/indicate(d) (that)/demonstrated (that)* preceded by abstract rhetors to indicate the ability or capability of the new findings (e.g., *These results indicate that the defect probably lies on* (SPENG5); *These results indicate that the upregulation of Pyk-2 kinase activity by SDF-1a occurs [...], and raise the possibility that the activation of Pyk-2 could contribute* (SPENG15)). ENG writers generally opt for possibility meanings (e.g., *These results indicated that doses of LC between 0.3 and 1 mL/kg could substantially inhibit* (ENG19); *these results indicate that the steady-state ratio of plasma VWFpp and VWF can be used to easily identify* (ENG11)). In SP, the deduction pattern *indica* in sentential relative clauses or followed by the anaphoric pronoun *esto* [*this*] in clause subject positions occurs in unhedged or possibility statements (e.g., *Esto indica que existe una clara asociación* (SP16); *lo que indica que la influencia de un posible efecto* (SP36)).

At the end of the Results sections, SPENG and ENG writers shift towards speculation in order to evaluate findings tentatively. Through *suggesting that (the)/suggesting/data suggest that* they express weak judgements when assessing results (e.g., *These results suggest that constitutive SOCS expression is sufficient* (SPENG7); *These data suggest that CACs from G-*

CSF–mobilized pheresis MNCs have greater in vivo angiogenic capacity (ENG10)). No similar patterns appear in SP. However, while not occurring in ENG, the speculative patterns *were considered/considerando* occur in SPENG and SP. However, this probable L1 transfer introduces SPENG writers' explicit assessment of research outcomes, which is not the case in SP texts (e.g., *8 of the point mutations <u>were considered</u> to possibly be relevant* (SP26)).

As with the Results, the SPENG and ENG Discussions display frequencies of evidential ELVs that are slightly higher than those of judgemental ones (59.94% vs. 40.06% and 54.01% vs. 45.99% respectively). In SP, judgement ELVs score twice as highly as evidence ones (62.70% vs. 37.30%). The SPENG subcorpus displays twenty different clusters, fourteen of them also occurring in ENG. Only three judgement clusters occur in SPENG, but just one (*suggest that the*) occurs in ENG, which shows other alternative judgement clusters. No evidence clusters appear in SP and four deduction clusters occur in this corpus.

The SPENG and ENG writers use the evidential clusters *has/have been shown/have shown that/been shown to* to explain findings and evaluate results. Correlating with self-mentions, these clusters help writers provide possible explanations of research outcomes by relying on first hand information (e.g., *We <u>have shown that</u> MRI can also be useful* (SPENG21); *<u>we show that</u> CACs but not EPCs can be cyropreserved* (ENG10)). Taking less visible stances, the SP writers combine *muestra/muestran* patterns with abstract rhetors to summarise and interpret findings in a detached way (e.g., *Nuestro trabajo <u>muestra</u> cómo la alimentación oral sin suplementar puede modular* (SP10)).

The SPENG and ENG writers also use the clusters *has/have been reported* to refer to previous works in order to support new knowledge claims (e.g., *Fas ligation <u>has been reported</u> to activate JNK, at least in tumoral cells [34]* (SPENG6); *Complications of the stent with encrustation <u>have been reported</u> by Jurczok et al [7]* (ENG27)). Similarly, the verb *note* clusters with modalised evaluative anticipatory-*it* constructions in SPENG and ENG (e.g., *It <u>should be noted</u> that intratumorally injected DC express neither CD4 nor AsialoGM1 and hence cannot be depleted* (SPENG13); *It should also be noted, however, that hypogonadism and related sequelae may be related* (ENG8)). None of these verbs form clusters or patterns in SP.

The evidential cluster *we observed a* in SPENG and the patterns *observamos/hemos observado/se observa* in SP reveal variation across languages. The SPENG and SP writers either use self-mentions to explicitly refer to intertextual sources for supporting claims or employ the passive *was observed* to convey evaluation in a detached way (e.g., *In agreement with previous studies, <u>we observed a</u> correlation* (SPENG10); *a significant relationship [...] <u>was observed in</u> our study* (SPENG47); *Nosotros*

observamos que los pacientes con anemia hospitalizados por ICC muestran cifras (SP15); *En nuestra serie se observa un cambio de los patrones en el contagio del VIH, en consonancia con los datos generales españoles.6* (SP13)). Conversely, the ENG writers consistently use self-mentions in the pattern *we observed (that)* to evaluate research processes and outcomes (e.g., *we also observed that MRI was extremely accurate* (ENG31); *We also observed that it was necessary* (ENG20)). The phraseological analysis further reveals different lexical preferences regarding the expression of evidence in SPENG and ENG. The clusters *not seem to/seem to be/does not seem/seems to be* in SPENG convey vagueness when interpreting findings while the ENG writers opt for *appear to be/appears to be/not appear to* to assess facts. The textual developments of the SPENG and SP texts show a cautious argumentation, restricting the scope of their claims by means of concessive, conditional clauses and reason-result relationships:

> In conclusion, the hAR mutation rate in patients with clinically localized prostate cancer was 16%; hAR mutations seem to be related to a lower Gleason score, although studies with more patients are needed to confirm these findings. (SPENG33)

> The present report establishes a new signaling pathway (JNK) downstream from Flt3 in AML, and this pathway appears to be of particular functional relevance in relation to adverse outcomes in AML, previously linked to Flt3 mutational activation by others [12,13]. (ENG21)

> Parece que la frecuencia alélica es superior en el grupo de pacientes que en el de controles, pero la significación estadística no es valorable, pues al encontrar una prevalencia tan alta en población sana, el tamaño de la muestra necesario para establecer conclusiones es muy elevado, y excede las ambiciones de este estudio (SP2)

As for judgement, the deduction patterns *demonstrate* and *indicate* introduce highly evaluative observations once sources of evidence have been provided. The passive is more common in SPENG (e.g., *Death by cytokine deprivation has been demonstrated to be the main pathway* (SPENG6)), while active clusters *demonstrated that the/have demonstrated that* are preferred in ENG to refer to intertextual references supporting writers' findings (e.g., *Lont et al [8] demonstrated clearly in their study that physical examination is accurate at detecting CC infiltration but that the role of MRI needed further elucidation*. (ENG31)). Both active and passive constructions (*se ha demonstrado/ha demonstrado que/han demonstrado que/estudios han demonstrado*) are used in SP to introduce strong judgements supported by reason-result arguments (e.g., *es prácticamente imprescindible, dado que se ha demostrado, de manera fehaciente, un efecto beneficioso* (SP7)). The deduction cluster *data indicate that* and the pattern *indicate(s)/(d) (a/the)* preceded by abstract rhetors also show variation between SPENG and ENG. While in SPENG commitment is mitigated through modal markers (e.g., *Our data indicate that such doses ought to be widely effective* (SPENG1)), ENG

writers appear more assertive (e.g., *findings, plus the striking correlation between TMU and IL-6 levels, clearly <u>indicate</u> that IL-6 has the capacity* (ENG9)). In SP, the patterns *se indica/indican (que)* relate previous works to current findings but do not introduce authorial judgement (e.g., *En estudios observacionales y epidemiológicos (16) <u>se indica</u> que en las personas diabéticas e hipertensas se incrementa* (SP6)).

Interpretation of findings is mainly linked to the expression of weak judgements in SPENG and ENG. Even if these texts share similar clusters and patterns (*suggest that the/our results suggest (that) (the)* in SPENG and *suggest that the/data suggest that/this data suggest (that)/our results suggest (that)* in ENG), they reveal different text development preferences. The SPENG writers modalise epistemic statements with dependent clauses, but the ENG authors repeatedly use *suggest* either following or preceding positive evaluation of findings based on deduction. The SP writers use very limited speculation meanings (showing no clusters or patterns) always linked to interpretations of other researchers' findings but not to their own findings (see examples below). Other speculative patterns in SPENG and ENG (*consider*, *know* and *predict*) perform similar discourse functions to those of *suggest* in these subcorpora. Speculative patterns *creemos que/pensar que/supone(n)/implica* in SP are not found in the English subcorpora.

> The present results <u>suggest that the</u> transient increase in F-actin polymerization induced by SDF-1a might lead to clustering of VLA-4 molecules on the cell membrane, which could represent one mechanism contributing to an enhancement […]. (SPENG15)

> Interestingly, our study demonstrates a significant dose effect of rFVIIa on thrombin generation, but much less of an effect on fibrin clot formation. These results <u>suggest that the</u> parameters of thrombin generation that govern clot formation are more complex than simply the onset […] (ENG3)

> Estudios realizados en pacientes diabéticos <u>sugieren que</u> existe una disminución del riesgo cardiovascular cuando se reduce la PAS < 130 mmHg y la PAD < 85 mmHg (8). En nuestro estudio el 36,2% de los pacientes presentó una TAD <80 mmHg (SP6)

4   Discussion

Although the three groups of writers analysed in this study theoretically adhere to the same requirements for writing manuscripts, the use of a section-coded corpus has proved to be a suitable way to track both similarities and differences across cultural contexts and languages and to show that epistemic modality tends to be a highly routinised practice in terms of textual patterning.

The overall comparison of ELVs in the two cultural contexts indicates that the Spanish writers writing in English modalise their discourse with epistemic meanings as the Anglophone scholars do, thus favouring the

expression of epistemicity, mainly in Discussion sections. This degree of commitment is recurrently more factual and evidential than judgemental except for the Methods sections. The need or desire to publish in English might be a possible reason why the Spanish scholars 'change' their discourse and negotiate new knowledge claims very much as their Anglophone counterparts do in order to have their findings accepted by the international scientific community.

In Introductions, the Spanish writers show a preference for evidentiality while their Anglophone counterparts strategically maintain a balance between evidence and judgement. It is only in the statement of purpose that writers in the two cultural contexts convey speculation and deduction and show commitment to new knowledge claims through ELV expressions combined with self-mentions. Up to this point in the Introduction, the Spanish writers mainly rely on evidence to show greater detachment from propositions than the North-American writers do when they address aspects of the problem approached in previous studies, describe the nature of the problem and its significance, and validate previous research. This suggests that the Spanish scholars display more cautious stances and establish a greater distance from their interlocutors than their Anglophone counterparts do when presenting new findings to the international audience. These varying textual responses may indicate that the Spanish scholars publishing in English are perhaps more aware of the rhetorical nature of the 'Create a Research Space' model of Introductions, in which "competition tends to be fierce, and academic promotionalism and boosterism are strong" (Swales, 2004: 226). In addition, the Spanish writers tend to boost their claims in order "to make one's results seem attractive, important, and true to the consumers of knowledge" (Bazerman, 1990: 78).

In the Methods sections of the texts written in English, while the North-American-based writers again combine judgement and evidence, the Spanish writers become slightly more judgemental, particularly when justifying their selection of criteria, methods and procedures. This again suggests that they conceive their readership as potentially dissenting from the authors' research-process decisions. This may also explain authors' primarily detached stances, which are linguistically realised by passive speculation and evidential patterns that help to build up an objective, detached report of past research procedures. Reader-friendly attitudes have also been found in these two groups of writers through the use of deduction and evidential signposts (*as indicated below*, *as shown above*, *as previously reported*) that aid readers' comprehension of the text.

In Results, evidence prevails in the reporting of findings in the English texts. A preference for passive constructions when describing research outcomes reflects, at a textual level, writers' detached positioning in this section, as also happens in the texts written in Spanish. Interestingly, the Spanish writers

writing in English tend to accompany this research reporting with boosters (e.g., stance adverbials) intended to draw readers along similar lines of thought. The two groups of writers rarely resort to speculative verbs and deduction ELVs preceded by abstract rhetors for conveying weak judgements on the main findings. This phraseology is regularly accompanied by probability statements in the case of the texts written in English by Spanish scholars and by possibility markers in the case of the texts written by the Anglophone scholars, thereby illustrating different commitment/detachment positioning towards propositions.

In Discussions, writers from the two cultural contexts first rely on evidence and later move towards deduction and speculation meanings. Evidential verbs co-occurring with *we*-pronouns reveal writers' involved stances when reiterating the new knowledge claims. Interpretation of results is conveyed through modalised evidential statements (e.g., *it should be noted that*) subtly inviting readers to share similar views. Deduction patterns, though, reveal different textual preferences. While the North-American-based scholars express deduction in an assertive way, the Spanish researchers show detached stances through passives and abstract rhetors and mitigation of evaluative remarks by means of modal verbs. Similar discoursal preferences have also been observed in the construction of persuasive arguments through speculative verbs. The Spanish writers' hedged discourse expresses provisionality of findings and again brings to the fore writers' perception of the audience as potentially dissenting. Conversely, their Anglophone counterparts become markedly assertive when assessing findings and appear to perceive their audiences as potentially consenting towards writers' opinions.

On the basis of these observations we could argue that there is considerable homogeneity between the texts written in English by the Spanish and the North-American-based scholars, suggestive of a possible effect of globalisation affecting the writing practices in the two cultural contexts. Relatively similar ways of expressing epistemic modality across RA sections suggest that the writing conventions of the Spanish scholars publishing internationally thus tend to be 'Englishised' since they are noticeably distant from those of the Spanish texts. However, the divergent preferences noted above, particularly those regarding textual development and hedging of discourse in Introductions and above all in Discussions, may be taken to evince different audience construals in the two cultural contexts. Consistent with previous studies (Mur-Dueñas, 2007; Pérez-Llantada, forthcoming), the Spanish scholars showed less visible stances at a textual level and epistemic verbs recurrently combine with other hedges, thus opening up the space for alternative views or interpretation of findings and thereby conveying deferentiality towards readers. In contrast, the North-American-based scholars conceive their readership as sharing similar views and thus convey

collegiality towards their readers by mingling the expression of epistemic modality with a generally overt evaluative discourse, which reduces the space for "dialogic alternatives" (cf. White, 2003: 263).

On the other hand, the comparison across languages revealed some preferred textual choices and developments when negotiating claims and constructing effective arguments. Even though judgemental and, above all, evidential ELVs were scarce in the texts written in Spanish, the analysis of textual patterning indicates shared grammaticalisations conveying objectivity and detachment – features that are recommended in Spanish formal academic rhetoric (cf. Vázquez, 2005). In writing texts in both English and Spanish the Spanish scholars resort to similar passive deductive clusters expressing detachment (*was calculated*/*se calcularon*) in the description of protocols of the study in Methods sections rather than the preferred grammaticalisation of the North-American-based researchers. Similar grammaticalisations appear in Results sections, with speculative *were considered*/*se consideraron* contributing to a detached interpretation of new knowledge with no explicit evaluation of facts – as the North-American scholars did. In Discussions, similar evidential clusters occur in both the active and the passive voice, whereas the North-American-based scholars recurrently used self-mentions with ELVs. As for textual development, the interlinguistic comparison above illustrates how the Spanish scholars writing both locally and internationally rely on intertextuality to a great extent (especially in Discussions) to support arguments, whereas the North-Americans convey proximity by means of ELVs introducing evaluation of research outcomes.

Corpus evidence on the hybrid nature of the SPENG texts highlights current concerns about language issues in the globalising academic and research landscape as regards the possible effects on non-native English writers publishing internationally – something already anticipated by Swales (1998) (cf. also Curry and Lillis, 2004; Flowerdew, 2007). That these minor local traits affect interpretability of texts and acceptability might not seem to hold true in this study. The hybridity of these texts suggests that academic English is no longer a *standardised* academic English but is subject to culture-specific variability (cf. Mauranen et al., 2010). And this variability, at least in the articles analysed, does not appear to have been an obstacle, since all the texts have been published in prestigious international journals – as already reported by Belcher (2007).

The intercultural and interlinguistic comparison above might be said to evoke Giddens's dialectics of change in that it instantiates the "nexus between an individual's actions and a socially defined context" (Devitt, 2004: 31). The increasing internationalisation of academic and research exchange may thus be regarded as creating a complex dynamics articulating hybridity and hegemony in the actual written products. Some might see the local discourse merging with the dominant normative academic English as non-natives'

(un)conscious resistance to the hegemonic role of English. Others may see these culture-specific textual preferences of local practitioners as steadily vanishing features allowing non-native researchers to become "better consumers or producers of these textual exemplars" (Swales, 2007: 156). What seems to be true is that the research article genre indeed reflects the social context in which the texts are produced and received and, as such, responds strategically to the exigencies of social and culture-specific situations. Hence, the genre provides instances of the dialectics of change as a facet of globalisation in the academic arena.

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Hidden influencers and the scholarly enterprise: A cross-cultural/linguistic study of acknowledgments in medical research articles[1]

Françoise Salager-Meyer, María Ángeles Alcaraz Ariza and
Maryelis Pabón Berbesí

The frequency and length of acknowledgments (ACK), the number of named and unnamed acknowledgees, the number of grants received and the sources of funding are here analyzed in medical research articles published in four different geographical contexts: Venezuela, Spain, France and the USA. Significant differences were found in all the variables between the US sample, on the one hand, and the two Spanish- and the French-medium samples, on the other. We conclude that the concept of intellectual indebtedness differs from one geographical context to another, and that sub-author collaboration is not only discipline-dependent but also language- and context-dependent.

1 Introduction

Acknowledgements (ACKs) have existed for over 500 years, but as Roberts (2003) interestingly reports, the common practice of acknowledging among 16th and 17th century authors was not to recognize any intellectual contribution (as is most frequently the case today), but to thank financial benefactors or to endear authors to potential patrons. This form of acknowledgments was called an '*impensis*' which, in Latin, mans '*at the expense of*'.

Another type of acknowledgement these early authors quite frequently resorted to was what Roberts calls 'a prudent bow' to the official body, religious or secular, that licensed the printing of the book. That form was known as '*imprimatur*', Latin for '*let it be printed*'. Later, for strategic reasons and for underlining academic network dependence and belonging, ACKs started flourishing in academic writing and publishing, from doctoral dissertations to scientific research articles.

It is this latter type of ACK that the present paper deals with, but, before entering into the heart of the subject, let us briefly examine how ACKs are viewed by two discourse communities that only recently got acquainted, viz., the applied linguistic and the information science communities.

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2 Acknowledgments: The communicative equivalent of a simple 'thank-you note'?

For applied linguists and genre analysts, ACKs are seen as a neglected "part genre" (Swales, 2004: 31) which forms part of "the paraphernalia of today's research articles" (Hyland, 2003: 253). In Hyland's parlance, ACKs are a "Cinderella genre"[2] in the sense that they are a taken-for-granted part of the background, "a practice of unrecognised and disregarded value" (Hyland, 2003: 242) "whose importance to research students has been overlooked in the literature" (Hyland, 2004: 306). This opinion is shared by Giannoni (2002: 9) who refers to ACKs as a "minor and largely overlooked academic genre", and by Cronin et al. (1993: 38) who consider them as a long neglected textual artifact that belongs to the "academic auditors' armamentarium". For his part, Genette (1997) classifies ACKs as "paratexts" alongside titles, headings, prefaces, illustrations and dedications.

Among the linguistico-rhetorical studies that have addressed the issue of ACK in academic writing, we can cite, on the one hand, Hyland's research on the generic move structure of ACKs in PhD and MA theses (Hyland, 2003, 2004; Hyland and Tse, 2004), and, on the other, Giannoni's cross-linguistic research on ACK behavior in Italian- and English-written research articles (Giannoni, 1998; 2002) and academic books (Giannoni, 2005, 2006a and 2006b).

For information and social scientists, ACKs are rather viewed as "exchange of gifts" (McCain, 1991: 495), "expressions of solidarity" characteristic of schools organised as mentor systems (Ben-Ari, 1987: 137), "supercitations" (Edge, 1979: 118), "trusted assessorship in action" (Mullins, 1973: 32) that reflect, on the one hand, sub-author collaboration (Patel, 1973: 81) and, on the other, cognitive partnership or distributed cognition in action (i.e., the explosion of teamwork in general and large scale collaboration in particular), thus highlighting trends in collaboration beyond co-authorship.

The social significance of ACK practices has been analyzed in a variety of disciplines, e.g., Heffner (1979) in biology, psychology, political science and chemistry; McCain (1991) in genetics; Cronin (1995) in information science, psychology, history, philosophy and sociology; Laband and Tollison (2000) in biology and economics; Giles and Councill (2004) in computer science, and Salager-Meyer et al. (2006) in mainstream/academic medicine vs. complementary/alternative medicine.

From this brief review of the literature, it is thus quite clear that the humble ACK paratext has emerged as a well-established facet of the scholar's

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[2] Hyland (2004) provides powerful reasons for considering the ACK section in PhD and MA theses as a genre in its own right.

rhetorical repertoire and a more or less institutionalised practice across scientific fields.

However, in spite of the fact that the importance of ACKs in today's scholarly communication is now well documented by scholars from a variety of different disciplines (see above), Hyland (2003) believes that much work remains to be done and research needs to be extended to other disciplines and languages. Cronin and Franks (2006) uphold the same opinion by arguing that both information scientists and sociolinguists should conduct further research so as to detail context-specific ACK practices and their associated rhetorico-pragmatic trends across disciplines and languages.

3   Purpose

The above review of the literature shows that all the studies (except Giannoni's) dealing with ACKs have been conducted on research published in English-language journals. In order to extend this line of research and fill the above-mentioned conceptual gap, the present research was undertaken with the aim of determining in which ways the publication context exerts an influence on the frequency, length and content of ACKs. Towards that end, we analysed the ACK textual spaces that accompany medical research papers (RPs) written in three of the most important languages of scientific communication (Spanish, French[3], and English) and published in four different geographical contexts: Venezuela, Spain, France and the United States of America. We hope that our endeavour will provide further insight into sub-authorship contribution to the construction of scientific knowledge and scholarly production in these four different contexts.

4   Corpus and method

4.1   Corpus

In studies of this kind, it is recommended to draw the sample texts from top-ranking journals because, as Connor (2004) argues, the articles published in these journals have undergone a strict peer review and editorial scrutiny. Such a procedure thus assures that the articles selected are fairly representative of the journal genre in content and style or, in Bazerman's parlance, that the texts are "situationally effective" (Bazerman, 1994: 23) and are the result of an "expert performance" (Bazerman, 1994: 131).

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[3] French, a language with a longstanding rhetorical and academic tradition, is used almost exclusively in francophone countries as the language of scientific knowledge dissemination (see Van Bonn and Swales (2007) for a review of the literature on French scientific discourse).

Following these recommendations, we randomly selected 200 RPs published between 2005 and 2007 and distributed as follows: 50 from 3 Spanish-language medical journals published in Venezuela, 50 from 2 Spanish-language medical journals published in Spain, 50 from 2 French-language medical journals published in France, and 50 from 2 English-language journals published in the United States of America (this latter corpus will be abbreviated hereafter as the 'US sample' or 'US corpus'). These are leading medical journals in their respective country of origin[4], are all indexed in several international databases and all require that the persons/centers/entities that collaborated or supported the research be acknowledged.

Our article selection procedure and the similar textual concept (the ACK section) analyzed thus allow us to state that our four corpora are parallel/comparable/equivalent[5] to the maximum degree (Moreno, 2008), and that the *tertio comparationis* criterion recommended in studies of this kind (cf. Connor and Moreno, 2005) is amply met, although as Swales (2004) and Van Bonn and Swales (2007) argue, the search for "maximum similarity" may be more difficult than it seems.

Table 1 displays the geographical origin of the papers published in the four samples.

4.2   Methods used and variables analysed

All selected papers were scrutinized to discover any ACK set apart at either the beginning or end of each RP. Medical journals indeed have different editorial policies regarding the presentation of ACKs, and although most ACK sections are generally found in clearly identifiable article-ending sections, these sections are not always labelled. Regarding their etiquette, ACKs may be "compound entities" (Cronin et al., 2004: 162) where authors may, for example, thank peers for ideas, federal and/or industrial funding agencies for financial support and colleagues for moral support. Funding bodies, however, are sometimes thanked in a separate textual space preceded by the heading 'Funding'. In cases where the funding support formed part of a textual space in its own right, we counted both paratexts (ACK and funding) together.

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[4] Revue de Médecine Interne and Annales de Cardiologie et d'Angéologie form the French sample; Medicina Clínica and Medicina Intensiva the Spanish sample; Revista venezolana de Oncología, Revista de Obstetricia y Ginecología de Venezuela and Investigación Clínica the Venezuelan sample, and American Journal of Medicine and Annals of Internal Medicine the US sample.

[5] *Parallel corpora* are defined as sets of comparable original texts written independently in two or more languages, and the notion of comparability is equated to the concept of *equivalence* (Connor and Moreno, 2005: 155).

The number of ACKs and their length (total number of running words making up the ACK/funding space) were recorded. In each ACK section, we also recorded the number of acknowledgees mentioned by name and of the unnamed entities credited. The number of funded RPs, and the number and source(s) of the grants received were also recorded in each ACK paratext.

5   Results

5.1   ACK frequency and length

As can be seen in Table 2, the highest frequency of ACKs was found in the US sample, where 82% of the RPs include an ACK section, and the lowest in the French sample where only 12% of the RPs examined mention an ACK section. Statistically significant differences were found between the frequency of ACKs recorded in the US sample and those observed in the Venezuelan (44%), the Spanish (26%) and the French samples (12%), p= .0007, .0001, and .0001, respectively.

Table 2 also shows that ACKs are the longest in the US sample (an average of 83 words per ACK), while the shortest are found in the French sample (an average of 21 words per ACK). Both Spanish-language samples are found in mid-position with a mean of 54 (Spain) and 31 (Venezuela) words per ACK.

It is interesting to note, on the one hand, that of the 9 US research papers that do not include any ACK section, 6 were written by non-native English speakers (NNES) from Italy, France, Germany, India, Japan and Denmark, and, on the other, that the shortest ACKs in the US sample accompany RPs whose authors (or, at least, the first author) are/is NNES[6].

5.2   Named and unnamed acknowledgees

The mean number of named acknowledgees is by far the highest in the US corpus (6.3 per ACK), about four times as much as the means recorded in the Venezuelan, Spanish and French samples.

Unidentified acknowledgees were found in the four corpora, although much more frequently in the French sample (84% of the ACKs in the French corpus proffer thanks to unidentified persons) than in the remaining three corpora. These are either patients who took part in the study or hospital staff (study personnel, general practitioners, residents, and/or nurses) who helped in recruiting patients and/or in collecting data. In one US research paper only

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[6] The authors of these RPs are based in countries where English is not spoken as a native language.

did we find that unidentified statisticians and epidemiologists were thanked for their expertise[7].

From a purely linguistic standpoint, the same laudatory adjectives *(helpful, insightful, invaluable, generous, etc.)* are used in the four corpora to refer to the help provided by the acknowledgees, although a perhaps more emotionally-charged and hyperbolic tone was recorded in both Spanish-written corpora (more frequently in the Venezuelan sample, though) where the collaboration provided is sometimes qualified as *absolutamente desinteresada* (absolutely disinterested), *muy gentil* (most kind) and/or *muy generosa* (very generous), and where the authors are *sinceramente agradecidos* (sincerely grateful). Not a single example of such a hyperbolic language was found in the French sample and very few in the US one. As a matter of fact, the only adjective used in the French ACK was *précieux* (precious), but again most acknowledgees from that sample were only dryly thanked for their dedication, availability and/or support.

5.3   Funding bodies and grants

A quantitative and qualitative difference in the number and nature of the grants that supported the RPs analyzed was observed in the four corpora. On the one hand, a far greater number of papers published in the US sample were supported by grants (72% in the US corpus vs. 26% for the Venezuelan sample and only 4% for the Spanish one). The French-authored papers did not report any financial support. The difference between the data recorded in the US sample and those observed in the Venezuelan and Spanish samples was found to be statistically significant ($p = .0001$). It is interesting to note that of the 14 unfunded RPs from the US sample, eight were written by NNES.

Not only is the number of funded papers far greater in the US sample, but the number of grants per funded RP is also much higher in the US sample: 3.3 grants in average per funded RP vs. 1.1 for the Venezuelan sample, 1.0 for the Spanish corpus, and obviously none for the French sample.

From a qualitative standpoint, interesting differences were found as well. As Table 2 shows, the majority of the grants that supported the US research papers came from extramural private agencies (56% of all the grants awarded) – mainly from the pharmaceutical industry, e.g., Novartis, Pfizer, Astra Zeneca, Sanofi – and, to a lesser extent, from National Institutes of Health and governmental research agencies (44% of all the grants recorded in the US sample). Interestingly, the grants mentioned in the US research papers written by NNES authors were mainly awarded by ministries and university research centres.

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[7] These usually appear in the authors' bylines.

By contrast, all the grants from the Venezuelan sample either came from intramural sources (university research centres or other educational institutions) or from national research councils. It is interesting to note that these entities are almost always acknowledged, because Venezuelan funding bodies make it a requirement that their name and grant number be acknowledged in any publication based on the funded project. If researchers do not follow this rule, they take the risk of being refused funding for their future research. Sanofi was thanked only once in one paper from the Venezuelan sample for having provided the researchers with free drug samples, not for having awarded a grant to conduct the research. As for the Spanish sample, the only two grants recorded in the whole corpus came from national research centres.

6   Discussion

6.1   Frequency and length of ACK sections and journal "instructions for authors"

Our study of the ACKs paratexts in the Venezuelan, Spanish, French and US corpora evinced sharp differences among the three publication contexts. First of all, our quantitative data clearly revealed that, in absolutely all respects, the highest figures were recorded in the US sample of ACKs. This is the sample where ACK paratexts are not only most frequently encountered and the longest, but also where they report the greatest number of acknowledgees and of grants received. It is interesting to note that the average length of ACKs recorded in the Venezuelan, Spanish and French samples is very similar to that reported by Giannoni (2002) in his study of linguistics RPs.
The very high frequency of ACKs in our US sample of medical RPs is consistent with previous studies of ACKs in other 'hard' scientific fields published in Anglo-American journals, such as genetics (McCain, 1991), chemistry (Cronin et al., 2004), computer science (Giles and Councill, 2004), but also in some 'soft sciences' such as psychology and sociology (Cronin, 1995)[8].
As we stated in the Methods section of this paper, all the journals consulted require that the persons/centres/entities that collaborated or supported the research be acknowledged. It should be mentioned, however, that the information provided by the English-language journals is much more detailed

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[8] Cross-disciplinary studies of ACK (Cronin et al., 1992; Cronin, 1995) have shown that philosophers and historians are much less assiduous in crediting the multifarious contributions of behind-the-scene actors. Cronin (1995) rightly argues that the cross-disciplinary differences observed in ACK frequency could suggest a gradation from soft to hard subject matters. Biomedicine certainly aligns itself along the hard disciplines, at least as is revealed by the ACK sections of papers published in the top ranking US journals we examined here.

than that given by their Spanish and French-language counterparts. This is a clear reflection of the fact that it is in the Anglo-American biomedical research world and literature where the issue about authorship and contributorship is most hotly debated (e.g., Wooley et al., 2006).

The fact that, for reasons of power and/or prestige, researchers would rather see their names in the authors' by-lines of papers published in English-language journals than in ACK sections that nobody (or hardly anybody) will read may in part explain why guidelines are much stricter in Anglo-American scholarly journals. This, in turn, could account for the differences observed between the US sample of ACKs, on the one hand, and the two Spanish- and the French-written samples, on the other.

But we would like to put forth two further hypotheses that could also explain the difference observed in the frequency and length of ACKs between the English-written corpus, on the one hand, and the two Spanish- and the French written ones, on the other. The first hypothesis is that researchers who publish in Spanish-language journals perhaps do not pay much attention to ACK guidelines or ignore them altogether.

In this respect, our results clearly corroborate those obtained by Pignatelli et al. (2005) who remarked that definitions of authorship and authors' behaviour vary in different countries. In their analysis of French medical journals, Pignatelli et al. indeed observed differences between editors' criteria and researchers' practice when compared to US journals.

As a matter of fact, Bhopal et al. (1997) report that French, and even British researchers, consider the guidelines established by the International Committee of Medical Journal Editors (2006) far too rigid and irrelevant. As a consequence, and behind closed doors, French and British scientists confess ignoring them altogether, which means that gift and ghost authorship is very frequent[9]. Longer authors' by-lines indeed mean shorter (or no) ACK paratexts. As Pignatelli et al. (2005) contend, what makes this a very serious problem in the French medical community, at least, is that such a practice is seen as normal behavior in most cases.

Reyes et al. (2001) also report low researchers' compliance with guidelines criteria established by a Chilean medical journal, and a very similar situation is described in Chinese medical journals (Whenhui et al., 2001). Our study thus lends further support to the fact that authors' compliance with editorial requirements and researchers' behaviour vary from one publication context to another.

The second hypothesis is intimately related to the first one. We could indeed speculate that all the persons who contributed to the research reported in our Spanish-written samples – especially in the Venezuelan one – appear as co-

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[9] In science, '*ghost authors*' are people who contribute to the research but are not given authorship credit, while '*gift authors*' are individuals who make no contributions but still receive authorship credit (see Langdon-Neuner, 2008).

authors (i.e., not as acknowledgees) whether their contribution was really intellectually meaningful or not, thereby contributing to the spread of "*polyauthoritis giftosa*" (Kapoor, 1995, cited in Modi et al., 2008: 6). Some of these co-authors would perhaps not qualify for authorship in core English-language journals. There is so much pressure in the Spanish-speaking world (much more than in its French counterpart) to publish in high-impact, refereed and internationally indexed periodicals that scientists need to appear as co-authors in the greatest number of scientific papers possible (Curry and Lillis, 2004; Gómez et al., 2006). We could therefore speculate that this new disease rightly called "impactitis" (van Diest et al., 2001), coupled with the requirements of academic promotion that are based on quantity rather than on quality, are in part responsible for the opacity of the way in which authorship and ACKs are attributed in the non-English speaking world.

It would be interesting to know how Spanish, Venezuelan and French researchers behave when submitting their research to English-language journals. Do they more frequently include an ACK section in their RPs? Does this section tend to be longer? Would there be a difference between medical journals published in English in non-English speaking countries and those published in the English-speaking world where impactitis is endemic and where the debate over the impact factor issue has triggered heated – sometimes even contentious – debate (Pelderman, 2007)? The US sample we analysed did not allow us to answer this question because of the 50 US research papers examined, only one was written by Spanish-speaking scientists from Spain and two by French researchers. However, the results of our research suggest that NNES scientists' ACK behaviour differs from that of their NES counterparts even when publishing in English-language journals. This would answer the question asked at the beginning of this paragraph, but further research is surely needed to confirm this finding.

6.2   Funding

Stark differences were also observed in the amount of grants and other financial support received by the RPs published in the four corpora, papers from the US corpus being much more frequently and substantially funded than those from the Spanish- and French language journals. This is not surprising because in 2000, and in the United States of America alone, the pharmaceutical industry financed over 62% of biomedical research (about US$30 billion as reported by Bekelman and Gross, 2003). What is more, in the US the proportion of industry-funded medical research has almost doubled since 1980 (Henry and Lexchin, 2002). We contend that the number of grants recorded would have even been higher had we examined clinical trials only.

The qualitative difference observed regarding the sources of funding, especially between the US and the Venezuelan samples, also clearly reflects the fact that in the developed world, especially in the US, about 70% of medical research is financed by the private sector (this figure, however, may differ from one developed country to another), whereas it is the public sector that (meagrely) supports scientific research in developing countries, such as Venezuela (Nour, 2005; Salager-Meyer, 2008).

Our quantitative data on funding also mirrors the fact that the European Union invests much less in health research than the USA. In 2004, for example, in the US the non-industrial sector spent twice as much as Europe on biomedical research and almost three times as much when adjusted for the size of the two populations (Groves, 2008)[10]. What is more, within Europe, health research must compete for its slice of the science funding pie, especially with physicists who are very influential in European policy, which is not the case in the USA.

7 Conclusions

We here analyzed the ACK paratext features of medical RPs in four different research publication contexts: Venezuela, Spain, France and the United States of America. Our findings tellingly underscore the fact that "backstage solidarity" (Goffman, 1959) significantly differs from one context to the other, and that the structural complexity of the sociocognitive ties between professional peers as revealed by research paper ACK paratexts is much more an integral facet and a ritualized politeness expression of research reported in US journals than it is in their French- and Spanish-language counterparts. In the non English-medium journals, indeed, ACK sections are not only much less frequent but also much shorter, especially in the French-authored papers. We could perhaps wonder how important it is to Spanish- and French-speaking scientists to thank their colleagues for their collaboration/or and expertise. What is the influence of language and culture here?[11] A close look at the ACK paratexts of the RPs written by NNES and published in the US journals analyzed here seems to indicate that NNES' behaviour differs from than that of NES, even when they publish in English-language journals. This suggests that the size of the audience and that of the academic community researchers belong to – two factors that have been put forth to explain

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[10] In 2004, the US non-industrial sector spent around 0.40% of its gross domestic product on biomedical research compared with 0.17% in the then EU 15 member states (before the accession of 10 candidate countries on May 1st 2004). As Groves (2008) points out, the difference would have been much greater if all EU countries were included.

[11] It is a fact that Venezuelans in general do not express their gratitude as frequently as English- (or French) native speakers do. The concept of 'politeness' is certainly not the same in Venezuela as it is in France, the United Kingdom or Spain.

intercultural variability (e.g., Burgess, 2002; Van Bonn and Swales, 2007; Moreno, 2008) – cannot be held responsible for the differences observed in the present study, but we would need a much larger sample to corroborate this hypothesis.

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Acknowledgments

Researching into English for research publication purposes from an applied intercultural perspective[1]

Ana I. Moreno

Spanish scholars have begun to request courses in skills relevant to publishing in English in order to enhance their chances of seeing their work accepted by international journals. I argue that it would be pedagogically useful to include tasks to raise their awareness of English-Spanish cross-cultural variation in academic writing. To support this, more cross-cultural research into academic discourses in English and Spanish using rigorous comparative designs is still necessary. After reviewing previous cross-cultural studies, I suggest some features of methodology and research design that would allow us to yield increasingly comparable, reliable and explanatory findings which could be a useful aid for developing practical teaching applications.

1   Introduction

Spanish scholars are gradually moving towards publishing their research results in international journals. For example, the number of papers by Spanish authors at the Spanish National Research Centre (CSIC) appearing in journals such as those covered by the Web of Science tripled from 1990-1992 to 2004-2006 (Gómez et al., 2007). It is important to point out that this trend has not been experienced in all disciplinary areas to the same extent, and is much less marked in the social sciences and humanities in the Spanish context as a whole (Gómez et al., 2006). However, given certain recommendations at the institutional level (e.g., at the CSIC), this may change, as even researchers in the humanities and social sciences will need to have at least 25% of their work published in English if they want their research activity to be recognized as excellent.

Although the situation in Spain is more complex than this paper can portray (see Rey-Rocha et al., 1998; Gómez et al., 2006), it may be said that one crucial factor explaining this growing trend towards scholarly publication in English was the introduction (in 1989) of research activity evaluation every six years (the so-called *sexenios*). This has encouraged publication in journals indexed in prestigious databases, such as the aforementioned Web of Science. The more recent accreditation systems used by the ANECA (National Agency for Quality Assessment and Accreditation) to qualify candidates for tenure-track positions (Real Decreto 13/12/2007, 5th October), as well as those used by this agency and other regional ones to qualify candidates for

university work contracts, are also expected to further the trend towards publication in indexed international journals, most of which are in English.

Generally speaking, until very recently Spanish scholars had little or no chance to use English for real academic purposes in their undergraduate and postgraduate degrees, in contrast to many of their colleagues in European countries such as the Netherlands, Finland and Germany (Dafouz and Núñez, 2009). This means that Spanish scholars in most fields usually need to make tremendous efforts to adapt to the discourse practices prevalent in international journals in English. To help these scholars, a few pedagogical materials specifically oriented towards them have recently been published (Fortanet et al., 2001). On the other hand, some scholars have started to seek more direct teaching assistance offered in the framework of Spanish higher education and research institutions (Mur-Dueñas and Lorés-Sanz, 2009). The present paper is especially concerned with English for research publication purposes (ERPP, Cargill and Burgess, 2008) courses for scholars who are beginning a scholarly career in non-English-medium settings like Spain. In my view, such courses are likely to flourish in the future as a new branch of EAP, and it may therefore be important to start reflecting collectively on the pedagogical options available to make them as relevant as possible to this community of scholars.

Various approaches to the teaching of EAP have been proposed and widely debated in the last few decades. They have been roughly classified as having pragmatic, critical or critical pragmatic orientations (see Harwood and Hadley, 2004, for a review). For the purposes of this study it could be stated that the pragmatic EAP approach is more concerned with facilitating non-native English speaking (NNES) scholars' access to their corresponding international discourse communities and, therefore, with teaching them the set of prevalent academic discourse practices in journals of prestige, i.e., the Anglo-American ones. The critical EAP approach is more concerned with difference and with questioning existing educational policies and practices in an attempt to transform both education and society. Finally, the critical pragmatic EAP approach attempts to "synthesise the preoccupation with difference inherent in critical pedagogy and the preoccupation with access inherent in pragmatic pedagogy" (Harwood and Hadley, 2004: 366).

Given the current pressure on Spanish scholars to either publish in English or perish, it is my contention that a purely critical ERPP approach in the usual sense of protesting against and criticizing mainstream practices would be a disservice to these scholars. I would agree with Harwood and Hadley (2004) that a critical pragmatic approach that addresses difference and access simultaneously might be more useful for most of them. However, instead of spending too much energy on raising scholars' awareness of disciplinary differences, as these authors seem to suggest is useful, I contend that it would be more relevant to raise their awareness of other types of cross-cultural

differences, such as those related to audience type and its associated sociocultural and cognitive features. In particular, these scholars would need to be very aware of differences in writing that might be related to whether they are addressing a national or international readership (see Curry and Lillis, 2004, for other audience types).

In the present paper, I will first discuss in what way bringing peninsular Spanish versus international English cross-cultural variation findings into ERPP courses would help Spanish scholars to be more aware of national versus international audience-related differences in writing. For such a pedagogical solution to become possible, however, more research into academic writing for publication purposes in international English versus Castilian Spanish using rigorous comparative designs is still needed. To provide a background for such a line of research, I will review some English-Spanish cross-cultural studies of the research article (RA) and the RA abstract, before proposing some developments in cross-cultural research methodology and design that, in my view, would lead to increasingly comparable, reliable and explanatory findings. Finally, I will draw on methods used for researching foreign language (L2) learning to propose an approach that would contribute to making results from future cross-cultural studies of academic writing increasingly applicable to practice. Finally, I will highlight recent studies that advance in this direction.

2   The usefulness of bringing cross-cultural findings into ERPP courses

Let us consider the case of one multilingual informant reported in Harwood and Hadley (2004) to illustrate what may be considered a culturally-motivated difficulty with writing academic texts in English. This informant complains that:

> […] in Nepal, our style of analysis is different, because people feel pretty much bad about criticizing others. […] In order to succeed, I would have to change. I would have to learn to use a very aggressive style that would more or less – you know – slap the reader in the face (Harwood and Hadley, 2004: 362).

As shown by these words, this informant has been able to identify one problem with his writing approach, i.e., his lack of critical attitude towards others' work. He is aware that in order to have better chances of success he would need to introduce a change he is not comfortable with. This is by no means an isolated case.

That Spanish scholars also feel uncomfortable about taking a critical stance is supported by empirical evidence from various fronts. A recent example can be found in a case study of successive manuscripts submitted internationally by an established Spanish scholar in the field of educational psychology and

the responses given by the journal editor and peer reviewers to these drafts during a six-month revision period (Burgess et al., 2005). One of the demands made by the reviewers, conveyed by the journal editor, was that the paper needed to "clearly articulate the contribution to the field" (p. 288). In technical terms, the problem with this writer's introduction was that it lacked an important move in its rhetorical structure, specifically Move 2 (establishing a niche), whereby authors situate their current research in terms of its significance in the field established in Move 1 (establishing a territory), before they show how they will occupy this niche in Move 3 (occupying the niche) (Swales, 2004).

It is important to note that most of the options available for developing Move 2 (e.g., counter-claiming, indicating a gap, question-raising or continuing a tradition, Swales, 2004: 141) involve evaluating the adequacy of others' work, the state of affairs or existing research traditions. Therefore, in order for this author to respond to the reviewers' demands, he would need to develop a more explicit critical attitude in relation to his discipline, in spite of his likely unwillingness to do so. As Burgess has explained (personal communication, 2008), one reason why Spanish researchers omit Move 2 is a reluctance on their part to criticize earlier work in the field and foreground their own contribution.

One possible pedagogical approach in cases like the one mentioned above would be to attempt to help Spanish scholars understand possible reasons for some of their difficulties. In relation to the omission of Move 2, we might hypothesize that this is a feature typical of their native writing culture, which may have been transferred to writing RA introductions in English for an international audience. This hypothesis is, in fact, supported by Mur-Dueñas's (2007) cross-cultural results in connection to Spanish and American RA introductions in business management, where a generalized lack of Move 2 is observed in the Spanish sub-corpus. A similar difference is observed in the introduction to RA abstracts in experimental social sciences (Martín-Martín, 2003). Thus, in order to explain why some Spanish scholars have a tendency to omit Move 2, we could show them empirical findings concerning this type of cross-cultural variation.

Another pedagogical aim could be to help Spanish scholars see the consequences of not changing their writing habits. To this end, participants could be made aware of the effects an inappropriate omission of Move 2 may have on the international reader. For instance, they could be referred to the typical comments made by international journal peer reviews when they come across the lack of such a move. The rhetorical effect in the case reported in Burgess et al. (2005) was that the editor and reviewers questioned the need for this author's research to have been conducted in the first place, which resulted in the author's being required to revise it. Failure to revise this

rhetorical feature in his writing would then be an obvious obstacle preventing his research from being published.

The pedagogical approach I wish to advocate for ERPP courses in Spain would thus incorporate two extra features before providing participants with possible rhetorical and stylistic solutions to enhance their chances of having their research published: a) tasks that help them become aware of cross-cultural variation in certain aspects of academic writing as a function of audience type and its related sociocultural and cognitive features; and b) tasks that raise their awareness of the likely rhetorical effects caused by an inappropriate transfer of certain features typical of their writing in Spanish to writing in English as an L2 for an international audience. Of course, for this kind of approach to become possible, both instructors and participants would need to have access to: a) reliable quantitative and explanatory cross-cultural findings on relevant rhetorical and stylistic features of the academic genres that are the objects of instruction; and b) reliable studies on the rhetorical effects caused by the possible inappropriate transfer of Spanish writing features to writing in English for an international audience.

I will now briefly outline some of the cross-cultural studies that have established quantitative comparisons of text features that are typical of research articles and abstracts across Anglo-American English and Castilian Spanish. My review in section 3 does not claim to be exhaustive or to summarize specific cross-cultural findings already obtained. Instead, it will underscore the major overall contribution of this kind of studies to the field.

3 Some English-Spanish cross-cultural studies of RAs and RA abstracts

Most English-Spanish cross-cultural studies of the RA and the RA abstract have used similar quantitative methods to those employed to analyse texts written in English. Some of these methods have been applied to the comparison of the rhetorical structure of whole texts of a genre or parts of texts within comparable disciplinary fields. For instance, Burgess (2002) compares the structure of RA introductions in linguistics and Mur-Dueñas (2007) compares all the sections in business management RAs. Pérez Ruiz (1999), Martín-Martín (2003) and Lorés-Sanz (2009) compare the structures of RA abstracts in epidemiology, experimental social sciences and linguistics, respectively. By applying rigorous quantitative methods these studies have managed to offer convincing evidence that the content of these academic genres varies significantly across the writing cultures under comparison.

On other occasions, quantitative methods have been used to compare lower-level text features. In some cases, these have been considered in the context provided by whole texts in which many rhetorical and pragmatic functions

are involved. For example, Lorés-Sanz (2006) compares the use of first person pronouns and citations in linguistics RA abstracts, and Mur-Dueñas (2008) examines the use of engagement markers throughout business management RAs. In other cases, lower-level text features have been compared in the context provided by more specific rhetorical environments. For instance, my own studies on various aspects of metadiscourse use in business and economics RAs restrict their comparison to a certain type of relational function, e.g., premise-conclusion (Moreno, 1998, 2004). In another example, Salager-Meyer et al. (2003) narrow their comparison of stylistic resources in Spanish, French and English medical discourse to one particular pragmatic function, e.g., criticism. In turn, Lorés-Sanz (2006) compares the use of the first person pronouns and citations across the various rhetorical moves in linguistics RA abstracts too, and Mur-Dueñas (2009) examines citation use across the various sections in business management RAs. From these quantitative studies we have learned that cross-cultural variation not only shows itself in aspects of the content of academic genres but also of their form.

Many of these quantitative studies share a concern with most traditional contrastive rhetoric (CR) research. However, instead of examining novice writing in English as an L2, as in Kaplan's seminal paper of 1966, and from there speculate about the rhetorical systems of the writers' L1s, the aforementioned studies compare the rhetorical and stylistic practices followed by successful Anglo-American and Spanish writers when communicating in their L1 in comparable academic contexts, with the exception of audience type (and its associated sociocultural and cognitive features). Their contribution to the field is thus important, since their research designs are more appropriate for confirming Kaplan's original hypothesis whereby the rhetorical structures [and, I would add, the stylistic features] of texts may vary greatly across languages and cultures. As I have explained elsewhere (Moreno, 1998), if there is no reliable knowledge about the extent to which the rhetorical habits of Spanish writers differ from, or resemble, those of English writers in comparable contexts, then little can be done to verify whether or not their problems with writing in English as an L2 may be related to negative transfer from L1 writing habits.

I will refer to the aforementioned type of studies as cross-cultural academic discourse analysis (CADA), which may be considered a recent strand within CR (Connor, 2008) since they compare rhetorical and stylistic features of academic texts across cultural borders. Now that we are in the initial stages of a promising tradition of CR studies, my aim in the remaining sections is to propose a few methodological developments and research designs through which studies in this field might yield increasingly comparable, reliable and explanatory findings which practical ERPP applications could usefully draw on. In particular, I am especially concerned with teaching applications that

incorporate raising awareness of rhetorical functions and stylistic features in ERPP genres.

4   Future developments in English-Spanish CADA

Comparability of textual features is, in my view, still one of the most pressing issues (Moreno and Suárez, 2008b). Various methodological changes have recently been incorporated to improve comparability conditions of cross-cultural studies. The most influential developments have come from such research traditions as discourse and genre analysis, pragmatics and corpus linguistics, and a few studies have also applied diverse approaches involving ethnographic methods and statistics. Research designs that investigate the content and shape of texts and their relationship to certain sociocultural and cognitive factors associated with audience-type need to observe the comparability requirement in two fundamental phases (Connor and Moreno, 2005).

The first phase is the selection of comparable corpora (Moreno, 2008). Recent studies have demonstrated how the content and form of academic discourse vary as a function of factors that are external to texts-as-products (e.g., generic, Swales, 1990, 2004; disciplinary, Hyland, 2000; and diachronic variables, Salager-Meyer, 2006). Thus, collecting comparable corpora that take these variables into account by means of stratified sampling (i.e., matching corpora representing given comparable genres, disciplinary fields and historical periods) has allowed recent cross-cultural researchers to carry out increasingly meaningful comparisons of text-internal features. However, this type of sampling procedure does not manage to control other relevant contextual factors as possible confounding variables that may also affect the rhetorical and stylistic realization of texts (e.g., the writers' academic background and experience in writing academic Spanish and English for research publication purposes, their actual mother tongue, the presence of possible brokers intervening in the composition of the text, the constraints of editorial guidelines, etc.). As I have argued,

> if the confounding variables are left uncontrolled and we observe cross-cultural differences in relation to a given rhetorical [or stylistic] feature, we will not be able to attribute them to the [sole] effect of the writing culture, … because they may have been due to the effect of some confounding variable (Moreno, 2008: 38).

Therefore future compilations would need to actively exclude or control probable confounding variables, which could be identified by qualitative methods.

The second phase is the identification of comparable textual concepts that can be further operationalized into linguistic features. In this respect, I have argued elsewhere that "if this type of study is ever to have some kind of real

validity and application, an even greater level of precision is needed. One should reach the levels where it may be said that two given signaling devices [or other rhetorical or stylistic features] are equivalent to each other" (Moreno, 1998: 551) in the sense that they serve to realize highly similar rhetorical, discoursal or pragmatic functions (see also Moreno and Suárez, 2008b). Some of the studies reviewed above carry out increasingly valid comparisons since their focus is restricted to more specific rhetorical environments. In my view, greater levels of validity and applicability could be achieved if comparisons of given lower-level text features were established across text fragments that were comparable at all possible levels of functional text analysis. For this purpose, micro-specialized corpora could be analysed in terms of the rhetorical structure of the texts down to the step level. One problem is that, as Lynne Flowerdew (2002: 112) observes, this kind of analysis "is only suited to texts which have a fairly formulaic rhetorical structure". In fact, certain academic genres would lend themselves to precisely this kind of analysis and tagging since, at least in some disciplines, they are becoming increasingly standardized (Salager-Meyer et al., 2003; Ayers, 2007).

Results from this kind of top-down comparative functional approach would allow cross-cultural researchers to codify ('tag') the texts accordingly. By so doing, all interested users could automatically retrieve comparable text fragments by means of corpus linguistics tools in order to compare the use of lower-level text features. For instance, verb tense use could be compared across text fragments *stating a finding* [step] when *presenting results* [move] in the *results section* [section] of RAs. This kind of comparison would be more valid and meaningful than if it were established across the whole results section, since the matched text fragments would be performing a similar rhetorical step in a similar move in a similar section. This approach would thus help us to increase the applicability of cross-cultural results to practical ERPP teaching materials focusing on rhetorical functions.

Another problem is that, since manual analysis of rhetorical functions is very time-consuming, the number of texts that could be processed by each analyst would not be very large in the framework of a manageable project. In addition, determining the function and scope of a given text fragment can also be very subjective at times. One possible solution might be for various researchers to apply the same methods of analysis to the same and supplementary corpora (e.g., Burgess, 2002), taking measures that could guarantee an acceptable degree of inter-rater reliability (i.e., agreement among raters). It would also be useful to draw on statistical developments to calculate the optimum sample size for each study in order to minimize efforts. Once comparisons were performed, greater efforts should be made to show whether the identified differences are statistically significant or not at

any comparable level of analysis (e.g., Moreno, 1998; Salager-Meyer et al., 2003; Moreno and Suárez, 2008a).

In my view, these methodological developments would allow future corpus-based quantitative cross-cultural comparisons of academic texts to provide increasingly meaningful and reliable accounts of differences and similarities in the use of rhetorical and stylistic features. That would be an important achievement, which might be improved if such comparisons could also help us to better understand why certain rhetorical and stylistic features tend to be preferred by given discourse communities across cultures. For these explanatory accounts to become possible, cross-cultural academic discourse analysts would need to go beyond the texts as products (Connor, 2004b) and beyond their own speculations by accessing the contexts of production and interpretation of the texts through qualitative methods (see Hyland, 2000; Flowerdew, 2002; Lillis, 2008; Moreno and Suárez, 2008a, 2009).

Another pressing issue is the usefulness of research contributions. In my view, applied researchers in ERPP should now concentrate on L2 English text features that cause difficulties for scholars attempting to publish internationally. If an L2 text feature does not cause conflict, why should we worry about it? Most of the previously reviewed cross-cultural studies in the new era that began in the 1990s are useful in the sense that they have lent more valid support to the CR hypothesis that differences exist by examining L1 rhetoric directly. However, we are left wondering whether Spanish scholars' possible transfer of differing features to their L2 writing in English could cause rejection of their manuscripts. Researchers on the cusp of the new era, who sought to lend weight to the CR hypothesis indirectly, resting on the idea of cross-cultural transfer, likewise left us with questions about the real-world significance of differences. For example, Valero-Garcés (1996) shows that Anglo-American scholars use more metatext in economics papers than their Spanish counterparts writing in English did, yet we note that the observed cross-cultural variation did not prevent the Spanish scholars from publishing their L2 English texts. As her research design also left us wondering to what extent Spanish scholars use metatext in comparable L1 Spanish, it is difficult to draw conclusions about how ERPP instructors might best proceed or whether they need to take any action at all. Therefore, for applied research in this field to provide increasingly useful findings for ERPP courses, studies now need to: a) reveal which L2 English text features are likely to cause rejection of NNES scholars' manuscripts, and b) assess whether they could be a result of cross-cultural transfer.

At this point we should be able to acknowledge a pressing need to establish closer connections between cross-cultural studies of academic writing and studies in second language learning by investigating: a) the rhetorical and stylistic difficulties NNES scholars encounter in the publication process; b) the type of unintended rhetorical effects that are caused on the international

reader by misusing, underusing or overusing certain rhetorical and stylistic features; and c) the minimum essential rhetorical and stylistic revisions associated with publication success, such as those already demonstrated at the level of paragraph coherence, additions and deletions, reorganization and thematic and rhetorical structure, reformulating, argument, positioning, and so on (Flowerdew, 2000; Kerans, 2001; Burgess et al., 2005; Lillis, 2008). Drawing on the CR hypothesis, it is expected that some of the identified difficulties will be shared to a great extent by relatively homogeneous groups of scholars on the assumption that these scholars share relatively similar educational, disciplinary, professional and sociocultural backgrounds, besides a common language. In what follows, I will highlight recent studies that, in my view, would help us advance in this direction.

5   What could intercultural academic discourse analysis offer?

In order to identify the rhetorical and stylistic features that tend to be a source of difficulty, their likely rhetorical effects and possible rhetorical and stylistic solutions, one type of analysis that should be illuminating is what I would like to call *analysis of suggested improvements to texts in process* (analogous to error analysis in second language learning research). This line of enquiry would consider academic writing as a process in which relevant participants are likely to specify exactly which rhetorical and stylistic features of a given exemplar of a given academic genre may need revision and why (Flowerdew, 1999; McKercher et al., 2007; Lillis, 2008). The most relevant participants in this process would be mainly journal editors and peer reviewers, since they are established members of the targeted discourse communities. In order to capture recurrent patterns of revisions and reasons for them, rigorous sampling procedures would need to be used. This would involve analysing the academic interactions through which the form and content of a sample of academic texts submitted to a sample of journals preferred by a given population of scholars are negotiated until they are published.

The greatest challenge involved in using this procedure would be how to gain access to verbal interactions that tend to be private, while applying valid sampling procedures. But the great advantage is that these interactions usually take place through writing (e.g., peer review reports and editorial correspondence), which would facilitate analysis. It is important to emphasize, however, that comments by peer reviewers do not always offer a good diagnosis of a problem. As Kerans (2001: 339) notes, "referees may lack the metalanguage needed to talk about rhetorical problems, thus explaining their rush to blame "the English" vaguely whenever they are confused by an L2 writer's manuscript". Therefore this information would need to be supplemented by data obtained by analysing the actual

manuscripts and their subsequent revisions towards publication (e.g., Burgess et al., 2005). Relevant information could also be obtained by means of qualitative methods (e.g., focus groups and talk-around-text interviews) (Flowerdew, 2002; Lillis and Curry, 2006; Lillis, 2008) with a view to triangulating the research and accessing peer reviewers' and end readers' perceptions of quality in academic writing.

Given the focus of this type of studies on text interactions between participants from diverse linguistic, cognitive and sociocultural backgrounds, they could be situated in the realm of intercultural rhetoric research (Connor, 2004a, 2008). Connor's distinction between contrastive and intercultural rhetoric draws on Sarangi's (1995: 22) distinction, according to which "'cross-cultural' attends to abstract entities across cultural borders, while 'intercultural' deals with the analysis of an actual encounter between two participants who represent different linguistic and cultural backgrounds". Since the studies I envision would look at actual encounters for negotiating the meaning and form of academic texts between academics with diverse linguistic and cultural backgrounds, I would like to further characterize them as *intercultural academic discourse analysis* (IADA).

6 Final remarks: On bridging the research-teaching gap in ERPP

My major concern in this paper has been to suggest ways in which future cross-cultural studies could obtain increasingly comparable, reliable and explanatory findings that could be ever more useful to ERPP courses designed for NNES scholars in countries where English is not the medium of communication. To illustrate my proposal, I have given examples of research relevant to the Spanish context, but the suggested approach could also be applicable to research into ERPP undertaken in relation to other languages used in similar contexts. The research design I have proposed would, among other things, aim to establish the rhetorical and stylistic features that are typically rejected when NNES scholars attempt to publish their research internationally. This would allow intercultural researchers to set up an inventory of rhetorical and stylistic difficulties whose possible origin could be investigated by follow-up cross-cultural studies, thus helping to bridge the gap between intercultural and cross-cultural discourse analysis.

The major drawback of this multiple-approach design is that it would take years to obtain visible results and, as is well known, genres are dynamic constructs. Therefore, it would be essential for large teams of researchers to be able to rapidly coordinate their efforts around common pedagogical objectives. The great advantage would be that, on the basis of results obtained in this way, more "pedagogically-primed" resources (Swales, 2002: 155) could be designed for relatively homogenous groups of scholars in

terms of their cultural, linguistic and disciplinary backgrounds. These could offer scholars and their instructors, mentors or other writing facilitators: a) insights into the difficulties likely to be encountered in the publication process; b) reliable explanations for some of them; c) more reliable information about the consequences of not changing rhetorical and stylistic habits; and d) a clearer picture of viable rhetorical and stylistic solutions on which they could base choices. In classroom teaching, instructors could select or adapt the most relevant activities for a given group of participants in a given ERPP course on the basis of information gathered from specific pre-course needs analysis.

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Section II

Discourse analysis of professional English

Research reports in academic and industrial research[1]

Philip Shaw

Many doctoral students at Swedish technical universities are so-called *industridoktorander* who are seconded by their companies to study for an advanced degree while employed by the company, and typically while working on research topics which arise naturally out of their industrial work. They therefore have experience of the genres and writing processes associated with in-company research and development as well as those of academic research. This paper reports on interviews based on text samples in which such doctoral students describe their writing, its production conditions, and its audiences (and hence language choice). The aim is examine their perceptions of the differences between the two writing environments and the discourses which researchers use to discuss them.

Broadly it is concluded that the subjects perceive themselves as belonging simultaneously to two discourse communities with rather different values. University research reports are themselves exposed to competition for publication space and need to stand on their own, while the internal reports are embedded in a network of telephone and email communication and are written more for the record. Therefore the academic reports need to be tightly focused, carefully written in the 'empiricist repertoire', and explicitly meet the expectations of an international audience, while the company test reports are merely raw material for use in inter-company competition, and therefore must be inclusive, to some extent truthful in a 'contingent repertoire' and implicitly refer to the shared company environment. However in-company attitudes to the written product vary according to the discipline; archival material can be very valuable in some areas and useless in other, fast changing, fields.

1   Introduction

The groups of genres called 'report' are extremely diverse (Ruiz-Garrido, 2006). They include genres written by learners like the lab report or book report, business genres like the public annual report or the monthly project report (House et al., 2003), and research genres like the technical report. 'Report' writing is a much demanded skill and teaching it is quite big business.

The actual nature of any report of course depends on its place in the genre assemblage (Spinuzzi, 2004) of a job and on its purpose, audience and topic. However the various report genres typically have official names (Santini, 2008), and are relatively stable (Schryer, 1994) and visible, foregrounded for their users. This means that they are much discussed, and to some extent sites of struggle. Although writing takes up a great deal of engineers' time, as an

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activity it is not prominent in engineers' image of their culture. Writing is not mentioned in Kunda's study of the subculture (1992), for example and Artemeva et al. (1999: 303) say "these students usually bring with them a resistance to the notion of engineering as a profession that requires literacy". Managers often say that their subordinates cannot write reports (Brammer and Ervin, 1999; Gaboury, 1999), though this is such a universal complaint that one may suspect that power plays a role, and dissatisfaction with subordinates' writing sometimes merely transfers the managers' own difficulties downwards. Another common complaint is that engineering students do not write enough in their university education and that universities should do more to train them (Wisler, 2008).

The diversity of the report group is, however, such that learner genres may not be helpful antecedents (Devitt, 2007) for professional genres. For them to be effective antecedent genres it would have to be the case that the objects of "the learning activity in the school (the theories, laws, methods, tools, and other artifacts of the profession) become 'mediational means' in the workplace" (Le Maistre and Paré, 2004: 45, cited in Artemeva, 2007). That is, things learned for their own sake in the classroom become available as tools in the workplace. But this is not a simple transfer. Using workplace genres is a matter of acquiring the identity of a workplace participant and perceiving the conditions of production and power relations typical of this environment. This may not be easy, since learner genres are very different in this respect; their aim is to display knowledge and allow testing (Hållsten, 2008: 168).

In learner genres, power, knowledge of content and disciplinary values, and communicative skill are all in the audience's hands. The text is autonomous – the teacher sits alone and grades, in engineering classes often with no dialogue with the writer at all. The action intended – setting a grade – is entirely in the hands of the knowledgeable, powerful and skilful partner. It is thus not surprising that teachers emphasize the importance of meeting the audience's expectations.

In professional genres, power, knowledge and communicative skill are distributed in varying proportions among the actors (Dias et al., 1999; Winsor 1999). When an expert writes a report for a manager, for example, the knowledge and the power are broadly speaking on opposite sides. Professional texts are embedded in a matrix of shared drafts, emails, phone calls, chats, and the written product is rarely the sole bearer of its purpose. The action intended by the text is complex, formed by the community in which the document is written, and requires multiple decisions. This can result in conflicts among actors. So engineers often fail to see the complexity of the situation and focus on what they want to see done, leading to managers' complaints that they do not consider the reader enough.

For example, Abbott and Eubanks (2005) found that academic writing teachers based their judgements of text quality on general principles like providing topic sentences, while practising engineers made similar judgements but on the basis of "speculations about the particular context and the effect the memo might have" (p. 201). Interestingly, Forey (2004) found that people working in business paid more attention to the ideational than the interpersonal features of a text and their primary concern was with clarity rather than the hectoring tone which struck teachers. Teachers and (linguistic) researchers may, says Forey, be overly sensitive to linguistic choices, or at least may have a discourse for talking about texts which highlights these. Parks (2001) found that nursing students were taught at college to write care plans in an explicit way as if for public consumption, but once they were in the community of practice they learned to write less explicitly, saving effort and assuming shared knowledge. Here again there was conflict in the real-world environment. Senior staff visualized a wider audience for the plans; the more implicit versions were 'bad habits'.

There has been much discussion of the workplace-classroom opposition (Artemeva, 2007), but there is another interface between the academy and industry which has had less attention, and that is in the area of research and development. In the academy there is an organic progression from learner tasks to research genres (essay/lab report → undergraduate thesis → dissertation → article). In industry, research genres like technical reports are part of a web of intertextually linked genres; the product of technical reports goes into project progress reports and specifications, and these in turn lead ultimately to marketing and sales documents. The research genres in industry and academia themselves, however, may have identical types of content (results of investigations) and broadly similar purposes (to inform interested parties of these results). Understanding the differences which nevertheless exist between the genres will, on a practical level, help us understand the different requirements of the environments in which engineers are required to write, and, on a theoretical level, provide insight into the relation of genre and purpose (Askehave and Swales, 2001).

This paper reports an investigation into the relationship between academic and industrial research reporting, as perceived by engineers working in both fields simultaneously. At technical universities in Sweden there are PhD students called *industridoktorander*, who have come back into academic research after a period of work in industry. They are employed by a company but working on an academic project. They typically spend three or four days a week at the university and one or two in their company, even if they are mainly working on their PhD project in both environments. They do not teach and are not novice academics being drawn into that community of practice. Their aim is rather to acquire expertise which will be valuable to their company, but also of course to acquire academic accreditation for

themselves. So they are at the professional/research interface, with experience of both environments.

The research questions asked in this paper concern research reports written for the company and as part of doctoral studies (mainly published as academic articles). The investigation views industrial research reports and academic articles as related genres and aimed to identify shared perceptions of the differences between them in terms of the classic genre characteristics (Swales, 2004) of purpose, audience, and the style and form of the product text.

The questions to which answers are sought are:

- How do research reports fit into the respective genre assemblages of their environments?
- How are the reports perceived in terms of audience, status, language choice (local language Swedish or international language English), and rhetorical requirements?

2   Method and subjects

I contacted a convenience sample of 10 *industridoktorander* in the field of vehicle engineering and arranged to interview them, four at their company and six at what I will call the Technical Institute, a large and prestigious engineering university in Sweden. Nine were men, one a woman and eight came from one large Swedish-owned vehicle manufacturer, one from another large US-owned manufacturer and one from a small vehicle engineering company owned by UK financial interests. Nine were L1 speakers of Swedish, one of German. They were at varying stages of their academic and industrial careers, with from a few months to ten years' employment in their companies and from a few months to four years of doctoral work. All were employed in research and development departments; the small company specialised in this area. Their work in companies was typically not as members of closely-knit project development teams, but (like Hållsten's informants (2008)) as experts on a particular narrow area, who might be consulted and asked to carry out tests on prototypes or parts under development by a number of such teams.

The interviews lasted between half an hour and forty-five minutes. I took notes and recorded on an MP3 recorder. The interviews were semi-structured – based on a schedule of questions (Appendix), all of which I obtained answers to, but which I added to where appropriate. Five interviews were conducted in Swedish and five in English, since all participants claimed they were willing to use either language. In practice the company environment encouraged the use of Swedish, the university that of English. All interviews were conducted in the language I initiated them in (although I offered the

choice), and it also seemed natural to me as an L1 English speaker to initiate in English at the university and in Swedish at the company.

3 Results

3.1 Genre repertoire

The interview technique is clearly better for eliciting fairly formal written genres than occluded or oral ones. It therefore produced something more like a genre repertoire focussed in communicative named genres than a genre ecology including all ephemera, self-directed notes, etc., (Spinuzzi, 2004; Hållsten, 2008), which were doubtless very common. Subjects needed prompting to elicit e-mail, telephone conversations, etc. The genres they mentioned can be categorised as business, educational, and research. In the first category most of them only perceived themselves as producing minutes of meetings. Only the subject who worked in a small company produced a full range of genres, including tenders, product documentation, etc. Educational genres consisted of coursework assignments at the Royal Institute – problem solutions and presentations, for example. Research genres were produced in both environments. In the university they produced theses – the licentiate waystage and the actual doctoral dissertation – conference papers and journal articles. Most doctoral theses were, or were to be, compilations of published articles with an introduction creating some sort of unity, but even where the thesis was to be a monograph, conference papers and articles played a large part in writing at the university. In the company, research or testing work was reported in such genres as technical reports, specifications, standards, technical requirements, system descriptions, and again conference papers. Here I focus on technical reports and conference papers in the company and articles and papers at the university.

3.2 Audience and place in the genre system

Published articles are in the public domain and open to all, indeed the number of outside readers (citations) is a key metric of their success. By contrast company research reports are normally private and in fact kept quite secret, so that mere language researchers are not able even to see an example. This is one aspect of the quite considerable generic differences encountered by *industridoktorander*.
Interviewees noted that in the academy the final text is a primary means of communication which is autonomous and must speak for itself. By contrast, in industry by the time one writes the report one has already informed all those who are primarily concerned orally or by email or a Powerpoint presentation. While it is not their discourse to put it like this, one could say

that one key generic difference lies in the roles of the immediate and ultimate audiences. At the university the engineer does tests and discusses the results with immediate colleagues, the supervisor, etc. The group then sets about producing, more or less collaboratively, a text which will isolate the issues that are important in a disciplinary sense and present them to the important but relatively faceless public audience of the journal or proceedings volume who will, it is hoped, incorporate this insight in their thinking and research. In particular, the article has to pass the scrutiny of referees from a different environment and possibly with different backgrounds.

In the company too, subjects reported that they test and then discuss the results with colleagues and those who commissioned the tests. This is not, however, mere preparatory activity, but actually the process of reporting to the important audience. Then the tester starts, generally alone, to produce a text which will be a record of the results for the faceless and potentially non-existent audience of later company researchers who need some of this information for an unknown purpose. Given the strict secrecy normally surrounding the reports even this faceless audience will be employees of the same organization with a good deal of shared background. If anyone acts as a critic of the text it is a senior person in the same workplace with shared knowledge of local practices and conditions.

The issue of audience in the company was one where rather different attitudes were expressed, again perhaps reflecting the less formalised rhetorical situation. Some informants tended to doubt whether there was an audience for archived reports at all, thinking that anyone who needed the information would find out who had written the report and ring him or her up to find out what it said. But several others thought that archived reports were an important resource due more attention than they generally received. The following dialogue (translated from Swedish) illustrates this:

- Interviewer: Who's going to read these reports?
- Subject: The people involved in the actual construction and whoever has my job after me. I've had lots of information from old reports that people wrote before me
- I: Do you inform people before the report is finished?
- S: Yes I send/present something preliminary to those who are absolutely interested and the final report to everyone who might be interested
- I: Aren't these archived reports just dead paper that no one reads?
- S: In electronics no one is interested in what happened ten years ago, but in my field it's not like that. I can read reports from the seventies and get something useful from them. I've learned a lot from old reports.

Subjects perceived fairly uniform requirements for archiving reports across their company, while the actual value of the reports, and hence the value of careful writing in them, was perceived differently as a consequence both of individual taste and of the nature of the discipline, as illustrated above.

3.3   Language choice

While most oral interaction at the Technical Institute is in Swedish unless foreigners are involved, at the doctoral level all writing and nearly all reading is in English, both for educational and research genres. This is a reflection of the international nature of the research fields and of the research groups in the institution. One subject said "Here at the university there are so many foreigners that it's natural to do it in English, but at the company it's natural to do it in Swedish".

The subjects said that in clearly international situations such as presenting at professional conferences, like that of the Society of Automotive Engineers in Detroit, or a European equivalent, they would of course speak and write English. There was more variety in language choice at company level in situations that were not obviously international. In the small UK-owned specialist engineering company everything is written in English, apparently primarily because most customers are abroad, but also so that the owners can know what is going on. In the large US-owned vehicle company the policy was that everything should be in English, but in practice about half the documents were produced in each language. Where the audience was to be purely Swedish, it would be silly to write in English, the informant said, and hinted at another factor: "I wrote one document in Swedish so the Americans wouldn't steal the idea". In the Swedish-owned company, Swedish was the default language although English was allowed and officially the company was bilingual. Seven wrote mainly or wholly in Swedish (with English terms and acronyms). One new employee thought English was the company language, and had been required to write a survey report in English; this may suggest that different departments had different practices. The German speaker had been assured that he could work through English but had quickly found that this was not the case in practice. The discourse of this environment is typified by the quotation. "We have an Englishman working for us and he writes in English": English is the exception not the rule. This range of formal and informal company language policies is similar to that reported by Hållsten (2008), but she also describes documents drafted in Swedish and then written in English. The subjects interviewed here did not perceive themselves as doing this, but that does not mean it did not occur.

3.4   Conference systems

Most of my informants attended two or three kinds of conference: academic, professional, and sometimes user-group. Both academic and professional conferences normally have their proceedings published before the event, so the oral presentation at both can be a discussion of the text. Subjects adopted different roles at the different types of conference. The academic conferences were primarily attended by university researchers and most highly valued by them. (so the *industridoktorander* were there in their roles as academic researchers). By contrast academic conferences were seen as pointless within industry.

Professional conferences, like that of the Society of Automotive Engineers in Detroit or a European equivalent, are primarily attended by industrial developers and researchers and attendance or presentation gave little prestige to academics in their role as academics. Academic researchers who attended them did so because they had roles, and often paid appointments, within industrial R&D. Professional conferences were very important for industrial researchers. Even the large companies valued the attention their employees' work would get on these occasions, and for the small-company employee attendance and presentation was essential publicity.

User groups for experts applying particular computer programs were opportunities not only to learn but to display one's achievements and acquire a reputation among both industrial and academic experts: they offered discussion with peers, many of them senior and influential.

It is particularly this area that shows the contrast between the reward and value systems of engineers practising in academia and those practising in actual company situations (Wisler, 2008). This contrast was highly salient to the interviewees in this investigation.

3.5   Rhetoric and genre

The interviewees expressed fairly uniform views on many aspects of the difference between writing in their two locations. They agreed in perceiving a sharp difference in the genre hierarchies of the two environments. For the university, journal articles were clearly the most valued with academic conference papers next and professional conference papers nowhere, because the peer-review systems involved provided a guarantee of quality. By contrast the papers at professional conferences were most respected by companies, because their message would "reach powerful people", although written products in general were less central.

In terms of content, academic writing was perceived as requiring a much more rigorous selection of material and more demanding rhetoric. "In your articles you only report successful experiments, no one is interested in

failure, but in the company you've got to report everything, successes and failures are equally important". This relates to differences in imagined audiences. The academic paper is designed for insertion at a certain moment in the conversation of the discipline and honed to make a specific point. By contrast, the written industrial test report was perceived as an archival resource which might be consulted for any purpose and in any context. Consequently, it was important not to be selective but to report the success or failure and results of all tests. Moreover, academic articles required a detailed description and justification of methods, while in industry their expertise was less under scrutiny and the focus was more on the results. Another way of putting this was to say that the exact testing procedure was what mattered at the university, while in the company it was important to specify exactly which part was being tested. This can be related to Hållsten's observation that in the company junior engineers were treated as experts who knew what they were doing, so it was the result that was important, while at the university writers are not supposed to possess this kind of personal authority.

Style was perceived as differing too. Writing at the university one had to weigh every word. Claims had to be more elaborately hedged and it was important to say exactly what one had evidence for and no more. At the company, they suggested, one could rely on people knowing what was intended.

Several informants expressed this greater rhetorical effort by saying that academic writing was more formulaic and writing in the company more free. It would be dangerous to generalise this, since one also hears the complaint that at other companies communication is too much restricted by templates, but in this context it presumably means that writing for academic publication requires close adherence to an IMRaD or other conventional sequence, while in the industrial test report one can more or less tell one's own story.

One informant complained that different attitudes to writing and the rhetorical effort required were reflected in writing time being budgeted for at the university but forgotten at the company. Once the tests were completed and the results communicated, the engineer was expected to go on to the next tests, with the writing done presumably in odd moments. This is a reflection of the relative unimportance, or at least lack of urgency, of the written document.

Subjects thus perceived academic writing as involving more rhetorical effort (perhaps especially because it is more decontextualized) than technical reports. One can imagine that this is not unrelated to the move from the contingent repertoire of everyday discussion of scientific activity to the objectivised prose of the academic report (Gilbert and Mulkay, 1984). In the company reports, one might suppose, informants wrote essentially secret documents for insiders who actually wanted to know what really happened. It was neither necessary nor desirable for contingent details to be generalized

into a standardized narrative of science. However, the opposition is not as clear-cut as this because most potential readers of the reports are those who have not been informed of its contents by some other medium and thus are not part of the immediate group within which it has been created. So the report must not be too implicit; it is intended precisely for relative outsiders in time or company space.

4   Conclusions

The two key differences that emerge from the investigation are in the centrality of the written text and in the stance of the audience to the writer's authority.

Orr (1999) compares the evaluation of writing skills by practising and academic engineers. Nearly half of senior industrial engineers rate writing as critically important, and slightly over half as very important but among academics over three-quarters regard the skills as critical. The results reported here confirm and elucidate these survey findings. Writing and communicating are very important in the industrial research environment, but written texts are not critical because research results are what counts and they can be communicated by a variety of media. In the academic environment, the texts are much more likely to stand alone and precise formulation is crucial.

Industrial reports are read for information, as written by experts, and do not need to establish their credentials and in this respect they are like textbooks. Their function is also to be a record of findings which can be consulted for any purpose and therefore must not be selective. However in-company attitudes to the written product vary according to the discipline; archival material can be very valuable in some areas and useless in other, fast changing, fields. Academic research articles have a focus on methods and justification, which they share with learner genres. They are also normally positioned as contributions to particular disciplinary conversations, and their results and conclusions are therefore carefully pruned to what is relevant in their intended context.

Finally, it may be noted that genres are normally said to be the property of discourse communities (Swales, 2004). But here we have two overlapping discourse communities: at all levels from *industridoktorander* to professors, there are people with a foot in both camps: students or professors who work half at a big company (or at their spin-off) and half at the university. Nevertheless the discourse community values and practices are distinct, and overlapping community membership does not mean merged value systems. Thus, the members of a discourse community are not people but personae, that is, people in particular roles.

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Appendix

Interview Schedule

1   a What department are you attached to at your company?
    b What is your job title?
    c Are you working on projects or as a consultant or what?

2   a What department are you attached to at the university?
    b What is the subject of your PhD?
    c Where did the topic come from?
    d How does the topic relate to what you are doing at the company?
    e Who will it benefit?

3   a What do you write at work? (Prompt: report, minutes, agenda, email, proposal)
b For each genre: name, length, audience, purpose, format, language

4   a What do you write at the university?
b For each genre: name, length, audience, purpose, format, language

5   a What's the difference between the two areas of writing?
b What's difficult about the transition?
c What's difficult about the two types of writing?
d How does the method description vary?
e Would you use these phrases in either type of writing?

              It may be suggested that....
              The cause is that....
              This method does not work...
              The limitations of the procedure are that...
              It is unclear whether....
              We would recommend.....

Information use and treatment adherence among patients with diabetes[1]

Ulla M. Connor, Elizabeth M. Goering,
Marianne S. Matthias and Robert Mac Neill

This paper, part of a series of linguistically-oriented studies designed to understand how patients manage chronic health conditions such as diabetes, focuses on patients' perspectives on available sources of information related to diabetes. The study seeks to ascertain the potential impact of various information sources on disease management. Twenty-one in-depth interviews were conducted with Type 2 diabetics about the sources and adequacy of information they received about their disease and about their adherence to their prescribed medication regimen. This chapter examines written sources of information, which were rated by many non-adherent patients as among their most useful information sources.

1   Introduction

Medication adherence has been heavily studied over the last three decades (Becker, 1985; Frankel and Beckman, 1989; Steele et al., 1990; Morris and Schultz, 1992, 1993; Roter and Hall, 1994; Klingle and Burgoon, 1995; Dunbar, 1998; Dunbar-Jacob and Schlenk, 2001; Bower and Taylor, 2003; van Dulmen et al., 2007), and for good reason, given that treatment non-adherence is considered a major public health problem, costing an estimated $100 billion per year in the U.S. (Vermeire et al., 2001). In addition to financial costs, failure to adhere to prescribed treatment regimens also results in poorer patient outcomes (Morris and Schulz, 1993; Vermeire et al., 2001). For example, a recent study demonstrated that patients who suffered from coronary heart disease and reported not taking their medication were more than twice as likely to experience subsequent cardiovascular events (Gehi et al., 2007). Prior research suggests that issues of medication non-adherence are exacerbated when individuals suffer from long-term, chronic diseases: On average, adherence rates are about 50% for long-term therapy, and this rate tends to decrease with the passage of time (Morris and Schulz, 1993). With rising rates of chronic diseases in the U.S., and the poorer health outcomes associated with non-adherence, these issues are becoming increasingly important.

Not only is medication adherence a serious problem in terms of financial costs and health outcomes, but, in spite of extensive research, the factors associated with predicting and increasing treatment adherence remain elusive

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[1] An earlier version of this paper was presented in June of 2007 at the Fifth Interdisciplinary Conference on Communication, Medicine and Ethics (COMET) in Lugano, Switzerland.

(Morris and Schulz, 1993; Vermeire et al., 2001). Although over 200 variables have been examined with respect to their association with patient adherence, we are still no closer to a clear understanding of the factors contributing to adherence (Morris and Schulz, 1993; Vermeire et al., 2001).

An additional issue with prior research is that the majority of studies have been conducted by practitioners who seek to understand how and why the patient fails to comply with orders issued by the physician (Vermeire et al., 2001). In other words, much research has privileged the provider's perspective by focusing on the voice of medicine, rather than on the voice of the patient's lifeworld (Mishler, 1984; Hamilton, 2001). Little research has taken the patient's perspective into account, to try to understand what the patient's reasons and motivations for adherence or non-adherence may be. Patients' thoughts, attitudes, motivations, and behaviors are influenced by their social world, their thoughts about their disease and their treatment, and their relationships with others. Research that simply attempts to correlate patient or disease variables with adherence misses out on this complex, intricate aspect of human behavior.

It appears that decades of research on treatment adherence, which have resulted in mixed, inconclusive findings, tell us that current methods of studying this phenomenon are inadequate. The complexity of human behavior renders an attempt to correlate hundreds of variables to adherence futile. As a result, it is becoming increasingly apparent that an in-depth examination of patients' perspectives on adherence, with an effort to elicit their thoughts, motivations, and reasons for behavior, might provide a clearer picture which will help us to understand the issue of treatment adherence.

Clearly, in spite of the numerous studies aimed at gaining a greater understanding of patient adherence, the factors that impact this behavior are still poorly understood. A logical starting point for such an endeavor is to focus on the ways in which patients acquire and make sense of information about their disease. Indeed, sources of information for patients abound, yet knowledge alone does not seem to guarantee that a patient will follow his or her physician's advice (Hamilton, 2001). The goals of the study were to determine which sources the patients find most important in their management of their diabetes and how that knowledge translates into adherence and non-adherence with prescribed medication. We were especially interested in testing the relationship between the patients' written comprehension of the written prescription information and its relationship to adherence as the first step in untangling the multiple variables affecting adherence.

The Interdisciplinary Research Team on Health Literacy in the Indiana Center for Intercultural Communication at Indiana University-Purdue University in Indianapolis consists of linguists, communication specialists, medical doctors, a lawyer, a pharmacist, and a pharmaceutical industry

expert. The major goals of the team are to find reasons for non-adherence and adherence and translate this knowledge into better educational practice and improved written labeling and information for patients. We believe that our approach to adherence and health literacy is unique because of its interdisciplinarity, its inclusion of both quantitative and qualitative analyses, and the fact that we define health literacy broadly and include in it the ability to navigate the system both via text and talk. Literacy is one factor affecting adherence. We define health literacy broadly using the Institute of Medicine definition: "the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions". Thus, health literacy is much more than reading, numeracy, and medical terms. It is the complex of behaviors that relates to medication adherence, which can be especially challenging for low literate, minority and non-native speakers groups. This chapter reports on the first stage in our research. It examines how patients acquire and deal with information – verbal and written – related to their diabetes and how they construct that knowledge into understanding and practice of adherence.

2   Method

In-depth interviews were conducted with 21 individuals with Type 2 diabetes. Participants were recruited by posting electronic flyers on a campus news service website at a large, urban, Midwestern university, and through a process of networking. Participants ranged from 26 to 73 years of age, with a mean age of 54.3. Six males and 15 females participated in the interviews. Eleven interviewees were Caucasian, six were Hispanic, and four were African American. Five interviews were conducted in Spanish, the interviewee's native language; the rest were conducted in English.

One interviewer conducted all of the interviews, using a semi-structured format. Patients were first asked to share the story of how they learned they had diabetes. In the second section of the interview, respondents were asked a series of questions related to the sources of information they use in managing their diabetes. Specifically, participants were asked to identify the sources of information that help them "make decisions about how to manage" their diabetes and to talk about elements of content and presentation that affected, either positively or negatively, the perceived usefulness of these various sources of information. In addition, interviewees were asked to rate the importance of the most common sources of information, using the question included in Table 1.

Instructions: Please rate each of these sources of information as to how useful it was to you in understanding and managing your diabetes.					
INFORMATION SOURCES	SELF-RATING				
a) Print advertisements	excellent	good	fair	poor	don't know
b) Television advertisements	excellent	good	fair	poor	don't know
c) The internet	excellent	good	fair	poor	don't know
d) News reports	excellent	good	fair	poor	don't know
e) Friends and family	excellent	good	fair	poor	don't know
f) Doctors	excellent	good	fair	poor	don't know
g) Spoken information from the pharmacist	excellent	good	fair	poor	don't know
h) Other health care providers	excellent	good	fair	poor	don't know
i) Labels on prescriptions	excellent	good	fair	poor	don't know
j) Written information provided by your pharmacist	excellent	good	fair	poor	don't know
k) Magazine articles	excellent	good	fair	poor	don't know
l) Diabetes education programs	excellent	good	fair	poor	don't know
Other (specify _____)	excellent	good	fair	poor	don't know

Table 1. Self-reported rating of information sources

The third section of the interview checked patients' medication adherence through self-reporting. Specifically, respondents were asked questions such as: "How many medications do you currently take?" "What exactly are the medications?" "Do you take the medication as the doctor has prescribed it?" "If no, why not". Table 2 shows an example of an interview excerpt judged fully adherent and an example of non-adherence.

The final section of the interview schedule consisted of a series of demographic questions. All interviews were transcribed, and the Spanish interviews were translated.

Example 1. An interview excerpt of full adherence
I: Do you typically use the prescribed drug in the way your doctor and pharmacist recommend that you use it?
R: Yes.
I: What messages persuaded you to do this, to use it as they prescribed?
R: Test results.
I: Yours?
R: Well, yeah. […] And these kinds of…when you get those test results, you see, okay, I've been taking everything the way the doctor said, for three months now, and suddenly everything works, versus the time you said, no I don't need to do all this stuff, and everything was way out of whack.
     I (Interviewer)   **R** (Interviewee)

Example 2. An interview excerpt of non-adherence
R: […] The doctor told me to check it three times a week …but this week I have not checked it. It's also that, what happens it that the medication that I have to take, when I have to take them at night I don't because I forget or because I'm being lazy. When the morning comes, at 7 in the morning when I take them, those that I have to take at night. Those that I have to take in the morning I take them or after breakfast. It's that I get up a 2 or 3 in the afternoon. All this is out of control.
     R (Interviewee)

Table 2. Examples of full-adherent and non-adherent responses

3 Results

The focus of this chapter is primarily on written sources of information. A brief overview of adherent versus non-adherent interviewees' ratings of the usefulness of various sources of information in managing diabetes is provided, followed by more detailed discussions of patients' responses related to written information sources: advertisements, magazines, and news reports; the internet; and patient information leaflets (PILs).
To explore in greater depth the relationship between information use and adherence, we divided the participants into 'adherent' and 'non-adherent' subgroups, based on the interviewees' responses to questions about adherence (see Table 2). Ten interviewees self-reported that they followed their doctors' directions and were diligent in taking their diabetes medication.

Nine reported that for a variety of reasons they did not always take their medications as prescribed or follow the advice of their doctor. Adherence levels could not be discerned from the interview transcripts for two of the participants.

3.1   Reported information sources

Figure 1 details participants' ratings of the usefulness of information sources and self-reported adherence. The 'Importance' bar represents the number of interviewees giving the source a rating of 'excellent' or 'good' (see Table 1). The 'Adherence' bar represents the number of interviewees who rated the source as highly useful who also self-reported as highly adherent.
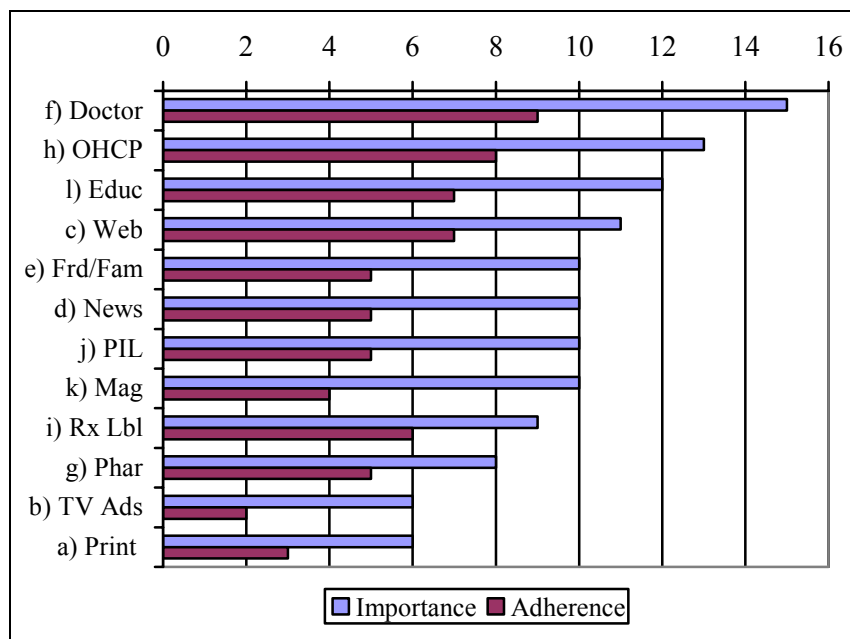
Figure 1. Numbers of subjects rating information source as highly important and reporting full adherence

Doctors, other health-care professionals, and diabetes education programs were rated as the most useful sources of information by participants. 15 of the 21 interviewees rated their doctor as a useful information source, and of those, 9 (60%) fully adhered to their prescribed medication regimen. 13 respondents, 8 who fully adhered (62%), rated other health-care professionals

as a highly useful source of information. Of the 12 interviewees who rated educational programs as useful, 7 (58%) reported full adherence. A similar ratio (between 63-67%) can be seen among those who rated prescription labels, the internet, and pharmacists as important sources of information. It is interesting to note, however, that only 2 of the 6 (33%) interviewees who rated television advertisements as a useful source of information adhered to their prescribed medication regimen. Print ads, magazines, patient information leaflets, news reports, and friends were also associated with relatively low adherence rates (between 40-50%).

Although preliminary, these findings indicate that there may be a relationship between a patients' use of written versus verbal sources of information and adherence. Consequently, the next sections explore in more detail, using thematic analysis of patients' own accounts and words, the role of written information sources in managing diabetes, focusing specifically on advertisements, magazines, and news reports; the internet; and patient information leaflets.

3.2   Advertisements, magazines and news reports

Although advertisements, both print and television, were rated as relatively unimportant sources of information in this study (see Figure 1), several of the interviewees reported that non-advertisement print messages were a useful source of information. The average rating of the importance of magazines as a source of information was 3.24 (3.00 for adherent and 3.33 for non-adherent patients), and the average rating for news reports was 3.38 (3.10 for adherent and 3.56 for non-adherent interviewees). Several themes emerged in our analysis of patterns of use related to non-advertisement written materials.

Although magazines (e.g., *Diabetes Forecast*, the magazine of the American Diabetes Association) and other print resources were important sources of information for some diabetics, our participants tended not to use them in isolation. Instead, they relied on print sources to supplement information from other sources. One interviewee described how he would discuss information acquired through print sources with his doctor before making decisions about managing his disease: "Like this new medication, I read about it in *Time* magazine, and I asked my physician about it, and he didn't recommend it".

Those respondents who regularly read magazines and news reports did so "to keep updated on what's going on". They reported that print information was "most helpful because it gave me ideas on how to make modifications to my own lifestyle, eating choices, information about new possible treatments, kind of giving a little overview of things like the best time to monitor your blood sugar, things like that". In addition, the respondents appreciated the accessibility of magazine reports on diabetes: "Magazine articles are very

important. It's a big topic, now, and *Newsweek* did a big summary of it…it just kind ties together research and innovation and personal stories in a really accessible level".

One final noteworthy pattern related to the use of magazines and news reports as a source of information about managing diabetes is that for the most part, this medium was not one that respondents actively sought out. They read magazines if they happened upon them, but they did not intentionally seek out print material about their disease. One respondent explained, "When I've got a magazine that pertains to diabetes, I read it…I read a couple I found at the doctor's office". Similarly, another interviewee noted, "I have not [used magazines]. I haven't ran [sic] across any. I'm not opposed to it of course, but I haven't ran [sic] across any magazine articles or anything". Yet another response suggested that print materials are a source of information that patients use if they come across it, but they do not actively seek it out: "I have all kinds of little magazines that I pick up in doctors' offices or you know, other things like that. I've got stuff in the mail".

Given that written information was seen by our respondents as more of a passive source, rather than one they actively seek out, it may be that this source has the least impact on our participants' disease management. Certainly the overall importance rating and the specific comments about this medium bear this out.

3.3   Internet

The internet is becoming an increasingly popular source of medical information, and for several of the patients in this study, the internet has become the primary source of information about their disease. The average importance rating for the internet as a source of information was 3.14, but this mean may be misleading because of the clear divide between those respondents who relied heavily on the internet (seven interviewees rate the internet 5-'most important') and those who did not use it at all (eight interviewees rated it 1-'least important'). In other words, for those patients who used the internet, it was a very important source of information. Interestingly, non-adherers rated the internet as a more important source of information than adherers.

The respondents who made heavy use of the internet reported that it served a variety of functions in the management of their disease. First, the internet was viewed by many of the respondents as a wellspring of information: "the web has been huge for me…find information, diabetes care and such, know what Type 1 and Type 2 are, differences between 'em and you know, where I fit in that…and just kinda pulling out information as much as I can". Overall, respondents commented positively on the range of information available on the internet: "You can find out anything you want to find out on the internet.

Um, it's wonderful. It's the best source of information, of quick information".

While several interviewees commented favorably on the range of useful information related to diabetes management available on the web, one interviewee noted that what he likes about the internet as a source of information is that it can be easily tailored to his own needs: "I don't eat beef or pork, so I have to learn how to eat without that, and they tell you".

In addition to using the internet to access a wide range of information and to tailor that information to the individual, several of the interviewees reported using the internet to triangulate information from various sources. One participant reported using WebMD in conjunction with the medication labels and other information provided with his prescriptions. He observed, "After I found out about WebMD, I would actually go online, look up the type of medicine and I would read the information there in addition to what the pharmacy gave me along with the prescriptions themselves". Another respondent shared an incident in which he used the internet to help him make a decision about a doctor's recommendation: "They tried to prescribe Avandia, which was a new thing a couple years ago, and I researched it on the internet".

Another theme worth noting related to the use of the internet as a source of information is the diverse patterns related to the timing of internet use. One common pattern reported is the patient who did not turn to the internet initially upon diagnosis, instead relying on other sources, and turning to the internet later: "I did eventually do some research on the world wide web, but at first, I mostly just went with information I got from the doctor". In contrast, another common pattern is patients who immediately turned to the internet, and after they had acquired a satisfactory understanding of their disease, internet use abated: "In the beginning, I looked up stuff, to get different books and things like that on the diabetes and stuff, diabetic cookbooks and things like that".

A final pattern related to internet use worth noting is that individuals tended to end up with one or two 'favorite' sites that they return to repeatedly. One respondent described his favorite site: "Doctor Weil-you know, the health guy…He's like an old hippy doctor who… [is] homeopathic, you know, holistic. He's got books out, he's all over, he's got a website, tells you what to eat, what kind of supplements to take". Another noted that he did not use the internet at first, but now "I have two sources there that I got to".

It appears that, for those who did rely on the internet, they found it quite useful, in terms of gathering general information about diabetes, supplementing information from their doctors, medication labels or other sources, and obtaining practical advice such as what to eat. Given the variety of uses of the internet cited by our participants, this source may serve to shape patients' perceptions of both severity of diabetes and benefits of

treatment, and may also provide specific cues to action, such as dietary advice.

3.4   Patient information leaflet

Another source of information discussed at some length in the interviews is the patient information leaflet (PIL) that accompanies prescription medications. Participants rated this as a moderately important source of information, with non-adherent interviewees rating it as slightly more important than adherent respondents.

In recent years the PIL has been recognized by researchers, particularly in linguistics, as a potentially valuable source of information to patients regarding their prescriptions. Accordingly, this research (Johnson et al., 1986; Rowe, 1995; Gustafsson et al., 2005) has focused on the premise that patient understanding of this written information may be a key mitigating factor in whether or not a patient adheres to his or her given medications regimen. Some of this research has focused simply on readability (Mallet and Spruill, 1988; Kitching, 1990), while other research has been concerned with deeper levels of language and discourse of the written information (Askehave and Zethsen, 2003; Clerehan et al., 2005). Further, this research, as well as research by Connor et al. (2008) indicates that the PIL contains information that is difficult to understand, relying on language that is not part of individuals' everyday lexicon. Our participants' responses to the usefulness of the PIL reflected these findings.

Patient Information Leaflet comprehension was checked as follows: Interviewees were shown an actual PIL, either in English or in Spanish, for Lisinopril, a common diabetes drug (see Figure 2). Then interviewees were asked a series of questions related to the content of the PIL.

The interviewees' comprehension was rated as 'none', 'some' or 'advanced' using the following criteria: *No comprehension* indicated that the patient could not locate the requested information at all. *Average comprehension* indicated that the patient was able to retrieve some of the requested information, but not by reading the entire PIL and locating relevant sections of the PIL. *Advanced Comprehension* indicated that the patient retrieved the relevant information from the right section and answered all questions accurately (i.e., listed the exact side effects mentioned). This comprehension check provided the following results: 5 of 21 interviewees had no comprehension whatsoever of the PIL; of those 3 adhered. 12 had some comprehension; of these, 5 adhered. 4 had advanced comprehension, but only 2 adhered.

This suggests that being able to read the PIL is not a guarantee of adherence. Future data gathering and analyses need to look at the relationships between reading skills and health management.

01/23/2007   WAL-MART NEIGHBORHOOD MARKET PHARMACY
                                              9920 EAST 30TH STREET
                                              INDIANAPOLIS, IN 46229 -0000
                                              (317) 895-5442

LISINOPRIL 10MG   TAB

LISINOPRIL (lyse-IN-oh-pril)

COMMON USES: This medicine is an angiotensin converting enzyme (ACE) inhibitor used to treat high blood pressure. It may also be used with other medicine to treat congestive heart disease or to improve survival in some patients after a heart attack. This medicine may be used to treat other conditions as determined by your doctor.

HOW TO USE THIS MEDICINE: Follow the directions for using this medicine provided by your doctor. This medicine may be taken on an empty stomach or with food. STORE THIS MEDICINE at room temperature in a tightly-closed container away from heat, moisture, and light. Do not freeze. Take this medicine regularly to receive the most benefit from it. Taking this medicine at the same times each day will help you to remember. CONTINUE TO TAKE THIS MEDICINE even if you feel well. Do not miss any doses. IF YOU MISS A DOSE OF THIS MEDICINE and you are taking 1 dose daily, take the missed dose if you remember the same day. Skip the missed dose if you do not remember until the next day. DO NOT take 2 doses at once.

CAUTIONS: DO NOT TAKE THIS MEDICINE if you have had an allergic reaction to it, to other ACE inhibitors, or if you are allergic to any ingredient in this product. DO NOT EXCEED THE RECOMMENDED DOSE without checking with your doctor. IT MAY TAKE 2 TO 4 WEEKS for this medicine to work. Do not stop using this medicine without checking with your doctor. Laboratory and/or medical tests including liver function, kidney function, blood pressure, blood counts, and blood electrolytes may be performed to monitor your progress or to check for side effects. KEEP ALL DOCTOR AND LABORATORY APPOINTMENTS while you are taking this medicine. BEFORE YOU HAVE ANY MEDICAL OR DENTAL TREATMENTS, EMERGENCY CARE, OR SURGERY, tell the doctor or dentist that you are using this medicine. THIS MEDICINE MAY CAUSE dizziness, lightheadedness, or fainting, especially when you begin taking this medicine. DO NOT DRIVE, OPERATE MACHINERY, OR DO ANYTHING ELSE THAT COULD BE DANGEROUS until you know how you react to this medicine. Using this medicine alone, with other medicines, or with alcohol may lessen your ability to drive or to perform other potentially dangerous tasks. If dizziness occurs, sit up or stand slowly. DRINK PLENTY OF FLUIDS during exercise or other activities where excessive sweating may occur. THIS MEDICINE MAY CAUSE increased sensitivity to the sun. Avoid exposure to the sun, sunlamps, or tanning booths until you know how you react to this medicine. Use a sunscreen or protective clothing if you must be outside for a prolonged period. IF YOU EXPERIENCE difficulty breathing; tightness of chest; swelling of eyelids, face, or lips; or if you develop a rash or hives, tell your doctor immediately. Do not take any more of this medicine unless your doctor tells you to do so. RARELY, THIS MEDICINE MAY LOWER YOUR RESISTANCE TO INFECTION. This risk may be increased if you have certain other health problems (such as kidney problems or collagen vascular disease). Prevent infection by avoiding contact with people with colds or other infections. Do not touch your eyes or the inside of your nose unless you have thoroughly washed your hands first. DO NOT USE A SALT SUBSTITUTE or other potassium supplement without checking with your doctor. BEFORE YOU BEGIN TAKING ANY NEW MEDICINE, either prescription or over-the-counter, check with your doctor or pharmacist. CAUTION IS ADVISED WHEN USING THIS MEDICINE IN THE ELDERLY because they may be more sensitive to the effects of the medicine. FOR WOMEN: USE OF THIS MEDICINE DURING PREGNANCY has resulted in fetal and newborn death. If you think you may be pregnant, contact your doctor immediately. IT IS UNKNOWN IF THIS MEDICINE IS EXCRETED in breast milk. DO NOT BREAST-FEED while taking this medicine. IF YOU HAVE DIABETES, this medicine may affect your blood sugar. Check blood sugar levels closely and ask your doctor before adjusting the dose of your diabetes medicine. MONITOR BLOOD GLUCOSE on a regular basis, as directed by your doctor.

01/23/2007

WAL-MART NEIGHBORHOOD MARKET PHARMACY
9920 EAST 30TH STREET
INDIANAPOLIS, IN 46229 -0000
(317) 895-5442

LISINOPRIL 10MG   TAB

POSSIBLE SIDE EFFECTS: SIDE EFFECTS, that may occur while taking this medicine include headache, drowsiness, dizziness or lightheadedness, tiredness, weakness, and cough. If they continue or are bothersome, check with your doctor. CHECK WITH YOUR DOCTOR AS SOON AS POSSIBLE if you experience fast or irregular heartbeat; prolonged nausea, vomiting, or diarrhea; a change in the amount of your urine; unusual joint pain; or unusual muscle pain, cramps, or weakness. CONTACT YOUR DOCTOR IMMEDIATELY if you experience swelling of hands, legs, face, lips, eyes, throat, tongue, or trunk; difficulty swallowing or breathing; severe dizziness; lightheadedness; fainting; hoarseness; chest pain; unusual stomach pain; yellowing of the skin or eyes; darkening of your urine; sore throat; or fever. AN ALLERGIC REACTION to this medicine is unlikely, but seek immediate medical attention if it occurs. Symptoms of an allergic reaction include rash, itching, swelling, severe dizziness, or trouble breathing. If you notice other effects not listed above, contact your doctor, nurse, or pharmacist.

BEFORE USING THIS MEDICINE: WARNING: This drug can cause serious fetal harm if used during the last six months of pregnancy. If pregnancy occurs, stop using this drug and immediately contact your physician. Some medicines or medical conditions may interact with this medicine. INFORM YOUR DOCTOR OR PHARMACIST of all prescription and over-the-counter medicine that you are taking. ADDITIONAL MONITORING OF YOUR DOSE OR CONDITION may be needed if you are taking non-steroidal anti-inflammatory medicine (such as ibuprofen, naproxen, or celecoxib), salicylates (such as aspirin), phenothiazines (such as thioridazine or chlorpromazine), diuretics (such as hydrochlorothiazide, furosemide, spironolactone, or triamterene), certain medicines for diabetes (such as glyburide, glipizide, tolbutamide, or insulin), pergolide, clozapine, eplerenone, indomethacin, lithium, potassium, azathioprine, or trimethoprim. Inform your doctor of any other medical conditions including a recent heart attack or other heart problems; blood vessel problems (such as aortic stenosis or stroke); kidney problems; hemodialysis; liver problems; electrolyte problems; a salt-restricted diet; lupus or scleroderma; diabetes; blood or bone marrow problems; allergies; pregnancy; or breast-feeding. USE OF THIS MEDICINE IS NOT RECOMMENDED if you have a history of unusual swelling of your face, neck, throat, tongue, lips, or trunk (angioedema). Use of this medicine in children who have severe kidney problems or are under age 6 is not recommended. Discuss with your doctor the risks and benefits of giving this medicine to your child. Contact your doctor or pharmacist if you have any questions or concerns about taking this medicine.

OVERDOSE: If overdose is suspected, contact your local poison control center or emergency room immediately.

PATIENT-ORIENTED DISCLAIMER: The information in this monograph is not intended to cover all possible uses, directions, precautions, drug interactions, or adverse effects. This information is generalized and is not intended as specific medical advice. If you have questions about the medicines you are taking or would like more information, check with your doctor, pharmacist, or nurse.

Figure 2. Example of English PIL from Wal-Mart Pharmacy

The analysis of the participants' responses to interview questions related to the PILs revealed several interesting themes. Participants commented on the difficulty of the language in the PIL. Although many patients felt that the information contained in the PIL was important, they found it difficult to understand. One respondent told us that the PIL is "helpful, but the writing was so dense…It's hard to read…Because the language. It's not accessible, you know". This patient also told us that, as a result of the inaccessible language, he relied on his doctor and his pharmacist to clarify the information about his medications. Similarly, another respondent said that the PIL contained "medical gobbly gook, so I don't understand a lot of it". And yet another simply said, "They're pretty complicated".

Although some patients commented on the language, the majority of our interviewees felt that the layout of the PIL was the greatest obstacle to its accessibility. One individual, pointing to a portion of the PIL, complained, "Right here, this whole paragraph is entirely too long to sit and read". Another respondent had similar complaints, saying, "There's not enough space between lines". And another agreed: "They have it so crammed". One interviewee also felt that because the information on the PIL was "so crammed", that it made the document "overwhelming", while another concluded that the inaccessible layout of the PIL made it "daunting". Some suggested reworking the layout of the PIL for easier readability. One suggested "separate paragraphs for individual categories", while several others suggested using bullet points and writing that would be "bigger print and not all bunched together".

Thus, it appears that the PIL is a potentially valuable source of information that patients read when they fill their prescriptions. However, the effectiveness of this information is compromised by the manner in which it is presented.

4   Discussion

Clearly, patients in this study turned to a variety of sources to shape their beliefs about their health and the management of their diabetes, and, as one would expect, different individuals viewed these sources with varying utility. It is noteworthy that differences in ratings of information sources emerged between patients who fully adhered to their treatment plan and those who did not. We discovered that those patients who indicated that they adhered to their treatments tended to rate doctors, other health care providers, education programs, medication labels, friends/family, and pharmacists as more important sources of information than non-adherent interviewees. In contrast, the non-adherent subgroup rated news reports, PILs, magazine articles, print ads and television ads as more important than the adherent respondents. Our sample was small, and, thus, these differences did not reach statistical significance, but these trends are nonetheless provocative in that they suggest that the value patients place on information may be related to whether or not they follow their treatment plan. It might be that particular information sources are more effective at fostering a sense of self-efficacy, or better communicate the severity of diabetes, the benefits of treatment, or helpful cues to action, which then serve to promote adherence. Or it might be that patients who are conscientious about following their doctors' instructions may naturally be more interested in learning more about their disease through particular media. The data in this study do not answer this question, but the notion that adherers in our sample placed greater value on particular information sources than non-adherers deserves further exploration, as this

may help us to understand better what makes patients follow their treatment's regimens.

The strength of this project is that we sought to elicit the patients' perspectives on the information they receive. This knowledge, in turn, puts us in a better position to capitalize on those sources that patients find most useful, in an effort to increase adherence, and, ultimately, outcomes. This study is the first step in a larger project exploring the relationship between information, literacy and adherence. The results of these interviews offer insight into the particular sources of information diabetes patients use in managing their disease. Currently we are in the second phase of this program, in which we are conducting 80 interviews with diabetes patients to examine, qualitatively and in-depth, their experiences with diabetes, as well as to measure quantitatively variables such as literacy, health literacy, life orientation, perceptions of quality of care, and medication adherence, in an effort to understand more comprehensively, from the patient's perspective, how individuals manage their diabetes. It is our goal that this multi-method, interdisciplinary research program will eventually help us to understand how individuals manage chronic conditions, such as diabetes, and how to improve disease management in order to effect more positive outcomes for patients.

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"Check it out" – The construction of patient empowerment in health promotion leaflets

Inger Askehave and Karen K. Zethsen

Patient empowerment – which involves new visions of patient roles and attempts to 'empower' the general population to take charge of their health – is an influential idea within the western health care system. Patient empowerment, however, is produced and made 'real' through language and so to fully understand what patient empowerment is, we need to explore the discourses and discursive practices that give it meaning. Patient empowerment is likely to be 'made real' in health promotion material and the aim of this article is to investigate the discursive construction of patient empowerment in health promotion leaflets.

1   Introduction

Recent years have seen a steady increase in health care information intended to inform and advise the general public about ways to increase their health and level of well-being. Numerous documents exist on 'how to stop smoking', 'how to manage and conquer depression', 'how to fight breast cancer', etc., and such information is readily accessible from the pharmacy, the GP's office, the hospital ward, health care magazines, or Internet sites. Many researchers have argued (see e.g., Johnson 1999; Aarva and Tampere 2006; Hall 2006; Larsen and Manderson 2008) that this is a natural outcome of a widespread patient empowerment trend that encourages people to "…gain control over decisions and actions that influence their health" (WHO 1998 ID: 121, 21 (cited in Hvas and Thesen, 2002: 5365)).

As the meaning of the word 'empowerment' suggests, "*to put someone into power*", people/patients cannot empower themselves. It requires collaboration between those 'in the know' (health care professionals) and those who 'want to know' (the general public). The empowerment process within the health care system is facilitated by means of a wide range of empowerment tools (doctor-patient communication, patient information leaflets, health promotion leaflets, support groups, on-line information, etc.) which are intended to provide people with the knowledge, expertise and self confidence to 'take charge', influence, and manage their own health (see Askehave et al., forthcoming). Thus, patient empowerment assigns a critical role to the patient in the empowerment process, i.e., the patient who traditionally has been regarded as a *passive receiver* of health care services and who is now being constructed as an *active consumer* in a health care market (Vrangbæk and Østergren, 2006). Patient- or consumer-centeredness seems to be paramount within the paradigm of patient empowerment but

when it comes to the actual *construction* of the empowered patient, the patients' own constructions are absent. The roles, relations, and meanings of patient empowerment are typically in the hands of those who produce the information of patient empowerment and this has the effect that the text producers' constructions of patient empowerment tend to govern the general populations' understandings and expectations of patient empowerment and the patient empowerment process (see also McKay, 2006).

This warrants an investigation of the discursive constructions of patient empowerment as patient empowerment, in our view, is also a question of being able to see through the constructions of empowerment and accept or reject the roles being assigned to the empowered patient.

Several studies exist which describe and problematize the gap between the social construction of patient empowerment (or the medical consumer) in the health care system, and the patients' own views. For example Sulik and Eich-Krohm (2008) argue that ideally the transformation from patient to medical consumer should lead to medical consumers who are optimistic, proactive, rational, responsible, and informed. However, their study of 60 breast cancer survivors and 18 infertile women indicated that the women felt burdened and overwhelmed by the empowerment process and the result was fears, anxieties and feelings of guilt. Sulik and Eich-Krohm (2008) concluded that the medical consumer is a social construction which may not necessarily be of benefit to the patient. Instead "the medical consumer role serves the interests of a medical system that seeks to expand its client base, sell more products and services, and increase profits" (Sulik and Eich-Krohm, 2008: 23). Likewise Salmon and Hall (2004) point out that the empowered patient is a professional construction which tends to exist in the minds of the clinicians rather than reflecting the experience of the actual patients. They warn against the routine use of empowerment vocabulary such as 'choice', 'control', 'cope', 'fight' or 'defeat', which patients apparently do not embrace, arguing that "the doctor who regards a patient as 'fighting' cancer may be insensitive to the patient's need for support" (Salmon and Hall, 2004: 54). Kealley et al. (2004), in their examination of the role of language in constructing social realities, conclude that the language of an information pamphlet written by nurses and given to relatives of patients in a Critical Care Unit disempowered rather than empowered the readers. Their findings suggest that the linguistic choices in the pamphlet seem to limit and constrain relatives in their involvement with the health care system whereas the CCU staff is presented as the active part, retaining its authoritative role within the health care setting. Likewise, Hall (2006) in his study of 40 medical leaflets from pharmaceutical companies collected from the doctors' waiting-rooms concludes that the rhetoric of the leaflets does not empower the readers but rather is more likely to create fear and anxiety; and nourish an illusion that the reader may self-diagnose, weigh risks, and make informed choices.

The above studies suggest that patient empowerment and health promotion are indeed social constructions; however, mainly constructed by the health care system. The studies also indicate that language plays a key role in constructing the social reality of empowerment – not least setting up the expectations and role relations between the key players in the patient empowerment process.

Our concern is to investigate the discursive construction of patient empowerment as we still need specific knowledge about the way language is being used to make sense of the empowerment process – not least the relations between and roles assigned to the key participants in the process: patients, consumers, relatives, doctors, pharmacists, etc. More specifically, the aim of this article is to make an in-depth analysis of two health promotion leaflets in order to examine and compare the ways in which the British pharmacy chain, Boots, chooses to use language to empower the reader. This will be done by using Greimas' actantial model to explore who the texts construct as the actors of the empowerment process and how these actors are interrelated. Furthermore, we shall use Greimas' actantial axes to demonstrate the relationships between pairs of actants in the empowerment process and identify the overall empowerment strategies at play in the leaflets.

2   Theory and method

The present study is framed within a social-constructionist methodology and inspired by Fairclough's textually-oriented theory of Critical Discourse Analysis (1989, 1995, 2003).

The emphasis on language as a constructive tool is one of the core assumptions within discourse analysis (Coyle, 2007). Discourse analysts regard language, not as a passive reflection of an objective reality, but rather as a site for constructing or doing 'reality'. This also means that language does not merely reflect reality in a straightforward way but *constructs* and *legitimates* social reality. Choice is key within the discourse analytical perspective as a language user may choose from (and at the same time will be limited by) a vast range of socially determined/socially determining linguistic structures and "orders of discourse" (Fairclough, 2003: 24) for "doing reality". These choices reflect the way we, as social beings, make sense of what is going on around us.

The present study involves a textual analysis of two health promotion leaflets. However, true to the discourse analytical framework (Fairclough, 2003: 3), the results of the textual analysis are related to a discussion of the "constructive effects" which language use in the health leaflets may imply. Thus, who the texts construct as the main actors, and how these actors are interrelated will be accounted for in the analysis to demonstrate the way the

British pharmacy chain, Boots, chooses to construct its 'universe' of health and well-being to the reader and to point to the way the pharmacy chain uses language to perform the social practice of empowering the patient/consumer. According to White (2006) the notion of 'narrative' – in its strongest formulation – holds that all human discourse has a 'narrative' impulse and uses this impulse to construct and maintain social realities. It follows that the narrative approach is relevant when it comes to the construction of social reality in health promotion leaflets and a narrative, semiotic model may, therefore, be useful for the analysis of health promotion material. We have chosen Greimas' (1966) actantial model on the strength of its analytical and explanatory powers. We were further encouraged to apply the actantial model as we found several studies within a health discourse context based on Greimas' model. Gwyn (2002) argues that the actantial model is particularly well suited to explore narrative accounts of illness; and in addition to his own examples (e.g., identifying the actors of a situation of acute illness) he cites Vestergaard and Schrøder (1985) who successfully applied the model on a text about a multivitamin. Gwyn emphasizes the explanatory powers of the model and its usefulness as a "tool in the sense-making process central to the analysis of illness narratives" (Gwyn, 2002: 156). Koch (1994: 278) states that "Greimas' actant model has proved very useful for the analysis of the experience of women in IVF programs" again as a way of analyzing or making sense of narratives (narrative data produced by qualitative interviews with women undergoing IVF treatment). Finally, even a study of health promotion material has been carried out using the actantial model, namely Aarva and Tampere (2006). In their conclusion the authors argue that the model can be used as a "theoretical framework and a semiotic tool to explore various health promotion cultures and value orientations within them. It will enable not only the identification of the dominant story but also many other narratives to describe *the normative dimensions of health promotion*" (Aarva and Tampere, 2006: 167) (our emphasis). Likewise, it is the normative dimensions of patient empowerment which we believe our Greimasian analysis of health promotion leaflets will bring to light.

3   The actantial model

The actantial model was originally developed by the French scholar Greimas and set out in his book *Sémantique structurale – recherche de méthode* from 1966 (in this article we refer to the English translation *Structural Semantics* from 1983) to illustrate the basic narrative structure of fairytales and has traditionally been used to analyze fiction. Greimas' famous model builds on the work by the Russian scholar Propp. The actantial model consists of six actants, i.e., functions or roles assigned to various entities of a text. The six actants are:

Subject: wants or is asked to carry out a project in order to reach a goal
Object: the goal sought by the subject
Sender: instigates the action (but does not necessarily neither help nor hinder the project)
Receiver: benefits from the action (this may be the subject, but not necessarily)
Helper: helps to accomplish the action
Opponent: hinders the action

An actor (the concrete manifestation of an actant in a narrative) may be a person, a thing or an abstract concept and these may belong to more than one actant at various stages of the narrative. Thus the actants possess a metalinguistic status in relation to the actors (Greimas, 1966/1983: 200). Identifying the actants in a text presupposes a functional analysis (Greimas, 1966/1983: 200), i.e., although the actantial model, in the first place, is an extrapolation of the syntactic structure (Greimas, 1966/1983: 213), the semantic roles may not be identical with the syntactic ones.

Between the actants of the model there are three very important relationships, namely:

The relation between subject and object – **the axis of desire**
The relation between helper and opponent – **the axis of power**
The relation between sender and receiver – **the axis of knowledge**

Among others, Wang and Roberts (2005) show that Greimas' method has great potential for depicting characters' narrative positions as well as links among these positions and this is what we intend to make use of. However, before we apply the model to our data we shall briefly introduce the two health promotion leaflets which have been subjected to analysis.

4   Data

10 health promotion leaflets were taken at random from a selection available at a store belonging to the British pharmacy chain *Boots the Chemists*. From our first reading of the material we identified five leaflets which seemed to have been structured in the same way in terms of lay-out and overall text structure. These five leaflets all had a logo in the bottom left hand corner which said "Check it out", though the main titles of the leaflets indicated the specific subject of each leaflet, namely *Kids' Health, Men's Health, Pain Relief, Foot Care,* and *Stop Smoking*. Intuitively, we considered the Kids' Health leaflet to be different from the rest and we decided to carry out an in-depth analysis of this leaflet. The remaining four leaflets were, again

intuitively, deemed to be quite similar, and we, therefore, selected only one, viz. Men's Health, for closer inspection. Based on the above, it is our hypothesis that an analysis of the two leaflets will reveal similar but also different strategies for constructing patient empowerment.

5   Analyses and discussion of results

We have carried out an actantial analysis of the two health promotion leaflets *Kids' Health* and *Men's Health* produced by *Boots the Chemists*. The identification of actantial functions in the texts has been based on contextual knowledge as well as linguistic/grammatical analysis. The following is an example of the way we have established the actors of the narratives:

Example: The identification of actors

At Boots we want to help you keep your children in peak condition

Sender/Subject/Helper = Boots (from the situational context we know that Boots is the *sender* of the leaflet – Boots is also the *subject* because of the explicit desire "want to" and *helper* because of the explicit action "to help")

Receiver/Subject = you (indirect object, i.e., the *receiver* of the help from Boots as well as *subject* of the non-finite clause with an action directed towards the children)

Object/Receiver = keep your children in peak condition (direct object, i.e., the *object* of the *subject*. However, the children mentioned in the clause are also the *receivers*, i.e., they benefit from the action of the parents (represented by "you").

The tables below contain examples of the types of actors that assume the actantial functions in each leaflet.

Sender	Object	Receiver
Boots (incl. experts and consumers)	Keep your children in peak condition Know about kids' ailments and preventive action	Parents Children The family

	Change your personality (don't worry/avoid unnecessary panic and trust your instincts)	
Helper	**Subject**	**Opponent**
Boots (including Boots Health Club, Boots pharmacists/experts, Boots products, Boots guide) Expert advice and information in general General practitioner Concrete health boosters (vitamins and minerals, etc.) Personal/empowerment characteristics in the parent (instincts, gut-feeling, knowledge of your child)	Boots Parents	Kids' ailments (eczema and dermatitis, ringworm, bites and stings, etc.) Health debate The poor diets of British children Personal characteristics (worries, afraid of other people's reaction (who think the parent is overreacting))

Table 1. Kids' Health promotion leaflet – actors representing actants

Sender	**Object**	**Receiver**
Boots (incl. experts and consumers)	Keep yourself in peak condition Know about optimum health and preventive action Change your personality (trust that our ailments are normal/be open)	Men

Helper	Subject	Opponent
Boots (including Boots Health Club, Boots pharmacists/experts, Boots products, Boots Weight Loss Programme, Boots guide) Expert advice and information in general General practitioner Concrete health boosters (Nutrients, fruit/vegetables, exercise) Personal/empowerment characteristics in the male (willpower, openness)	Boots Men	Unhealthy lifestyle (stress obesity, lack of exercise, malnutrition) Lack of health knowledge among men Personal characteristics (suffer in silence, bottle things up, feel 'abnormal' and unable to talk to the GP)

Table 2. Men's Health promotion leaflet – actors representing actants

As appears from the lists of actors above, there are very similar constructions at play in the two leaflets. We know from our contextual knowledge that Boots (including its experts and consumers) function as the *sender* of the empowerment process – the one instigating the process and sending the readers off in their quest for the *object*. As *subjects* we find Boots and the readers (men and parents), which is a common construction of empowerment – the health care professional does something which is expected to have the effect that the 'medical consumer' take charge/become empowered (in this case e.g., the reader is expected to use the information and advice from Boots to instigate action in relation to himself or to his/her children). The extra level of empowerment in the Kids' Health leaflet (Boots helps parents help their children) has the effect that there are two *receivers* in the Kids' Health leaflet namely the reader (parents who benefit from Boots' actions as *subjects*) and children (who benefit from parents' actions as *subjects*), whereas in Men's Health the reader (men) is the only *receiver*. The *helpers* of the empowerment process are quite expectedly Boots (health clubs, experts, products etc.) including its expert advice and information about health and well-being in the leaflet. We also find examples of the GP as the *helper* as well as concrete health boosters or lifestyle changes (healthy eating and

exercise). As health boosters require a change in lifestyle, one might say that the reader is constructed as a 'self-helper' in his/her quest for the object, in this case if he manages to change his own or his/her children's diet, do more exercise, etc. Both leaflets also refer to personal characteristics as *helpers* – characteristics which are traditionally associated with the empowered patient (Aujoulat et al., 2007) such as 'willpower' and 'openness' in the Men's Health leaflet, and 'instincts' and 'gut-feeling' in the Kids' Health leaflet. The *opponents* in the two leaflets are quite different. In the Men's Health leaflet the *opponent* is basically men themselves (their lack of *knowledge* about unhealthy lifestyles, their unhealthy lifestyles in general, and, finally, their personal characteristics (suffering in silence, bottling things up, unable to talk to the GP, etc.). Whereas in the Kids' Health leaflet the *opponents* are in many cases out of the parents' control (such as Kids' ailments in general, the health debate (an interesting construction which accentuates the 'media frenzy' of health promotion), the diets in general of British children, etc.). However, there are also examples of personal characteristics which hinder the *object* – namely parents' worries about illnesses or worries about what other people think. The *objects* of the empowerment processes in the two leaflets are more or less identical at a very general level. It is a question of getting people or their children into peak condition, getting them to know about ailments, optimum health and preventive action, and, finally, achieving a change in the reader's personality.

Through our analysis of the actors in the two leaflets, various empowerment strategies emerged which can be accounted for by demonstrating the *relationships* between pairs of actants in the texts – the so-called actantial axes. As mentioned above these are **the axis of desire** (the relation between the *subject* and the *object*), **the axis of power** (the relation between the *helper* and the *opponent*) and **the axis of knowledge** (the relation between the *sender* and the *receiver*).

The following types of empowerment strategies were identified in the leaflets:

Empowerment strategy 1
Axis of desire: Parents should take preventive action to keep their children in peak condition
Axis of power: Example of *opponent*: Malnutrition. Example of *helper*: Omega-3 oils, multivitamins, calcium, fruits and vegetables.
Axis of knowledge: Boots provides parents with information about nutrition and about relevant products

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Empowerment strategy 2
Axis of desire: Parents should not worry about common ailments and should avoid unnecessary visits to the doctor.
Axis of power: Example of *opponent*: Worries. Example of *helper*: Specific knowledge about symptoms
Axis of knowledge: Boots provides you with information about the symptoms of common children's ailments (and about relevant products)

Empowerment strategy 3
Axis of desire: Parents should trust their instincts
Axis of power: Examples of *opponent*: No obvious signs of serious illness, if other people think you are overreacting (family, authorities). Examples of *helper*: Your instincts, a strong feeling that something is wrong, your knowledge of your child.
Axis of knowledge: Boots encourages you to trust your instincts

Table 3. Types of empowerment strategies in the Kids' Health leaflet

Empowerment strategy 1
Axis of desire: Men should take preventive action to stay in tip-top condition
Axis of power: Examples of *opponent*: men's usual lifestyle, lack of knowledge of health issues. Examples of *helper*: more exercise, eat healthy foods, lose weight, stop smoking, stop heavy drinking
Axis of knowledge: Boots provides relevant information to men

Empowerment strategy 2
Axis of desire: Men must learn to be open about not feeling mentally well
Axis of power: Example of *opponent*: Suffer in silence. Example of *helper*: don't suffer in silence
Axis of knowledge: Boots makes it clear that if you do not admit to feeling mentally unwell nothing can be done about it

Empowerment strategy 3
Axis of desire: Men should know that many awkward or embarrassing ailments are perfectly normal and therefore something they can easily discuss with their GP
Axis of power: Example of *opponent*: Common belief that e.g., sexual problems or diseases are embarrassing and only happen to you. Example of *helper*: Knowledge, e.g., statistics, emphasizing the frequency and normality of problems such as impotence, chlamydia and hairloss
Axis of knowledge: Boots tries to make men realize that many awkward problems are more normal than may be presumed

Table 4. Types of empowerment strategies in the Men's Health leaflet

If we merge the specific empowerment strategies of each of the two leaflets we find three distinct categories of empowerment attempts:

- Empowerment through the provision of **knowledge** (know the symptoms, know about nutrition and exercise, know what is common and normal and therefore not embarrassing)
- Empowerment through the strengthening of **your self-confidence** (trust your instincts, knowledge of your child)
- Empowerment through the strengthening of **your ability to be open about your problems** (don't suffer in silence)

In the leaflet concerned with kids' health, the following main empowerment strategies were identified: (1) the provision of knowledge targeted to make parents competent to diagnose their child and tell the difference between a serious illness and a harmless ailment (which could be cured without an "unnecessary visit to the doctor") as well as (2) the strengthening of self-confidence to make the parents confident enough to actually trust their instincts as well as their knowledge. In the leaflet concerned with men's health, on the other hand, the empowerment strategies were as follows: (1) the provision of knowledge to be able to take preventive action or know what is common and, therefore, not embarrassing as well as (2) the strengthening of men's ability to be open about their problems. Our analyses do of course not tell us anything about the reception of the leaflets and it is, therefore, impossible to say whether these constructions appeal to the reader and leave the reader with a feeling of being empowered. Whether it will, does not only depend on the actual content of the leaflets but also upon the resources and the situational context of the readers.

6   Conclusion

The aim of this article was to make an in-depth analysis of two health promotion leaflets in order to examine and compare the ways in which the British pharmaceutical chain, Boots, chooses to use language to empower the readers of the leaflet. This was done by using Greimas' actantial model to explore who the texts constructed as the actors of the empowerment process and how these actors were interrelated. Furthermore, we used Greimas' actantial axes to demonstrate the relationships between pairs of actants in the empowerment process and identified the overall empowerment strategies which were at play in the two health promotion leaflets.

It is important to bear in mind that an in-depth analysis of two leaflets by no means points to the constructions of patient empowerment in their entirety. However, the analysis of individual texts is nonetheless an important step as

it provides us with clues as to the nature of patient empowerment discourses and is an indicator of the way leading players in the health care system provide advice and information about health and well-being in order for the individual to become empowered and take action. Secondly, due to limits of space, the analysis contains a rather narrow view on 'text', considering as 'text' only the verbal strategies in the leaflets. However, one might argue that to provide a truly in-depth analysis of the health promotion leaflets, one would need to include an analysis of the visual strategies (font size, lay-out and images) as well, as the non-verbal strategies play an equally important part in health promotion. We do find that an analysis of actantial roles is very useful for the understanding and explanation of the construction of health promotion material and patient empowerment, but we also find that a major weakness of the model is the lack of any frequency measurement. The model accounts for the various roles at play, but not for the frequency of linguistic manifestations of each role assignment.

In spite of the above shortcomings, we found that the actantial analysis proved very useful for identifying the way Boots makes sense of the empowerment process and who Boots saw as the key actors involved in the effort to empower the readers of the leaflets. The leaflet is indeed an important genre in the health care market and Boots, as the provider of health care products, quite expectedly cast itself in the role of *sender*, *subject* and *helper* of the empowerment process. The reader was constructed as the *receiver* (or consumer) of Boots' product, Boots' expertise and Boots' advice, however, the reader was also cast in the role as his/her own *helper* and *opponent* of the empowerment process suggesting that a change in personality – and not only experts or expert knowledge – will bring about the desired *object*. Abraham et al. point out (in their article on alcohol-education leaflets from 2007) that patient information which focuses mainly on instruction may not empower the patient at a deeper level so to speak, but only superficially. In comparison there is no doubt that our analyses show that, in addition to the more instructive, 'superficial' kind, Boots has attempted the 'deeper' kind of empowerment by means of the strategies that aim at building confidence and promoting openness. This echoes the two dominant views on how to empower people (Aujoulat et al., 2007: 15) where the process of empowerment may be seen from the point of view of the *patient* (and considered a process of personal transformation where power is created within the patient him/herself) or from a *patient-provider* perspective (where empowerment is regarded an interactive process where power is given to the patient by the health professional).

The distribution of roles (actors) evident in the two leaflets analyzed and thus the construction of empowerment identified may be unsurprising and seem very logical in our part of the world, where we are getting more and more

used to seeing ourselves as medical consumers. However, as Gwyn (2002: 18) puts it:

> Health beliefs are culturally located and culture-specific. We fabricate and endorse beliefs about health and illness continually through discourse, out of the stories we tell one another and the stories we hear from those around us. These beliefs vary enormously from culture to culture and from era to era.

Thus, the 'experts' who in the analyzed texts clearly fill out the role as *helpers* (as well as *senders*) may well in another culture not have the same *helper* status as, say, advice from a senior family member and may perhaps even carry the role of *opponent*. Likewise, in some societies or contexts 'smoking' may not be the *opponent* it clearly is in a health promotion leaflet in the western world, but could be the *helper* which opposes *opponents* such as stress or antisocial behaviour. The same goes for the *helper* 'trust your instincts' from the kids' health leaflet which may be cast as an *opponent* in a society where the trusting of instincts has proved to be disastrous in many cases and where the *helper* of a health promotion leaflet would clearly be the doctor's advice (for more on cross-cultural issues see e.g., Connor et al. (2008) and their study of patient information and cultural differences).

In this article we have uncovered the way Boots chooses to make sense of the empowerment process, however, one should remember that the roles assigned to key actors in a health promotion leaflet are never given. They will always reflect the norms, values and expectations of the text producers in the health care market at a given time; and the choices, be they deliberate or not, help promote and legitimatize a particular view on patient empowerment. Whether the reader actually 'buys' the message (and the Boots products) is quite another story.

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Who "we" are: The construction of American corporate identity in the Corporate Values Statement genre

Pilar Garcés-Conejos Blitvich

The aim of this paper is twofold: (i) to describe the corporate value statement (CVS) genre in terms of extant genre theories, and (ii) to describe how American corporate identity is constructed therein. The descriptions of the genre and of the construction of corporate identity are data-driven and based on examples of CVS extracted from the webpages of fifteen American corporations. Both the internal (geared toward the company's employees) and the external (computer mediated and geared to the general public) realizations of the CVS genre are analyzed. The last section of the paper is devoted to a quantitative analysis of the genre's rhetorical strategies. More specifically, the analysis focused on the type of self-reference (epistemic or agentive) that was chosen to construct corporate identity. The results, although tentative, indicate that identity construction is not discourse-specific, but genre-specific, and that identity is co-constructed differently depending on the specific community the genre targets.

1   Introduction

This paper has two main goals: (i) to describe the corporate values statement (CVS, henceforth) genre, which, to my knowledge, has not been described before in terms of extant genre theories (Swales, 1990; Bhatia, 2004, 2008), and (ii) to describe how American corporate identity is constructed therein. The two goals are interrelated because, to account for identity construction, first one has to situate it within specific contexts and genres, and these genres in turn have to be situated within discourse systems (Scollon and Scollon, 2001). Thus, a substantial part of this paper will be devoted to describing the CVS genre, which is seen as its main contribution. The descriptions of the genre and of the analysis of how identity is constructed therein are data-driven and based on the analysis of examples of CVS extracted from the webpages of fifteen American corporations.

Corporate values can be defined as operating philosophies or principles that guide an organization's internal conduct, as well as its relationship with the external world. The CVS is one of the many genres which comprise the discourse system of corporate America. Corporate identity can be constructed through any corporate genre, although that may not be the genre's main purpose. The primary communicative purpose of the CVS genre, however, is to provide employees with a "… sense of purpose and identity in a world that is in flux" (Lagace, 2006). The CVS has a secondary purpose which is to

promote a positive image of the company and instill confidence amongst its stakeholders.

This twofold (public relations/promotional) purpose of the genre (Bhatia, 2004) can, in part, be related to the two audiences targeted by the internal (geared to the corporation itself) and external (geared to the general public) instantiations of the CVS. These two levels will be taken into consideration in the generic description of the CVS. Furthermore, since the external instantiation of the CVS is computer-mediated and accessed through the company's webpage, a section of the discussion is devoted to describing the influence of the medium on the CVS genre.

Once the genre has been accounted for in all its complexity, the last section of the paper will focus on how corporate identity is constructed therein. This is especially relevant as the primary goal of the CVS is to provide employees with a sense of purpose and identity. By focusing on the genre-sanctioned rhetorical strategies, the analysis seeks to establish what lexico-syntactic devices are used to that end. More specifically, epistemic and agentive self-references are located and analyzed in the CVS of the fifteen American corporations that comprise the corpus. Van De Mieroop (2007) relates agentive self-references to the construction of institutional identity. The main goal of the analysis is to ascertain whether the same holds true within the American CVS genre.

2 Genres and discourse systems: The Utilitarian ideology and American corporate discourse

Scollon and Scollon (2001: 5) argue that genres are better understood as being part of a given discourse system. According to these authors, discourse systems coincide with James Paul Gee's Discourses with a capital D, and comprise everything which can be said or talked about or symbolized within a particular domain, e.g., 'the discourse of law' or 'the discourse of entertainment'. They divide discourse systems into involuntary (those to which members have no choice in belonging, such as age, gender, or ethnicity) and voluntary (goal-oriented discourse systems, usually institutional structures which have been formed for specific purposes, such as corporations or governments) and define them on the basis of four main characteristics (2001: 178-179):

1. Members of a given discourse system will hold a common ideological position.
2. Socialization of members is accomplished through preferred forms of discourse.
3. A set of preferred forms of discourse (face strategies, certain genres, lexicon, etc.) used by members serve as symbols of membership and identity.

4. Face relationships are prescribed for discourse members or between members and outsiders.

Western corporate discourse is a voluntary discourse system and, according to Scollon and Scollon (2001), is the most representative example of the Utilitarian Discourse system, grounded in Utilitarian ideology. This ideology champions individuality, empiricism and rationalism and has shaped the style known as C-B-S (Clarity-Brevity-Sincerity) (Lanham, 1974), which has become the dominant communicative system in the business and governmental worlds (see Pan et al., 2002, for an updated review). Scollon and Scollon (2001: 180) point out that identity within a voluntary discourse system is often displayed through attention to the goals of the group and by expressing its ideology. Thus, the construction of corporate identity is constrained by the goals of the corporate world and its ideology, i.e., the agency of the members of the corporate discourse community is limited by the Utilitarian ideology.

Identity construction in social practices has constituted one of the main foci of research in sociolinguistics over the last twenty years (de Fina, 2007). The fundamental role of language in the construction, negotiation and establishment of identities is now widely accepted. Within identity theory, social constructionism is perhaps the most general perspective. It views identity as a process, not as a given or a product, always embedded in social practices and thus takes an anti-essentialist view of the self (de Fina et al., 2006).

Along these lines, Bhatia and Lung (2006: 266) define corporate identity as "… a multidimensional and dynamic construct that is realized in and through the discursive practices of members of business and disciplinary cultures". In this definition, Bhatia and Lung emphasize the centrality of discourse in the construction of corporate identity. Furthermore, and crucially for the purposes of this paper, they state that "… identities are often simultaneously realized within and sometime across generic boundaries, which makes the notion of generic integrity (Bhatia, 2004) centrally relevant to any form of identity construction" (2006: 266).

Following Hatch and Schultz (1997), Bhatia and Lung (2006) distinguish between organizational identity and corporate identity. Organizational identity refers to members' perceptions, feelings and thoughts about their organization. Corporate identity is conceptualized as a function of leadership and it is formulated by top management. There are cases, like the one described by Sam Palmisano, the CEO of IBM, where the CVS of a corporation is the result of a bottom-up, grassroots movement in which all employees participate. However, this is the exception rather than the rule. The CVS genre lays the ground rules of the ideology and performance of the corporation, and it is usually put together by top management.

I now turn to a detailed description of the CVS genre. The CVS genre's primary role is to provide employees with a sense of purpose and identity. Identity is not constructed in a vacuum, but is enacted through the performance of culturally recognized – and genre related – acts and stances (Ochs, 1993). Thus, we need to describe and acknowledge generic constraints on identity construction before we can proceed to the analysis of how this is achieved.

Both the description of the CVS genre and the analysis of how identity is constructed therein are data-driven and based on fifteen CVSs (3,147 words) which were extracted from the webpages of fifteen American corporations. The only requisite for inclusion in the corpus was for the company to have posted its CVS on its webpage. Otherwise, selection was random: I included a few diversified industrial companies, and the rest were selected from Fortune 500's list of the 100 best companies to work for in 2008. The reason behind the inclusion of very different types of corporation in the corpus was to see whether, regardless of the product manufactured or the service provided, generic patterns and recurrent lexico-syntactic devices could be identified and the latter related to the construction of corporate identity. Once all fifteen instances of the CVS genre had been located, they were assigned a number in the corpus (CVS#1, CVS#2, etc.). They will be identified in the same manner in the following discussion.

3   Description of the CVS as a genre

The CVS as a genre belongs to what Bhatia refers to as a public relations discourse (2008: 167). Vaughn (1997) describes public relations as innately organizational. Its focus is on the relation that an organization has with its different publics, i.e., how an organization adjusts to its environment and how the environment adjusts to the organization.

The CVS is closely related, and sometimes confused, with the company's mission statement (see Swales and Rogers, 1995; Isaksson, 2005). However, the mission statement describes what the company aims to fulfill: time-limited objectives, task-oriented goals, or aspirations of achievement. The CVS, on the other hand, is about what the company stands for and how its employees conduct themselves. Corporate values frame a role for the corporation that gives it a purpose beyond profit. Most importantly for the objectives of this paper, the CVS aims to provide employees with a sense of purpose-driven identity (Van Lee et al., 2005; Cha and Edmondson, 2006; Lagace, 2006).

According to Paine (2003), the CVS developed as a response to the need for corporations to be measured in terms of both financial and ethical standards. Ethical standards are determined by the context in which a corporation is operating, and are therefore in constant flux. I would argue that the 'value

shift' that Paine describes is the change that modern corporations are experiencing from a *Gesellschaft* to a *Gemeinschaft* structure. Scollon and Scollon (2001) discuss Tönnies's (1971) influential distinction between Gemeinschaft – i.e., a community form of social solidarity, based on a common history and tradition – and Gesellschaft – i.e., a contractual, rational or instrumental organization of social relations based on mutual agreement and designed to protect mutual interests. Scollon and Scollon indicate that Asian corporations are inspired by *Gemeinschaft* and operate more along the lines of kinship. However, the impersonal, individualistic, empiricist and rationalistic fundamentals, on which the Utilitarian ideology rests, foster a *Gesellschaft* structure that Western corporations operate in. Recently, it would seem that changes in the primary culture (Widdowson, 1998) – mostly in the aftermath of corporate scandals such as Enron, WorldCom and Tyco, among others – have pushed for a change in the method in which corporations are accounted for and have laid the way to enable the enacting of ethical values to coexist with the obtaining of financial profit as the main purposes of corporations. Therefore, a Gemeinschaft structure seems to have found its place alongside the traditional, corporate Gesellschaft structure. The view of the company as a 'family' that is betrayed when someone does not abide by its shared values came up, for example, in the 2002 talks surrounding the HP-Compaq merger, which led to large-scale layoffs (Lagace, 2006). Van Lee et al. (2005) agree that the fact that a large number of corporations are making their values explicit signals a significant change in corporate practices from a decade ago. The authors conclude that the ramifications of this shift are just beginning to be comprehended.

Although the long-term changes are still underway, it seems that companies whose primary value is profit no longer achieve superior market performance (Collins and Porras, 1994). Hultman (2005: 35) indicates that although some managers may find organizations being both "humanist" and "practical" counterintuitive "… research clearly indicates that this is not only possible but also necessary".

3.1   A description of the textual realization of the CVS genre: The CVS genre and Swales's (1990) three-level model

As indicated above, to my knowledge, there are no prior descriptions of the CVS genre based on genre theory (Swales, 1990; Bhatia, 2004). In this section, I apply Swales's (1990) three-level model (communicative purpose triggers a specific genre which is realized by a given move structure in turn realized by genre-sanctioned rhetorical strategies) to the internal, textual realization of the CVS genre. But before I turn to its description, I want to discuss a feature that sets the CVS genre apart from many other corporate

genres. As Scollon and Scollon (2001) point out, socialization within a given discourse system is accomplished through members' learning and reproducing preferred forms of discourse (i.e., face relations, certain genres, technical vocabulary) that serve as symbols of membership and identity. Furthermore, Bhatia (2004: 129) emphasizes the fact that most professional genres are the result of collaboration among different professionals. However, most employees will never get a chance to reproduce or instantiate the CVS. As discussed above, the CVS is put together by top management and is seldom altered, unless transformations occur in the primary culture which need to be reflected in the deletion of old values or the addition of new ones. An example of this rewriting as a response of changes occurring in the primary culture could be the 'green', environmentally-friendly approach to business observed in many CVSs, which reflects the current, more environmentally-conscious mentality of the American culture as a whole.

The fact that the CVS is a top-down genre whose realization employees usually have very limited control over is, in a way, at odds with the genre's primary communicative purpose, which is to provide employees with a "… sense of purpose and identity in a world that is in flux" (Lagace, 2006). This communicative purpose triggers a move structure, which the analysis has found to be varied.

The CVS of many companies starts by including their vision and then proceeds to list each significant value, which is followed either by a series of bullet points describing the ways in which the value is instantiated or by a brief narrative that carries out the same function. Johnson Controls' CVS is a good example of the genre's most common realization:

CVS#5 Johnson Controls

Our Vision
A more comfortable, safe and sustainable world.

Our Values

Integrity
Honesty, fairness, respect, and safety are of the utmost importance.

Customer Satisfaction
Our future depends on us helping to make our customers successful. We are proactive and easy to do business with. We offer expert knowledge and practical solutions, and we deliver on our promises.

Employee Engagement

We foster a culture that promotes excellent performance, teamwork, inclusion, leadership and growth.

Innovation

We believe there is always a better way. We encourage change and seek the opportunity it brings.

Sustainability

Through our products, services, operations and community involvement, we promote the efficient use of resources to benefit all people and the world.

However, this layout is not the only type of realization of the genre to be found. In the corpus, for example, ITT (CVS#3) uses a diagram to present its vision and values. Edward Jones's CVS (CVS#10) uses bullet points to list their values, but these are followed by very long narratives. Accordingly, the length of the CVS examples included in the corpus has also been found to vary widely: from 97 words (CVS#9 FedEx) to 534 words (CVS#10 Edward Jones).

Moreover, the list of values included also varies substantially. Van Lee et al. (2005) found the following values to be the ones most frequently included in the corpus of CVS that they analyzed: Ethical behavior/integrity (90%); Commitment to customers (88%); Commitment to employees (78%); Teamwork and trust (76%); Commitment to stakeholders (69%); Honesty/openness (69%); Accountability (68%); Social responsibility/ corporate citizenship (65%); Innovativeness/entrepreneurship (60%); Drive to succeed (50%); Environmental responsibility (46%); Initiative (44%); Commitment to diversity (41%); and Adaptability (31%).

The rhetorical strategies used to compose the move structure of the CVS also vary widely. In terms of content, although the use of technical vocabulary is part of the way in which individuals reflect their membership in a given discourse system (Scollon and Scollon, 2001), none of the CVSs included in the corpus made use of technical jargon. Most moves contain an abstract noun to refer to the specific value, and the narrative or bullet points that follow it make the abstractness of the value concrete by detailing specific ways in which the value is enacted. Almost all these narratives or bullet points reflect the C-B-S (Clarity-Brevity-Sincerity) style of the American corporate world (Lanham, 1974). However, there are some exceptions. Edward Jones's CVS (CVS#10) also presents differences at the rhetorical strategy level by containing a conversational style where the client – "you" – is addressed directly and by means of informal expressions – "let's be honest", "It might not sound like a big deal but…" – and contracted forms of the verbs are used.

Almost without exception (but see Atlas Copco CVS#4 and Titan Group CVS#12), as illustrated in the example of the CVS included above, the plural form of the first person pronoun "we" or the plural form of the possessive adjective "our" are used in all the strategies. This is in accordance with the democratic ideals of equality promulgated by the Utilitarian ideology as well as with the solidarity face system on which interactions within Western corporations are based (Scollon and Scollon, 2001). Additionally, the inclusive "we" fits in well with the primary goal of the genre, i.e., the construction of a collective, corporate identity. As I mentioned earlier, in the last section of this paper I will tackle the analysis of rhetorical strategies in more depth by focusing on the choice of lexico-syntactic devices to display either epistemic or agentive self-references. These choices will be related to identity construction and seen as an example of how discourse ideologies are reproduced at the micro-level (Blackledge, 2002).

Although the number and type of moves varies, it is important to remember that "… instances of genres do not necessarily contain a fixed set of obligatory moves. Instead the genre-texts select their structural elements from a common move repertoire" (Askehave and Nielsen, 2004: 5). The move structure of the CVS genre should be expected to be diverse, as at least some of the values included will reflect the uniqueness of the specific corporation. Despite the differences, all examples of the CVS genre included in the corpus displayed generic integrity: "… a typical instance of a specific genre looks like the one intended, in the sense that the members of the discourse or professional community with which it is associated tend to recognize it as a valid example of the genre in question" (Bhatia, 2004: 115).

In addition to its company-internal, textual realizations, the CVS genre is also computer-mediated, and thus company external. As I have indicated, all the examples of realizations of the genre included in my corpus were extracted from companies' webpages. The fact that CVS is a computer-mediated genre adds an extra level of complexity to its description – something which is undertaken in the next section.

3.2   CVS as a mediated genre

The advent of information technologies has had major repercussions on traditional genres and genre theory. In their analysis of the homepage as a genre, Askehave and Nielsen (2004) discuss how the World Wide Web, as a medium, conveys unique properties to the genres it mediates. This fundamental interconnection between genre and medium cannot be ignored by genre theory. On-line genres are no longer self-contained (Lemke, 2003). Any given on-line page provides a number of hypertexts which connect the reader with other pages of text, other images, other video clips. The path followed by each individual reader through the different choices of hypertext

and where these may take him/her is not predictable, and certainly far removed from the linearity that conventional genres offer. Lemke uses the term "traversal" to refer to our ways of making meanings and living our lives across the boundaries between sites and institutions. He states:

> We have learned to make these traversals meaningful in themselves. Meaning is no longer internal to genres and institutions. It is also made across and between them, as we juxtapose, catenate, and traverse not just websites or television channels but, on longer timescales, the sites and roles of our days, weeks and lives (Lemke, 2003: 4).

In section 3.1, I analyzed the textual realization of the internal version of the CVS genre. Despite differences, most of the examples included in the corpus showed generic integrity and could be recognized as realizations of the CVS genre. However, the traversals through which the CVS genre is accessed and created on-line vary to a far more significant extent. The most common one is for it to be accessed through the hypertext: "About us" or "About (corporation name)". Furthermore, although all the companies selected had a CVS section, values such as ethics or commitment to the environment or the community were expanded respectively in the corporate governance section or in specific sections on community that detail the projects or charitable organizations the corporation is involved with. Thus, they were developed across generic lines. For example, Valero Energy Corporation's CVS (CVS#8) had separate links to sections on environment and community. This would be in accordance with the view that values should inform all aspects of the corporation's practice.

The location of the "About us/*corporation name*" section also varied: it was prominently displayed at the top of the page (Danaher CVS#2) or sometimes found at the bottom of the page in a very small font (American Express CVS#6 or FedEx CVS#9).

It would seem that although the generic integrity of the textual realization of the CVS genre is quite well established, its on-line, traversal realization is not as recognizable, and is very much dependent on the design of the corporation's webpage.

Therefore, in the description of the CVS as a mediated genre, the affordances of the medium and how they affect its generic integrity have to be taken into consideration. More importantly for the purposes of this analysis, any genre, such as the CVS, that was not digital in its inception and becomes mediated at a later stage may, as a result, have its primary generic intention altered and eventually evolve into a new genre (Ruiz-Garrido and Ruiz-Madrid, forthcoming).

Besides the repercussion on generic integrity and traditional genre theory (see Askehave and Nielsen (2004)), information technologies have made business genres more accessible to stakeholders and the general public. The widening of the target public also has fundamental effects on the genre. The CVS

genre's primary target public is the company's employees, who are expected to derive a sense of collective identity from the values it states, and to infuse those values into their professional practices. Therefore, the primary purpose of the CVS is socialization and enculturation of the company's employees. However, by posting their CVS on line, corporations target other populations as the main public for the CVS genre and, by doing so, the initial purpose of the genre changes as well. By making their CVS public, companies want to present a positive image of the corporation, one that is in accordance with current standards of ethics. Although there is no certainty as to whether its CVS will be read and by whom, by making it public, a company's CVS can be compared with that of other companies and make it more attractive for investors or future employees. Thus, their CVS genre's external, secondary purpose is promotional[1], i.e., to promote and market the company as well as to recruit potential talent. Therefore, the CVS genre can be described as a mixed genre, i.e., a genre with more than one communicative purpose, according to Bhatia (2004). This double communicative purpose also has an impact on the way in which identity is constructed. Identity is co-constructed in relation to a specific audience. In this context, it is co-constructed in relation to at least two different audiences addressed by the internal and external realizations of the CVS genre.

After this qualitative analysis of the CVS genre, I return to the analysis of the rhetorical strategies used to realize the move structure of the genre (Swales, 1990). More specifically, I focus on the lexico-semantic devices that can be related to the construction of the companies' identity. As I discussed above, the primary purpose of the CVS genre is to provide employees with purpose and identity as members of a specific corporation. Its secondary purpose is to promote the company to stakeholders and prospective employees. In the accomplishment of the two purposes, both the presentation and the construction of the corporate self are fundamental. I will now provide a detailed analysis of the ways in which this is achieved.

While there is a substantial amount of literature devoted to the study of corporate identity, few papers offer an analysis of what linguistic choices are made to construct it. Some scholars (see Vaughn, 1997; Skerlep, 2001) point out that organizational communication and public relation theory have seldom focused on rhetorical, i.e., linguistic, aspects, although "… it is through rhetoric that people and organizations negotiate and manage their relationships" (Elwood, 1995).

Furthermore, Quigley (2000: 154) very persuasively argues that talking about the construction of self or identity really means talking about a grammatical practice, rather than an abstract theoretical construct. Shotter (1989) points

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[1] Bhatia (2004: 63) defines promotional genres as those whose main is "… to inform and promote in order to sell ideas, goods or services to a selected amount of people".

out that grammatical features of language provide choices for distinct positional fields for the subject; which one is selected is always related to "the specific pressures of recipient design" (Fox, 1994: 31).

Along these lines, Van De Mieroop (2007) carried out a quantitative and qualitative study of professional and institutional identity construction. By professional identity, Van De Mieroop refers to the identity that speakers are constructing by presenting themselves as experts. Institutional identity refers to the social positioning of the speaker as a member of his/her organization. Van De Mieroop's definition of institutional identity corresponds to what is here understood as corporate identity.

Van De Mieroop applied to her study the dichotomy between epistemic and agentive self-references proposed by Dyer and Keller-Cohen (2000), who draw on Bruner's psychologically oriented analysis of narratives (1990). According to Dyer and Keller-Cohen (2000: 294), "The agentive self is associated with actions and the temporal progression of the narrative and the epistemic self with thoughts, feelings and beliefs". Van De Mieroop (2007) concluded that professional identity is closely linked to the use of epistemic self-references, whereas institutional identity is constructed by means of agentive self-references.

Extending Van De Mieroop's analysis to the construction of corporate identity in the CVS genre, I plan to focus on the epistemic and agentive references that are used to construct corporate identity in the rhetorical strategies that make up the moves of this genre. Van De Mieroop's results link agentive references to the construction of institutional (corporate) identity. Due to the nature of the CVS genre, one would expect epistemic references to be more predominant within this context. However, authors and practitioners seem to agree with Van De Mieroop's conclusions and emphasize the agentive nature of the CVS. For example, Hultman (2005: 35) states: "… values are defined not by what we say but by what we do. To be considered viable, therefore, these behaviors must produce effective outcomes. When an organization establishes or changes its values, it's very important to give those values clear behavioral definitions". For example, The US National Park Services National Leadership Council (2001) views their corporate values as "… the basic elements of how we go about our work. They are the practices we use (or should be using) every day in everything we do".

Thus, based on prior research and on individuals' views on corporate best practices, my hypothesis is that corporate identity within the CVS genre will be constructed mainly by the use of agentive references. This section of the analysis will seek to answer the following questions, keyed to the above-stated hypothesis:

Research questions:

RQ 1) Is corporate identity within the corporate values genre constructed by agentive self-references, as concluded by Van De Mieroop?
RQ 2) Do epistemic self-references play any role in the construction of corporate identity within the corporate values genre?

4   The CVS genre's rhetorical strategies and the construction of corporate identity

4.1   How the analysis was conducted and what results were obtained

As described above, the corpus on which this study is based is made up of fifteen CVSs extracted from the webpages of American corporations. The corpus was first used to inform the generic description of the CVS by applying to it Swales's (1990) model (i.e., communicative purpose triggers a specific genre which is realized by a given move structure in turn realized by genre-sanctioned rhetorical strategies) as well as tenets from current approaches to the study of cybergenres.

The second level of analysis, which focuses on the genre's sanctioned rhetorical strategies, sought to identify epistemic and agentive self-references included in each of the fifteen CVSs. In the analysis, Dyer and Keller-Cohen's (2000: 294) distinction between the agentive self (associated with actions and the temporal progression of the narrative) and the epistemic self (associated with thoughts, feelings and beliefs) was applied. Thus, a self-reference such as the following: "We uphold the highest standards of integrity in all our actions" was coded as epistemic. On the other hand, a self reference such as "We work together, across boundaries, to meet the needs of our customers and to help the company win" was coded as agentive (CVS#6 American Express). The results of the analysis are displayed in Table 1.

Name of corporation	Epistemic self-references	Agentive self-references
1. Ingersoll Rand	1	13
2. Danaher	10	7
3. ITT	3	9
4. Atlas Copco	8	4
5. Johnson Controls	3	6
6. American Express	4	5
7. Shared Technologies	8	2
8. Valero Energy Corporation	5	1
9. FedEx	2	4

10. Edward Jones	16	13
11. CarMax	7	7
12. Titan Group	1	1
13. Google	8	4
14. Johnson and Johnson	8	6
15. KPMG	2	3
Total # of occurrences	**86**	**85**

Table 1. Epistemic and agentive self-references found in the CVS corpus

4.2   Findings and how they relate to identity construction within the CVS genre

Out of the total number of self-references found in the corpus ($n = 171$), 86 of them (50.3%) were epistemic self-references and 85 (49.7%) were agentive self-references. Therefore, within this genre, the construction of corporate identity is not primarily related to the use of agentive references, as was predicted based on Van De Mieroop's conclusions. Therefore, the answer to the first research question, which sought to ascertain whether corporate identity within the CVS genre is constructed by agentive self references, would have to be negative.

The second research question focused on whether epistemic self-references played a role within the CVS genre. The answer, in this case, is affirmative, as epistemic self-references were found to be the most common, albeit by a very small margin.

The results, although not in line with Van De Mieroop's, seem to be intuitively in accordance with the primary and secondary purposes of the CVS genre: it could be expected that the expression of values should be tied to epistemic self-references, expressing belief, attitudes, feelings, and so forth. Those are the values that make the corporation distinct and set it apart from others, which is the objective of using the external, promotional realization of the genre. On the other hand, the abstract values on which employees need to be socialized have to be made concrete by translating them into specific ways in which employees can enact them. That would account for the almost equal use of agentive self-references in the corpus.

The results of this analysis, although tentative due to the size of the corpus, clearly point to the indissoluble connection between identity construction and genres. Even within genres belonging to the same discourse system, we should expect to find differences in the ways in which corporate identity will be constructed. These will be constrained by the communicative purpose of

the genre itself and the affordances of the medium through which the genre is mediated.

5   Conclusions

This paper has sought to describe the CVS using the tenets of traditional genre theory (Swales, 1990; Bhatia, 2004, 2008) as well as more recent approaches to the field (Lemke, 2003; Askehave and Nielsen, 2004). Although the CVS is often accounted for in the organizational and public relations literature, it had not been tackled from the standpoint of genre theory before.

Since the CVS has two different realizations (external and internal) and one of them, the external, is computer-mediated, the generic description was intended to provide an account of both of them. It was found that the multiplicity of publics that the external realization targeted had an impact on the communicative purpose of the genre. Its primary communicative purpose, within the public relations genre, was to socialize employees by providing them with a purposeful and value-driven corporate identity. In the external realization, the CVS was transformed into a promotional genre whose main aim was to appeal to prospective clients and recruits.

The textual realizations of the CVS analyzed were found to display generic integrity, despite some differences. However, the traversals through which the genre was accessed and constructed on-line were found to be less stable, and very much dependent on the company's specific webpage design. Crucially for the on-line, external generic integrity of the CVS genre, it was found that several moves of the genre were developed across generic boundaries.

The last section of the analysis was devoted to a quantitative analysis of the genre's rhetorical strategies. More specifically, the analysis focused on the type of self-reference (epistemic or agentive) that was chosen to construct corporate identity. Taking Van De Mieroop's results as a starting point, it was hypothesized that corporate identity would be constructed mostly through the use of agentive self-references. However, the results of the analysis showed that epistemic and agentive self-references were almost equally prevalent in the corpus. The parity of epistemic and agentive self-references was related to the two communicative purposes of the internal and external realizations of the genre.

These results, although tentative, clearly indicate that identity construction is not discourse-specific, but genre-specific, and that identity is co-constructed differently depending on the specific community the genre targets.

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Section III

EPAP pedagogy

Evaluating and designing materials for the ESP classroom

Ana Bocanegra-Valle

This paper explores the development of printed materials in ESP from a practical point of view and aims to shed light on issues of concern to ESP practitioners when they set about writing materials for classroom use. Such matters include the reasons for ESP materials development, the value of authentic materials, the evaluation of published materials, the development of original and adapted in-house materials, and the corresponding implications for the ESP practitioner. Sample activities have been included and commented so as to illustrate the issues raised and to be of practical guidance to in-service and prospective developers of ESP materials.

1   Introduction

Materials design and evaluation as a key area within EFL/ESL (English as a Foreign Language/English as a Second Language) teaching goes back to Cunningsworth (1984) and has since then developed into a topic that has been dealt with in many volumes (Sheldon, 1987; McDonough and Shaw, 1993; Tomlinson, 1998, 2003a; McGrath, 2002; or Renandya, 2003, to name but a few), journal papers, conferences, courses, seminars, workshops and other forms of academic interest around the world. In fact, the existence of an international association such as MATSDA attests the relevance now enjoyed by materials development in language learning[1]. Many universities and language centres have begun to offer specialised modules or Master's and PhD courses on materials development. Moreover, at some universities, materials development may be regarded as a key merit for candidates applying for a job and on the same level as a PhD degree, teaching experience or (near-) native language competence[2].

Turning attention to the field of English for Specific Purposes (ESP), a milestone in materials development was Herbert's (1965) textbook *The Structure of Technical English*. This was a pioneering work for two reasons: 1) it was the first coursebook focused on ESP and the learning of applied languages (engineering English) – from then onwards the number of ESP textbooks rose steadily and generously, especially from the 90s to the present

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[1] Since its foundation in 1993, the Materials Development Association (MATSDA) has been a meeting point for all those interested in the design, evaluation and development of high-quality materials for the learning of languages (see URL: http://www.matsda.org.uk).

[2] Recently, a Finnish university announcing a post for a native-speaker English lecturer stated the following requirement for potential applicants: "Experience in producing teaching materials significant for teaching. Both planning and production will be considered. Selected samples of the teaching material may be enclosed".

and in certain areas such as Business English; and 2) Herbert followed a corpus-based approach to materials design, so popular nowadays, by researching the actual language of engineering publications and providing a basic corpus of expert language to be mastered by learners (then, future engineers).

This paper explores the position of coursebook materials design and evaluation in ESP and aims to shed light on what issues are of concern to ESP practitioners when they set about writing materials for classroom use or potential publication. It focuses on *printed* materials as the most usual medium for classroom materials delivery; however, many theoretical and practical insights herein may be relevant and applicable to audiovisual and/or computer-based materials. Based on my personal experience and practice as a researcher, in-house materials writer and ESP practitioner, I will try to give some hints on the multifaceted nature of materials development and offer practical guidance to in-service and prospective materials developers.

2   Materials development and ESP

2.1   What are materials in ESP?

In language teaching, *materials* are:

> Anything which is used to help to teach language learners. Materials can be found in the form of a textbook, a workbook, a cassette, a CD-Rom, a video, a photocopied handout, a newspaper, a paragraph written on a whiteboard: anything which presents or informs about the language being learned. (Tomlinson, 1998: xi)

Such a definition might also serve the purpose of ESP materials; however, four main issues should be emphasised before proceeding any further:

1) There are *major* and *minor* ESP areas/courses, and published materials are sensible to this reality. Business English and Maritime English are examples of these[3]. Some courses that are tailor-made to suit a particular group of students would also fall within the *minor* category (for instance, English for tourism to a group of taxi drivers and policemen in a popular town for British tourists).

2) *Subject-matter content* is fundamental to ESP materials. Also known as *carrier content*, *informative content*, *discipline-based knowledge*, *specific*

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[3] St John (1996: 9) found that "of 24 ESP books claimed as new in 1994, 21 were business related". About a decade later I had a rough look at the 2006 catalogue of the *English Book Centre* and data revealed that the situation remained the same. The highest number of published titles was in the area of "Banking, Business and Finance" (215 titles). Far behind this *top* ESP area, titles numbered 20 for "Tourism" and "Science and Technology", 13 for "Computing and Telecommunications", 8 for "Medicine and Health", 4 for "Aviation" and "Law", 3 for "Engineering", and closed with "Agriculture" (2 titles) and "Maritime" (1 title).

content, *specialist knowledge* or *expert knowledge*, this refers to the information which is specific to a particular discipline and which people, like students and future experts, possess in their mother tongue. ESP teachers will need a reasonable understanding of the specific discipline as well as "an interest in the disciplines or professional activities the students are involved in" (Dudley-Evans and St John, 1998: 14).

3) All too often, ESP teachers become evaluators, designers and developers of materials, simply because "publishers are naturally reluctant to produce materials for very limited markets" (Hutchinson and Waters, 1987: 106) and most ESP areas conform to this reality. These roles are not exclusive to ESP teachers but, if compared with EFL/ESL teachers, they are more often engaged in the task of evaluating, designing and developing materials for their classroom use. It is precisely this additional role of materials providers/developers that has endowed ESP teachers with the denomination of *practitioners* (Robinson, 1991)[4].

4) Unlike EFL/ESL teaching, there exists a mismatch between pedagogy and research; that is, there is a gap between coursebooks and pedagogical practice, on the one hand, and research findings, on the other. For instance, as Harwood (2005: 150) found, there is "a lack of fit between how academic writers write and what the textbooks teach about writing".

2.2   What does ESP materials development entail?

Materials are particularly useful in ESP because they play a key role in exposing learners to the language of a particular discipline as it is actually used; in short, they are a source of "real language" (Dudley-Evans and St John, 1998: 171). Developing materials for the ESP classroom is a trade-off between learning needs, language content and subject-matter content which implies the review of a number of issues:

- What is the target topic/what will be the carrier content?
- Is this topic relevant for my students/the discipline?
- What do I, as an ESP practitioner, know about the carrier content?
- What are my students supposed to know about the carrier content?
- To what extent do materials reflect the language/conventions of the discipline?
- What are the learning goals?
- What is the target language form/function/skill?
- What materials are available, suitable and accessible?
- What teaching equipment is required and available?

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[4] The practical volume edited by Master and Brinton (1998) is a good example of current practices worldwide. Arranged into seven ESP macro-areas, the wide range of contributions felicitously illustrates in-service ESP practitioners' commitment to in-house materials design and development.

-    How much time should be spent on the design, development and implementation of activities?
-    Will materials be classroom-oriented or provide additional work?

At its most basic level, the process of ESP materials development is as shown in Figure 1. Firstly, available materials are reviewed, evaluated and selected according to different criteria and with reference to a particular ESP course. Then, if there is a lack of materials, or if materials available are not suitable according to such evaluation, practitioners might be required to develop materials from scratch or abridge, extend, refine, rewrite – in short, adapt – the available materials for a particular learning situation, ESP area, target group of learners, timing or set of resources. There exists the possibility that, although there are materials available for classroom use, practitioners feel the need to provide additional materials for out-of-classroom work, self-study or the like. In this case, the process would not differ.

Lastly, because materials development is an ongoing process, those engaged in creating or adapting materials will be required to pilot test or perform evaluative reviews so as to adjust materials over time in response to implementation outcomes, current trends in the field or research findings. This last step is a desirable practice because "materials that undergo this evaluative review and revision process are likely to serve student and teacher audiences more effectively than materials that do not" (Stoller et al., 2006: 175). Developing materials is a matter of trial and error, and it will be convenient to bear in mind that materials that are appropriate for a particular ESP course/area may not prove so efficient for other ESP courses/areas.
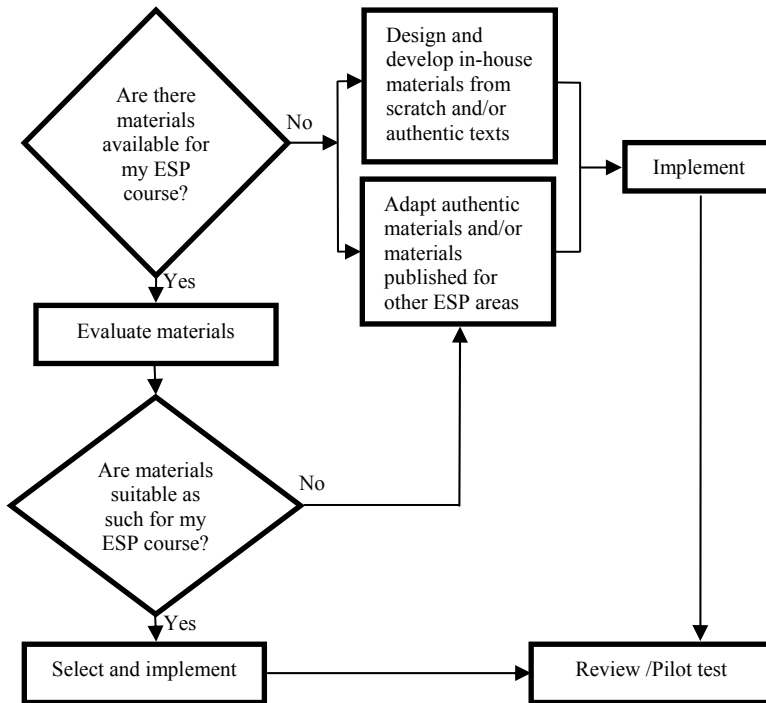
Figure 1. Flowchart on the process of ESP materials development

2.3 The value of authenticity

Authentic, *genuine*, *real*, *natural* or *unsimplified* are adjectives randomly used today in ESP to refer to texts or materials that can be used within language-learning contexts but which were specifically written or developed for an audience other than language learners. Similarly, an *authentic text* would be a text "normally used in the students' specialist subject area: written by specialists for specialists" (Jordan, 1997: 113).

The notion of *authenticity* has been subject to controversy for some decades, and there might be scholars who would still disagree with today's generally accepted definition. Henry Widdowson (for whom the authenticity of materials had to be understood in terms of their appropriateness, interaction, outcomes and efficiency rather than based on their origin) stirred up lively discussions on the belief that "what is real or authentic to users is not authentic to learners" (Widdowson, 1998: 19). The view of authenticity in terms of appropriate language use regardless of the origin of the materials (Kuo, 1993), the distinction between text authenticity and learner authenticity

(Lee, 1995), or authenticity of purpose versus genuineness of text (Dudley-Evans and St John, 1998) sustained the literature of the time.

An eclectic view is that aired by Mishan (2005), who links theory, research and practice to provide a five-factored criteria for measuring authenticity: i) provenance and authorship of the text; ii) original communicative and sociocultural purpose of the text; iii) original content of the text; iv) learning activity engendered by the text; and v) learners' perceptions of and attitudes towards the text and its corresponding activity. Mishan's (2005) manual generously illustrates how authentic materials can be used in the general language classroom and may be a source of inspiration when attempting to develop materials and tasks for ESP learners.

The two texts in Figure 2 may serve to illustrate this discussion. Text I was extracted from an authentic publication (for an expert audience) and Text II from a non-authentic publication (for ESP learners)[5].

Text I	Text II
The Nickel-Cadmium Cell. In this cell the active material of the positive plate is nickel-peroxide, and of the negative, metallic cadmium. The active materials are contained in perforated steel tubes which are assembled in steel frames to form complete positive and negative plates. The positive and negative plates are separated by ebonite rod insulators, and the complete cell is erected in a welded sheet steel container. The electrolyte is a solution of pure potassium hydroxide of specific gravity 1·19. On discharge, the nickel peroxide is reduced to a lower oxide while the cadmium is oxidized. On charge the process is reversed.	Nickel-cadmium cell (NiCad). The electrodes are of nickel (+) and cadmium (-) and the electrolyte is potassium hydroxide. It has an EMF of 1.2V and is made in the same sizes as primary cells, e.g. HP2, PP3; button types are also available. High currents can be supplied. Recharging must be by a constant current power supply because of the very low internal resistance.
(Laws, W. (1991) *Electricity Applied to Marine Engineering,* London: The Institute of Marine Engineers, page 417)	(Glendinning, E.H. and J. McEwan (1993) *Oxford English for Electronics.* Oxford: OUP, page 27)

Figure 2. The language of authentic versus simplified texts

A swift comparison shows the following main differences:
1) Text I is more content-specific than Text II, it provides far more information, more data and greater detail; hence, subject-matter

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[5] It must be noted that Text II is *not* an explicit adaptation of Text I. They are two independent texts with similar content (The Nickel-Cadmium Cell is the carrier content) which I happened to find and, to my understanding, can be paralleled and compared for the purposes of this paper.

complexity is higher and learners should be more familiar with the target discipline;

2) In relation to 1) above, the language used to convey such specificity is much more elaborated in Text I as regards:

  - Lexical density: "The electrolyte is a solution of pure potassium hydroxide of specific gravity 1·19" (Text I) versus "The electrolyte is potassium hydroxide" (Text II).

  - Grammatical structures: compare "The active materials are contained in perforated steel tubes which are assembled in steel frames to form complete positive and negative plates" (Text I) with the absence of subordinate and complementary clauses in Text II.

  - Sentence length: compare "In this cell the active material of the positive plate is nickel-peroxide, and of the negative, metallic cadmium" (Text I) with "The electrodes are of nickel (+) and cadmium (-)" (Text II), which is much shorter.

  - Language simplification: in the example above, symbols in Text II act as visuals for simplifying the use of the language and assisting understanding.

  - Linguistic devices: writing is more elaborated in Text I because it makes use of more links, time relaters, etc. that serve different functions (e.g., showing a step in a process).

3) In contrast with Text II, the cognitive load when processing the information provided in Text I is much higher. Consider "On discharge, the nickel peroxide is reduced to a lower oxide while the cadmium is oxidized. On charge the process is reversed" (Text I) versus "Recharging must be by a constant current power supply because of the very low internal resistance" (Text II). Text I is focused on what happens during the charging/discharging process whereas Text II does not pay attention to such a process but to a condition for the process to take place.

For most materials writers, the great disadvantage of an authentic text is that the amount of information outweighs the amount of learnable language; in this sense, simplified texts help learners focus their attention on the main language features and use. Nevertheless, as Tomlinson (2003b: 5) claims:

> the counter-argument is that such texts overprotect learners, deprive them of the opportunities for acquisition provided by rich texts and do not prepare them for the reality of language use, whereas authentic texts (i.e., texts not written especially for language teaching) can provide exposure to language as it is typically used.

Moreover, when simplifying a text there is a risk of distorting language and making the text inauthentic (Islam and Mares, 2003). This possibility is particularly important in the field of English for Academic Purposes (EAP) (as a branch of ESP) because EAP is very genre-dependent and "materials to

familiarize students with a given genre are necessarily authentic texts" (Barnard and Zemach, 2003: 313).

There may be convincing arguments in favour of, or against, the nature and role of authentic materials in language learning, but their extensive use in ESP classrooms is common practice today. Authentic materials are a link between the classroom and the outside world (Wong et al., 1995) and, since the advent of Internet, they are more varied and accessible than ever, thus providing ESP practitioners with a diversity of 'take-away formats' (video, audio, pictures and text) awaiting time investment and exploitation effort[6].

3 Evaluating published materials

Measuring the potential teaching/learning value of authentic texts, coursebooks and other types of materials is one of the ESP practitioner's duties. Unlike language teaching at primary or secondary school levels, where administrations, departments or staff choose particular coursebooks for a whole institution, materials evaluation is particularly frequent in ESP at tertiary level. This is simply due to the fact that, as a general rule, no single coursebook is followed from beginning to end but, rather, extracts (units, exercises or tasks) from a number of published materials are brought together and, if necessary, supplemented with in-house activities. The reasons for evaluation, however, are common to language teachers in general because there is a need to examine the implications that certain materials may have for a particular course and to come to grounded opinions about the appropriateness of the methodology and content of the materials for a particular context (Littlejohn, 1998).

The use of already available materials implies pros and cons, and these vary according to each target ESP course. Unfortunately, there is no global recipe to carry out an effective evaluation at all levels and for all areas; however, some relevant works suggest methods, include checklists and provide criteria which help to identify gaps, avoid pitfalls, recognise achievements, and confront strengths and weaknesses so as to make decisions for materials use. Materials are mostly evaluated through questionnaires and checklists or analysis sheets, but there are also other methods like interviews, observation procedures, rating scales, and so forth.

Ur (1996), Jordan (1997), Dudley-Evans and St John (1998), Ellis (1998), Littlejohn (1998), Hall (2000), Tomlinson et al. (2001), Islam and Mares (2003), Rubdy (2003) or Tomlinson (2003c), to name but a few, provide general guidelines, establish factors, suggest criteria or provide instructions on how to evaluate published language-learning materials for classroom use

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[6] Barahona and Arnó (2001), for instance, is a good example of how authentic material from the Internet can be implemented in EAP courses.

which may be of relevance to ESP[7]. More specifically, Cunningsworth (1995), Candlin et al. (2002), Barnard and Zemach (2003), Pritchard (2004), Flinders (2005) and Chan (2009) provide criteria, checklists and analytical descriptions with varying levels of detail for particular ESP areas.

Some scholars (Littlejohn, 1998; Rubdy, 2003; Tomlinson, 2003c) complain that, even though useful for their purpose, most frameworks (checklists and questionnaires, mainly) that exist to aid in materials evaluation make general, impressionistic judgements on the materials and do not provide a detailed analysis. From my point of view, Pritchard's (2004) and Chan's (2009) proposals for two particular ESP disciplines fill this gap.

Pritchard (2004) offers an in-depth evaluation of published materials for Maritime English, a field of ESP which particularly stands out as an example of a *minor* discipline. Pritchard covered a wide selection of textbooks and audiovisual materials published between the mid-80s and 90s by searching worldwide through well-known publishing houses, educational institutions and training establishments. Pritchard's detailed survey is of most use to all those ESP practitioners who seek to evaluate ESP materials (not only Maritime English materials) in a consistent manner. Moreover, it is also a neat example of how to make ESP materials evaluation a coherent, systematic, objective and credible activity. On the other hand, Chan (2009) devises her checklist for a radically different discipline. By making use of research findings, she presents a six-step model for linking pedagogical considerations and the particular discourse of Business English, and develops a two-part topic-specific checklist for materials evaluation. Part A categorises pedagogical considerations into six issues of common concern to ESP courses (needs analysis, learning objectives, methodological approach, naturalness of the language models, contextualization of the language, and learner autonomy) which can thus be replicated as such in ESP areas other than Business English. Part B is more topic-specific but may also serve as a guide to other specialised discourse types if supported by research findings.

Materials evaluation is not a straight-forward exercise but a process that "depending on its purpose and the context of use it can embrace different perspectives (prospective, ongoing and/or retrospective) and can be multidimensional (external and/or internal; static and/or dynamic)" (Rubdy, 2003: 54). As a cyclical process, it aims to match course needs with available solutions as well as to bring about improvements in current and future classroom work. In line with this final purpose, Stoller et al. (2006) support *pilot testing* (also known as *class testing* or *trialing*) as an effective means of evaluating the efficiency of (i.e., validating) materials. One of the advantages of pilot testing is that mismatches between course aims and the materials

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[7] Hutchinson and Waters (1987), Sheldon (1987, 1988), Robinson (1991), McDonough and Shaw (1993) and Griffiths (1995), although perhaps a little dated, are still worth reading.

themselves are revealed and corrective measures can be taken and implemented.

When evaluating materials, it might also be useful to take into consideration the potential feedback and expert opinion of subject-matter colleagues on the timely inclusion of certain topics or the relevance of certain activities. Should the opportunity arise, it would also be advisable to obtain perceptions and feedback from learners as potential or actual users of certain materials. In short, both expert colleagues and learners may be extremely illuminating in helping ESP practitioners match, following Dudley-Evans and St John's (1998) terms, carrier content (i.e., the subject matter) to real content (i.e., the specific language).

4 The case for in-house materials

In-house materials refer to materials developed locally by a particular teacher or group of teachers for a particular course, a particular group of students and with the resources available at a particular time. As opposed to published materials, they are also referred to as *tailor-made materials*, *locally produced materials*, *self-designed materials*, *internal materials*, *home-made materials* or *home-grown materials*. In the context of language learning, in-house materials may be developed either from scratch or by adapting existing learning materials and authentic materials/texts. Materials adaptation is defined as:

> Making changes to materials in order to improve them or to make them more suitable for a particular type of learner. Adaptation can include reducing, adding, omitting, modifying and supplementing. Most teachers adapt materials every time they use a textbook in order to maximise the value of the book for their particular learners. (Tomlinson, 1998: xi)

In contrast to materials evaluation, in-house materials is an under-researched area: literature is wanting and principled frameworks and criteria for in-house materials development and adaptation are scarce. Some suggestions for materials production and/or adaptation may be found in the relevant literature (Dudley-Evans and St John, 1998; Jolly and Bolitho, 1998; Tomlinson, 1998, 2003a; Barnard and Zemach, 2003; Islam and Mares, 2003; Saraceni, 2003) and can be customised for use in ESP contexts, as required.

The reasons why ESP practitioners need to grow their own materials may be varied and can be summed up as follows:
- To have course materials
- To add variety to available materials and classroom work
- To supplement coursebooks and other available materials
- To exploit authentic materials
- To foster particular language items or skills

- To modify or increase/decrease the difficulty of learning targets
- To enhance or simplify informative content
- To attend to learners' needs, lacks and wants
- To highlight genre and/or discourse conventions
- To cater for learning diversity (i.e., differing learning styles)
- To deal with large, heterogeneous learner groups
- To maximise resources and time available
- To provide supplementary work
- To promote language learning autonomy
- To adapt the course to suit the demands of a particular institution and/or country/region

Some ESP areas are particularly sensitive to in-house materials due to the lack of published materials available. Hence, ESP practitioners dealing with *minor* disciplines (in the sense discussed above) are required to rely wholly or mostly on their self-designed materials. In other cases, materials available may be too country/region-specific or, on the contrary, too internationally oriented; therefore, some replacement may be needed[8]. There might be other particular circumstances, such as external mandates, by which ESP practitioners may feel obliged to provide their own materials.

In any case, following Krzanowski (1998), as far as possible good self-designed ESP materials should:

- balance informative, language and communicative content (i.e., "adequacy of content");
- be based on topics of general academic and professional interest;
- be directly linked to related degree/course/curriculum;
- be recyclable and evergreen;
- be evaluated against length and time available;
- be set in a memorable context;
- meet the criterion of authenticity;
- ideally cover both language and skills;
- offer students the opportunity to gain transferable skills;
- not over-promote one discrete skill;
- lend themselves to being adapted and/or extended;
- stimulate student interaction;
- adapt preferences to learners' needs and knowledge;
- be professionally printed and edited;
- help practitioners develop their own teaching style.

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[8] For instance, a Maritime English teacher in southern Spain may feel the need to replace a unit with the carrier content of "particulars of icebreakers" with a unit that includes the carrier content of "particulars of fishing vessels", which, in this particular case, will be more relevant to the profession given the fishing industry in the area and the absence of icebreakers.

5   A sample of in-house materials for the ESP classroom

This section provides examples of in-house materials developed from scratch and by adaptation[9]. When attempting to produce your own materials and/or adapt available materials, I would suggest following these Ten Commandments:

 I   evaluate resources and time available
 II   evaluate input (terminology, grammar, level of formality, relevance to the discipline, etc.)
 III   contrast students' formal (linguistic) knowledge with that required by the piece of oral and written discourse
 IV   contrast students' content (subject-matter) knowledge with that required by the piece of oral and written discourse
 V   evaluate the relevance of learning goals against the unit/course/discipline
 VI   consider the relevance of carrier content (subject matter) within the unit/course/discipline
 VII   consider the relevance of the real content (language) within the unit/course/discipline
 VIII   consider timing, lay-out and edition requirements
 IX   take into account updating and recyclability
 X   be aware of your limitations

Materials may be adapted by means of different techniques as explained and illustrated in Figure 3. Moreover, this range of techniques may be applied for adapting materials across disciplines, within disciplines, from other learning materials and from authentic materials.

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[9] This issue has been of particular interest to me for some time. For more illustrative materials of this kind, see Bocanegra (1997, 1999, 2001).

```
                                              ┌─────────────────────┐
                                              │ EXTENDING –         │
                                              │ supplying more of the│
                        ┌──────────────────┐  │ same type of material│
                        │ ADDING – supplementing│ │ (quantitative change)│
                        │ the existing materials and│ └─────────────────────┘
                        │ providing more materials│ ┌─────────────────────┐
                        └──────────────────┘  │ EXPANDING –         │
                                              │ adding something     │
                                              │ different to the materials│
                                              │ (qualitative change) │
                                              └─────────────────────┘
```

ADDING – supplementing the existing materials and providing more materials

EXTENDING – supplying more of the same type of material (quantitative change)

EXPANDING – adding something different to the materials (qualitative change)

DELETING – removing parts or sections of existing materials

SUBSTRACTING – extracting part of the available materials (quantitative change)

ABRIDGING – excluding certain parts and focussing attention on others (qualitative change)

Materials adaptation techniques

SIMPLIFYING – rewording a text so that it becomes more accessible to learners or simplifying an activity to make it more manageable

REORDERING – sequencing an activity in a different way so that it makes more pedagogic sense

REPLACING – substituting parts or sections of existing materials with different purposes (to cater for culture specific interests, etc.)
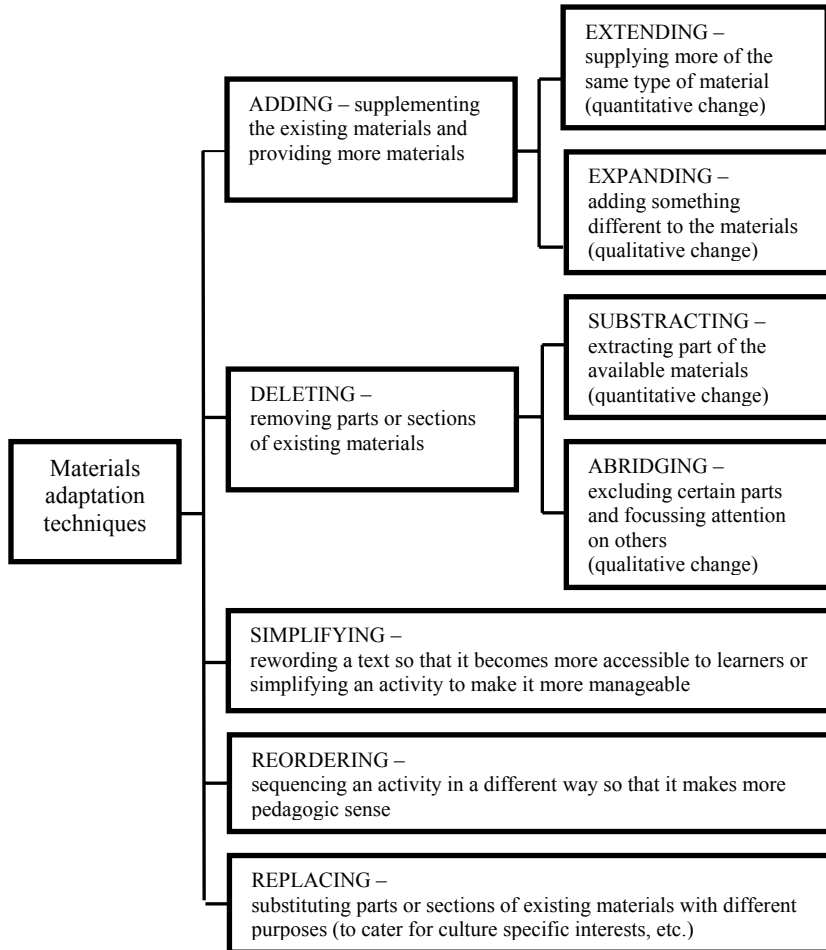
Figure 3. Techniques for adapting materials (based on Islam and Mares, 2003: 91-92)

SAMPLE ACTIVITY 1: *A presentation to the board* (see Appendix)

This example illustrates how materials can be adapted across disciplines from published learning materials and by means of extending, expanding and replacing techniques. The original exercise was found in Waistell, M. (1993) *Executive Listening*, London: Nelson, page 81. It was a follow-up exercise to

promote vocabulary learning targeted at a Business English audience. The original exercise consisted of a text with gaps to be filled in with words from a lead-in exercise and considering the graph included. For the adaptation task I inserted a blank graph, tried to imitate a real speech to the board and provided a more visual layout by making use of different visuals. The language of the reference text has been adapted so as to resemble oral language and contain terminology relevant to the new ESP area (industrial engineering). The main similarities and differences between source and adapted material are summarised in Table 1.

Feature	Original exercise	Adapted exercise
ESP area	Business English	English for industrial engineering
Language level	Intermediate	Low-intermediate
Learning aim	Terminology	Reading comprehension
Tasks	Fill in gaps from graph and lead-in text	Skim text and draw graph from text
Type of input	Graph and lead-in text	Text
Language	Imitating oral language but not presented as such	Imitating oral language and presented as such
Rubrics	Direct instructions to carry out the exercise	Building of context to resemble a real professional situation
Visual aids	Graph drawn	Graph to be drawn. Representation of context where input occurs. Oral language is brought into context
Preparation time	0 mins	45 mins approx.
Implementation time	5 mins	5 mins
Group work	Individual work	Individual work
Variations	No	Yes. Working in pairs, one student performs the role of advisor to the company reading the annual report and another student fills in the graph paying attention to the oral input. Additional aim: to provide opportunities for speaking and listening

Table 1. *A presentation to the board*: similarities and differences between authentic and adapted material

SAMPLE ACTIVITY 2: *My ship's voyage* (see Appendix)

This example illustrates how materials can be adapted within disciplines from published learning materials (Blakey, T.N. (1987) *English for Maritime Purposes*, London: Prentice Hall, page 100) and by means of extending, expanding, reordering and replacing techniques. Here, Maritime English learners were asked to write a similar description to the one exemplified by using the prompts given and inserting the corresponding prepositions and definite article if necessary. The main similarities and differences between source and adapted material are summarised in Table 2.

Feature	Original exercise	Adapted exercise
ESP area	Maritime English	Maritime English
Exercises/Tasks	One/Two	Four/Six
Language level	Low	Low-intermediate
Grammatical aim	Place/movement prepositions, definite article, simple past	Place, movement and time prepositions, definite article, simple past, past continuous and superlatives
Vocabulary aim	Ship types, manoeuvres, geographical names	Ship types, manoeuvres, geographical names, types of cargo, identification
Skills aim	Reading comprehension, guided writing	Reading comprehension, guided and free writing, listening and speaking
Tasks	Describe as guided	Choose among options, deduce grammar rule, relate prepositions to place and movement, transfer information from and to visual aid, interact orally
Type of input	Text	Text, drawing, peers
Rubrics	Direct instructions to carry out the exercise	Building of context to resemble a real context. Gradual presentation with increasing difficulty
Visual aids	No	Yes. Maps
Preparation time	0 mins	60 mins approx.
Implementation time	10-15 mins	45-50 mins
Group work	Teacher to large group, individual work	Teacher to large group, individual work, pair-work with oral interaction

Table 2. *My ship's voyage*: similarities and differences between authentic and adapted material

SAMPLE ACTIVITY 3: *Abandoning ship* (see Appendix)

This example illustrates how authentic available materials, other than published texts/books, can be used for the design of classroom exercises. The source used is an instruction card that can be found (usually posted) on board any vessel and shows how a packed evacuation suit must be worn when abandoning ship. The procedure I followed for the layout was scanning the card, reordering the pictures using the corresponding computer tool and deleting part of the language in the instructions. The main aim was to provide opportunities for learners to interact orally in a large group while at the same time requiring them to classify information and become accustomed to the language of instructions relevant to their professional field. Students are introduced to the topic by the set of questions in Step 1 (pre-communicative activity). Then, they carry out the task by exchanging information and interacting orally (Step 2). Finally, Step 3 provides some grammar practice of relevance to the language of instructions. Students are not explicitly taught how to use the verb in the imperative tense; they are encouraged to have a look at the example [1], consider the verbs provided in the table, and deduce how a verb must be used for giving instructions and orders. The form *don't* may be additionally added to provide practice on negative instructions and orders.

SAMPLE ACTIVITY 4: *Emergency rescue boats* (see Appendix)

This example illustrates one of the many possibilities that the Internet offers as an authentic source for the development of web-based materials. The source material was extracted from the official site of a company specialised in marine and other products (http://www.avoninflatables.co.uk/). The whole exercise was developed from scratch by making use of the commercial information provided on-line, a picture of the products offered and basic computer tools for providing a more learner-friendly layout. The main aim of the exercise is to practise specific vocabulary by interacting orally. By asking questions and requesting specific data, students are required to fill in the table of specifications with the missing information. This is an information gap activity in which learners are asked to share information with restricted co-operation: one learner possesses some information which his/her partner must discover by taking the initiative and by formulating relevant questions. The difficulty of this exercise lies in the ability of learners to comprehend figures and interpret abbreviated dimensions. It can work as a sort of note-taking practice, which will be very useful in the profession because grasping spellings and, particularly, numbers through speech is quite a difficult task, even for proficient non-native speakers.

6   The teacher's role revisited

EFL/ESL and ESP teaching materials development shares a common rationale and methodology. The process of evaluating and designing materials to be used in an EFL/ESL classroom does not differ significantly from doing the same for an ESP context. The difference, however, lies in an unbalanced distribution of duties. As previously discussed, ESP practitioners are more often faced with the task and responsibility of developing learning materials. Furthermore, they are also required to be aware and familiarised with the specialist knowledge relevant to the learners and to keep learning materials updated with the latest innovations in the target discipline.

Administrations and other stakeholders (including learners) take for granted that a good ESP teacher is also a good materials writer or a good developer of course materials. For Dudley-Evans and St John (1998: 173) this is a myth to be disputed because "only a small proportion of good teachers are also good designers of course materials. What all ESP practitioners have to be is good providers of materials". Indeed, even though materials writers were good teachers, "not all good teachers [would] make good materials writers" (Barnard and Zemach, 2003: 313). This is particularly evident if ESP practitioners lack the necessary grounding in materials evaluation, design and development, which in most cases makes them act as materials developers driven by personal intuition, beliefs and experience, if they have any. In any case, materials writing may also be understood as a need to reduce dependency on publisher materials and, more importantly, as a means of professional development (Jolly and Bolitho, 1998).

Current ESP practitioners cannot remain unaware of the fact that "materials have evolved into much more complex objects" (Littlejohn, 1998: 190) and that such complexity puts additional pressure on professionals in their day-to-day work. The most immediate example is the Internet as a source of authentic materials, which are just a mouse-click away. In most cases, teachers and learners are computer literate; thus, it places heavier workloads and more challenging demands on the teaching profession if practitioners are required to rely on authenticity to develop learning materials for classroom use.

Barnard and Zemach (2003: 313) claim that ESP practitioners, as prospective materials writers, should have "teaching experience in the relevant specialism", "some degree of knowledge of the relevant specialism", "an interest in the relevant specialism", and "familiarity with learning materials available for the specialism", among others. To my understanding, this heavy reliance on "specialism" is the key feature that emphasises the difference between EFL/ESL teachers and ESP practitioners as materials providers, at the same time as it challenges the latter to:

- become familiar with the specialist subject (carrier content);

- become familiar with the language of the subject (real content);
- become familiar with the teaching of adult learners, and large/heterogeneous groups;
- become familiar with materials evaluation, design and development;
- be ready to spend time on evaluating, designing and developing materials;
- be ready to review, pilot test and update materials;
- be creative, imaginative and flexible;
- be ready to accept new challenges and overcome anti-scientific attitudes;
- be ready to rely on expert colleagues' knowledge and professional experience; and,
- be ready to take into account students' specialist knowledge.

7   Concluding remarks

In this paper, I have tried to cover a range of important issues within the scope of ESP materials development, paying particular attention to the ESP practitioner, the case for materials evaluation, and the possibilities and challenges of in-house materials for minor ESP areas. It has also been my intention to confront the notion of authenticity when reviewing texts and materials for classroom use and to identify key areas of potential research. Figures and tables have been included to enhance a practical approach, and examples and activities have been analysed in the light of such discussions.

The evaluation, design and eventual development of materials offer a great potential for ESP practitioners and researchers alike. It is hoped that the ideas expressed herein and the personal experience shared both contribute to enrich current classroom practice and fruitful research.

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Appendix

SMALL ACTIVITY 1: *A presentation to the board*

PAPERALIA is a paper plant located outside Manchester (UK). The Managing Director is presenting the annual report to the other members of the Paperalia board.

The following extract refers to that part of his speech which evaluates the cost of energy used by the plant in relation to the total production costs. As a member of the board, you prefer visual information. Read the final report and complete the following graph according to the information provided.

> And now, let's have a look at energy costs. If we look at last year's statistics for the plant, we can see some quite informative trends. In January we had the usual seasonal factors causing the trough of 73%. This increased slightly to 77% for February and then rose to 85% in March. In April, May and June we reached a plateau of 90% for three months but then a slump took the figures to 80% for July. If you remember, the weather was particularly good in July. From August to November we had a series of fluctuations. August showed an increase to 85% but this fell to 77% in September, rose to 87% in October and then fell again to 81% in November. In December, the figures jumped to a peak of 97%, no doubt because of the need for Christmas production —and of course this month (January) looks like last year's January, around 75%.

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Cost of energy against total costs (in %)
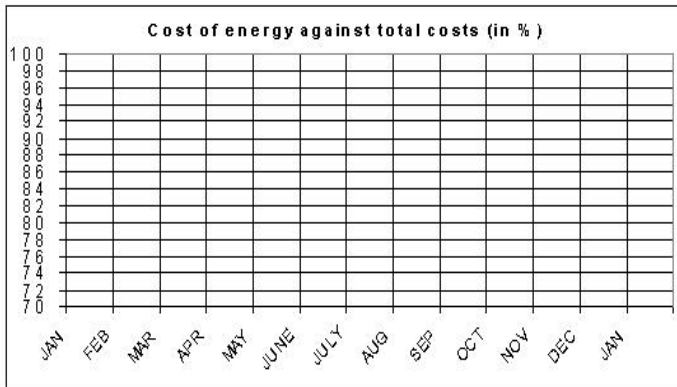
SAMPLE ACTIVITY 2: *My ship's voyage*

Exercise 1.- What do you know about the Titanic? Choose the best prepositions in the following passage.

- Vessel Titanic, a liner OF/AT 46,328 tons, was the largest ship OF/IN the world when she was built. She struck an iceberg IN/ON the North Atlantic IN/ON her maiden voyage IN/ON 1912 and sank with the loss of 1,490 lives. She was sailing OF/FROM Southampton TO/UNTIL New York ON/IN 10 April 1912.

Now read the description of a voyage made by MV Diomede paying particular attention to the prepositions of place. Underline them, compare with your answers for the text above and discuss.

- On 6 April, 1979 the French general cargo vessel, MV Diomede, was fully loaded when she left the port of New Orleans in the USA for Hawaii in the Hawaiian Islands. She steamed across the Gulf of Mexico, through the Yucatan Channel and along the north coast of Jamaica, calling at Kingston. Then she sailed through the Panama Canal and across the Pacific Ocean to Hawaii.

Exercise 2.- Write a similar description for the voyage outlined below and follow the vessel by plotting her route in the map. Use the appropriate prepositions and the definite article (*the*) where necessary:

10/9/80 - bulk oil carrier - SS Enterprise - partial load - Nagasaki - Japan - Bombay - India - east coast of China - Taiwan Strait - South China Sea - Singapore - Strait of Malacca - Indian Ocean - Sri Lanka - west coast of India - Bombay.
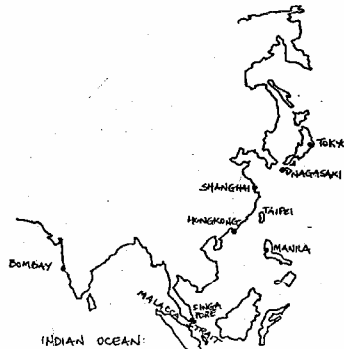
Exercise 3.- Pair work. Take your time to make a similar voyage using the prompts below, then, describe that voyage to your partner who will follow it on the map provided. Once your partner's vessel has arrived safely to her destination port, it is time to return and your partner will describe the voyage back. Exchange roles and ... enjoy your voyage!

16/6/80 - Italy - passenger liner - MV Orient - Southampton - UK - Naples - Italy - English Channel - Bay of Biscay - west coast of Portugal - Lisbon - Strait of Gibraltar - Mediterranean Sea - Naples.
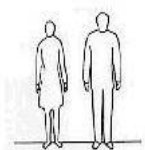
Exercise 4.- Describe in a similar way a personal voyage or a voyage on which you would love to set off.

SAMPLE ACTIVITY 3: *Abandoning ship*

STEP 1. Have a look at the pictures below to answer these questions briefly:
    A What are the pictures showing?
    B When would you be following these instructions?
    C Have you ever worn a suit like this?
    D If so, when was that?
STEP 2. Imagine you have to abandon your ship. Look again at the pictures below and work with your partner to put the ten stages to be followed in the correct order. The instructions below will help you in case of doubt.

INSTRUCTIONS

[1] Emergency!

[1] Emergency!
Abandon ship

[ ] _____
lifejacket again
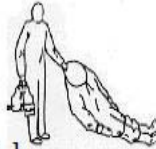
[ ] _____ to
liferaft and
_____ calm

[ ] _____
stair and _____

[ ] _____
liferaft and
_____ rescue

[ ] _____
lifejacket

[ ] _____
PAK EVAC from wallet

[ ] _____
lifejacket

[ ] _____ suit
through neck entry

[ ] _____
lifejacket wallet

[ ] _____ suit, _____
hood, and _____ drawcord
to maximum

PACKED EVACUATION SUIT FOR AN ABANDON SHIP SITUATION
PAK EVAC © a premeditated evacuation suit, also termed, 'once-only suit'

STEP 3. Now use the verbs below to complete the instructions for each picture and stage.

To Pick Up	To Put On	To Put Up	To Enter
To Climb Down	To Enter	To Put On	To Keep
To Remove	To Tighten	To Await	To Open
To Pick Up	To Make Way	To Board	To Abandon

SAMPLE ACTIVITY 4: *Emergency rescue boats*

Below you will find some information about the well-known AVON Emergency Rescue Boats. Would you like to know more about their specifications? First of all, decide with a partner who will be Student A and who will be Student B. Then, work with him/her to fill in the missing specifications in the table provided but do not share your paper with him/her (and do not let him/her look at yours, either!).

AVON Emergency Rescue Boats

AVON has just released its brand new emergency rescue boats 380 and 310. Standard equipment includes two paddles, high-output foot bellows (for manual inflation), pressure relief valves (to bleed off over-inflation), and a repair kit.

Student a

SPECIFICATIONS			
Item		ERB-310	ERB-380
Length	Overall	10'0"	
	Inside	6'9"	
Beam	Overall	4'10"	
	Inside	2'4"	
Tube Diameter	Bow	13.5"	
	Stern	15"	
Weight		111 lbs	
Stowed Dimensions		43" x 21" x 13"	
Capacity	Weight	924 lbs	
	Persons	5	
Motor (max Hp)		10 Hp	
Prices		$ 3,970.00	

Student b

Item		ERB-310	ERB-380
Length	Overall		12'5"
	Inside		8'10"
Beam	Overall		5'6"
	Inside		2'8"
Tube Diameter	Bow		15"
	Stern		17"
Weight			170 lbs
Stowed Dimensions			47" x 26" x 20"
Capacity	Weight		1430 lbs
	Persons		7
Motor (max Hp)			20 Hp
Prices			$4,995.00

From text to task: Putting research on abstracts to work

John M. Swales and Christine B. Feak

In recent years there has been a noticeable upsurge in the amount of research devoted to abstracts, particularly research article abstracts. In a survey published in 2005, Montesi and Urdiciain identified 28 studies of abstracts, and several more have appeared since then. In consequence, the issue that now arises is how to turn these discourse-analytic findings into materials and activities that will benefit the international community of scholars and research students. In this chapter, we respond to this issue by illustrating and discussing certain of the tasks contained in *Abstracts and the writing of abstracts* (Swales and Feak, 2009).

1   Introduction

Twenty years ago, it would seem that abstracts were an under-researched genre from a discourse-analytic perspective. In these terms, Swales (1990) instanced only an unpublished study by Rounds (1982) and a 1985 chapter by Graetz, who, *inter alia* concluded "The abstract is characterized by the use of the past tense, third person, passive, and the non-use of negatives" (p. 125). By about 2005, the situation has radically changed. In an overview published that year, entitled "Recent linguistic research into author abstracts", Montesi and Urdiciain cite 28 studies of this part-genre since 1990, to which we can now add several more, including Van Bonn and Swales (2007) and Golebiowski (2009). Montesi and Urdiciain (2005) also discuss another six studies dealing with conference abstracts. The conference abstract, however, is arguably a different genre because it is a stand-alone text (rather than operating as an accompanying part-genre), with the consequence that it will be accepted or rejected on its own merits. The high-stakes competitive environment of the conference abstract typically means that, in terms of Yakhontova's (2002) distinction, the ensuing text will be more concerned with "selling" rather than "telling".

The disciplinary fields from which the abstracts have been drawn are mostly biology, the language sciences, and medicine, although both Hyland (2000) and Stotesbury (2003) offer elaborate multi-disciplinary studies covering many fields. Similarly selective has been the comparative work between English and other languages: for example, we have traced single papers dealing with German (Busch-Lauer, 1995) and Swedish (Melander et al., 1994), but as many as eight investigations comparing Spanish and English abstracts, some of the more accessible being Lorés (2004), Martín-Martín (2003) and Valero Garcés and Calle Martínez (1997).

It is not our purpose here to discuss the major findings from this increasingly-solid literature, but rather to show how research, whether our own or that found in publications, can be used to develop materials and tasks suitable for scholars, researchers, and students – both native speakers of English and speakers of English as an additional language – who are not English specialists, but who are active in other disciplines. These materials and tasks, we believe, may be appropriate for longer courses, for all-day or part-day workshops or seminars, and/or as reference materials for independent study. The materials have been extracted from, or adapted from *Abstracts and the writing of abstracts* (Swales and Feak, 2009), a small textbook supported by an on-line *Commentary* available at http://www.press.umich.edu/esl/compsite/ETRW/.

In these materials the initial approach is to raise rhetorical consciousness about the role of research article abstracts. Attention then focuses on matters of macro-structure, and then on to certain more 'micro' elements including types of opening sentence, links between the first two sentences, the forms of purpose statements, and the construction of appropriate highlighting statements. In effect, this organization reflects a two-pronged top-down approach moving from the macro to the micro, but also moving from analysis to awareness to acquisition. Further, in order to enrich the process, there are also elements of inductive data-driven learning involving participants in the analysis of concordance lines. As ever in English for Academic Purposes (EAP), close attention has been paid to the alignment of texts and tasks; while we do not claim to have got this alignment right in every case, we have struggled, through trial and error and through taking careful note of feedback received, to have found workable solutions to many of the dilemmas that EAP materials writers encounter.

2   Rhetorical consciousness raising

Here then is a first extract from the materials.

Extract One

The research world is facing "an information explosion" with several million research papers being published each year. There are also continual announcements of new journals being launched, either online or in hard copy or both. Many researchers have therefore to be highly selective in their reading, often focusing on skimming abstracts and key words. Research article (RA) abstracts have thus become an increasingly important part-genre. In the "old days" most papers did not have abstracts; surprisingly perhaps, they were only introduced into medical research articles in the 1960s. And the now-fashionable so-called "structured" abstract (i.e. with named subsections) did not appear until about 1987.

Among top journals (with high rejection rates), manuscripts may be rejected after a reading of the abstract alone (Langdon-Neuner, 2008). While we need to stress that such rejections will be largely based on perceived scientific problems with the paper, it remains the case that a careful and coherent abstract can only help a manuscript reach the next stage of external review.

According to Huckin (2001), RA abstracts have at least four distinguishable functions, to which we have added a fifth:

1. They function as stand-alone *mini-texts*, giving readers a short summary of a study's topic, methodology and main findings;

2. They function as *screening devices*, helping readers decide whether they wish to read the whole article or not;

3. They function as *previews* for readers intending to read the whole article, giving them a road-map for their reading;

4. They provide *indexing help* for professional abstract writers and editors;

5. They provide *reviewers with an immediate oversight* of the paper they have been asked to review.

Task

Rank these five functions in terms of their importance to you and your field. Are there any that you think are irrelevant? Are there any other functions that you can think of? Work in pairs if possible. Do your discussions change your own approach to constructing abstracts in any way?

As can be seen, this opening task is designed to encourage course participants or users of the material to think about the functions of RA abstracts in perhaps a broader and more concentrated way than they had hitherto done; further in a class or seminar setting, we have found that the activity works well as 'an ice-breaker', especially in a class where members do not know each other well.

3   A reference collection

If participants are all from the same field of study or department, a reference collection of, say, ten abstracts, can be assembled for them beforehand. If not, and if we are facing a class setting, or even perhaps a linked series of seminars, then each participant is asked to prepare a small reference collection consisting of abstracts from his or her most highly-targeted journals. These collections will serve as a basis for much of the analytic work to come. The second extract offers a simple start for this.

Extract Two

Now consider this data:

Table 1: RA abstracts from various fields (adapted from Orasan (2001))

Field	# of sentences	average # of words
Computer science	9.6	232
Chemistry	8.6	215
Artificial Intelligence	8.2	166
Biology	7.9	196
Anthropology	6.2	158
Linguistics	5.8	150
Overall averages	**7.4**	**175**

Here are three questions based on Table 1:

1. What patterns do you notice in this table?
2. Where would your field fit in the table? (If it is not one of the above). Use your reference collection as your data source.
3. What observations would you like to make about your findings?

We should note here that this is a simple counting task, preparing participants for more sophisticated investigative forays later. Further, the task is certainly easier and quicker if course participants have assembled their abstract collection into an electronic file – as is today increasingly likely.

3.1   A first text

After these preliminary 'priming' activities, we can now turn to an actual example of a journal abstract.

Extract Three

Task

Read this traditional (unstructured) abstract from political science and answer the questions that follow. It is deliberately shorter than average (91 words)

Abstract

① Many scholars claim that democracy improves the welfare of the poor. ② This article uses data on infant and child mortality[1] to challenge this claim. ③ Cross-national studies tend to exclude from their samples non-democratic states that have performed well; this leads to the mistaken inference that non-democracies have worse records than democracies. ④ Once these and other flaws[2] are corrected, democracy has little or no effect on infant and child mortality rates. ⑤ Democracies spend more money on education and health than non-democracies, but these benefits seem to accrue to middle- and upper-income groups.

1. Underline what you consider to be the key clause (or part-sentence) in the abstract.

2. What is the main tense used in this abstract? Why is this tense used? What is typical in your field? Check your reference collection.

3. This abstract uses no citations or references to previous research. Is this typical in your experience?

4. Does the abstract author use "I" or "we"? What is your experience here? Refer to your reference collection. Does your field commonly use expressions like "the present authors"?

5. In the above abstract there is a single "self-referring" or "metadiscoursal" expression[3]. In this case *this article* in Sentence 2. Are metadiscoursal expressions used in abstracts in your field? If so, what are the common nouns?

6. Are acronyms/abbreviations used in the example abstract? In your field do they occur? And if so, of what kind?

With this first piece of textual analysis out of the way, we now turn to the *general* macrostructure of RA abstracts:

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[1] The percentage death rate.
[2] Errors.
[3] *Metadiscourse* is a common concept in studies of academic texts. It has various definitions. In this series, we use a narrow definition of "text about your text", as in "*In the following section, we offer a computer simulation*".

Extract Four

Much recent work in discourse analysis has investigated the number of "rhetorical moves"[4] (or communicative stages) in abstracts in various fields—and in various languages. Most researchers identify a potential total of five moves. Terminology varies somewhat, but these are in their typical order as follows:

Move #	Typical labels	Implied questions
Move 1	Background/introduction/situation	what do we know about the topic? why is the topic important?
Move 2	Present research/purpose	what is this study about?
Move 3	Methods/materials/subjects/procedures	how was it done?
Move 4	Results/findings	what was discovered?
Move 5	Discussion/conclusion/implications/ recommendations	what do the findings mean?

At this juncture it is important to stress that abstracts have the *potential* for all five moves, although in many cases, especially when there are tight word (or character) restrictions, not all five moves will be realized. It should be further noted that while the above order of the five moves is pretty regular, exceptions can be found, especially with regard to the Methods move. The instructor should then apply this analytical scheme to an abstract she believes to be suitable for the group, which is then gone through and explained. The group then works on one of their reference collection abstracts, ideally in pairs.

3.2 Moving toward micro-analysis: Getting started

After the 'broad-brush' concerns of the previous section, it is now time to begin focussing on the details.

Extract Five

We will explore the move structure by taking the case of RA abstracts in one of the medical fields. The field we have chosen is Perinatology. Perinatology, also known as Maternal-Fetal medicine, deals with high risk pregnancies and has a number of research journals. Some of these require 'structured' or sectioned abstracts and some

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[4] *Move*. This is a stretch of text that does a particular job. It is a functional, not a grammatical term. A move can vary in length from a phrase to a paragraph.

continue to use traditional ones. As a preview, here is a typical traditional abstract from this field. We have blocked it into moves for you. *Postpartum* means "after having given birth".

Abstract:

① The object of this study was to evaluate postpartum women for psychiatric symptomatology including cognitive disturbances, anxiety, depression, and anger to better meet their needs for support and involve them in the care of their infants.	**Move 2**
② We interviewed 52 postpartum mothers at the Bronx Lebanon Hospital Center within 5 days of delivery and determined the presence of psychiatric symptoms using the 29-item Psychiatric Symptom Index.	**Move 3**
③ Despite the fact that adult mothers were happier when they were pregnant (71.4% versus 29.4%; $p = 0.010$) and less likely to be worried about their baby's health (25.7% versus 52.9%; $p = 0.003$), adult mothers demonstrated higher depressive symptomatology ($p = 0.009$), higher amounts of anger ($p = 0.004$), and greater overall psychiatric symptomatology ($p = 0.005$) than adolescent mothers. ④ Mothers whose infants were in the neonatal intensive care unit did not report significantly higher psychiatric symptomatology than mothers whose infants were healthy.	**Move 4**
⑤ Physicians need to be aware of the high levels of depression and anger present among postpartum women so appropriate support can be given.	**Move 5**

Notes:

1. In the Results move (Move 4), the significant findings in Sentence 3 are given before the non-significant ones in S4.

2. The question of tense in purpose/objective/object statements in abstracts and introductions often arises. A general rule is that if a **genre-name** is used (e.g. the purpose of this *paper/article*…) the present tense is chosen, but if a noun is used that describes **the type of investigation** (*The purpose of this experiment/survey/analysis*) the past tense is preferred. With the rather vague term "study" – a very common choice in some fields – it would seem that the past tense is generally preferred, especially in the life and health sciences, but even there some exceptions can be found.

3. Note that in this and other medical fields, Move 5 quite often takes the form of a recommendation.

After this discussion of a single Perinatology abstract, we now need to have a broader look at how abstracts get started. For this, we took a random sample of 20 openings from a Perinatology corpus.

We found that there were four types of opening sentence (S1); in each case, we have also given a second – and simpler – example from economics.

Type A: <u>Starting with purpose or objective</u> (8 instances)
> The purpose of this study was to identify risk factors and to characterize infants with respiratory distress syndrome (RDS)[5].

> The aim of this study is to examine the effects of the recent change in corporate taxation.

Type B: <u>Starting with a (medical) phenomenon</u> (7 instances)
> Mild postnatal anemia is common.

> Corporate taxation rates vary around the world.

Type C: <u>Starting with (medical) practice</u> (3 instances)
> Continuous monitoring by pulse oximetry is a common practice for preterm and critically ill newborns.

> Economists have long been interested in the relationship between corporate taxation and corporate strategy.

Type D: <u>Starting with present researcher action</u> (2 instances)
> Premature infants < 1500 g were randomly assigned to study and control groups.

> We analyze corporate taxation returns before and after the introduction of the new tax rules.

As can be seen, Types B and C open with Move 1 (Background). Ten out of the 20 fell into this category. There were eight instances of openings starting with Move 2 (Type A), and just two opening sentences begin directly with Move 3 (Type D).

Task

> A.   Provide from your own area of research a third example opening sentence for each of the four opening types. Is there a type that you would not expect to find?

> B.   Now look at the opening sentences in your own reference corpus of abstracts. How many fall in each type? Do you need any new types? Be prepared to comment on your findings.

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[5] Abnormally fast breathing.

4 Further work on specific moves

After illustrating some of the material designed to help scholars navigate Moves 1 and 2, we now briefly summarize activities constructed for the three further moves. The main thrust of the work concerned with Move 3 (Methods, etc.) deals with making sure that this communicative stage is sufficiently short so as not to unbalance the abstract as a whole. Hence, the activities focus on reducing a 50-word method description to something of about half that length. The materials designed for Move 4 (Results) open with a discussion of two issues: Is it always the case that major results should be presented before more specific ones, and what are disciplinary expectations regarding the inclusion in the abstract of statistical data (as in the case of the Perinatology abstract)? We then take advantage of the paper by Hyland and Tse (2005) in which they note that, across the six disciplines they analysed, the main results are expressed in the form of finite *that* clauses. One task here asks users of the material to change noun phrases into suitable *that* clauses, following this simple example:

> The results offer clear evidence of the reality of global warming.

> The results offer clear evidence that global warming is a reality.

As for Move 5 (Conclusions, etc.), the material centers around the question of whether disciplines increasingly expect some upbeat, promotional close to RA abstracts, as in this example from a 2006 issue of *Computer Modeling in Engineering and Science*:

> Through the simulations, *it is clearly demonstrated* that MATES is *a powerful tool* to study complex city traffic problems *precisely*. (our emphases)

Apart from these activities, the work on Move 5 also discusses the roles of general implications and/or recommendations in the closing move, especially on the role of the latter in the health sciences.

5 Moving toward a wrap-up

The section of *Abstracts and the Writing of abstracts* dealing with texts for research articles ends with these two activities, the first designed to summarize the work so far, and the second to apply it to a real editing situation.

Now you should be in a position to draft an RA abstract based on some research project you are or recently have been engaged in. When you have finished the draft, consider the checklist below. If you find it difficult to get

started, try identifying in your longer text a sentence that summarizes each move. (This is sometimes known as "reverse-outlining").

1.	☐	My draft falls within the required word limit.
2.	☐	My research is fairly typical of the subfield. (If not, please go to 11 below)
3.	☐	The number of sentences is appropriate.
4.	☐	The draft has the expected number of moves.
5.	☐	I have considered the pros and cons of an opening problematizing move.
6.	☐	I have considered whether the purpose statement is necessary.
7.	☐	I have made sure that the methods move is not too long.
8.	☐	I have reviewed the main tense options of present (for Moves 1, 2 and 5) and past (Moves 3 and 4).
9.	☐	The main findings are sufficiently highlighted.
10.	☐	As for conclusions, I have followed typical practice in my subfield.
11.	☐	As my research is unusual, I have considered whether I need to justify the topic and/or the approach in the opening two moves.
12.	☐	Throughout I have checked whether any acronyms or abbreviations will be understood.

Task

A visiting scholar in your institution is a Brazilian professor of nursing with somewhat limited experience of writing research English. She has written an article in Portuguese (with colleagues) on the dental health of adolescents in her home area. The Brazilian journal requires an abstract in English as well. Below is her draft abstract, which you have offered to edit. Do this in two stages:

First, think about the content, i.e. is there anything you think might be added?

Next edit the abstract for language. Try not to over-edit (just because you wouldn't yourself say it that way…)

The importance of buccal[6] health for adolescents of different social strata of Ribeirão Preto

Abstract: ① The objective of the present study is to know the importance of buccal health for adolescents of different social strata, identifying the importance of dental aesthetics, and the care that these students take in relation to their buccal health. ② The methodological process adopted in this investigation is of qualitative nature, using as technique of collection of data the semi-structured interview. ③ We know the importance of buccal health in several contexts of their lives, as in their personal appearance, sexuality, employment, and general health. ④ This investigation allows to know the motivations of adolescents to preserve their buccal health, and we believe to be so valid to develop health promotion through health education. (111 words)

6   Final considerations

The materials we have illustrated and discussed in this chapter have been piloted by the authors in classes and workshops at University of Michigan, as well as in several other venues around the world; for example, the first author got valuable feedback from a three-hour workshop at the Mediterranean Editors and Translators Conference held in Split, Croatia in 2008. Even so, what we have offered here is still, and doubtless will long remain to be, a "work in progress". The unstable nature of these or any EAP teaching materials derives from a number of sources. First, the research world to which they are directed is itself not a stable entity, but subject to continual change as research conditions, expectations and value systems react to evolving circumstances. Second, materials such as these, based in large part on existing discourse-analytic research, are subject to necessary modifications if new findings emerge. For example, Hyland (2000) showed that the percentage of abstracts from his eight fields containing introductions and conclusions rose between 1980 and 1997 from 33% to 47% and 7% to 22% respectively. Now, suppose Hyland (or somebody else) revisits the situation in 2010, and finds that these trends have either further accelerated, or, even actually have reversed. Such findings would have to be taken into account. Third, there may be both technological or pedagogical developments that will likely affect the viability of the current materials; software programs may become available that will allow effective automatic summarization of research papers; or accessible specialized corpora may proliferate, along with an increased facility in the use of concordance packages by non-linguists (as suggested by Lee and Swales, 2006).

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[6] *Buccal* is a medical adjective, here referring to the mouth area.

A larger dilemma facing responsible EAP textbook writers arises from criticisms of the EAP field by 'academic literacies' scholars such as Theresa Lillis (Lillis and Scott, 2007; Lillis and Walkó, 2008), who argue that it is over-reliant a) on textual-formalist approaches (in contrast to those focusing on academic social practices), and b) on individual roles in text production (in contrast to co-constructing networks). As practitioners in our own institutions, as we go about our teaching, counseling and tutoring activities, we are doubtless cognizant of the importance of group behaviors (including speech behaviors) in the emergence of research texts, and of the salience of the socio-academic contexts in which our students are embedded (cf. Molle and Prior, 2008). However, *as textbook writers*, trying to be helpful on much wider canvas, it remains unclear to us how best to respond to the criticisms raised at the beginning of this paragraph; we can, of course, construct social practice contexts for the writing tasks we envision, but we have little idea how they might resonate (or not resonate) in Brazil, South Africa, Spain or the UK. However, we should perhaps do more to explain the necessary limitations we seem to be operating under as textbook authors.

Criticisms aside, we should take into account the student perspective in exploring the issues raised above. Our classroom experience indicates that graduate students and scholars are themselves looking to published and unpublished texts in their efforts to familiarize themselves with the genre conventions of written texts within their academic programs and chosen disciplines. Indeed, our students, especially those that are struggling, consistently report that their advisors strongly encourage them to examine other texts to understand the expectations surrounding the writing task at hand. It seems that without exception, our students do follow this advice, but left to their own devices remain unsure about the textual features to which they should attend.

Our classroom experience has also revealed that when students and scholars look to other texts for guidance, they often look at no more than one exemplar. The disadvantages of this strategy may be all too apparent to many of us, but students and scholars realize this only after creating their own reference corpus of a particular genre or part-genre and analyzing 10-15 of their own texts alongside the task texts. Recent comments on the corpus emphasis in relation to abstracts include the following:

> If I had looked at only one abstract, I might have gotten the wrong idea of what I should do. I wouldn't have realized that one of my abstracts is really a bit unusual – at least compared to the other nine that I looked at.

> I'm surprised to see that there was so much variation in the moves that authors include in abstracts in my field. I thought it was always the same; that it had to always be the same.

> *I can see that different journals seem to want or expect different things. Some want a recommendation at the end. Others just want results and no recommendations. There's no one way to write an RA abstract.*
>
> *I didn't expect to see that some authors really "sell" their work by choosing certain language. I can see the difference in abstracts that try to hook the reader and those that are just dry and not interesting.*
>
> *I never paid attention to tense and I always was told to never use passive. Now I see why someone might choose one form or another. It's not about what I have to do; it's what I choose to do.*

Based on these and other comments, it would seem that our materials have contributed to our goal of raising rhetorical awareness about the RA abstract part-genre, particularly in regard to the importance of individual choices that can be made at both the macro and micro levels of writing. More generally, a two-pronged top-down approach that emphasizes the potential for choice throughout the writing process offers some means of addressing the challenges that writers face as they move from analysis to awareness to acquisition.

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Approaching the essay genre:
A study in comparative pedagogy

Ruth Breeze

A study was designed to compare two methodologies for teaching essay writing in English to Spanish university undergraduates. Students in the first group (textual analysis, TA) analysed the linguistic features of the essay genre and practised aspects of the relevant language in a series of focused exercises. Students in the second group (rhetorical analysis, RA) carried out various pedagogical tasks to encourage an in-depth understanding of rhetorical functions within the essay. Pre-test paragraphs and final essays were assessed to determine the progress made by individual students and the quality of the final product. There were improvements in both groups, the gains being statistically significant in both cases. The RA group made greater progress over the course of the programme, and wrote better final essays. Although these results cannot be taken to vindicate top-down methodologies for teaching written genres, they provide some insights into the complexity of teaching writing at university level. It is logical for teachers in an EFL context to focus closely on the linguistic and textual aspects of writing, but they must not ignore the rhetorical dimensions of the writing task, which are arguably more important for the overall quality of the written product.

1   Theoretical background

One of the goals of English for Academic Purposes (EAP) is to teach students how to write the type of paper, ranging from short essays to term papers or dissertations, that they will need to produce for their other university courses. The methodological changes envisaged by the Bologna reforms, with an increasing emphasis on coursework, and the expansion of bilingual universities across Europe, have heightened the need for a full range of academic writing skills to be taught outside the inner circle of English-speaking countries. However, there is no complete consensus as to how these goals can best be achieved. There is general acknowledgement that in the teaching of writing for academic purposes, genre is a central issue. Students need both to understand what academic genres are about, and acquire the linguistic apparatus needed to write them accurately. However, despite consensus concerning the objectives, there is less agreement about how these goals are to be achieved in terms of classroom methodology.

A review of the literature on this subject shows the existence of three broad pedagogical approaches (Hyon, 1996). These are the English for Specific Purposes (ESP) approach, the "Australian school" of genre pedagogy, and a movement known as the "New Rhetoric". Each of these emerges from a particular background which shapes the way genres are conceptualised and taught. ESP originated in the context of teaching English to educated non-

natives for highly practical reasons, and adopts a streamlined approach to the teaching of genre, encouraging the use of strategies such as writing to models, replication of real professional tasks in the classroom, and so on, to equip students to carry out professional tasks effectively in English.

The Australian genre school (Kress, 1987; Martin, 1993), which finds its theoretical underpinning in systemic functional linguistics, came into being in a rather different context, that of adult migrants in Australia. It has proved extremely influential in school systems across the world because of its concern with basic literacy skills, and its open, flexible approach to genre. However, as far as classroom practice is concerned, ESP and the Australian school might be said to converge (Flowerdew, 2002), since both approaches place an emphasis on textual analysis: students' attention is drawn to the surface features of particular genres (lexis, grammar and rhetorical structure), and the associations between these features and the writer's communicative purpose are made explicit (Kress, 1987; Swales, 1990; Swales and Feak, 2004). Students are then encouraged to use model texts as a basis for their own writing, and may be given specially designed exercises to complete so that they can practise different aspects of academic writing in a guided environment.

The third approach, the "New Rhetoric", is promoted by authors such as Freedman (1994). She contests the notion that the explicit features of genres should be taught, and suggests that this may even prove deleterious because written genres are intrinsically highly complex, and students will tend to reify and misapply any rules that they have been taught. In her view, explicit discussion of formal features of genres may be useful, but only on a secondary level, as a means of consciousness-raising integrated into practical writing activities. Her approach has found adherents in the USA, where authors such as Coe (2002) have been influential, mainly in the teaching of L1 writing. This approach focuses on the relations between aims, language and generic possibilities that shape writing in social situations outside the classroom. Coe argues that teachers should make students aware of the forces and pressures that influence writers in particular social contexts, so that they can learn for themselves how to write in given situations, through a process of guided participation. This methodology for teaching writing fits well with research trends that emphasise the social construction of texts in professional contexts, and underscore the importance of understanding the discursive purpose of the text and its role within a particular disciplinary world (Bhatia, 1999, 2003; Lea and Street, 1999).

Practitioners in the area of teaching L2 writing, where linguistic support is more obviously needed, have tended to modify this "strong" emphasis on context. A mixed pedagogy is often adopted, which places the main emphasis on context, but recommends the study of concrete language features found in contextualised examples (Ventola, 1994; Yunik, 1997). Such an approach ties

in with recent emphases on situated learning to facilitate the transfer of skills (Lave and Wenger, 1991; Adam and Artemeva, 2002). In pedagogical terms, this methodology could be termed a "top-down" approach to teaching genre (Pang, 2002), since it begins with the macrostructure, and tends to give priority to organisation over linguistic detail.

For the purposes of comparison, a two-part study was designed to explore the differences between these two methodologies in practice, and to identify the positive contributions and possible difficulties of each approach. The first part of this study, focusing on report writing for students of business English, has been published elsewhere (Breeze, 2007). This paper reports the results of the second part of the study, which centred on the short academic essay.

2   Experimental design

For the purposes of the study, two groups were created consisting of undergraduate students (age: 20-23 years) enrolled in upper-intermediate-level English courses (CEFR B2 level) at a Spanish university. All the students needed to complete an essay-writing module as part of a 6-credit course. The first group (textual analysis, TA, n=21, enrolled in the first semester) followed a 5-hour writing programme based on Swales and Feak (2000), in which they studied the linguistic features of the essay genre (introductions and conclusions, paragraph structure, link words, academic register, etc.) and practised the relevant language. The second group (rhetorical analysis, RA, n=21, enrolled in the second semester) also completed a 5-hour writing programme, in which they carried out various pedagogical tasks to gain a deeper understanding of the rhetorical functions within the essay (what the writer is trying to do, how the material can be organised conceptually) (see Appendix for full details of both programmes). Both groups wrote a pre-test paragraph, and a final essay on the prompt "Businessmen should do anything they can to make a profit". The pre-tests and final essays were analysed using a specially developed analytical scale, and rated holistically by two independent raters.

2.1   Textual analysis (TA)

With the textual analysis group, the essay-writing module was launched with a brief discussion of the short essay genre and analysis of a model text. Students were encouraged to use the model when carrying out various paragraph-writing tasks. They were given further examples of essay language where necessary. Other activities (based on Swales and Feak, 2004) were then used to focus on textual organisation, including the need for topic sentences, cohesion, and lexical choice including register and academic style.

Students brainstormed a checklist for essay writing, which was discussed in the class, and wrote the essays individually as homework.

2.2   Rhetorical analysis (RA)

Students began with discussion of an essay prompt, and worked in groups to note down ideas about paragraph content and overall structure. Students then carried out an activity designed to make them focus on developing reasons and examples in the context of an essay topic. To scaffold a better understanding of this rhetorical method, the teacher gave students a second prompt, and they filled in a worksheet with separate slots for "arguments", "reasons" and "examples". The teacher wrote up some sample answers on the board to stimulate class discussion as to whether these reasons or examples were sensible, adequate and sufficiently developed. Where this was not the case, the teacher guided the discussion about why not, and brainstormed better explanations or examples.

Students then used their worksheets to provide a plan for the rhetorical organisation of a paragraph, and to write rough drafts. As a supplementary exercise, they then received a copy of a text on a similar subject from a different genre (textbook explanation) and were asked to define why this text was not an essay. Finally, students were given the same model essay as the TA group, as reference. They wrote the essays individually as homework.

3   Results

3.1   Analytical rating scale

A two-pronged approach to assessment was developed. First, the pre-test paragraphs and final essays written by both groups were rated using an analytical scale developed from that of Chiang (2003) to evaluate the extent to which students had assimilated particular aspects of the essay genre over the course of the programme. The basic constructs of cohesion, coherence and generic appropriateness were broken down into nine components. Cohesion was represented by "use of junction words", "smooth transitions between sentences", "use of equivalent words", "introduction of new information" and "punctuation". Coherence and appropriateness to genre were represented by the components "logical development" and "arguments supported", "paragraph structure" and "register". Each essay was assigned a score of 0, 1 or 2 on each category (0 indicated no conformity to the usual requirements of the essay genre, 1 indicated that the essay partially conformed to these norms, and 2 indicated that the essay followed the generic conventions throughout).

Second, with a view to obtaining a qualitative appraisal of the overall effect, the final essays written by the students in both groups were evaluated by two independent raters using an adapted TOEFL scale (0-6).

Table 1 shows the mean score on the final essay for students in both groups. The mean total (out of a possible 18 points) is also calculated, for the purposes of comparison. None of the differences was statistically significant. Nevertheless, the overall score can be seen to be higher for the RA group than for the TA group. Moreover, the TA group had followed a programme in which features of each of the analytical categories were taught explicitly, and so the fact that the RA group scored slightly better on these points is somewhat surprising.

	Mean TA	Mean RA
Junction words	1.43	1.45
Smooth transitions between sentences	1.14	1.7
Equivalent words	0.62	1.05
Introduction of new information	1	1.5
Punctuation	0.67	1.2
Register	0.76	1.3
Arguments supported	1.29	1.65
Logical development	1.1	1.75
Paragraph structure	1.05	1.55
Total	9.05	13.3

Table 1. Mean analytical scores on final essay in TA and RA group

	TA	RA
Junction words	0.57	0.6
Smooth transitions between sentences	0.14	0.5
Equivalent words	0.19	0.25
Introduction of new information	0.19	0.15
Punctuation	0	0.3
Register	0.14	0.45
Arguments supported	0.19	0.3
Logical development	0.19	0.4
Paragraph structure	0.24	0.4
Mean	1.86	3.35

Table 2. Mean gains from pre-test to final essay in TA and RA group

Table 2 shows the mean gains from pre-test to final essay on the same categories. Again, the RA group seemed to have made greater progress. In

both cases, the overall gains were statistically significant (p<0.001 on Student's paired t-test), but the difference between the two gains was not significant.

It is noticeable that the greatest gain in both groups was on the category "junction words". These are a highly concrete and visible aspect of the written text, and so it is quite understandable that the students found it relatively easy to identify and use them once they had been sensitised to their importance. It is equally unsurprising that students failed to improve their punctuation or ensure the smooth introduction of new information. Although the TA group did not improve in the area of fluid transition between sentences to any dramatic extent, it was interesting that the RA group did achieve a substantial gain in this area. One could speculate that the top-down focus on text as effective communication might have encouraged students to think more about interpersonal dimensions such as organisation of information (smooth transitions, logical development and paragraph structure), adequacy of examples and explanations (arguments supported) and the importance of register. The RA group made gains of 0.3 to 0.5 on all of these points, whereas the TA group made gains ranging from 0.14 to 0.19 on the same categories.

On the other hand, it was disappointing that students in the TA group failed to make greater gains on concrete points such as the use of equivalent words, or mastery of register, which had been practised at length in the more language-focused programme for this particular group. As it turned out, both the pre-test scores and the final scores for these categories were low for the TA group (on equivalent words, their mean score rose from 0.43 to 0.62, while on register it increased from 0.62 to 0.76). By contrast, the RA group, which had started with slightly better scores for register and equivalent words than the TA group, made a more substantial improvement on both categories (the mean score for equivalent words rose from 0.8 to 1.23, and for register from 0.85 to 1.3).

Finally, it is interesting that the second largest gain made by the TA group was that of 0.24 on paragraph structure. Although this was not as substantial as the gain made by the RA group (0.4), this improvement is a positive sign, which may indicate that the teacher's use of the model essay, and the accompanying strategy practice, proved useful for the students in question.

3.2   Qualitative assessment

In addition to the analytical assessment detailed above, the essays were also given an overall qualitative score by two independent raters who used an adapted TOEFL scale (0-6). The agreement between raters was calculated using Kappa and Weighted Kappa, and was found to be "good" on both (Kappa=0.628, Weighted Kappa=0.704). The mean score in the TA group

was 4.71, whereas the mean score in the RA group was 5.12 (SD 0.85 and 0.74 respectively). Although this difference was not statistically significant (p=0.11), the overall picture seemed again to favour the rhetorical approach.

On the level of subjective comparisons, it was noticeable that some of the students in the RA group had made considerable efforts with their essays, which were longer, more ambitious, and had better developed paragraphs. The RA group's essays also showed more evidence of higher-order skills in their order and development, even though in some cases this did not result in greater quality of writing throughout the text. It seemed generally true that most students in this group had taken greater care with overall text organisation, and with developing individual paragraphs. This was particularly visible in the case of the conclusions: all the essays by the RA group had reasonably well-developed conclusions, whereas in the TA group two essays lacked anything resembling a conclusion, and several wrote sketchy one-sentence final paragraphs. In general, the writing of the RA group was more ambitious, flowed better, and was more interesting to read than the essays written by the TA group.

One particular point in favour of the RA group was their fuller use of examples. As Cameron (2003: 41) points out, successful argumentative writing (in English) involves "developing ideas by moving between the general and the specific", and this is particularly true in the case of the short essay task, where it is common to find this requirement underlined in the phrase "discuss with reasons and examples". This represents an area of particular difficulty for Spanish students, who are unused to presenting arguments in this way. Many students fail to follow the argument-reason-example structure perceived by English NS as coherent, and they seem particularly ill at ease blending abstract ideas and concrete examples together. It could be surmised that this feature of English L1 writing may be an analogue of the empirical methodology which marks Anglo-American academic culture, and that this aspect of writing is therefore rather more problematic for Spanish students, whose background culture may predispose them towards other types of textual organisation.

In the TA group, which had not worked specifically on the rhetoric of arguments and examples, only one essay contained a concrete example of a company which had acted unethically. In the RA group, five students discussed one or several companies which had acted in ways that were ethical or unethical. Moreover, these students had researched these cases, or had at least taken the initiative of relating the essay topic to other issues they had been studying, because their discussions of particular cases were up to date and showed awareness of complex ethical dilemmas. Although it might be thought disappointing that, after the time devoted in class to brainstorming examples, only five students bothered to use them, there was at least a

significant advance on the situation in the TA group, in which only one student mentioned a concrete instance of ethical problems in business.

Given the design of the study, it is not entirely surprising that the essays from the RA group should have been more developed, with better use of examples. However, one less predictable result concerned the lack of a parallel advantage for the TA group on points such as punctuation, register and academic vocabulary. In terms of qualitative impression, it is important to note that the essays by the TA group generally did not seem any better on these points than those in the RA group. None the less, there were some examples of blatant slips of register in writing by students in the RA group, which indicated that they could have benefited from more practice in this area.

To summarise, as might be expected, the rhetorical analysis group performed particularly well in terms of understanding and developing the task. Disappointingly, there was no evidence of a parallel advantage existing for the textual analysis group as far as concrete language features such as register or use of equivalent or junction words were concerned, even though these aspects had been addressed specifically during the writing course.

3.3   Student perspective

At the end of the essay writing component of the course, students were asked to submit their opinions on a semi-structured questionnaire. In the TA group, various students expressed the view that the type of exercises they had done were "very important" and "difficult". They also felt that the preparation had been useful, and they had learnt more about writing. The general impression from the RA group was also that most students found the activities worthwhile. One RA student commented that "the writing activities in the classroom were interesting and really useful to do the essay", while another said "the writing was interesting. I have learned so much about the structure of some specific writings (for example the essay for TOEFL)". Another felt that the sessions had over-laboured a relatively simple point: "However I would argue that the time spent in class discussing the structure of the essay itself was not that useful. What I am trying to say is that it was too much time focused on the composition. With half an hour people in the class could get the idea of how to write it and what it should look like". A further comment indicated that at least one student felt that the link between the real world, academic study and essay writing had not been strong enough. "I think that the homework has been useful to complete our writing skills about academic and opinion essays. I think it would be a great idea for next year to write about actual firms that appear in newspapers and TV in order to compare how students write about the same ideas". This comment was interesting, because the teacher had stressed the need to link ideas with real experience

and knowledge in order to find ways of backing up the arguments expressed in the text. It seems that this particular student felt a need for greater integration of the writing task into the academic programme.

4   Discussion

Despite the contrastive design of this study, with two parallel groups, two methods, and a common rating system before and after, the principal underlying intention of this study was not to demonstrate empirically the superiority of one methodology or the inferiority of the other. Instead, the aim was to identify the strengths and weaknesses of the two approaches.

The first point that should be made is that both programmes appeared to help the students learn to write essays, since both groups made reasonable progress through the module and the final essays showed many improvements on the pre-test paragraphs. Although it may appear surprising that writing programmes of such a short duration should have such a powerful effect, it should be recalled that the programme was extremely focused, centring on areas which were known to be problematic for students from this background. Other authors have also made similar claims concerning rapid improvement in specific aspects of L2 as a result of intensive instruction (Pang, 2002). It has been observed that short writing programmes may enable students to progress in areas like register or metadiscourse, even though there may be little observable improvement in issues such as grammatical accuracy, which come closer to the core of general language competence and require longer time to develop (Shaw and Liu, 1998). In these authors' words, L2 writers produced text that was "less like speech and more like conventional academic written English" (Shaw and Liu, 1998: 245) after a conventional pre-sessional course incorporating some writing instruction. Moreover, their students also improved noticeably in the use of register and metalanguage, without parallel advances in the area of correctness.

We might speculate that the key to this phenomenon may lie in the rapid development of specific strategies, such as planning and organising text. Although this might seem to take the discussion right back to the writing strategy research of the 1980s (Flower and Hayes, 1987; Oxford, 1990), in fact, it can be argued that the students' acquisition of strategies is closely tied up with their understanding of the rhetorical functions in a particular text, and in more general terms, with "clearly understanding what writing entails" (Zamel, 1983). One of the main underlying difficulties encountered when teaching academic writing is that students often fail to understand what they are supposed to do, and so time dedicated to consciousness-raising in this sense is time well spent. The qualitative differences between the essays written by the two groups in the present study point to greater engagement

with the issue of genre in the RA group: their essays were more ambitious in their scope, with a more sophisticated manipulation of argument, and a more developed attempt to weave ideas and facts together in order to answer the question. These results are consistent with those obtained by Pang (2002) in a similar contrastive study focusing on writing film reviews. In his research, the students who followed a "conceptual awareness building" programme seemed better able to "master the real-life intent and practices" of reviewers, and showed greater awareness of the discourse functions within the review than did students who were taught through an approach that centred on linguistic analysis (Pang, 2002: 157).

The rhetorical analysis approach may thus open students' eyes to the purpose underlying the overall textual organisation and the structure that underpins paragraph organisation, helping them to learn practical strategies which can be transferred to new essay titles and, perhaps, to other, more sophisticated, forms of discursive writing.

Overall, the analytical results are also more encouraging for the RA group. These students improved more on most of the categories assessed, and scored higher overall on their final written product. However, in contrast to the findings of other researchers (Pang, 2002), the TA group in the present study was not found to have gained more on concrete points of accuracy such as punctuation, appropriate register, use of equivalent words or smooth sentence transitions, even though these aspects were discussed explicitly and practised by this group as part of their essay writing module. Unlike Pang's "textual analysis" group, which obtained greater increases in scores on the mechanistic aspects of text, such as format and presence of obligatory features, the TA group had a lower overall analytical score on these items. None the less, the students in the TA group themselves indicated that they had appreciated the detailed language component of the writing module, since it seemed to meet their expectations. The truth is that it is probably difficult to make much progress quickly on language or cohesion issues, and that much more practice is probably necessary to bring about a dramatic improvement in this area.

It could be surmised that the enhanced performance of the RA group in the present study may be attributed to their superior understanding of the essay genre and their acquisition of a few important strategies. The top-down approach encouraged students to relate what they learnt in the writing program to their wider understanding of the field, and taught them to organise ideas and information within the structure offered by the essay genre. It may thus have helped them initially to activate pre-existing schemata about discursive writing. In some cases, it may have allowed students to build these schemata where they were absent. The same could be said of strategies, in that the top-down approach facilitated the activation of appropriate strategies, challenged the use of inappropriate ones, and gave

some students the opportunity to learn simple text-organisational strategies for the first time. The linguistic approach adopted with the TA group may have been counter-productive in this, in that it may not have provided enough opportunities for students to see the "big picture" of what essays are supposed to be about, or the overall story in which each part of the essay has a different role. If they failed to grasp these points, the TA group may have interpreted the writing tasks as "yet another language exercise". They thus did not make as many connections between what they learnt and its uses and functions as the RA group did, which meant that they were less able to reproduce it when required. This interpretation is consistent with recent work that stresses the difficulty of transferring writing skills from one context to another (Adam and Artemeva, 2002). Such problems could be alleviated by ensuring that top-down explanations are always given to situate classroom writing in a wider rhetorical context. Where possible, connections should be made with real-life writing activities, and simulations should be used to bring home the purposes of academic and professional writing to students who may have little experience of these outside the English class.

One last point about the present study concerns the actual context, which might account for differences between the present results and those obtained by authors such as Pang (2002). Pang's Chinese students "were used to learning English by rote and rules" (p. 157), which, he believes, made them more receptive to the linguistic focus adopted with his "linguistic analysis" group. The Spanish students analysed here seemed less receptive to this approach, preferring the more interactive, group-oriented methodology of the RA approach (Wong-Fillmore, 1982; Stebbins, 1995; Breeze, 2002). Macro-cultural factors may well influence the students' preferences and responses, and this should be borne in mind by writing teachers when they are looking for an appropriate methodology. Both researchers and practitioners need to be aware that methodologies for teaching L2 academic writing will yield different results in different situations across the globe, depending on the mainstream culture or educational culture of the country. It is likely that the top-down approach was perceived by many students as being more mature or more complex, which may have made it correspondingly more motivating. The RA approach was novel enough to engage most students' interest and provoke a creative response, whereas the carefully focused writing activities used in the TA approach were classified by some students as "just language exercises". However, in a different context, this approach might be perceived as "simple", or as providing insufficient linguistic scaffolding to enable students to complete the task.

Finally, although the results of this study suggest that fairly rapid results can be achieved in aspects of genre mastery such as textual organisation, we are left to face the challenge as to how best to help students make connections between finer details of the text, such as register, punctuation, logical

development and sentence flow, and the wider picture of what the text is for. Textual analysis and detailed practice still need to be factored into writing programmes in such a way that students can perceive the importance of issues such as register or sentence flow, learn how to improve, and transfer the knowledge and skills they have acquired to other writing tasks. Although top-down organisation is essential, sentence-level accuracy is also important if students are to become effective writers for academic and professional purposes.

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Appendix

Course contents

1   Textual analysis group

1a. The students were given a model essay and a title. The teacher elicited from the class the main features of the essay (introduction, conclusion, number of paragraphs, and how these features related to the essay title). The teacher wrote an introduction for the new title on the board, using the model as a base. The students were then asked to write the next paragraph, which was handed in and used as the pre-test.
1b. In subsequent classes, the students worked on various language exercises, designed to sensitise them to paragraph structure, sentence structure, cohesion and aspects of academic style such as choice of vocabulary, absence of contractions and first/second person pronouns.
1c. The notion of paragraph structure (important-less important, or highlighting statement-explanation/detail) was shown to be similar to the ones they had worked on for the report. There was discussion of any other similarities or differences between the essay and the report.
1d. The students then wrote an essay as homework. The total duration of tasks was about 4 hours.

Sample material used with TA group

Comment on the punctuation in the following text. Then change the punctuation to make it easier to read.

On the other hand there is a smaller group who think in a different way, they believe that the principal purpose of a firm is not making the highest profit and so they try to make sure that the company should take care of their employees and be patient with the new people, try to generate a good atmosphere in the work place, give the employees the opportunity to make suggestions, if you do all this you will have better results.

2   Rhetorical analysis group

2a. The students were given an essay title. The teacher asked the students what structure this essay should follow, and drew out from the class the idea that the essay was supposed to have four or five paragraphs, including an introduction and conclusion and central paragraphs in which points were developed. The students were asked to work in groups to decide on the themes for the central paragraphs. They wrote their themes on the blackboard, to permit comparison with other groups. They then wrote a paragraph to serve as the pre-test.

2b. During the next session, students were sensitised towards the issue of persuasion and the implications of this for the rhetorical organisation of paragraphs. The empirical style of argumentation preferred in student essays in English-medium academic contexts was discussed, and the need for arguments to be supported with reasons and examples was emphasised. The students then worked in small groups to complete a worksheet which required them to fill in some ideas for or against a particular topic, and then add examples to back up these ideas. In the feedback given at the end of the session, the teacher emphasised the importance of paragraph structure, particularly the notion that a paragraph in this type of composition often begins with a topic sentence which makes a particular point, and which is followed by two or three more sentences that give reasons, explanations or examples that support this point.

2c. At this point, the students were confronted with a different genre in the same family as the essay. They were given two texts and asked to say what made them different: which one was an essay, and which was an explanation in a textbook. First, they tried to contextualise each one, and discussed the interpersonal contexts of the different texts – readers or listeners are known or unknown, specific or general. They were asked to underline any ways in which the different texts aimed to persuade their readers. They commented on the style and on the presence/degree/type of persuasion in each.

2d. As a consolidation exercise, students focused on the model essay and defined the rhetorical function of the introduction and conclusion, commenting on the nature of the other paragraphs. They were given a sample essay which did not meet the requirements and were asked to make comments on it in groups. This session was rounded off with group discussion of the ways in which that essay could have been improved.

2e. They were set the same essay title as the TA group for homework. The total duration of the tasks was around 4.5 hours.

Sample material used with RA group

Work in pairs to fill in the worksheet. Then compare your notes with another pair of students:

Reasons why business people need to make a profit
Examples in which profit is the most important factor 1. 2.
Reasons why ethical considerations are important
Examples in which ethics might overrule the need to make a profit 1. 2.

Academic writing in the disciplines: Practices in nursing, midwifery and social work

Julio Gimenez

Research has demonstrated that academic writing is one of the essential skills that university students need to master, sometimes before they start university. This applies to both general and discipline-specific writing. However, we still know very little about writing practices in disciplines such as nursing, midwifery and social work. Based on a two-year research study, the chapter explores the practices associated with writing specific genres in these disciplines and the difficulties students face when writing. It first reports on the results of a survey the students completed and then presents three case studies which support the results. The chapter finally examines pedagogical implications resulting from the study.

1   Introduction

Several studies have confirmed that academic writing is one of the essential skills that university students are expected to master (Lea and Street, 1998; Lillis and Turner, 2001; Read et al., 2001; Whitehead, 2002; Andrews, 2003; Elander et al., 2006; among others). Research indicates that in universities where teaching is conducted in English students are expected to know at least the basics of general academic writing even before starting their degree programmes (Lillis and Turner, 2001; Whitehead, 2002; Elander et al., 2006). These expectations about students' general ability to write are mirrored in content specific courses (Whitehead, 2002; Gimenez, 2007; 2008). Whitehead (2002), for example, argues that nursing students are expected to acquire academic writing skills relatively easily and to the expected standards. A similar situation is encountered in many midwifery programmes where students are required to know how to write academically even before they start their programme of study (Gimenez, 2006).

Content lecturers also expect students to be able to write the specific genres that their disciplines favour (Gimenez, 2008). But how much do we know about disciplinary academic writing practices and writing discipline-specific genres? Is it the same type of writing that students learn in general writing courses? How do the genres students have to produce differ from 'the essay' which has been identified as the 'default genre' in higher education (Womack, 1993; Andrews, 2003)? What are students' experiences when writing discipline-specific genres? And, probably more importantly, how do disciplinary practices shape discipline-specific writing? Based on a two-year research study that examined the nature and dynamics of discipline-specific academic writing in three disciplines: nursing, midwifery and social work, the chapter explores these questions in an attempt to provide research-

informed answers. It first reports on the results of a survey completed by a group of students representing each discipline and then presents three case studies which lend further support to answer the questions posed in the study. The chapter ends with an examination of the implications for teaching discipline-specific writing that have resulted from the study.

2   The literature

Research has convincingly shown that academic writing in general and the 'academic essay' in particular are core activities in most university programmes (Womack, 1993; Lillis, 2001; Lillis and Turner, 2001; Read et al., 2001; Andrews, 2003). Writing has remained a central activity that supports what Lillis (2001: 20) calls 'essayist literacy' practices in higher education. The centrality of writing is evidenced by the role it plays at both entry and exit course levels. Writing is sometimes used to determine whether a student is accepted on a particular course of study (Gimenez, 2006) and usually "constitutes the main form of assessment" (Lillis and Scott, 2007: 9). The 'academic essay', identified by some researchers as the 'default genre' in higher education (Womack, 1993; Andrews, 2003), has become closely associated with writing courses in university pre-sessional and in-sessional programmes although the label may sometimes be used as a 'shortcut' to other types of writing, adding to the confusion that students experience understanding the expectations of their lecturers (Gimenez, 2008) and the marking criteria used to assess their writing (Lea and Street, 1998; Lillis, 2001). It is not surprising, for example, to find in assignment briefs and their accompanying marking criteria a reference to an essay when in fact the lecturer may want the students to write a report or a critique.

There are, however, some fundamental differences between general and discipline-specific writing courses (Kaldor and Rochecouste, 2002). While most general academic writing courses, where the essay tends to play a central role, are determined by skills and general academic conventions, discipline-specific writing is influenced by the practices of the discipline it represents. These practices involve not only the genres and text types favoured by a discipline – 'what they write' – but also the strategies, principles, beliefs and practices adhered to by that particular discipline – 'how they write' (Hyland, 2004).

Thus disciplines determine the specific genres students need to be able to produce, albeit differences which have been reported across disciplines (Hewings, 2004; Hyland, 2004; Swales, 2004; Thompson, 2006). Reports, for instance, have been discovered to be a popular genre in business and engineering (Okoye, 1994; Stanton, 2004; Zhu, 2004). Reflective writing has been singled out as a common type of writing in education, nursing and midwifery (Lunsford and Bridges, 2005; Rocha, 2005; Gimenez, 2008).

However, focusing on genres as texts or on the skills needed to write them may not help us understand the complexities involved in academic writing. It is more interesting and revealing to examine writing discipline-specific genres together with the social practices that surround it (Barton et al., 2007). Barton and Hamilton (2000: 7) defining literacy (reading and writing) as social practice state that "the notion of *literacy practices* offers a powerful way of conceptualising the link between the activities of reading or writing and the social structures in which they are embedded and which they help shape" (emphasis in the original). Social practices, however, may not always be easy to isolate and readily observable. A more concrete and tangible notion is that of 'literacy events' which are observable activities that have texts playing a central role. "The notion of events", explain Barton and Hamilton, "stresses the situated nature of literacy, that it always exists in a social context" (ibid: 8). As the discussion section of this chapter will show, the situated and complex nature of discipline-specific academic writing becomes more visible when writing is investigated as social practice.

The other area of interest in this chapter is what students perceive to be their main difficulties in discipline-specific writing. Students' difficulties in writing in specific disciplines (Hewings, 2004; Stanton, 2004; Zhu, 2004) or specific genres (e.g., Bitchener and Basturkmen, 2005) have received a great deal of attention in business, engineering and geography in the last decade. However, the challenges faced by students in nursing, midwifery and social work have been under-represented in the literature, except for a few notable exceptions (e.g., Whitehead, 2002; Leki, 2003).

As discipline-specific writing highlights the genres the disciplines favour, the difficulties students encounter can be expected to differ across disciplines. Difficulties will thus be determined not only by the linguistic challenges of specific genres but also by the exigencies (e.g., specific strategies, principles and beliefs) of particular disciplines. For instance, the linguistic exigencies of reflective writing (reflective tone, straightforward style, simple language and structures) are different from those of a care critique (evaluative tone, elaborate style and language). By the same token, disciplinary exigencies will also play a role in how students perceive the task of writing genres. Writing reflectively in nursing is generally identified as difficult by students as they are requested to project an impersonal view, accompanied by an impersonal tone and style, on the events being reflected. This disciplinary exigency seems to contradict what is normally understood by reflective writing, creating conflicts of ownership, identity and authority in the students (Gimenez, 2008). Thus when considering difficulties in discipline-specific academic writing, it is also important to examine the exigencies associated with disciplinary practices.

3   The study

This study was conducted at a university in London over two academic years (2004-2005 and 2005-2006). The students who participated were enrolled in a BSc Nursing, a Diploma in Higher Education (Advanced) Midwifery, a BSc Pre-Registration Midwifery and a BSc in Social Work.

One hundred and seventy students participated in the study: 68 nursing students, 67 midwifery students, and 35 social work students. The participants were chosen following stratified selection as the study aimed at examining typical genres and their associated linguistic and disciplinary demands by level of writing rather than year of study. Level 1 of writing coincides with the start of the programme of study and the tasks at this level are descriptive rather than argumentative. Level 2 writing, which normally starts nearing the end of year 1, marking the transition between years 1 and 2, expects students to favour argumentation and critical analysis over description. Level 3 writing is the most analytical and includes tasks such as the undergraduate dissertation. For a complete explanation of the levels of writing and the requirements at each level, please see Gimenez (2008).

Table 1 shows the composition of the groups and the breakdown by discipline and writing level. Participating students on these programmes represent a variety of cultural, ethnic, linguistic and educational backgrounds. Some had started university after finishing 'A levels', others after Access courses, and others after an Advanced Vocational Certificate of Education (AVCE)[1]. Students came from the UK, Cyprus, Ghana, Jamaica, Kenya, Nigeria and Zimbabwe, and spoke different varieties of English, Greek, Swahili, Twi, Ibo, Shona, and Ndbele.

Discipline	Level 1	Level 2	Level 3	Total
Nursing	21	21	26	**68**
Midwifery	18	28	21	**67**
Social work	11	13	11	**35**
Total	**50**	**62**	**58**	**170**

Table 1. Composition of groups by discipline and level

The main study took place after a pilot study. The purposes of the pilot study were to identify the profile of the participating groups, make contact with their content lecturers, make arrangements for data collection and try out the

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[1] 'A levels' are qualifications taken during the optional final two years of secondary education in the UK; 'Access courses' provide preparation for higher education to mature students with few other qualifications; and AVCE is a qualification which leads to higher education or employment.

questionnaire, one of the data collection instruments. The questionnaire asked the students about themselves as students, their programmes of study and their views and experiences in academic writing. Once calibrated after the pilot, the questionnaire was administered to the groups that participated in the main study, and the answers computed using SPSS and analysed before the interviews took place.

Three case studies provide the qualitative data for the study. These case studies are based on the interviews to three students from each discipline and to some of their content lecturers as well as the field notes I made in my role of researcher.

4 Findings

This section presents the results from the questionnaire the students answered and introduces the three case studies.

4.1 Results from the questionnaire

The questionnaire was mainly used to identify the most frequently requested genres in the three disciplines and the difficulties the students had producing them. Table 2 below illustrates the main genres in nursing, midwifery and social work identified in the study.

Genres	Nursing	Midwifery	Social work
Argumentative/analytical writing	✓	✓	✓
Care plans	✓	-	-
Care critiques	-	✓	-
Case studies	✓	-	✓
Discharge summaries	✓	-	-
Observations	-	✓	✓
Portfolios	✓	-	✓
Reflective writing	✓	✓	✓
Reports	-	-	✓
Undergraduate dissertation	✓	✓	✓

Table 2. Main genres in nursing, midwifery and social work

The shaded areas in the table represent a common genre for all three disciplines. This, however, should be read with certain caution to avoid over-generalisations. Take, for instance, reports. Although reports were uncommon to nursing and midwifery, nursing and midwifery students had to

produce 'mini-reports' after a visit to a client, for example, which became embedded into other genres such as reflective accounts or the undergraduate dissertation. The degree of embeddedness and hybridity of a genre seems to be determined not only by the genre itself but also by the discipline that constructs it. In this study I observed a higher degree of embeddedness in genres constructed in social work than in midwifery. Table 2 also lends some support for the claim that the academic essay may fall short of the needs that students writing in the disciplines may have (Johns, 1997; Gimenez, 2008) and may as well be a poor representative of the expectations of content lecturers.

As to the difficulties reported by the students in the questionnaire, they can be grouped into general and discipline-specific. The general difficulties referred to the demands of writing academically (e.g., supporting claims with evidence); the discipline-specific difficulties had to do with disciplinary requirements (e.g., no personal voice in reflective writing in nursing).

Table 3 shows an overview of the main areas of difficulty by type and discipline identified by the students. For an area to be considered representative of the difficulties students experienced, it had to be identified by at least 65% of the respondents.

Difficulties	Nursing	Midwifery	Social Work
1. General			
1.1 Showing relations	✓	-	✓
1.2 Writing critically	✓	✓	✓
1.3 Supporting claims	✓	✓	-
2. Discipline-specific			
2.1 Linking theory and practice	✓	✓	✓
2.2 Incorporating models	✓	-	✓
2.3 Showing writer stance	✓	✓	-

Table 3. Students' main difficulties in academic writing in nursing, midwifery and social work

Showing relations, the first category in the general group of difficulties, refers to the linguistic relational link between the assignment question or brief and the contents of their assignment, or to the relation between the different parts of their assignment (e.g., introduction). This was particularly identified as difficult by nursing and social work students. The second category, writing critically, has been singled out as an area of concern by most of the students in the three disciplines. Supporting claims with either references or examples from clinical experience was the third most common problem students identified in the survey.

As to the discipline-specific group of categories, the difficulty that most students in the three disciplines identified was linking theory and practice, which is an important practice subscribed by disciplines with a strong emphasis on providing evidence-based care. The second most important difficulty students identified was incorporating relevant models – especially models of care – to the theoretical discussions in their assignments. This was particularly relevant to nursing and social work. The other concern students singled out was being able-or in some cases 'allowed' – to show their stance as writers, especially in nursing and midwifery where students are discouraged to use personal pronouns in reflective writing. These concerns are further explored in sections 4.2 and 5.

4.2   The case studies

Three students from each programme were interviewed in depth and were also asked to select writing samples of typical genres they had been asked to produce for their programme modules. Of these nine students, three – one from each discipline – have been selected as case studies for this chapter.

Claire[2]

Claire was studying nursing when we met. She had come to the UK from Jamaica as a child and had not had what may be described as a 'traditional' path into higher education (e.g., no A levels), but had come into nursing through an access course. Claire was in her mid thirties and was a mother of three. She struggled to strike a balance between her responsibilities as a student and a mother. When she left school she started working in a local supermarket but it was when she got a job at an old people's home that she became interested in health care and considered a career in nursing. As a returning adult, she found university work in general and academic writing in particular a rather daunting experience.

There were several issues she found difficult to handle, but she particularly found disciplinary writing conventions hard to understand, and would complain about and resist some of them. One particular case was becoming invisible as a writer reflective writing. Nursing students are normally advised to 'project an impersonal voice and avoid the first person singular'. In her interview, Claire said "I never know how to write about it [the experience] you know. It's like talking about somebody else as if you hadn't been there it's so weird... when I read what I've written you know I feel it belongs to somebody else".

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[2] All names are pseudonyms that the participants themselves chose for this and other reports on the study.

Her dilemma also materialises in her writing as seen in the following reflective piece she had been asked to write.

Text 1[3]: Claire's text
On that occasion the student nurse visited the client in her own home. I told her she could face serious problems if she failed to see the nurse in hospital again. The client reacted negatively and said she would not accept being told what to do by a student. From this experience, the student nurse learnt she needed to develop her interpersonal and communication skills for handling communication with clients more effectively.

Flora
Flora was studying to become a midwife. She was originally from Nigeria and had lived in the UK for 19 years at the time of the study. In her native country she had completed her secondary schooling. She was a mother of two and worked part-time at a nursing home. Her work and parental responsibilities made it quite difficult for her to devote enough time to her studies and she sometimes felt very frustrated about it.
Her difficult relation with academic writing added to her feelings of frustration. One major problem Flora experienced was finding ways to link the theory and practice of midwifery, as evidenced in the following extract from a care critique she had to write.

Text 2: Flora's text
The importance of supporting the woman not only physically but also emotionally was already investigated in many source in the literature (Page, 2000). Tarkka and Paunonen (1996) suggest three types of support during pregnancy: affect, affirmation and aid. These three types were used by the midwife this student observed and supported. Another example is provided by Rooks (1999) in America.

David
David, an East Londoner in his early thirties, was doing a degree in social work in which he became interested after one of his closest friends graduated as a social worker. Although he had finished secondary school and had passed his A levels rather successfully, he decided university education was not for him. David had had different odd jobs and gone through various periods of unemployment before he applied for a bursary to study at the university. His main areas of difficulty were how to successfully incorporate relevant models or methodologies into his assignments and how to support

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[3] Texts are the original version the participants had written before we met.

his own claims effectively. The following text from a report he wrote on a visit to a client illustrates the former of his difficulties.

Text 3: David's text
Although, Mr. Ashy was able to open up to me about his problems because I accepted him as an individual, despite the fact that we are both from different cultural background, I assume it would be difficult for any individual to express their inner most thought to someone from a different ethnic background or culture but I tried to cross this boundary by reflecting acceptance in my behavior and attitude. It made it easy for us to start off with an understanding of accepting each other. These facilitated the working partnership or relationship between us.

> *"Unconditional positive regard is the label given to the fundamental attitude of the person-centered counsellor towards her client. The counsellor who holds this attitude deeply values the humanity of her client and is not deflected in that valuing by any particular client behaviors. The attitude manifests itself in the counsellor's consistent acceptance of and enduring warmth towards her client (Mearns and Thorne 1999 p.64)"*

5 Discussion

This section examines the disciplinary practices surrounding the three literacy events (writing discipline-specific genres) that have been presented in the case studies above, in an attempt to gain a better understanding of the complexities of academic writing in the context of the study and the difficulties the students reported in the questionnaire.

Three particular discipline-specific practices are of central importance to the chapter: remaining impersonal in reflective writing in nursing, providing evidence-based care in midwifery, and making sure care remains client-centred in social work.

5.1 Impersonality practices in nursing

As the results of the survey have confirmed showing writer stance is one of the discipline-specific difficulties that students singled out. Not all disciplines adhere to the same norms of impersonality when it comes to writer stance (Hyland, 2001), in nursing and midwifery the 'norm' seems to require students to 'project an impersonal voice and avoid the first person singular', even when writing reflective accounts (Gimenez, 2008). This principle presents real challenges for writers who have to remain linguistically absent from their texts and deal with conflicts of ownership, identity and authority as a result. This is exactly how Claire felt when having to write her reflective

assignments, as shown in her case study above. Claire found it difficult to make any sense of this principle in her discipline and resisted it to the point of risking a low mark on some of her assignments. As seen in text 1, the tensions between her stance as a writer and the principles of impersonality in nursing resulted in some of her texts being confusing and difficult to follow. In text 1 there is a clear tension between how Claire prefers to refer to herself using the first person pronoun and how her discipline expects her to do it as 'the student nurse'.

One explanation for this discipline-specific practice can be found in the fact that nursing, being primarily a client-centre discipline, encourages students to focus on the client involved in the case rather than on themselves as writers. A second explanation for the impersonality practice in nursing writing can be found in the history of nursing as a professional discipline. Given its short history, nursing still seems to be struggling to find its place alongside other more 'traditional' and well-established disciplines like medicine. As one of the content lecturers I interviewed said, "impersonal accounts always appear to be more professional and scientific".

In any case, Claire had not found or been given any convincing explanations for her to understand this principle and had been left waging her own battles against it. In an attempt to help her, we discussed some of these reasons behind this practice and she decided that focusing on her client rather than on herself as 'the teller of the tale' was more in line with the principles of client-centred care she so much liked in nursing. We also looked at other linguistic possibilities which would allow her to show her own stance and presence as a writer. Claire thought that discussing these linguistic and discipline-specific practices had prepared her to talk about it with her content lecturers and to be able to negotiate with them instances in which her presence in her writings was absolutely necessary.

5.2   Evidence-based care in midwifery

Midwifery aims at providing care for women and their babies, care that is largely based on informed-decisions and empirical evidence. This is one of the main reasons for asking students to link the theory and practice of midwifery in their written assignments. As one lecturer explained to me in her interview, "With government legislation becoming tighter and tighter, there's an absolute need for midwives to provide evidence-based care and also to make and help their clients make informed decisions".

This central disciplinary practice is seldom explained to the students. In Flora's case, for instance, she knew it was one of the criteria that a care critique had to meet to be successful but did not know why. As with many other aspects of writing, she thought "it is one of those things you know you've got to do... full stop".

The invisibility of the practice prevented Flora from making informed-decisions when writing her assignments. In text 2, Flora failed to provide a strong link which demonstrated she understood this disciplinary practice. Although the link is textually present in her text, it requires further elaboration of the theory, as well as an explanation of how the practice observed illustrates it. Further elaboration and explanation would have shown Flora's ability to identify evidence to support her decisions as a future midwife.

We examined this practice in her discipline and analysed pieces of writing that had successfully evidenced an understanding of it and compared them with other texts that failed to do so. Flora could realise how texts are meant to reflect disciplinary practices rather than isolated writing conventions. This comparative exercise also allowed her to be more in control of her own writing as situated in her discipline.

5.3   Client-centredness in social work

Like other professions, social work strives to maintain clients at the centre of the care it provides. One way in which social work as an academic discipline tries to sustain this practice is by requesting students to identify relevant models or methodologies for their assignments. As one lecturer said in his interview, "We hope students will understand the importance of good models in their own professional practice".

In David's case, however, the hope did not materialise. He struggled to show evidence of this disciplinary practice in his writing mainly because he was not aware of writing as situated practice. He supported his argument but could not show the importance of 'unconditional positive regards' as a methodology. Like Flora, David saw writing as a mechanistic exercise determined by rigid conventions he needed to follow.

As in the previous cases, an examination of how writing is shaped by disciplinary practices helped David improve his assignments. We examined the importance and the role of models in the practice of providing client-centred care and the ways in which this can be evidenced in writing. He then produced several drafts of the same text and we compared them in terms of how they materialised the practice. In this way, David was able to explain the 'importance of good models or methodologies' in his discipline and reflect it in his own writings.

5.4   Disciplinary practices in nursing, midwifery and social work

One of the main difficulties that disciplinary practices present new comers to any discipline is that the norms, beliefs and values that support these

practices are rarely talked or written about and thus remain invisible to them. Coupled with this, there are very few occasions on which mentoring or apprenticeship systems are in place to support the professional development of novice participants. In most disciplines, becoming a full participant is something people learn 'on the job'.

A similar situation is faced by the majority of students when they start their subject-specific modules in higher education degree programmes. Disciplinary practices, including what kinds of written and spoken discourses are favoured, usually remain 'invisible' and sometimes only accessible to the central participants.

What these three cases above illustrate is that difficulties with writing in the disciplines are not always the result of deficits in the students' previous academic trajectories or their lack of knowledge of academic writing conventions. A closer look at the practices that shape discipline-specific writing, as these three cases show, reveals that their 'invisibility' can obstruct rather than facilitate the development of discipline-specific writing. Writing and content lecturers thus need to work together to make disciplinary practices clear and visible to the students. In this way, students will be able to approach writing as situated practice rather than as a set of conventions they need to follow. By the same token, they will be able to decide whether they wish to adhere to or resist or negotiate practices with their content lecturers as they move from peripheral to full participation in their disciplines (Lave and Wenger, 1991).

6   Pedagogical implications

There are some interesting pedagogical implications emerging from this study. One of them is that, for an examination of discipline-specific academic writing to be really effective, it needs to critically examine the social and disciplinary practices around it. Approaching writing as a constructed practice and its contexts as "sites of negotiation" (Lillis, 2001: 24) will allow writing lecturers as well as content lecturers to gain a more complete picture of the complexities and tensions involved in discipline-specific academic writing. It will also help students to critically analyse disciplinary exigencies and possibly 'disentangle' the different and conflicting views that some content lecturers sometimes have about what is required to successfully produce a piece of writing and to clarify these with them.

A second implication is the need for academic writing in higher education to become more discipline-specific and situated. This will involve an examination of the social practices around writing, the genres students are typically requested to write in their disciplines, the general and discipline-specific demands that are associated with producing the identified genres, and the difficulties that students normally experience when writing them. This

investigation would ideally involve the students as well as writing and content lecturers.

Coupled with this, the selection of strategies that may help students write successfully will obviously have to be discipline and context specific. From the results of the study it seems reasonable to suggest that those strategies should be identified by all the participants of the literacy practices in which writing takes place. Thus the producers (students) and consumers (lecturers) of the practices are brought together into the negotiation of strategies needed for successful writing.

7   Conclusion

Based on the results of a two-year research study on academic writing in nursing, midwifery and social work, this chapter has explored some of the complexities and practices associated with writing in these three disciplines. It has examined and discussed the results of a survey completed by a group of students and then presented three case studies in an attempt to throw some light on the literacy practices of these disciplines. The chapter has also provided an examination of some of the implications for teaching discipline-specific writing in higher education.

It is hoped that other research studies will continue to explore the theoretical issues involved in discipline-specific academic writing and to examine the resulting pedagogical implications in order to further our understanding of the intricacies of the writing practices in higher education.

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English language education
for science and engineering students

Thomas Orr

This chapter provides an introduction to English for Science and Engineering (ESE) not only for those who may be interested in developing an ESE program but also for those who may be interested in pursuing ESE as a career. It contains explanations of ESE work, descriptions of successful practice, attributes of an ideal practitioner, and a detailed profile of one representative program.

1 Introduction

Science and engineering are global disciplines, with English being the language of preference for top international conferences and scholarly publications as well as for communication among international employees in the workplace and on international project teams. Competence in the English of scientific and technical work is essential for success, not only for native speakers, but also for nonnative speakers, who comprise the vast majority of professionals in scientific and engineering fields. Schools of science and engineering know this fact and continually search for better ways to improve the English skills of their students, but specialists in English for Specific Purposes (ESP) who possess the appropriate knowledge, skills, and interests to contribute significantly to this work, unfortunately, are in very short supply.

The intent of this chapter is to help alleviate this problem by offering some helpful perspectives and guidelines to university students and mid-career professionals who might be persuaded to pursue a career in English language education for Science and Engineering (ESE)[1]. As a university administrator who recruits and hires professionals in ESE; who lectures frequently to science and engineering faculty about ESE; and who routinely seeks competent science/engineering English experts for research projects, conference keynotes, publication review committees, and consultation opportunities, I am continually troubled by the enormous gap between human supply in ESE and world demand. If this chapter can help to increase both interest and competence in the work of English language instruction for

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[1] Historically, English for science and engineering has been called EST (English for Science and Technology) in the ESP literature; however, in this chapter engineering will be used instead of technology since, currently, the greatest plea for effective academic and professional English instruction in these disciplinary domains comes from the engineering community which prefers to be labeled as *engineering* rather than labeled as *technology*.

science and engineering, this will advance the field of ESP and the science and engineering disciplines in equally positive ways.

Before we begin, however, it would be best for me to note that English language instruction for native speakers (NS) and nonnative speakers (NNS) will not be strongly differentiated in this chapter, since both groups are frequently expected to possess similar levels of competence in English but merely bring different domains of experience and training with them to the university when they matriculate. Some of the instruction proposed on the following pages will be better suited for novices in the professional English discourse of science and engineering, and other instruction for the more proficient, but expertise in English communication does not divide cleanly between native and nonnative speakers in technical fields, which often attract students surprisingly weak in all forms of social and professional interaction, even when communicating in their native language. Consequently, no particular distinction will be made between learners beyond those with different kinds of learning needs. As ESP continues to evolve, it seems probable that the field will eventually expand its sphere of interest to include addressing the specific English learning needs of both native and nonnative speakers at whatever levels of English require professional assistance.

2   Ideal interests and abilities for successful instruction

Language education has been around for a very long time, producing not only generation after generation of successful (and not so successful) language users but also a very large archive of knowledge about what ought to be done to enable language acquisition to occur. In the context of ESE, professional literature in ESP (e.g., Dudley-Evans, 1998), ESL (e.g., Tsui, 2003), general higher education (e.g., Fink, 2003; Bain, 2004; Sawyer, 2006; Biggs and Tang, 2007) and higher education for science and engineering (e.g., Reis, 1997; Baillie and Moore, 2004; Kalman, 2008) can be used to build a profile of what might be called the ideal educator for the ESE profession. Naturally, no one is born with all of these characteristics. But having a clear view of what the ideal might look like provides a much better professional target for educators who are thinking of developing some professional expertise in this field. In fact, scholarly research on expertise and expert performance (Ericsson et al., 2006) supports this assertion with multiple examples from the cognitive sciences which show that people who become experts have much clearer mental images of what expertise in their professional domain actually entails than long time novices, who perhaps wish to become experts but typically possess no more than vague notions of how genuine professionals actually think and act.

3   Profile of an ideal educator in ESE

General Professional Interests
- Interest in knowledge, learning, and personal improvement
- Interest in people and in helping them with their own personal improvement

Specific Professional Interests
- Interest in human language and communication
- Interest in math, science, engineering, and other relevant fields
- Interest in the learning sciences (cognitive science, educational psychology, sociology, education, instructional design, etc.)

General Professional Abilities
- Ability to identify essential knowledge, learn it, and apply it
- Ability to identify problems, understand their causes, and generate successful solutions
- Ability to communicate, build positive relationships, and work well with others

Specific Professional Abilities
- Ability to understand the culture, activities, and English of science and engineering
- Ability to identify the English and supporting attitudes and behavior that make work successful in science and engineering
- Ability to determine where students are lacking in these areas
- Ability to select or design appropriate instructional content and supporting instructional methods
- Ability to deliver the instruction effectively and get good results
- Ability to assess learner progress and respond with helpful feedback
- Ability to evaluate instruction and continually make improvements
- Ability to work productively with administrators, educators, and others involved in the work

One thing that this profile cannot do is specify the amounts of interest, knowledge, or ability that are needed to assure there will be successful results from one's efforts. However, it may be reasonable to assume that the more one has the better one will perform, although success in some educational contexts may require no significant amount of interest or ability at all. Necessary amounts of professional expertise in different areas depend heavily on local circumstances.

4   Descriptions of English language need

One of the most noticeable elements of professional practice in ESP is needs analysis, a set of carefully designed procedures for determining what specifically needs to be learned in what specific way. In regard to the English language learning needs of university students majoring in science or engineering, it should be noted that curriculum designers, materials developers, and instructors can benefit from the considerable amount of knowledge that scholars, practitioners and authorities have already identified as essential learning needs based upon their own professional perspectives. Naturally, different learners in different contexts aiming at different skill sets will require different instructional content and learning activities, but incorporating the recommendations of those who support science and engineering professionally will help create far richer, more effective instruction than can be obtained from personal observations or the ESP literature alone. What do authorities identify as essential language-related learning needs for students in science or engineering? Here are a few representative examples.

According to ABET, Inc. (2008: 2), the world's largest accreditation board for quality assurance in applied science, computing, engineering, and technology education, engineering programs must demonstrate that their students attain the following outcomes by graduation if their programs expect to qualify for accreditation:

- an ability to apply knowledge of mathematics, science, and engineering
- an ability to design and conduct experiments, as well as to analyze and interpret data
- an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- an ability to function on multidisciplinary teams
- an ability to identify, formulate, and solve engineering problems
- an understanding of professional and ethical responsibility
- an ability to communicate effectively
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- a recognition of the need and an ability to engage in life-long learning
- a knowledge of contemporary issues
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Although all of these activities require skill in special modes of language, item D requires students to be able to communicate both technical and nontechnical information to other people on a project team who may not be familiar with some of the vocabulary or concepts being discussed. Therefore, ESE in some contexts might need to train students to be sensitive to the linguistic and disciplinary knowledge of different audiences as well as equip students with the English language skills that are needed to speak or write at a variety of different levels of complexity in order to convey their messages successfully. This would include the ability to comprehend English messages expressed in different accents and levels of language proficiency as well as the ability to respond appropriately. Scientists and engineers nearly always work in teams, and it is increasingly common these days, thanks to the Internet, for team membership to not only be multidisciplinary but equally international both in terms of nationality and work location.

Item G, the ability to communicate effectively, extends the need for competence in English to include all aspects of spoken and written communication that are required to connect professionally with others for all of the academic and professional purposes that characterize a student's field. Since faculty and administrators must demonstrate to ABET what communicative tasks require student proficiency, along with evidence that students have actually attained it, it is best for ESE specialists and engineering/science faculty to work together to create language training programs that can satisfy the accreditation demands of ABET or any other accreditation board or government ministry that the university may have to answer to. English proficiency standards that may satisfy specialists in ELT may not be sufficient to satisfy the expectations of science and engineering departments, where English needs differ from the language skills normally measured by popular assessment tools, such as the International English Language Testing System (IELTS) or the Test of English for International Communication (TOEIC).

In addition to accreditation boards and government agencies that may specify particular English requirements for schools of science and engineering, practitioners also have opinions about what students need to learn in school, based upon their own experience with university learning and its usefulness (or not) in preparing them to succeed in the workplace. A frequently cited survey (Middendorf, 1980) of 4,057 working engineers, for example, generated a list of 38 skill areas recommended for development – eight of which specifically involve communication and all of which rank in the top ten of all the skills on the list:

- Management
- Technical writing
- Probability and statistics

- Public speaking
- Creative thinking
- Working with individuals
- Working in groups
- Speed reading
- Talking with people
- Business practices (e.g., marketing)
- Computer use, etc.

Additionally, university administrators, such as science and engineering school deans, also have ideas about language-related requirements for their students in science or engineering. Out of ten recommendations for engineering school reform proposed by James Plummer, Dean of Engineering at Stanford (LaPedus, 2008), three of them (recommendations 4, 7, and 8) deal specifically with competence in English:

4. Engineering schools must teach students how to <u>work well as a member of a diverse team</u> (i.e., diverse in expertise, culture, and language).

7. Engineering schools must provide <u>global knowledge and experience</u> (e.g., Stanford offers summer internships in companies worldwide).

8. Engineering schools must teach <u>better communication skills</u>.

Parallel to the requirements of ABET, Plummer recommends better training for English communication among professionals of diverse language, cultural and professional backgrounds, that not only includes all of the standard spoken and written discourse for academic and professional purposes, but also includes sufficient knowledge and experience using English at work in different global contexts which would logically require skill in cross-cultural communication.

Calls for better English language use in science and engineering – along with specifics about what kind of language that includes, as well as some rather excellent training materials to facilitate its mastery – can also be found at the websites of professional societies in science and engineering, and in their professional newsletters, magazines, and journals.

The American Society for Mechanical Engineering (ASME), for example, has a website with 48 modules of professional training, including several in the English of profession practice, such as Conducting Effective Meetings, Effective Technical Presentations, and Negotiation in addition to the writing of technical, cost, and grant proposals. One module on general communication skills includes instruction in listening, speaking, and writing, prefaced with a wonderful story (and photograph) of a real English listening comprehension problem. It seems that the command from a supervisor "Don, turn if off" was misunderstood as "Don't turn it off", resulting in a high-pressure soapsuds machine, used to wash airplanes, being left on all night,

thus filling a hanger full of aircraft with soap bubbles (See http://www.professionalpractice.asme.org/communications/commskills/index .htm).

Additional resources of information about English language use in fields of science and engineering, which can be used both for increasing one's knowledge of ESE as well as for making informed decisions about what content and training might be appropriate for a specific population of science and engineering students, are the websites and publications of two of the most internationally respected organizations devoted to research and education in scientific and technical communication: the IEEE Professional Communication Society (www.ewh.ieee.org/soc/pcs) and the Society for Technical Communication (www.stc.org).

Other organizations within the sphere of science and engineering also contain valuable insights, research, training recommendations, and training modules/materials that can help educators and other decision-makers develop appropriate English language training for a variety of different language learners with a range of different learning needs. Here is a sampling of the many that exist:

- American Society for Engineering Education (www.asee.org)
- Council of Science Editors (www.councilscienceeditors.org)
- International Federation of Engineering Education Societies (www.ifees.net)
- National Science Teachers Association (www.nsta.org)
- Association for the Education of Teachers in Science (www.aets.unr.edu)
- National Association of Biology Teachers (www.nabt.org)
- American Association of Physics Teachers (www.aapt.org)
- National Association for Research in Science Teaching (www.narst.org)
- American Association for the Advancement of Science (www.aaas.org)
- American Chemical Society (www.acs.org)
- National Academy of Sciences (www.nas.edu)
- ACM Special Interest Group on Design of Communication (www.sigdoc.org)
- Association of Teachers of Technical Writing (www.attw.org)
- International Organization for Standardization (www.iso.org)
- National Association of Science Writers (www.nasw.org)
- Institute of Scientific and Technical Communicators (www.istc.org.uk)

5   Programs and instruction

Depending on university need, funding, and educational politics, English language education for university students majoring in science or engineering may consist of separate English language courses, English instruction embedded within science and engineering content courses, online independent study modules, special workshops or seminars, or off-campus training retreats. Those who provide the training may be applied linguists specializing in English education for science and engineering; specialists with degrees in technical communication; knowledgeable scientists or engineers on the science and engineering faculty; scientists or engineers currently working in or retired from industry; specialists in linguistics, literature, or composition from an engineering schools' neighboring English Department on the same campus; or language teachers recruited from local English conversation schools. To generate better educational success, however, it is best to employ specialists who match the profile presented earlier in this chapter. All of the potential language trainers mentioned above possess useful knowledge and perspectives that enable them to contribute something of value to the design and delivery of ESE. But if language training needs are significant and success from the program is crucial, then more substantial investment in talented professionals with long term commitments to ESE as their life profession will usually generate more satisfactory results.

6   Example: Center for Language Research (CLR)

One of the programs for English language education for science and engineering that illustrates ESE most characteristically is the one I direct in Japan, which in many ways exemplifies the kind of full-fledged ESE program that most universities would benefit from establishing if they simply knew more about this option and had the resources to make it a reality. It also clarifies for ESP professionals who may be interested in shifting their focus to ESE what kind of activities this line of work typically involves.

General Description: The Center for Language Research (CLR) is a language research and training center within the School of Computer Science and Engineering at the University of Aizu in Japan, a public bilingual university of 1,200 students, offering studies in computer science, computer engineering, information systems, information technologies and project management. The Center for Language Research works in parallel with the Center for Cultural Research and Studies (CCRS) to provide language support (via the CLR) and general studies support (via the CCRS) to broaden student learning in complementary subject areas as well as to enable students

to succeed in a bilingual campus environment, where the vast majority of students, faculty, and staff are nonnative speakers of English.

CLR Mission: The mission of the Center for Language Research is to contribute to the development of professionals in computer science, computer engineering, and related fields through the research and teaching of successful language use in academic and workplace contexts.

CLR Faculty: The CLR is staffed with eleven tenured and tenure-track professors at Assistant Professor, Associate Professor, and full Professor levels, with one of the full Professors serving as Director. All eleven faculty members hold PhD degrees issued by reputable international universities, and are actively engaged in teaching and research, as well as university, public, and professional service.

CLR Faculty Expertise: CLR faculty members possess varying levels of expertise in the following areas, which they employ in both their teaching and research to support ESE in undergraduate and graduate school classes, as well as in workshops, seminars and consultation for science, engineering, and business professionals in the workplace:
- English for specific purposes (academic and professional purposes)
- Teaching English as a foreign language (TEFL)
- Teacher training and professional development
- Second language acquisition
- Applied and theoretical linguistics
- Pronunciation/Articulatory and acoustic phonetics
- Educational technology/Instructional design
- Cognitive science/Semantics/Expertise and expert performance
- Language testing and assessment
- Corpus linguistics/Vocabulary acquisition
- Sociocultural theory
- Composition and rhetoric
- Research methods/Statistics
- Usability design and testing
- Technical communication/Information design
- Writing for publication/Oral presentation
- Business documents, communication, and negotiation
- Asian languages and culture

The rationale for recruiting PhDs and offering them tenure-track positions with employment up to age 65 is that ESE is not something that anyone can pick up easily and obtain good results from through part-time or short-term

efforts. Practitioners need an attractive, stimulating environment for long term research, experimentation, and professional development in ESE before they are able to possess the right balance of knowledge, skills, and perspectives that are required to produce significant results. They also need to have research interests (and capacities) in areas that complement ESE and then target their research toward meeting the genuine academic and professional learning needs of their students and clients. Hiring practices during the early years of CLR history proved all too clearly that faculty with high interest but low capacity in ESE, as well as faculty with high capacity but low interest in ESE, both failed to be good fits for ESE work and thus were not able to take students very far in their development of technical discourse and documentation.

CLR Research: In the Center for Language Research, there are currently two research laboratories: the Phonetics Laboratory and the eLearning and Usability Laboratory.

The **Phonetics Lab** (http://clrlab1.u-aizu.ac.jp/) researches speech production and pronunciation, with some research projects focusing on articulatory phonetics and others on acoustic phonetics. For studies on articulatory phonetics, the laboratory uses an ultrasound machine to display real-time images of the tongue moving during speech, and it also uses a Vicon motion capture system for tracking the lips, jaw, eyebrows, and other parts that typically move during speech. For studies on acoustic phonetics, the laboratory mainly uses open-source acoustic analysis software, such as Praat. Many of the research projects, however, involve an analysis of both articulation and acoustics.

The **eLearning and Usability Lab** (http://droyjapan.googlepages.com/home) studies elearning and courseware management systems, such as Moodle, to determine their appropriateness in different contexts and their usability in terms of user experience. Usability research related to graphics and information design is also conducted.

Other faculty members conduct research in their offices, in their classrooms, or wherever else is appropriate in order to generate reliable information that can guide them in their decision-making about the suitability of course content, teaching methods, or supporting technologies. In fact, every classroom is considered a site for experimentation in the CLR. Classrooms and English courses are not only for English language education but equally for the testing of new ideas and technologies to discover if they really work. Needs analysis is central to ESE (as well as every other branch of ESP), and thus it is essential for ESE specialists to continually research target academic

and workplace environments; the language, thinking, and behavior that are required for success in these environments; and assess the teaching and technologies employed in ESE training to see if they are actually meeting the target educational goals. CLR findings generated from formal and informal research efforts are applied to improve CLR instruction and frequently published in international journals, conference proceedings, or scholarly books in order to support other professionals who are also working in ESE. It is additionally the aim of the Center to publish information that can support working scientists, engineers, and business professionals, who use English in science and engineering and would like to improve their professional performance. A few illustrative titles of CLR publications in ESE demonstrate the kind of research that an ESE center may need to conduct in order to provide it with the specific information it needs to develop the most suitable educational program:

- Survey of Workplace English Needs among Computer Science Graduates
- Using Concept Maps for Information Conceptualization and Schematization in Technical Reading Courses
- IEEE Best Papers in Science and Engineering
- Structured Authoring of Technical Documents through Systematic Collaboration in Using Open-Source Technologies
- The Language and Rhetoric of Bibliographic Citation in the Field of Computing
- Writing for Publication: An Undergraduate Course for Students in Computing
- Twenty Problems Frequently Found in English Research Papers Authored by Japanese Researchers
- Models of Professional Writing Practices within the Field of Computer Science
- Using Praat and Moodle for Teaching Segmental and Suprasegmental Pronunciation

CLR Curriculum: Undergraduates at the University of Aizu take eight required courses, along with two or more electives which change annually to adjust to current needs and interests. Courses are designed to train students in the English language and complementary professional thinking and lifestyle that will enable them to succeed in their studies at a bilingual university, as well as succeed in part-time jobs, internships, and after-graduation employment where English will also be used if the students are genuinely proficient enough to manage the technical and business English responsibilities that companies reserve for their best employees with the greatest professional potential.

The required courses in listening and reading focus on developing English reception skills. Required courses in speaking and writing focus on developing English production skills. The electives focus on specialized knowledge and applications, requiring the use of both English reception and production skills. And the capstone course, *Thesis Writing and Presentation*, parallels senior research in the research labs, which must culminate in a senior thesis written in English and PowerPoint slide presentation delivered in English before a panel of judges and an audience of faculty and students. The thesis must be formatted in LaTeX and follow a University of Aizu template similar to that used for journal articles published by the Computer Society of the IEEE (Institute of Electrical and Electronics Engineers, Inc.), the world's largest professional organization for scientists, engineers, managers, technical communicators, and educators who work in fields related to electrical products and services, or the education and business fields that support them.

In the graduate school, which is taught almost entirely in English, language instruction blends to a much greater degree with content instruction than it does at the undergraduate level, and thus some language-focused courses are taught by ESE faculty in the CLR and others are taught by faculty or experts from the corporate world who specialize in English-medium computer science, engineering, or project/corporate management. Lists of current graduate and undegraduate courses can be found in the Appendix.

At present, CLR faculty are embedding more of their ESE instruction in realistic contexts and professional development activities, since over 15 years of experience has revealed that students who learn the English and culture of science and engineering from the very first day of freshman English class achieve higher proficiency in all of their English skills by graduation than those who spend considerable time on general English instruction and review in the early months of class before advancing on to instruction that more typically characterizes the scientific/technical community. In addition, students who learn the English of science and engineering, along with how to use that language in the context of a mature, professional lifestyle, achieve the greatest success in English and obtain some of the most attractive, high-status, high-salaried jobs after graduation. Experience has shown us that students who are treated as EFL students and given EFL-like games, pairwork activities, and grammar drills tend to think and act as EFL students. On the other hand, students who are treated as budding adult scientists or engineers and given lectures, projects, and assignments that typically interest adults actually begin to think, act, and speak as mature professionals even while they are still undergraduates. Consequently, the CLR continues to improve its training by experimenting with more mature, innovative content that can transform ordinary Japanese high school graduates into mature

English-proficient professionals within the short span of four years – an immensely difficult but delightfully challenging task.

Additional modes of training
Beyond classroom-based English language training provided in the courses listed above, the Center also experiments with additional ESE learning opportunities in other environments that seem to generate good educational results.

Extra-Curricular Projects: One of the unique features of the University of Aizu is that any professor can create a credit-earning extra-curricular project to introduce students from all grade levels to some aspect of professional research and development or current professional topics and issues. CLR faculty sometimes use this option to offer students the opportunity to read and discuss mature topics of interest (e.g., the thoughts and writings of great scholars) or the opportunity to join professors in specific research projects resulting in an international publication and conference presentation (e.g., projects related to language acquisition, technology, or professional ESE discourse).

University Clubs*:* All universities in Japan allow students and/or faculty to create university clubs for academic, social, or athletic purposes. CLR faculty members have taken advantage of this culture by creating clubs that allow students to develop their English language skills in rich social environments. Some clubs have focused on playing English-based computer games and competing in game competitions, some have focused on playing sports with strong international student/faculty blends which require heavy use of English, and others have focused on more academic pursuits such as intelligent/philosophical discussions in English or English test preparation support for students who aim at taking the TOEIC or other standardized English tests that may be required for admission to a company or foreign graduate school.

Special Seminars: Another successful mode for ESE training has been special English-only seminars that focus on specific topics or issues. One recent seminar, for example, brought together twelve highly proficient English speaking undergraduates from the University of Aizu, the University of Tokyo, and Waseda University for an English-only weekend titled *Seminar on International Negotiation and Group Decision-Making for Engineering Students* at a pension (bed and breakfast) in a nearby mountain resort district. Students heard lectures on negotiation and group decision-making in the context of engineering projects, and then worked in groups to create their own PowerPoint presentations on different aspects of the topic

for feedback and discussion from the other project teams. Taking students off campus and out of the city to enjoy more concentrated time with others to study and discuss significant topics that are highly relevant to one's students' professional development works very well to keep motivation high and English developing rapidly in areas that match their specific academic and professional needs.

Others: Other modes of training that provide students with ESE in rich educational contexts include internships at international/English-medium companies; short and long term study abroad programs at partner schools of science and engineering; volunteer work to meet the needs of international students or residents in the prefecture; international online projects with students in other countries; or participation in local, national, or international conferences that are run in English.

Samples of ESE content
Instructional content in ESE is no different from that in other domains of ESP in terms of selection and development. Like that in other areas, ESE is designed to meet a set of specific learner needs that have been identified through ongoing inquiry. Courses in the CLR include instruction in the following content, which CLR research has identified as relevant to University of Aizu student needs.

*Spoken English Tasks***:** Make appointments; Ask questions; Participate in discussions; Share ideas, advice, perspectives; Evaluate, critique, correct, caution; Negotiate decisions/agreements; Present research and engage in Q&A; Guide, teach, assist; Communicate with clients; Communicate on project teams; Communicate via technology (e.g., Skype); etc.

*Written English Texts***:** Webpages; PowerPoint slides; Proposals and position papers; Descriptions and definitions; Specifications and documentation; Reports (feasibility, progress, final); Instructions, procedures, directions; Business letters and email; Résumés, CVs, cover letters; User reviews (books, software, etc.); Articles for publication (research, etc.); Applications (membership, grant, etc.).

Professional Vocabulary: Abort, access, adapt, adjust, align, allocate, analyze, annotate, append, apply, approve, archive, assemble, assign, attach, augment, automate, etc.

Professional Collocations: Write a report, write an email (message), write software, write a (computer) program, write (source) code, write (computer, requirements, design, technical, user) documentation, write an algorithm,

write a review, write a (research) paper, write script, write applications, write applets, write plug-ins (or plugins), write queries, etc.

Specific Language Required for Individual Courses (e.g., the **Writing for Publication** course): Sentence, paragraph, text, list, grammatical parallelism, table, figure, citation, title, abstract, IMRD, references, style manual, acknowledgments, appendix, periodical, newsletter, trade magazine, journal, article, user review, tutorial, title page, cover letter, submission, copyright, etc.

Grammar Instruction: Generic and discipline-specific sentence patterns (e.g., sentence grammar of definitions), grammatical parallelism, subject-verb agreement, plural/singular distinctions, count/noncount distinctions, nominalization, lessons on common errors in student writing (e.g., *Almost univercity job in science and engineering need doctorate.* → *Most university jobs in science and engineering require doctorates*).

Professional Development Components: Time management; Study skill development; Information acquisition and management; Relationship building and professional networking; Wise decision-making in regards to part-time job selection, free time activities, reading material, and friendships; Career selection, planning, and development; etc.

Samples of ESE learning activities
Create a Company: For this project, students created private consultancies and engaged in real consultation, which not only gave them a wealth of experience in multiple aspects of English and management, but it also expanded their résumés with some impressive accomplishments as undergraduates. Project activities included creating a company name and logo, a company mission statement, a company webpage and stationery, and various emails, proposals, progress reports and final reports in the context of real consultation via English with real clients.

Create a Learning Log: For this project, students kept a daily record of the things they learned in their university classes, learned from their daily reading, learned through personal experience, or learned through conversation with others. Everything was recorded in English, with specific words given by the professor that were required for use in the report each day to encourage students to use different grammatical constructions and phrase their thoughts in different ways. Here is a (corrected) example:

> FURTHERMORE: Today, I made progress in learning Java, a programming language commonly used for cellphone applications. Furthermore, I made

> progress in understanding my professor's Russian-accented English. Progress in these two things made me very happy because I want to become a good programmer, and I want to be more international.

In class, students exchanged learning logs, read them, underlined confusing content or poor English in red ink, and then advised each other on how to communicate their messages more clearly and attractively. The professor, of course, provided helpful feedback and instruction as well.

Plans for further program improvement
Although this program has made significant progress since its humble beginnings in 1993 when it was established along with the University of Aizu, there are many more improvements that need to be made to make the Center even more successful in its English education for students and working professionals in science and engineering. Short term goals for further improvement include better coordination between individual English courses, better coordination with university content courses, additional studies of professional English use in newly evolving workplace contexts, greater innovation in instructional methods and technologies, and better use of assessment tools and techniques to generate the kind of data needed to make quality educational and administrative decisions. Long term goals include the eventual addition of a major or minor in ESE for students who want to focus exclusively on the production and management of corporate knowledge and communication in global work environments rather than pursue computer science or engineering as their primary career path. Of course, further professional development for all of us in the CLR toward the goal of becoming more like the ideal ESE educator profiled earlier in this chapter is naturally the key to improvement in every project we attempt, for teaching or research rooted in anything but mature professional interests, motives and methodologies tends to generate mere appearances of success rather than actual results that can benefit everyone.

7   Conclusion

English education in support of students and professionals in science and engineering is a serious endeavor saddled with high expectations for successful results. To date, many language specialists have shied away from ESE because they lack sufficient understanding of the work or enough interest in science and engineering to sustain the long term commitment that is required to develop expertise. But ESE does not need to be difficult. The central aim of science is to understand the world around us, and the central aim of engineering is to improve the quality of life in that world through technology. Science is based on curiosity and systematic inquiry, and

engineering is based on curiosity and creative problem-solving. No one is born a scientist or engineer, but rather people grow into these roles through meaningful exposure to useful input and experience. Language specialists need not shy away from ESE because they assume that they need to know more about effective language use in science and engineering than all of the scientists and engineers they will ever meet. No, language specialists who select ESE as their profession simply need to share the same curiosity for knowing about the world and the same drive for finding effective solutions to problems they encounter. In fact, ESE is most successful when practitioners simply bring out the scientist and engineer within themselves and work in unison with their science/engineering peers to discover how English can be understood and employed to its greatest advantage for all scientific and engineering endeavors.

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Appendix

Current courses in the CLR English program

First Year (First Semester) – Required English
RE1 Listening & Reading 1 (40-50 students per section)
RE2 Speaking & Writing 1 (25-35 students per section)

First Year (Second Semester) – Required English
RE3 Listening & Reading 2 (40-50 students per section)
RE4 Speaking & Writing 2 (25-35 students per section)

Second Year (First Semester) – Required English
RE5 Listening & Reading 3 (40-50 students per section)
RE6 Speaking & Writing 3 (25-35 students per section)

Second Year (Second Semester) – Required English
RE7 Listening & Reading 4 (40-50 students per section)

Third Year (First and Second Semester) – Elective English
(Students choose at least two)
Advanced English Acquisition Courses
EE1 Discourse Analysis for Computer Science
EE2 Pronunciation: Comparing English and Japanese Sound Systems
EE3 Vocabulary Development
EE4 Preparation for the TOEIC
EE5 Language, Space, and Time
EE6 Introduction to Second Language Acquisition
EE7 Introduction to Syntax
Advanced Professional English Applications Courses
EE8 Reporting Statistical Research in English
EE9 Resume Design and Development
EE10 Writing for Professional Publication
EE11 Document Design and Usability Testing
EE12 Strategic Interaction for Professional Communication
EE13 Advanced Technical Communication
EE14 Innovators in Science and Computing

Advanced English and Technology Courses
EE15 History of Language-Related Technologies
EE16 Pronunciation: Acoustic Analysis Using Software
EE17 Design and Research of Games for Language Learning
EE18 Corpus Linguistics
EE19 Language Use on the Internet
EE20 Cyberethics for Information Technology

Fourth Year (First Semester) – no English classes.
Students are busy searching for jobs or graduate schools.

Fourth Year (Second Semester) – Required English
RE8 Thesis Writing and Presentation (15-25 students per section)

Graduate School Courses – Requirements vary
according to field of study
G1 Language Analysis
G2 Computer-Assisted Language Learning
G3 International Negotiation
G4 Documentation for Technical Procedures
G5 Technical Writing in Software Engineering
G6 The Design of Computer-Based Instruction
G7 Human Aspects of Software Engineering
G8 Fundamentals and Practices of Project Management

Note: These course lists are upgraded each year to meet new needs and interests as well as to incorporate new findings from CLR faculty research.

Notes on contributors

María Ángeles Alcaraz Ariza is a tenured lecturer at the University of Alicante (Spain) where she teaches English for Medicine and Tourism. Her main research interest is the analysis of medical discourse written in Spanish, French and English, both from a synchronic and a diachronic perspective. She has published extensively in *Fachsprache, English for Specific Purposes, Lebende Sprachen, Ibérica, International Journal of Applied Linguistics* and *Journal of Pragmatics*.

Inger Askehave, Ph.D. is Professor and Head of the Department of Language and Culture at Aalborg University, Denmark. Her primary research interests include expert-lay communication, PR & business communication, and organisational communication. She has published several articles on genre theory, language and discourse, translation, business communication and expert-lay communication in journals such as *Hermes, Applied Linguistics, Text, Perspectives, Document Design, Discourse Studies* and *Discourse & Society*.

Ana Bocanegra-Valle, PhD in English Philology, is a Senior Lecturer at the University of Cádiz (Spain) where she teaches courses on English for the shipping industry, for the shipping business and for shipping law, as well as English for marine engineers. Her main areas of research interest include the pedagogy and discourse of Maritime English, ESP teaching/learning-related issues, and the autonomy and interlanguage of ESP/EFL learners. She is at present Editor-in-Chief of the international LSP journal *Ibérica* (ISSN 1139-7241).

Ruth Breeze has MAs in Modern Languages (University of Cambridge), and Education (Open University). In 2006, she completed a Ph.D. on Second Language Writing at the University of Navarra, Spain, where she is Director of the Institute of Modern Languages. She is also editor of the *IATEFL ESP Newsletter*.

Ulla M. Connor, Ph.D., is the Barbara E. and Karl R. Zimmer Chair in Intercultural Communication, Professor of English, and Director of the Indiana Center for Intercultural Communication, at Indiana University Purdue University Indianapolis (IUPUI). She has authored and co-authored ten books and over 100 articles and book chapters. Her pioneering book, *Contrastive Rhetoric* (1996, Cambridge University Press), remains a standard for research in the field. She has been an invited plenary speaker over 100 times at conferences around the world. One of her current research interests is applied linguistics in the field of health communication.

Christine B. Feak, PhD, is a Lecturer at the English Language Institute, the University of Michigan in Ann Arbor. She is the co-author of several articles and several textbooks, three of which were published with the University of Michigan Press in 2009: *Academic Interactions* (with S. Reinhart and T. Rohlck), *Telling a Research Story: Writing a Literature Review* (with J.M. Swales), and *Abstracts and the Writing of Abstracts* (with J.M. Swales).

Inmaculada Fortanet-Gómez is a PhD doctor in English Philology by the Universitat de València since 1993. She is a senior lecturer at Universitat Jaume I, where she teaches academic and business English as well as English Language in the degree of English Philology. She also participates in teacher training with courses on academic writing, conference presentations, and teaching in English. With regard to her research interests, they are focused on professional and academic English and Content and Language Integrated Learning (CLIL) in university settings. She has published chapters and co-edited several international volumes and has published in journals such as *English for Specific Purposes*, *English for Academic Purposes* and *Discourse Studies*.

Pilar Garcés-Conejos Blitvich, PhD University of Valencia, is an Associate Professor of English at the University of North Carolina at Charlotte where she teaches linguistics. Previously, she held positions at the University of Valencia and the University of Seville, where she founded the research group EPICS. Her fields of expertise are pragmatics and discourse analysis. Recent publications include papers in *Intercultural Pragmatics, International Review of Pragmatics* and *International Review of Applied linguistics* and co-edited collections published by Cambridge Scholar Publishing and Antares. She is the co-organizer of the NAWPRA initiative (North American Workshop on Pragmatics) and the co-editor in chief of the series *Advances in Pragmatics and Discourse Analysis* (Cambridge Scholar Publishing).

Julio Gimenez, PhD, is a lecturer in English language and academic literacies and Director of Research at the Centre for English Language Education, The University of Nottingham in the UK. His main research interests are in academic literacies, workplace communication and discourse analysis. He has published his work in the *Journal of English for Academic Purposes*, the *English for Specific Purposes* journal, and the *International Review of Applied Linguistics* (IRAL), among others. He has co-authored books on reading and writing across the disciplines and he is the author of *Writing for Nursing and Midwifery Students* (2007, Palgrave).

Elizabeth M. Goering, PhD, is an Associate Professor in the Department of Communication Studies at Indiana University Purdue University Indianapolis. She teaches courses in intercultural, organizational, and small group communication at undergraduate and postgraduate levels. The primary focus of her research is the intersection of culture and communication processes in a variety of contexts.

Robert Mac Neill, MBA, Harvard University, is CEO of CoMac Analytics, Inc., a health service company, and Board Member of the Indiana Center for Intercultural Communication at Indiana University Purdue University Indianapolis. With more than 30 years of experience in the pharmaceutical industry, he has been involved in the study of patient adherence for several years.

Marianne S. Matthias, PhD, is a Research Scientist with the Roudebush Veterans Affairs Medical Center and Assistant Adjunct Professor with the Department of Communication Studies at Indiana University-Purdue University, Indianapolis. Dr. Matthias' research concerns patient provider communication in chronic conditions.

Dushyanthi Mendis, PhD, is a Senior Lecturer at the Department of English, University of Colombo (Sri Lanka). She has a Phd from the University of Michigan, Ann Arbor, and her research interests are related to varieties of English, discourse analysis, and corpus linguistics. She is currently involved in the compilation of the Sri Lankan component of the International Corpus of English (ICE-SL). She has published in the *Sri Lanka Journal of the Humanities, TESOL Quarterly*, and most recently, *Anglistik – International Journal of English Studies*.

Ana I. Moreno, PhD, is a senior lecturer and researcher at the University of León (Spain). She is the Principal Investigator of a Spanish National Research Project on *Rhetorical Strategies to Publish in International Scientific Journals from a Spanish-English Intercultural Perspective.* Her main research interests are genre and discourse analysis, intercultural communication and EAP. Her work has appeared in *English for Specific Purposes*, *The Journal of English for Academic Purposes* and *Text & Talk,* and she has collaborated in international collective volumes on *Applied Linguistics, Intercultural Rhetoric, Review Genres* and *Scholarly Criticism,* published by Multilingual Matters, John Benjamins, Palgrave-MacMillan and Peter Lang.

Thomas Orr, PhD, is a Professor at the University of Aizu and Director of the university's Center for Language Research, where he studies the professional English discourse of science and engineering with the aim of developing effective educational programs and materials for university students and working professionals. He has taught English for roughly 30 years in the United States and Japan; held administrative positions in IEEE, PERC, TESOL, and JACET; and had his work published by IEEE, Wiley-Interscience, Halldin, Rodopi, Blackwell, Wiley-Blackwell, TESOL, and others. More specific information can be found at http://www.u-aizu.ac.jp/~t-orr/resume.html.

Maryelis Pabón Berbesí holds a BA in English Language and Literature and an MA in Linguistics from the University of Los Andes, Mérida, Venezuela. She has conducted research in the area of Spanish and English and is currently teaching English at the University of Los Andes.

Juan C. Palmer-Silveira lectures and carries out research at Universitat Jaume I, holding a PhD in Linguistics. He is currently working in English for Business Communication (EBC) and ESP. He is the author of several books and articles published internationally, having co-edited *Genre Studies in English for Academic Purposes* (1998, UJI) and *Intercultural and International Business Communication* (2006, Peter Lang), among others. His main research interests are on the fields of academic and professional English, as well as on Business Communication. He is also a funding member of the GRAPE research group.

Carmen Pérez-Llantada is a Senior Lecturer of English at the University of Zaragoza, Spain. Her main research interests include genre-based, rhetorical and intercultural analyses of academic speech/writing. As part of a national research project she is currently engaged in ethnographic research to enquire into culture-specific rhetorical styles of multilingual academic writers. With A. Mauranen and J.M. Swales, she is co-author of the article "Academic Englishes: A Standardised Knowledge?", which will appear in A. Kirkpatrick (ed), *The Routledge Handbook of World Englishes* (2010, Routledge).

Miguel F. Ruiz-Garrido, PhD, member of the research group GRAPE (www.grape.uji.es), is a Senior Lecturer at Universitat Jaume I (Castelló, Spain). He teaches English language and English for Business Communication different levels. His main research fields are English for professional and academic purposes, as well as Content and Language Integrating Learning (CLIL). Within these fields he has co-authored *Hablar Inglés en la Universidad: Docencia e Investigación* (2008, Septem Ediciones), and co-edited *Intercultural and International Business Communication:*

Theory, Research and Teaching (2006, Peter Lang) and *Hacia una Educación Plurinlingüe: Experiencias Docentes AICLE* (2009, UJI). He is currently co-editing the online international journal *Language Value* (ISSN 1989-7103).

Françoise Salager-Meyer was educated at the University of Lyons, France and the University of Texas at Austin. She is currently teaching ESP and Russian at the University of the Andes (Mérida, Venezuela). She is the author of numerous publications on written medical discourse. Both in 1994 and in 2004, she was awarded the Horowitz Prize for her works on the pragmatics of written scholarly communication.

Philip Shaw, PhD, has taught English and linguistics in Thailand, Germany, Britain and Denmark. He is currently a professor in the English Department of Stockholm University. He teaches World Englishes, phonetics, and academic writing at undergraduate and postgraduate levels. His main research area is English in and after the university, at present with a focus on reading skills and vocabulary acquisition. He is co-author of *World Englishes: An Introduction* (2003, Arnold) and co-editor of *The Map and the Landscape* (2006, Peter Lang).

John M. Swales is Professor Emeritus of Linguistics at the University of Michigan, where he was also Director of the English Language Institute from 1985 to 2001. Recent book-length publications are *Abstracts and the Writing of Abstracts* and *Telling a Research Story: Writing a Literature Review* (both co-authored with Christine B. Feak), and *Incidents in an Educational Life: A Memoir (of sorts)*, all published in 2009 by the University of Michigan Press.

Karen K. Zethsen, PhD, is a professor and Head of the Research Group for Translation and Interpreting at the Aarhus School of Business, University of Aarhus (Denmark). Her primary research interests include translation studies, expert-lay communication and lexical semantics. She has published numerous articles within her fields of interest in journals such as *Target, the Translator, TTR, Meta, Document Design, Text & Talk* and the *Journal of Pragmatics*.