RESEARCH ARTICLE INTRODUCTIONS:
VARIATIONS ACROSS DISCIPLINES AND CULTURES

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The purpose of this study is to look at introductions across disciplines and cultures and to investigate whether differences across academic disciplines are more noticeable than cross-cultural differences. The material of the present study consists of a sample of 60 introductions, i.e. 20 each from Medicine, Economics and Linguistics, 30 in English and 30 in Lithuanian. The model of analysis was developed from Swales' CARS model (Swales 1990). The findings reveal certain preferences of textual patterns by the three disciplines common to both English and Lithuanian academic traditions as well as some cultural differences.

1. Introduction

Over the last two decades, a number of authors have concerned themselves with the overall organization of various parts of the research article (RA), such as the introduction (Swales 1990; Swales&Najjar 1987), the results section (Yang&Allison 2003), the discussion section (Holmes 2001), the abstract (Bhatia 1993), and the acknowledgements (Giannoni 2002). Various lexico-grammatical peculiarities of this genre have also been investigated, ranging from the use of voice (Tarone et al. 1981) to citation practices (Hyland 1999). Beyond the textual structure, research has focused on the social construction (Berkenkotter&Huckin 1995) and historical development of the RA (Valle 1999).

One aspect of the RA that has received a lot of attention is the introduction. Introductions are important because they play a key role in showing the relevance of the research about to be reported to previous work in the field (Bhatia 1993, 82) and setting up the reader's expectations. Since Swales' (1990) seminal work on the move structure of RA introductions, there has been considerable interest in applying the CARS (Create-A-Research-Space) model in examining texts written in different languages and cultures (e.g., Czech, Polish) (Čmejrkova 1996, Golebiowski 1999).

Despite the growing interest in disciplinary differences in academic writing, less research has been carried on the variations in RA introductions across disciplines. Nwogu's (1997) study of medical RAs and Posteguillo's (1999) study of the schematic structure of computer science RAs emphasize the need for further research on disciplinary variation. However, there have been only a few studies focusing on the RA introduction. Swales&Najjar (1987) investigated the presence of principal findings in Move 3 of RAs. Lindeberg (1994) looked at rhetorical conventions and the expression of knowledge claims in the introductions of scholarly articles in three disciplines. Samraj (2002) discussed the promotional function of introductions in conservation biology and wildlife behaviour.

In this paper I report on an analysis of parallel RA introductions in English and Lithuanian taken from the three disciplines of medicine, economics, and linguistics. By comparing texts in two different languages that belong to the same genre but different disciplines I attempted to distinguish textual characteristics that are due to disciplinary norms and cultural differences from those that are features of the genre to which the texts belong.

2. Methods and materials

Swales (1990) postulated a 3-move structure for RA introductions, known as CARS model. The model consists of three moves each with several steps; each one of these steps is sometimes concurrent, sometimes optional. According to this model, writers often begin with a move, *Establishing a territory*, which deals with the field in which the research topic is located and its importance. With the help of the second move, *Establishing a niche*, they create a niche for themselves within the indicated territory by querying previous research, showing an area it has not covered or indicating a way in which it could be extended. Finally, in the third move, *Occupying the niche*, authors state the purpose of research or outline the work carried out. Tables 1 and 2 below show the results obtained analysing each of the 60 RA introductions following the CARS model.

The corpus of the study consists of 60 RA introductions (approximately 17,400 words). Twenty RA introductions each from the three disciplines of medicine, economics and linguistics, ten in English and ten in Lithuanian respectively, published in 1998-2000 were randomly selected from journals deemed by specialists to be prestigious in the fields. Thus, RA introductions have been taken from the following professional journals:

> - medical RA introductions: *Kidney International*, 2000, Vol.57; *European Respiratory Journal*, 2000, Vol.15; *Medicina*, 2000, Vol.36;
> - economic RA introductions: *Oxford Review of Economic Policy*, 1999, Vol.15; *Ekonomika: Mokslo darbai*, 1999, No.47-49;
> - linguistic RA introductions: *Applied Linguistics*, 1998, 1999, 2000; *Kalbotyra*, 1998, 1999, 2000; *Darbai ir dienos*, 1997, 1999.

3. Interdisciplinary differences

The CARS model (Swales 1990, 141) was successfully applied to all 60 RA introductions in both languages. The moves were identified by a combination of linguistic evidence and text comprehension. The findings are presented in Tables 1 and 2.

According to Swales, Move 1 Step 1 (*claiming centrality*) "appeals to the discourse community whereby members are asked to accept that the research about to be reported is part of a lively, significant or well-established research area" (Swales 1990, 144). In his corpus of 158 introductions, Swales (1990:144) reports an average use of Step 1 of slightly less than 50%. The percentage of Step 1 in my corpus across the three disciplines in English amounted to 80% (see Table 1). This might indicate "an increasing use of promotional strategies in genres which are traditionally considered non-promotional in intent" (Bhatia 1997, 190). The authors usually claimed importance or interest, referred to the central character of the issue or active research in the area, e.g.:

(1)   ... *is an important contribution to the diagnosis of... is widely used in routine...testing* (MRAIE3)

(2)   ...*has stressed the key role* ... (ERAIE2)

(3)   *Many researchers and theoreticians recognize the need to*... (LRAIE4)

Table 1. **The CARS model in RA introductions in medicine, economics and linguistics in English**

Moves	No of occurrences		
	Medicine	Economics	Linguistics
Move 1. *Establishing a territory*			
Step 1. Claiming centrality	7 (70%)	9 (90%)	8 (80%)
Step 2. Making topic generalisation(s)	10 (100%)	10 (100%)	9 (90%)
Step 3. Reviewing items of previous research	10 (100%)	4 (40%)	8 (80%)
Move 2. *Establishing a niche*			
Step 1A. Counter-claiming	0 (0%)	0 (0%)	1 (10%)
Step 1B. Indicating a gap	8 (80%)	1 (10%)	4 (40%)
Step 1C. Question raising	1 (10%)	9 (90%)	1 (10%)
Step 1 D. Continuing a tradition	3 (30%)	0 (0%)	1 (10%)
Move 3. *Occupying the niche*			
Step 1A. Outlining purpose	6 (60%)	9 (90%)	8 (80%)
Step 1B. Announcing present research	6 (60%)	3 (30%)	2 (20%)
Step 2. Announcing principal findings	2 (20%)	1 (10%)	2 (20%)
Step 3. Indicating RA structure	0 (0%)	5 (50%)	5 (50%)

Step 2, within the same Move 1 (*making topic generalisations*), was used by authors of English RA introductions in medicine, economics and linguistics in almost 100% of cases (see Table 1).

Step 3 (*reviewing items of previous research*) seemed to be obligatory in medical (100%) and linguistic (80%) RA introductions. Only 40% of economic RA introductions had references to previous research in their text. Some introductions briefly summarised the main trend of previous research and indicated that the review of previous research would follow as a separate chapter.

(4) *A key strand of the following literature, which is reviewed in the next section, mainly tests the hypothesis that real interest rates at the national level are determined by public debt at the national level.* (ERAIE3)

In other cases previous research was referred to in footnotes, sometimes in a rather unusual way. For example:

(5) *I apologize to all those authors in my sub-discipline whose works could have been cited, but were not, because of space limitations.* (ERAIE7).

Step 1A in Move 2 (*counter-claiming*) seemed to be systematically avoided by authors in all three disciplines. Counter-claiming was not regarded as a proper way to introduce the problem which motivates the research in question. Instead, Step 1B (*indicating a gap*), appeared as a preferred means of presenting the need for new research in medicine (80%) and less so in linguistics (40%), while Step 1C (*question-raising*) prevailed in economics (90%), and Step 1D (*continuing a tradition*) was sometimes used in medical RA introductions (30%). The use of *however* was by far the most common way of starting this move:

(6) *However, the measuring conditions are radically different in the clinical settings...* (MRAIE 3)

(7) *However, these studies compared KmgCit with potassium citrate or magnesium citrate, but not with...* (MRAIE5)

It is interesting to note the trend in medical RA introductions to predict a gap in Move 2 by making a weak knowledge claim which indicated limitations of previous research:

(8) *The mechanisms responsible for turbular damage ... are still not fully understood.* (MRAIE2)

(9) *Little is known about nonparticipants of asthma schools in Europe.* (MRAIE8)

Economic RA introductions (90%) displayed a tendency of establishing a niche by raising from two to five questions (Step 1C), e.g.:

(10) *In spite of the central role the interest rate plays, there are several long-standing puzzles. First, how can we reconcile observed movements in...? Why is there a seeming constancy over...? How can we explain the cyclical movement of...? Second, why is it that empirical studies often seem to show that...? Third, how do we explain the relationship among...?* (ERAIE2)

Step 1A (*outlining purpose*) in Move 3 was used in 90% of economic and 80% of linguistic RA introductions, e.g.:

(11) *In this paper we seek to gauge the effect of high real interest rates...* (ERAIE4)

(12) *The main objective of this paper is, therefore, to provide an overall description of...* (LRAIE2)

Medical RA introductions tended to use either Step1A (60%) or Step 1B (*announcing present research*) (60%):

(13) *The objective of the present study was to test whether...* (MRAIE3)

(14) *In this study we describe a Japanese CNS family...* (MRAIE6)

50% of economic and linguistic RA introductions used Step 3 (*indicating RA structure*), while none of the medical RA introductions did.

(15) *In Sections II and III, we analyse the empirical evidence on... Section IV is devoted to a discussion of the relationship between... In Section V we discuss more general approaches to... A final section concludes.* (ERAIE4)

(16) *First, it briefly clarifies what is intended by the term metacognitive knowledge. Next, it reviews selected theoretical and research literature on... This is followed by a discussion of how... The conclusion considers the practical implications of...* (LRAIE5)

Table 2. **The CARS model in RA introductions in medicine, economics and linguistics in Lithuanian**

Moves	No of occurrences		
	Medicine	Economics	Linguistics
Move 1. *Establishing a territory*			
Step 1. Claiming centrality	9 (90%)	7 (70%)	5 (50%)
Step 2. Making topic generalisation(s)	10 (100%)	9 (90%)	7 (70%)
Step 3. Reviewing items of previous research	9 (90%)	2 (20%)	7 (70%)
Move 2. *Establishing a niche*			
Step 1A. Counter-claiming	0 (0%)	0 (0%)	0 (0%)
Step 1B. Indicating a gap	5 (50%)	5 (50%)	3 (30%)
Step 1C. Question raising	0 (0%)	1 (10%)	3 (30%)
Step 1 D. Continuing a tradition	1 (10%)	0 (0%)	0 (0%)
Move 3. *Occupying the niche*			
Step 1A. Outlining purpose	6 (60%)	10 (100%)	9 (90%)
Step 1B. Announcing present research	2 (20%)	5 (50%)	2 (20%)
Step 2. Announcing principal findings	0 (0%)	1 (10%)	0 (0%)
Step 3. Indicating RA structure	0 (0%)	1 (10%)	0 (0%)

The percentage of Step 1 (*claiming centrality*) across the three disciplines in Lithuanian amounted to 70%. Centrality claims in Lithuanian RA introductions were sometimes weaker than in English introductions, for example:

(17) *Geometrinių iliuzijų kilmė, nepaisant sukauptos gausios eksperimentinių tyrimų ir teorinių samprotavimų medžiagos, tebėra mokslinių interesų objektas.* (MRAIL7)
('The origin of geometrical illusions, despite the rich material accumulated by experimental research and theoretical reasoning, **still remains an object of research interests**.')

(18) *Pastarąjį dešimtmetį lietuvių kalboje plintančios svetimybės – jau seniai nebe nauja, tačiau vis dar aktuali svarstymų ir diskusijų tema.* (LRAIL9)
('Loan-words entering the Lithuanian language during the last decade **are no longer a new but still a pressing** issue for consideration and discussion'.)

Step 2 (*making topic generalisation*) in RA introductions in the three disciplines in Lithuanian was used in slightly under 90% of cases (see Table 2).

Similarly to the English corpus, Step 3 (*reviewing items of previous research*) seemed to be obligatory in Lithuanian medical (90%) and linguistic (70%) RA introductions. Lithuanian economic RA introductions demonstrated the same tendency of not using Step 3 in the text as their English counterparts.

The preferred way of establishing a niche in Lithuanian RA introductions in medicine (50%) and economics (50%) was by using Step 1B (*indicating a gap*) of Move 2, for example:

(19) *Akies obuolio melanomos, kaip ir daugumos kitų navikų, priežastys nėra visiškai aiškios.* (MRAIL4)
('**Causes** of the eyeball melanoma, like those of the majority of other tumours, **are not completely clear**'.)

(20) *Nedidelė Lietuvos naujų ekonominių santykių formavimo patirtis verčia atidžiai studijuoti...* (ERAIL2)
('**Small experience** of Lithuania in the formation of new economic relations forces to study... closely...')

However, while Step 1B in medical RA introductions mainly referred to research-internal factors, like insufficient knowledge in the field, in economic RA introductions it frequently referred to research-external factors, such as economic or technological changes, e.g.:

(21) *Pradinis modelio variantas... dabar nebetinka. Jis modifikuotinas dėl kelių priežasčių...* (ERAIL7)
('The initial version of the model... **is now no longer suitable**. It should be modified due to several reasons...')

(22) Tačiau per pastaruosius du dešimtmečius įvyko didelių **technologinių pokyčių**... (ERAIL9)
('However, during the last two decades **great technological changes took place**...')

In contrast to the economic RA introductions in English, Lithuanian economic RA introductions did not raise questions (only one case was encountered). Here we seem to have a national preference in professional discourse.

Lithuanian linguistic RA introductions displayed an equal amount of Step 1B (*indicating a gap*) (30%) and Step 1C (*question raising*) (30%).

(23) Tačiau kaip tokią kalbos politiką ir patį reiškinį vertina kalbos vartotojai Lietuvoje, **atrodo, dar nėra tirta.** (LRAIL9)
('However, how language users in Lithuania evaluate such language policy and the phenomenon itself seems not to have been investigated yet'.)

(24) Mus pirmiausia domina **klausimas, kas** verčia tyrinėtojus šį žodį laikyti germanišku. (LRAIL3)
('The question that interests us first of all is what makes researchers see this word as Germanic.')

Lithuanian introductions displayed the same tendency of avoiding Step 1A (*counter-claiming*) of Move 2 (0%) in all the three disciplines. Step 1D (*continuing a tradition*) was equally unpopular, perhaps because all disciplines had to reassess their tradition in the light of new challenges due to the fall of the Soviet system (only one case of Step 1D was encountered in a medical RA introduction).

Lithuanian RA introductions demonstrated a strong preference for using Step 1A (*outlining purpose*) of Move 3, especially in economics (100%) and linguistics (90%). In 40% of the economic RA introductions, together with a more general purpose of the article, specific objectives were also listed (usually as bulleted points).

Step 1B (*announcing present research*) of Move 3 was the second option chosen by Lithuanian authors, more popular in economics (50%) than in medicine (20%) or linguistics (20%). In 50% of economic RA introductions Step 1A and Step 1B were used concurrently. While announcing present research, 20% of the Lithuanian authors of economic RAs also indicated the limitations of their research, e.g.:

(25) *Šiame straipsnyje nesiekiama įvertinti valstybės priemonių, nes tam reikėtų dar daugiau analizės ir mokslinių apibendrinimų.* (ERAIL2)
('**This article does not seek** to evaluate state measures because that would require more analysis and scientific generalisations'.)

Step 2 and Step 3 of Move 3 were not encountered in Lithuanian RA introductions (except one RA introduction in economics which used all four steps of Move 3).

4. Contrasting the findings across the three disciplines in English and Lithuanian

RA introductions in the three disciplines appeared for the most part to contain the moves in the CARS model. One feature common to all introductions in my corpus (with a single exception) was that authors avoided counter-claiming as a face-threatening act. The most notable difference in Move 1 was that economic RA introductions tended to review previous research in a separate section and not in the text of the introduction. Strategies for establishing a niche also differed, with medical and linguistic RA introductions indicating a gap, while economic RA introductions in English raised questions. In Move 3, economic and linguistic RA introductions in English tended to be more reader-friendly than medical RA introductions through indicating the RA structure.

Table 3. **The CARS model in RA introductions in medicine, economics and linguistics in English and Lithuanian**

Moves	No of occurrences		
	Medicine	Economics	Linguistics
	Engl./Lith.	Engl./Lith.	Engl./Lith.
Move 1. *Establishing a territory*			
Step 1. Claiming centrality	70%/90%	90%/70%	80%/50%
Step 2. Making topic generalisation(s)	100%/100%	100%/90%	90%/70%
Step 3. Reviewing items of previous research	100%/90%	40%/20%	80%/70%
Move 2. *Establishing a niche*			
Step 1A. Counter-claiming	0%/0%	0%/0%	10%/0%
Step 1B. Indicating a gap	80%/50%	10%/50%	40%/30%
Step 1C. Question raising	10%/0%	90%/10%	10%/0%
Step 1 D. Continuing a tradition	30%/10%	0%/0%	10%/0%
Move 3. *Occupying the niche*			
Step 1A. Outlining purpose	60%/60%	90%/100%	80%/90%
Step 1B. Announcing present research	60%/20%	30%/50%	20%/20%
Step 2. Announcing principal findings	20%/0%	10%/10%	20%/0%
Step 3. Indicating RA structure	0%/0%	50%/10%	50%/0%

Some cultural differences were also encountered. Though the majority of RA introductions in both languages claimed centrality, Lithuanian centrality claims were sometimes weaker. The lowest percentage of centrality claims was in Lithuanian linguistic RA introductions, which could perhaps be accounted for by the fact that authors writing in Lithuanian do not experience strong competition in getting their papers published. In Move 2, unlike their counterparts in English, Lithuanian RA introductions in economics did not raise questions (with only one exception). This must be due to the fact that the majority of Lithuanian authors received their education under the system where questions were discouraged. There was a strong tendency in Lithuanian economic RA introductions of establishing a niche by indicating a gap, often referring to research-external factors justifying the transition to a new tradition. It is hardly surprising, therefore, that Lithuanian RA introductions never claimed to be continuing a tradition (except one medical RA introduction). The most noticeable difference in Move 3 was the unwillingness of Lithuanian authors to indicate the RA structure in the introduction, while half of the English introductions in economics and linguistics used this step.

The results of the analysis can have implications for the teaching of academic writing to non-native speakers of English who are seeking membership in international disciplinary communities. In addition to pedagogical implications, this study can also contribute to the understanding of genre structure across disciplines and languages.

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DISCIPLININIAI IR KULTŪRINIAI MOKSLINIŲ STRAIPSNIŲ ĮŽANGŲ SKIRTUMAI

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Santrauka

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