

A genre-based study of biomedical editorials and letters to the editor: a contrastive analysis

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Abstract

This paper reports on a genre-based contrastive analysis of the textual organization of biomedical texts. In order to provide the maximum educational value to our research, our corpus is made up of 100 biomedical texts divided as follows: 25 Letters to the Editor, 25 *Cartas al director*, 25 Editorials and 25 *Editoriales*. Following Paltridge's approach, based on simple keys to symbolize the main parts of discourse in the environmental area, we developed a similar analysis to work with the rhetorical structure of the texts of another area, i.e. Medicine. After studying the informational structure of the texts and analyzing the results, we found striking differences when comparing the discourse organization in texts of various sub-genres. This shows that each genre has unique linguistic patterns which are not shared with the rest.

Key words: genre, contrastive text analysis, scientific genres, letters, editorials

Resumen

Análisis contrastivo basado en el género de editoriales y cartas al director biomédicas

Este artículo presenta un análisis contrastivo desde la perspectiva del análisis de géneros sobre la organización textual de textos biomédicos. Con objeto de intentar que nuestra investigación tenga el mayor valor didáctico posible, nuestro corpus está formado por 100 textos biomédicos: 25 *Letters to the Editor*, 25 *Cartas al director*, 25 *Editorials* y 25 *Editoriales*. Nuestra investigación ha seguido la propuesta de Paltridge, basada en el empleo de unas sencillas claves para representar las partes principales del discurso del área medioambiental. Por nuestra parte, hemos desarrollado un análisis similar y lo hemos aplicado a un corpus de textos del área de Medicina. Tras estudiar la estructura retórica de todos los textos y analizar los resultados, observamos contrastes significativos tras comparar la organización discursiva en textos de diferentes subgéneros. Ello demuestra que cada género y subgénero presenta sus propias características lingüísticas, las cuales no coinciden con las del resto de géneros.

Palabras clave: género, análisis textual contrastivo, géneros científicos, cartas, editoriales

Researching editorials and letters to the editor

Before introducing the characteristics of these two sub-genres, we would like to define what a genre is and outline our vision of the concept. This notion has been discussed in different areas such as folklore studies, linguistic anthropology, the ethnography of communication, conversational analysis, applied linguistics, the sociology of language, literary theory and rhetoric.

We take Swales's genre definition as main reference:

A genre comprises a class of communicative events, the members of which share some set of communicative purposes. These purposes are recognized by the expert members of the parent discourse community, and thereby constitute the rationale for the genre. (Swales, 1990: 58)

Other linguists offer different perspectives on the concept. Martin (1993) focuses on the “regularities of staged, goal oriented social processes”, and Miller (1984) studies the “typification of social and rhetorical action”. In any case, genre is also a social action; it reflects the reality of a society, as explained by Berkenkotter and Huckling (1995: 7):

Because it is impossible for us to dwell in the social world without repertoires of typified social responses in recurrent situations – from greetings to thank yous to acceptance speeches and full-blown, written expositions of scientific or scholarly investigations – we use genres to package our speech and make of it a recognizable response to the exigencies of the situation.

Bazerman (1988: 6 & 62) also indicates the social aspect of genres, and indicates how each text may strengthen the genre it belongs to:

A genre consists of something beyond simple similarity of formal characteristics among a number of texts. A genre is socially recognized, repeated strategy for achieving similar goals in situations socially recognized as being similar. A genre provides a writer with a way of formulating responses in certain circumstances and a reader a way of recognizing the kind of message being transmitted. [...]. Thus the formal features that are shared by the corpus of texts in a genre and by which we usually recognize a text's inclusion in a genre, are the linguistic/symbolic solution to a problem in social interaction.

Accordingly, we consider the complex meaning of genre as a formal discourse category, either oral or written, which shares some characteristics, such as the area it belongs to, readership of the text, author, macrostructure, content and communicative purpose.

Two biomedical sub-genre samples are Letters to the Editor and Editorials. The function of these sub-genres of opinion is either informative or expressive, or both; and, as we will demonstrate by means of our analysis, the rhetorical structure of each one is different from the other.

Editorials and Letters to the Editor are understudied sub-genres, since most of the researchers have limited their analyses to Scientific Article writing, it is, therefore, the type of writing that rhetoricians and sociologists have tended to analyse (e.g., Swales, 1984; Bernhardt, 1985; Swales & Najjar, 1987; Bazerman, 1988; Rymer, 1988; Harmon, 1989; Gross, 1985, 1990; Gragson & Selzer, 1990; Nwogu, 1997; Williams, 1999).

Although Research Articles (Swales, 1990: 125) have different sections, their structure is not so different if compared through several disciplines (Piqué- Angordans, 2002). Nevertheless, as we will see throughout the present study, some differences may be detected when studying bilingual corpora (Mendiluce Cabrera, 2005; Mendiluce Cabrera & Hernández, 2005).

On the other hand, some researchers have tried different genres' structures, this was the case of Posteguillo (1999), who undertook a study on Computer Science Articles' structure; or Alberola (2004), who focused on bank leaflets' rhetorical structure and the persuasive power of advertising, achieved by means of a specific pattern called AIDA (Attention, Interest, Desire, Action). A different study was carried out by Pérez-Llantada (2003), who analysed the rhetorical structure, focusing on thematic articles from Computer in Science and Engineering area, reaching the conclusion that some moves may facilitate information processing, this way favouring relevance in communication.

Editorials

Traditionally, the term editorial made reference to a “message from the editor.” Today Editorials are short essays that usually express the views of the editor or the policies of the journal. They may be written by the editor, a member of the editorial staff, or

an invited author. These sub-genres, particularly appropriate for complementing Original Articles, may comment on an article in the same issue of the journal, or they may deal with a separate topic of concern to the journal's readers. Opinion Articles that represent only the authors' view may be published in sections called Commentary, Viewpoint, Sounding Board, or Controversies. The editor may publish several Editorials in a volume of the journal; this distinguishes the way in which different editors make their mark on a scientific journal.

Letters to the Editor

These letters are short articles used for two purposes: 1) they show agreement or disagreement with respect to previously published articles, and 2) they explain brief scientific information that does need the length and detail of the original article.

At the beginning, the idea of creating journals came from the need to print the usual correspondence between doctors. This way the scientific community could exchange their knowledge and experiences. Nowadays, these formal articles that are submitted for publication require statements of authorship, disclosure of conflicts of interest, and copyright transfer, and they may be subject to peer review and revision.

The International Committee of Medical Journal Editors (1997) has recognized that Letters to the Editor are an essential aspect of postpublication review. In fact, this Committee has recommended that all biomedical journals contain a section carrying comments, questions, or criticisms about articles they have published and where the original authors can respond.

The framework

As already pointed out above, this study is based on Paltridge's (1997) genre-analysis model, which is also based, at the same time, on Swales' genre-analysis model. Swales (1981) originally proposed a four-part schema which is later further refined as the "Create a Research Space" (CARS) model for analyzing Research Article introduction (Figure 1). In his analysis, Swales adopts strategies similar to those embodied in schema-theoretic models positing a four move (text segment which has its linguistic features and its communicative purpose or role within the text) schema for article introductions:

- Move 1: Establishing the field**
- (a) Showing Centrality
 - i. by interest
 - ii. by importance
 - iii. by topic-prominence
 - iv. by standard procedure
 - (b) Stating Current knowledge
 - (c) Describing Characteristics
- Move 2: Summarizing Previous Research**
- (a) Strong Author Orientations
 - (b) Weak Author Orientations
 - (c) Subject Orientations
- Move 3: Preparing for the Present Research**
- (a) Indicating a Gap
 - (b) Question-Raising
 - (c) Extending a Finding
- Move 4: Indicating Present Research**
- (a) Giving the Purpose
 - (b) Describing Present Research
 - i. by *this/the* present signals
 - ii. by move 3 take-up
 - iii. by switching to first person pronoun

Figure 1. Four “move” schema for Article Introduction (Nwogu, 1991: 113)

According to Swales (1990), each move usually consists of several steps, these may be defined as specific communicative strategies which, combined among them, will constitute the information that comprises a move. Each step is created with the purpose of leading the writer toward the development of specific moves (Figure 2):

- Move 1 Establishing a territory**
- Step 1 Claiming centrality, and / or
 - Step 2 Making topic generalisation, and / or
 - Step 3 Reviewing items of previous research
- Move 2 Establishing a niche**
- Step 1A Counter claiming or
 - Step 1B Indicating a gap or
 - Step 1C Question raising or
 - Step 1D Continuing a tradition
- Move 3 Occupying the niche**
- Step 1A Outlining purposes or
 - Step 1B Announcing present research
 - Step 2 Announcing principal findings
 - Step 3 Indicating RA structure

Figure 2. A CARS model for Article Introductions (Swales, 1990: 141)

As regards to Paltridge (1997: 111), he analyses twelve texts on Environment Studies using several *keys* or terms abbreviations symbolizing rhetorical elements within the text, these may also indicate the place of occurrence or frequency of appearance

within the text structure; that is, each key represents a different part of the discourse, as shown in Figure 3:

BI	Background Information
JS	Justification for Study
IG	Indicating a Gap
PS	Purpose of Study
RS	Rationale for Study
QR	Question Raising
PR	Previous Research
CS	Context of Study
M	Materials
R	Results
C	Conclusions

Figure 3. Paltridge's proposal

Influenced by Hasan (1984) in his analysis of the potential of the genre structure, Paltridge (1997: 66), while attempting to locate rhetorical elements in texts, asked himself questions such as the following: “what elements must occur; what elements can occur; where elements must occur; where elements can occur; and how often elements can occur.”

After having reviewed all the genre analysis proposals available, we chose Paltridge's for application to our texts. This is mainly due to three reasons:

- 1) its simplicity;
- 2) it facilitates the count of the results;
- 3) more specific conclusions can be easily obtained; and
- 4) as compared to move-step theory by Swales, keys are perhaps more economical and precise as rhetorical structure identifiers.

The Corpus

The corpus used in this research note is drawn from a previous research which consisted of 100 biomedical texts taken from national and international biomedical journals. Despite the wide range of topics and authors of different nationalities, we focused on two languages, English and Spanish, and we made a random selection of 50 texts written in English (25 Editorials and 25 Letters to the Editor), and 50 in Spanish (25 *Editoriales* and 25 *Cartas al director*). The texts here have been extracted from a larger PhD dissertation and on its four sets of bilingual corpora (Vázquez y del Árbol, 2002).

The method of analysis

Since our aim was to introduce the schemata representative of the structure of four sub-genres, we worked with two different analysis units: (a) triads and (b) keys. The first ones are maximal structural units that consist of three elements, according to position and function (Introduction, Development, Final Conclusion).¹ As regards to keys, the minimal analysis units, they have been considered as the main tools within our research.

In order to obtain the maximum detail in our results, several steps were carried out in the analysis process:

- (a) classification of the texts into four groups, according to their sub-genre: *Cartas al director*, Letters to the Editor, *Editoriales* and Editorials;
- (b) scanning of each text;
- (c) solid reading, highlighting the most relevant aspects of the texts;
- (d) text division into triads (maximum structural units) that consist of three elements, according to position and function; Introduction, Development and Final Conclusion (we will refer to each of them by means of a single letter [Introduction-A, Development-B, Final Conclusion-C]);
- (e) analysis of informational structure, where each sentence was assigned at least one key. After having studied the texts we decided to include and, therefore, symbolize the Salutation and Closure, since they are formal keys of the textual body of these sub-genres. We represented the structural content by using at least one key for each sentence.

After reading and developing an analysis of the corpus, twenty keys were identified in our corpus representation, as shown in Figure 4:

A	Advice	ME	Methods
AP	Agree with Previous studies	NFW	Need of Further Work in the future
BI	Background Information	PR	Previous Research
CO	Conclusions	PRS	Presentation of Study
CL	Closure	PS	Purpose of Study
CS	Context of Study	QR	Question Raising
DP	Disagree with Previous Studies	R	Results
H	Hypothesis	RAP	Results that Agree with Previous Studies
IC	Information of the Current moment	RDP	Results that Disagree with Previous studies
IF	Information of the Future	R/JS	Rationale/Justification for Study
IG	Indicating a Gap	SA	Salutation
MA	Materials	(Hid)	Hidden

Figure 4. Keys List (our proposal)

In order to illustrate the information conveyed and simplified by the aforementioned keys, we present a set of examples containing sentences extracted from the texts comprising our corpus.

- Text 1: “Finally, we must be cautious in generalising the results to primary care in the UK in view of the highly selective nature of the GPs who participated in the study.” (A-Advice)
- Text 2: “As Carney and co-workers show, primary care physicians explore both psychosocial and somatic concerns.” (AP-Agree with Previous studies)
- Text 3: “Chlamydia is a genus of obligate intracellular Gram-negative bacteria comprising 3 species, *C. trachomatis* (CTR), *C. psittaci* (CPS) and *C. Pneumoniae* (TWAR) (CPN).” (BI-Background Information)
- Text 4: “Happy holidays,” (CL-Closure)
- Text 5: “*Y nada más que felicitar al Dr. N. Catarineu Nieto por su excelente aportación histórico-literaria en la que, además de erudición, ha sabido destilar unas gotas de nostalgia por la muerte anunciada de la Estomatología en España.*” (Co-Conclusions)
- Text 6: “*Se han estudiado las complicaciones tiroideas en 25 pacientes tratados por EH en el Servicio de Hematología del Hospital Universitario de Caracas y en el Centro de Quimioterapia Oncológica entre los años 1985 y 1996.*” (CS-Context of Study)
- Text 7: “Let us work to prove Hobbes wrong when he states, “Maybe we can eventually make language a complete impediment to understanding.”” (DP-Disagree with Previous studies)
- Text 8: “*Creemos que esto podría justificarse porque el lado izquierdo del conductor se encuentra limitado por la puerta y ventana del vehículo, mientras que el derecho tiene un mayor espacio para movilizarse, disminuyendo así el tiempo de contacto con los álcalis liberados en la deflagración.*” (H-Hypothesis)
- Text 9: “*Esta labor corre a cargo de mi persona siguiendo modelos aprendidos en los Estados Unidos en uno de los mejores departamentos de cirugía de colon y recto del mundo en la Cleveland Clinic y del Dr. Sánchez-Gil cirujano de amplia experiencia en este campo que participa ampliamente de esta filosofía asistencial.*” (IC-Information of the Current moment)
- Text 10: “Availability of genomic data will permit analysis of similarities in gene sequences between humans and other organisms for which the function of the gene in question is known, resulting in rapid elucidation of human gene function.” (IF-Information of the Future)

- Text 11: “*La etiopatogenia de esta enfermedad sigue siendo una incógnita aunque en los últimos años parece implicarse a la interleucina 6 un importante papel.*” (IG-Indicating a Gap)
- Text 12: “*Caso observado: mujer de 24 años, sin antecedentes patológicos de interés, sin enfermedades ni traumatismos previos, que ingresa por presentar dolor y tumefacción en miembro inferior derecho, con impotencia funcional.*” (MA-Materials)
- Text 13: “Focus reduction neutralization test (FRNT) was performed against the four hantaviruses reported to cause HFRS (PUU, DOB, HTN and Seol virus [SEO]) on two serum examples, one drawn 10 days after the onset of the illness and a second one drawn 4 years later, as previously described.” (ME-Methods)
- Text 14: “Future studies are therefore needed to define patient populations at low risk for invasive infections.” (NFW-Need of Further Work in the future)
- Text 15: “*Así, Mayers et al describieron el aumento del porcentaje de cepas resistentes a la ZDV en pacientes en el momento de la seroconversión.*” (PR-Previous Research)
- Text 16: “In this article, Timothy Hoff at SUNY-Albany examines characteristics, job involvement, and career stage differences among 294 physician executives working in managed care settings.” (PRS-Presentation of the Study)
- Text 17: “We would like to share our experience with the use of hepatitis C-positive liver grafts in patients with end-stage hepatitis C liver disease.” (PS-Purpose of Study)
- Text 18: “*Si los rasgos anormales que provocan el inicio de una crisis epiléptica están crónicamente presentes, ¿por qué no está el cerebro epiléptico en constante status?*” (QR-Question Raising)
- Text 19: “Our first report indicated that CTR was a common trigger of ReA, as 25/186 patients had genital CT infection identified by culture.” (R-Results)
- Text 20: “*Comparando estos resultados con los obtenidos mediante Clo-test® y cultivo, existió concordancia en 32 de 34 pacientes (94.4%) (tabla I).*” (RAP-Results that Agree with Previous studies)
- Text 21: “*Sin embargo, en Suecia, Leoncini et al encuentran una tasa baja de presencia de mutaciones R211K y L214F, lo que indica la necesidad de estudios más amplios y en distintas zonas geográficas, abogando por la realización de estudios de investigación de la prevalencia de mutaciones de resistencia en distintas poblaciones.*” (RAP-Results that Disagree with Previous studies)

- Text 22: “*Dado que algunas apreciaciones me parecen contradictorias, aprovechando mis pequeñas experiencias sobre el tema, y el conocimiento de algún que otro Centro informatizado (y las razones por las que se informatizó), quiero plantear tanto una reflexión, como realizar algunas aseveraciones y una pequeña conclusión final.*”
(R/JS-Rationale/Justification for Study)
- Text 23: “Dear Sir,” (SA-Salutation)
- Text 24: “Dear Sir, Bonfanti et al. present an interesting investigation in their letter and make comparisons with our recent study.” (Hid-Hidden²)

As we can see, there are some aspects in our list of keys which differ from Paltridge’s (1997), mainly due to the fact that we have researched within a different area (Medicine):

1. We found in our texts all the keys set forth by Paltridge – BI (Background Information), CO (Conclusions, called C by Paltridge), CS (Context of Study), IG (Indicating a Gap), MA (Materials), PR (Previous Research), PS (Purpose of Study), QR (Question Raising), R/JS (Rationale/Justification for Study), and R (Results). Nevertheless, we have developed some changes regarding the nomenclature: C (Conclusions) has been substituted by CO, M (Materials) has been replaced by MA; RS (Rationale for Study) and JS (Justification for Study) have been reduced to just one key: R/JS (Rationale/Justification for Study).
2. The abovementioned key R/JS (Rationale/Justification for Study) is the equivalent of two other keys shown in Paltridge’s proposal: Rationale for Study (RS) and Justification for Study (JS). We took this decision since we thought that the idea symbolized by both keys is a single one: *the reason of the topic of the text*.
3. We have enlarged Paltridge’s list with some new keys we have found in our corpus; such as Advice (A), Agree with Previous studies (AP), Closure (CL), Disagree with Previous studies (DP), Hypothesis (H), Information of the Current moment (IC), Information of the Future (IF), Methods (ME), Need of Further Work in the future (NFW), Presentation of the Study (PRS), Results that Agree with Previous studies (RAP), Results that Disagree with Previous studies (RDP), Salutation (SA).
4. Finally, Hid (Hidden), the keys modifier, has been included in order to symbolize that the idea expressed in the text by the key it accompanies is more implicit than the rest of information.

In order to be more precise, we used simple schemata, representative of the textual structure of the corpus analyzed, where the keys are organized according to their order of appearance in our texts. In order to achieve this purpose we decided to consider demands of space: first, not to include the frequent combinations of keys (i.e. H+IF+IG → Hypothesis + Information of the Future + Indicating a Gap) found in a sole sentence, because it would enlarge and excessively complicate each schema; and second, to use a list of symbols in order to explain, through them, the frequency of occurrence of a key, its repetition or its location. Before presenting our four schemata (one for each sub-genre), we will elaborate on some symbols used to describe the maximum amount of information featuring the corpus analyzed:

- 1) ++ means that a key may appear more than once in the section indicated. Therefore, if we see BI++ in section A (Introduction), it will mean that this key appears several times in the Introduction section.
- 2) * indicates the possibility that some keys have to appear in more sections than the one indicated. When R/JS* is located in section B (Development), it means that R/JS is often found in the Development section, although it has also been used in the other two (A and C).
- 3) *** If we use a combination of the symbols mentioned previously it means two things. First, the key modified by *** may appear in the section indicated and also in the other two sections; and second, it tends to appear more than once. So, a key PRS*** in section C (Final Conclusion) may also appear –more than once– in sections A or B.
- 4) / means the possibility that some keys have to appear in the same place and section, although the key that appears before the slash is the most common one.
- 5) () Brackets surround optional keys.

Results

According to our analysis, there are ten keys which were found to be relevant for the rhetorical structure and, therefore, were found to occur in most of the texts (BI-Background Information, CO-Conclusions, IG-Indicating a Gap, MA-Materials, ME-Methods, PR-Previous Research, PRS-Presentation of the Study, R-Results, PS-Purpose of Study, R/JS-Rationale/Justification for Study). These were classified as “basic elements.” Obviously, there are also keys which are less frequent and,

consequently, less relevant for the text structure, and as a result were classified as “no basic elements” (A-Advice, AP-Agree with Previous studies, CL-Closure, CS-Context of Study, DP-Disagree with Previous studies, H-Hypothesis, IC-Information of the Current moment, IF-Information of the Future, NFW-Need of Further Work in the future, QR-Question Raising, RAP-Results that Agree with Previous studies, RDP-Results that Disagree with Previous studies, SA-Salutation). These, therefore, will not appear in our list, since they are not fundamental for the texts analyzed.

Once the rhetorical structure of our corpus has been analysed, the results were simplified by using four schemata (one per each sub-genre); in order to detail more information, percentages of occurrence were also included, as shown in Tables 1 and 2.

<i>Cartas al Director</i>		Letters to the Editor	
Moves & Steps	%	Moves & Steps	%
Introduction (A)		Introduction (A)	
SA-Salutation	88	SA-Salutation	64
BI-Background Information ***	88	PR-Previous Research ***	72
R/JS-Results/Justification for Study **	76	R/JS-Results/Justification for Study **	80
PR-Previous Research *	32	BI-Background Information ***	60
PS-Purpose of Study *	36	Development (B)	
Development (B)		BI-Background Information	72
BI-Background Information	68	PRS-Presentation of Study	80
PRS-Presentation of Study *	72	MA/PS-Materials/Purpose of Study	56/24
MA-Materials **	60	ME-Methods **	52
ME-Methods **	60	R-Results ***	56
R-Results **	60	Final Conclusion (C)	
Final Conclusion (C)		CO-Conclusions ***	100
Conclusions CO ***	92	IG-Indicating a Gap	88
Indicating a Gap IG	80		

Table 1. Rhetorical structure of *Cartas* and Letters

<i>Editoriales</i>		Editorials	
Moves & Steps	%	Moves & Steps	%
Introduction (A)		Introduction (A)	
BI-Background Information ***		BI-Background Information ***	72
R/JS-Results/Justification for Study *	96	R/JS-Results/Justification for Study	60
Development (B)	60	Development (B)	
BI-Background Information		BI-Background Information	100
R/JS-Results/Justification for Study	84	PRS-Presentation of Study	80
PRS/PS-Presentation of Study */ Purpose of Study*	60/20	PR-Previous Research *	88
PR-Previous Research	36	MA-Materials	44
R-Results	28	ME-Methods	56
Final Conclusion (C)		R-Results	76
CO-Conclusions ***	100	Final Conclusion (C)	
(PS)-Purpose of Study	5	CO-Conclusions ***	100
IG-Indicating a Gap	88	PS-Purpose of Study	24
		IG-Indicating a Gap	100

Table 2. Rhetorical structure of *Editoriales* and Editorials

Discussion

The results obtained after the analysis of the 100 texts show the following characteristics:

The pattern of the informational structure identified in the corpus is only one, since all the texts of our corpus can be divided into three triads (Introduction, Development and Final Conclusion).

The textual structure shows that the biomedical texts analyzed share the same Field, but not the same communicative purpose. For example, Correspondence sub-genres (*Cartas al director* and Letters to the Editor) have more specific topics. On the other hand, the topics of *Editoriales* and Editorials are more general and less specific; since they deal with different types of problems.

The information structures of the four sub-genres are open, heterogeneous and flexible, especially in *Editoriales* and Editorials. In fact, after comparing *Cartas* with Letters we found fewer differences than in the contrast between *Editoriales* and Editorials.

The texts of different language and same sub-genre (*Cartas* compared with Letters and *Editoriales* with Editorials) show fewer differences between them in their rhetorical organization as compared to those texts which do not belong to the same sub-genre. Nevertheless, after comparing texts of the same language and different sub-genre (*Cartas* with *Editoriales* and Letters with Editorials) more relevant differences have appeared.

Editorials and *Editoriales* have a less specific content, due to the fact that they do not deal with information on the materials (MA) and methods (ME) of the research developed.

As pointed out above, many differences in the textual organization of Editorials and *Editoriales* have been found, moreover, their structure is less rigid than those of *Cartas* and Letters, and that probably means each genre may have unique linguistic patterns which are not shared with the rest.

In any case, we did find several similarities within the four sub-genres' structures (as shown in Tables 1 and 2), that is, all the sub-genres analysed had some keys in common,

that was the case of BI (Background Information) or R/JS (Rationale/Justification for Study); both keys have been located within all the Introductions. Development sections were also quite similar in their initial and ending keys, since BI (Background Information) and R (results) were spotted at the beginning (BI-Background Information) and at the end (in the case of R-results) of the aforementioned section. This did not only happen at sections A or B, since in all genres the Final Conclusion sections presented analogous schemata, because the key CO (Conclusions) could be detected throughout all the ending sections of the four sub-genres.

Conclusion

This study shows that a schema based on keys can be applied to symbolize the biomedical sub-genre structure. However, it is not the only possible pattern of informational structure within these texts, since we can also find variations in their textual organization.

The aim of this research was to demonstrate the effectiveness of an analysis at the level of genre register. After comparing the results, the analysis reveals the following: (1) there are more striking differences when comparing the textual organization of different sub-genre texts (all written in the same language, either Spanish or English), (2) than in the contrast of texts from the same sub-genre (texts written in English compared to the ones in Spanish).

To conclude, we think that by developing this type of analysis we can provide not only the learner but also the ESP teacher with the informational structure necessary for recognizing, writing, translating or even teaching any type of genre or sub-genre. As has been shown, each genre has its own rhetorical structure, therefore, we agree with Henry and Roseberry (2001: 167) who have concluded that “ESP practitioners need to be aware of not just this range of features, but where they are used and for what purpose.”

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NOTES

1 This last one (Final Conclusion) was named so in order to avoid confusions with the term *Conclusions*, one of the keys within our proposal.

2 Hidden (Hid) is a key modifier, always indicating that the idea expressed by the key it goes with is more implicit than others in the text. Therefore, it is always found modifying any other key. Obviously, the sentence will also illustrate the use of another key called *Rationale/Justification for Study*, modified by Hidden.

Appendix: references to the texts analysed

Cartas al Director

Text 5: González, J. (2000). "Cartas al director." *Archivos de Odontostomatología* 16,2: 138-139.

Text 6: Serrano, J. C. et al. (1999). "Complicaciones tiroideas en pacientes con enfermedad de Hodgkin tratados con radioterapia y quimioterapia." *Sangre* 44,6: 496-497.

Text 8: Menor, A. (1999). "Lesiones por airbag: 2 casos de quemaduras en extremidades superiores." *Emergencias* 11,5: 386.

Text 11: Marcos, F. et al. (1998). "Un nuevo caso de enfermedad de Castleman localizada." *Anales de Medicina Interna* 15,12: 63-64.

Text 12: Rodríguez, A., et al. (2000). "Factor Leyden y trombosis venosa iliocava, tras la toma de anticonceptivos orales." *Investigación Clínica* 3: 44.

Text 18: Caballero, M. A. et al. (2000). "¿Cuál es el papel de la teoría del caos?" *Atención Primaria* 26, 8: 135.

Text 20: Gutiérrez, A. et al. (1999). "Uso del test de antígeno de *Helicobacter Pylori* (Hp) en heces para la detección de infección por Hp." *Gastroenterología y Hepatología* 22,10: 55.

Text 22: Alonso, F. A. (1998). "Reflexiones al hilo de la informatización para profesionales y gerentes de atención primaria." *Dimensión Humana* 2,1: 3.

Letters to the Editor

Text 1: Leung, W.-C. (1999). "Methodological flaws exist in the study of patient-centredness of consultations." *British Journal of General Practice* 49,449: 1008.

Texts 3 & 19: Melby, K. et al. (1999). "Chlamydia pneumoniae as a trigger of reactive arthritis." *Scandinavian*

Journal of Infectious Diseases 31,3: 327-328.

Text 13: Papa, A. et al. (2000). "First case of puumala virus infection in Greece." *Infection* 28,5: 334-335.

Text 17: Torres, M. et al. (1999). "Use of Hepatitis C-infected donors for Hepatitis C-

positive OLT recipients." *Gastroenterology* 117,5: 1253.

Texts 23 & 24: Lindberg, B. et al. (1999). "Islet autoantibodies in cord blood could be a risk factor for future diabetes." *Diabetologia* 42,12: 1443.

Editoriales

Text 9: Fernández-Dovale, M. (2000). "Cáncer de colon y recto". *Revista Andaluza de Patología Digestiva* 23,2: 33-34.

Texts 15 & 21: Najera, R. (1999). "Implicaciones clínicas de las resistencias a los antirretrovíricos". *Publicación Oficial de la Sociedad*

Española Interdisciplinaria del S.I.D.A. 10,5: 167-169.

Editorials

Text 2: Dietrich, A. & L. Eisenberg (1999). "Better management of depression in primary care." *The Journal of Family Practice* 48,12: 945-946.

Texts 4 & 16: Johnson, J. A. (1998). "Editorial." *Journal of Healthcare Management* 43,6: 467.

Text 7: Ruby, S. G. (2000). "Clinician interpretation of pathology reports. Confusion or comprehension?" *Archives of Pathology and Laboratory Medicine* 124,7: 943-944.

Text 10: DeAngelis, C. D. et al. (2000). "Genomic medicine and the individual

patient-byte to bedside. A call for papers." *JAMA* 284,20: 2642.

Text 14: Ruef, C. (2000). "Is antibiotic prophylaxis without risk?" *Infection* 28,5: 259-260.